
Development of Cognitive Skills of Compassionate
Communication for Higher Education's
Online Group Work Management

Jayasundara Mudiyansele Priyantha Vijitha Kumari Jayasundara

*Submitted to the University of Hertfordshire in partial fulfilment of the requirements for the
degree of Doctor of Philosophy*

September 2023

**Development of Cognitive Skills of Compassionate
Communication for Higher Education's
Online Group Work Management**

Supervisors:

Dr. Theo Gilbert

Dr. Saskia Kersten

Dr. Lily Meng

Doctor of Philosophy

Submitted to the University of Hertfordshire in partial fulfilment of the requirements for the degree of Doctor of Philosophy

Department of English Language and Linguistics
School of Creative Arts
University of Hertfordshire

DECLARATION STATEMENT

I certify that the work submitted is my own and that any material derived or quoted from the published or unpublished work of other persons has been duly acknowledged.

Student Full Name: Jayasundara Mudiyansele Priyantha Vijitha Kumari Jayasundara

Student Registration Number: 18028736

Signed: *PVKumari*

Date: *September 25, 2023*

ABSTRACT

This study explored the development of the cognitive skills of compassionate communications (CSCC) among ethnically diverse Sri Lankan HE STEM students in the UK and Sri Lanka during online, task-focused discussion meetings. The psychobiological model of compassion was used as the theoretical model to map the wider socio-economic, political, and historical context in Sri Lanka to the current study. In this mixed-methods, action research study, two groups of four students per group, were selected from five UK universities (Cycle 1). Next, six groups of four students per group were selected from Sri Lankan state universities (Cycles 2 and 3). In both countries, each group's students participated in a task-focused group meeting, focus groups/interviews, and completed two questionnaires before and then (all this was done again for comparative purposes) after an online 90-minute CSCC intervention session. Screen gaze data of each group member and data collected from two questionnaires were analysed employing SPSS, MS Excel and R. Transcripts of group meetings and focus groups/interviews were analysed using Template Analysis and NVivo (Pro 12). Micro-ethnographic analysis was conducted to identify group behaviours of the participants. In relation to all three Cycles, a comparison of the pre-and post-CSCC intervention quantitative and qualitative findings indicated, post-intervention, a significant increase in a) the use of cameras, and b) sustained screen gaze attentiveness to each other. Triangulating the quantitative and qualitative findings indicated an enhancement of a) prosocial behaviours amongst the participants, b) their educational experiences, c) social experience mediated learning experience, and d) positive impacts of applying shared-virtual backgrounds. These data demonstrated the relationship between the quality of students' social and learning experiences in the pre-and post-CSCC group work. The study identified how to adapt the CSCC used in offline meetings to the online context. It identified the potential contribution of the CSCC as part of group work pedagogy for repairing historic and still current divisions among HE student communities in Sri Lanka.

DEDICATION

*This verse I pen, with heartfelt grace,
For in the realm of knowledge's pursuit,
Your continuous guide aided me find,
the formidable envoy in me,
To materialize my dream to a real...*

*My beautiful motherland, Sri Lanka's heart,
Whose unwavering support set me apart,
With each tax paid, fueled my aspiration,
With grateful heart for your contribution
To honor you with this remarkable triumph...*

*To my research supervisors, compassionate, wise and kind,
Your guidance shaped my curious mind,
With patience, you led me to explore,
And inspired learning to the core,
To drive to surmount challenges being a creative dynamo...*

*To my parents, dear and near ones whose love and care,
Nurtured my dreams beyond compare,
You stood beside me through thick and thin,
In your embrace, fostering confidence, the strength to win,
To chart novel trajectories and architect innovative solutions flourishing
my voyage in this higher education milieu....*

ACKNOWLEDGEMENTS

This thesis will not be a reality without the supportive hands extended by many. It is a pleasure to convey my sincere appreciation to all of them.

First and foremost, I would like to express my sincere gratitude to Professor Dr Theo Gilbert, for his guidance, encouragement, and support throughout this doctoral journey. His continuous support during difficult circumstances in a highly compassionate and inspiring manner is highly appreciated. I wish to record my heartiest gratitude to Professor Dr Saskia Kersten for her continuous guidance, motivation, and timely feedback which support me in broadening my knowledge horizons while deepening my understanding. I am indebted to Dr Lily Meng for her guidance, and motivation provided right throughout this process while directing me toward the opportunities to learn and thrive. All three of your personal qualities as supervisors, mentors, and compassionate personnel are inspirations for my career path. I wish to record special thanks to Professor Joy Jarvis for her useful comments provided during the registration and doctoral assessments.

A special tribute to all study participants from the universities of the United Kingdom and Sri Lanka for their commitment and generous support during the study. I am pleased to offer my sincere gratitude to all the Deans of the Faculties, Heads of the Departments, and lecturers at all participant universities for their utmost support extended from granting permission for data collection to making the students aware and ensuring their participation in this research study.

I wish to extend my heartiest gratitude to Professor Jayantha Lal Ratnasekera, Vice-chancellor of Uva Wellassa University for releasing me from academic responsibilities to pursue this study full-time. The support extended by Professor Ruwan Ranasinghe, Dean, Faculty of Management Sciences, and Dr. Kumudu Jayawardhana, Head, Department of English Language Teaching, Uva Wellassa University in this process is highly appreciated. My appreciations are overdue to Emirates Professor Rajiva Wijesinha, Dr. Nirosha Paranavitana, Senior Professor Janaki Wijesekara, Dr. Premarathna Dissanayake for their guidance, encouragement, and motivation throughout my academic journey.

I am pleased to express my special gratitude to Susan Grey, Director of the Doctoral College, Rowland Hughes, Associate Dean Research, Kathy Lee, Samantha Strange, Emma King, and Nichola Hogg and research tutors at the Doctoral College for their assistance extended in numerous ways from day one at the UH. I am truly grateful to Gloria Richards for reading manuscripts and offering me opportunities for useful and rich discussions. My sincere thanks are overdue to Jinrong Fang for her support and care with her lovely company during this study.

I wish to record my heartiest gratitude to the academic staff of the School of Humanities including Dr Christina Schelletter, Head of English Language & Linguistics, and other colleagues from the School of Humanities, Yoshimi, Fumi, Amparo, Helen, Cathy, Gerlinde, Ciara, Timothy, and the professional staff Mary, Mandy, Gowri for their support extended in numerous ways and lovely company from the beginning of my PhD journey at room R323.

I would like to express my gratitude to Professor Helen Barefoot, Director, Learning and Teaching Innovation Centre (LTIC), Karen Clerk, and Amanda Yip, for the constructive comments, interesting discussions along with compassion provided throughout the Ph.D. candidature. I am also obliged to Yulia Marunchak, all the staff and students who consented to support my data collection and sparing their time to take part in my study experiments in the initial scheduling of data collection even though those experiments could not be done due to COVID-19 pandemic. I am obliged to Kate, Anna, Claire, Katharine, Jo, Vicky, Nick, Maria, Martina and all staff members of Careers and Employment Service, and all career coaches for their support and lovely company. Moreover, I wish to record my sincere gratitude to my beloved teachers Upul Nishantha Gamage, Rev. Mahamithava Dhammarathana Thero, and Dr. Sunil for their unflinching moral support and spiritual caregiving during my study. Srila, Piyamas, Waruna, Brian, Damini and I started the PhD journey more or less at the same time and thank you so much for being for one another and always being compassionate. I am obliged to my lovely friends Malshani, Maheshika Akki, Gayani, Thushari, Nishani, Nuwan Aiya, Udeshika, Asela, Chandima Akki, Manoj, Heshani, Sharmila, Dilhara, Chandima Akki, Darshi Akki, Diluka Akki, Kavinda, Ruchira, Sujanthi, Samanthi Akki, Aruni Akki, Sudharma Akki, Vicky, for their extended support in numerous ways and their upkeep to complete this journey. I am indebted to my neighbours Jurgita, Ruksha, Dinusha, Lakshika, Manosha, Shirin and their families for their company.

I offer my special tribute to my mum for her unconditional love, care, encouragement, and for being my role model in every stage of life and my dad for being my strength to complete this journey with lovely memories. My tributes are overdue to my siblings for their love, care support extended from the beginning to the end of this journey. I am grateful to my husband's parents, my in-laws, and all my relatives for their lovely company, care, and motivation extended to continue this journey. This thesis would not have been possible without the unconditional love, support, patience, and understanding of my husband Manjula and my little son Manuja.

I would like to acknowledge the financial support from 'AHEAD,' the World Bank project. Last but not least, I wish to record my sincere gratitude to all who extended their assistance in many ways while encouraging me even by a single word to make this research a success.

KEYWORDS

Cognitive

Communication

Compassion

Experience

Group

Higher Education

Learning

Online

Screen gaze

Social

Students

Virtual Background

ABBREVIATIONS

CAE – Centre for Academic English

CAPE Sri Lanka – Country Assistance Program Evaluation for Sri Lanka

CfP – Compassion-focused Pedagogy

CMT – Compassionate Mind Training

CSCC – Cognitive Skills of Compassionate Communication

DELT – Department of English Language Teaching

EPT – English for Tourism Purposes

GCE (A/L) – General Certificate of Education (Advanced Level)

HE – Higher Education

HEI – Higher Education Institute

HEMS – Humanities, Education, Management and Social Sciences

MoE – Ministry of Education

ICT – Information Communication Technology

PostIGD – Post-intervention Group Discussion

PreIGD – Pre-intervention Group Discussion

PostIGM – Post-intervention Group Meeting

PreIGM – Pre-intervention Group Meeting

PostIJAP – Post-intervention Journal Article Presentation

PreIJAP – Pre-intervention Journal Article Presentation

PW – Picture-Word

SL – Sri Lanka

SoC – Science of Compassion

STEM – Science, Technology, Engineering and Mathematics

UH – University of Hertfordshire

UK – United Kingdom

TABLE OF CONTENTS

DECLARATION STATEMENT	iii
ABSTRACT	iv
DEDICATION	v
ACKNOWLEDGEMENTS	vi
KEYWORDS	viii
ABBREVIATIONS	ix
TABLE OF CONTENTS	x
LIST OF TABLES	xix
LIST OF FIGURES	xxiii
1. CHAPTER 1	1
Introduction	1
1.0 Introduction	1
1.1 Research Questions	5
1.2. Organization of Chapters.....	6
2. CHAPTER 2	9
Background of the Study and Its Rationale	9
2.0 Introduction	9
2.1 Sri Lanka’s Wider Socio-Economic, Historical and Political Background.....	10
2.1.1 Imperialism and Its Impacts	10
2.1.2 Linguistic Imperialism	11
2.1.3 English Education in Sri Lanka	13
2.1.4 State of English Medium Instructions in Sri Lankan Higher Education.....	15
2.1.5 Employability	18
2.1.6 Impacts of Civil War (Summary on Historical Difficulties, Social Destruction, Fracturing in Sri Lankan Communities).....	19
2.1.7 Impacts of the 2019 Easter Bomb Attack in Sri Lanka	21

2.1.8	Impacts of the COVID-19 Pandemic.....	22
2.2	Theoretical Background: Compassion	22
2.2.1	The Psychobiological Model of Compassion	23
2.2.2	Applying the Three Circles Model of Compassion in HE Group Work.....	25
2.2.3	Activation of Threat and Drive Systems in Brains	27
2.3	The Rational for the Study	28
2.3.1	Sri Lankan Students' Mental Health and Wellbeing	28
2.3.2	Three Circles Model: Mapped onto Sri Lanka's Wider Socio-Economic, Historical and Political Contexts.....	30
2.4	Moving Forward.....	32
2.5	Chapter Summary	32
3.	CHAPTER 3	34
	Literature Review	34
3.0	Introduction	34
3.1	Science of Compassion	35
3.1.1	What is Compassion?.....	35
3.1.2	Understandings of Compassion.....	37
3.1.3	Benefits of Compassion	40
3.1.4	Safeness and Learning	43
3.1.5	The Current Study – Theory of Compassion	44
3.1.6	Compassion as Motivation	45
3.1.7	The Three Orientations of Compassion.....	45
3.2	The Group Tasks in Current HE	50
3.2.1	Group Work and Social Relationships	52
3.2.2	Group Work and Academic Performances.....	53
3.2.3	Social Relationships and Academic Performance	53
3.2.4	Online Group Work Meetings.....	54
3.3	Practical Compassion in Group Work.....	57
3.3.1	The Importance of Screen Gaze Online	60
3.3.2	Applying the Three Circles Model of Compassion in HE Group Work.....	62
3.3.3	Why Compassion in HE?.....	62
3.3.4	Effectiveness of Compassion in Reducing Stress/Anxiety.....	64
3.4	Other Related Theoretical Aspects.....	65
3.4.1	Constructivism	66
3.4.2	Constructionism	66
3.4.3	Intersubjectivity Theory	68
3.4.4	SOLE and Reinforcement Theory of Motivation	68

3.5	Chapter Summary	69
4.	CHAPTER 4	70
	Research Methodology	70
4.0	Introduction	70
4.1	Research Questions	73
4.2	Action Research Approach.....	74
4.2.1	Why Action Research?	75
4.2.2	Action Research Spiral (Cycle)	76
4.2.3	Basic Phases in Action Research.....	77
4.2.4	Action Research Cycles of the Current Study.....	80
4.2.5	Ethnography	81
4.3	Structure of Three Cycles and Their Methods in Current Study	82
4.3.1	The Pre-Intervention.....	82
4.3.2	The Intervention	84
4.3.3	The Post-Intervention.....	86
4.3.4	The Rationale for Employing Separate Subject-Related Journal Articles for Group Work Meetings in This Study.....	88
4.4	Sampling and Data Collection.....	89
4.4.1	Sampling Methods	89
4.4.2	Data Collecting Methods	91
4.4.3	Choosing an Online Platform for Data Collection	97
4.5	Data Analysis - The Overarching Methodology	98
4.5.1	Qualitative Methods.....	98
4.5.2	Data Analysis Methods Considered but Deselected	105
4.5.3	Quantitative Methods.....	107
4.5.4	Data Triangulation.....	115
4.6.	Cycle 1.....	116
4.6.1.	Participants	116
4.7	Cycle 2.....	117
4.7.1	Modifications to Cycle 2	117
4.7.2	Participants	121
4.8	Cycle 3.....	122
4.8.1	Modification to Cycle 3	122
4.8.2	Participants	122
4.9	Modifications to Intervention Session from Cycles 1 to 2 and 2 to 3	124
4.10	Addressing Research Questions	127

4.11	Ethics Approval for the Study.....	128
4.12	Chapter Summary	129
5.	CHAPTER 5	130
	Findings Cycle 1	130
5.0	Introduction	130
5.1	Non-verbal Communications.....	131
5.1.1	Analysis of Quantitative Data — Students’ Screen Gaze Behaviours	133
5.1.2	Analysis of Qualitative Data — Observation Field Notes (Non-verbal Communications).....	148
5.1.3	Screen Gaze - Sustaining vs Not-sustaining (Breaking).....	157
5.1.4	Summary: Non-verbal Communications Cycle 1.	161
5.2	Verbal Communication.....	163
5.2.1	Template Analysis of Group Work Meetings’ Transcripts (Pre- and Post-Intervention Comparisons).....	164
5.2.2	Template Analysis of the Focus Groups’ Transcripts (Pre-Intervention Vs Post-Intervention).....	169
5.2.3	Emergent Themes from Template Analysis of Pre- and Post-Intervention Group Meetings and Focus Groups Transcripts - Data Triangulation Method	183
5.3	Analysis of the Two Questionnaires.....	193
5.3.1	Statistical Analysis of Questionnaire 1 — Group Work Behaviours	193
5.3.2	Statistical Analysis of Questionnaire 2 — Compassionate Engagement and Action Scale	195
5.4	Chapter Summary	196
5.5	Conclusions.....	197
5.5.1	Adjustments to the Methodology from Cycle 1 into the Main Study	198
6.	CHAPTER 6	204
	Findings Cycle 2 & Cycle 3	204
6.0	Introduction	204
6.1	Non-verbal Communications.....	206
6.1.1	Analysis of Quantitative Data — Students’ Screen Gaze Behaviours	208
6.1.2	Analysis of Qualitative Data Pertaining to Non-verbal Communications.....	226
6.1.3	Screen Gaze — Sustaining vs Not-sustaining (Breaking).....	232
6.1.4	Triangulation of Quantitative and Qualitative Data — Non-verbal Communication.....	233
6.2	Verbal Communication.....	237

6.2.1	Template Analysis of Group Work Meetings Transcripts (Pre- and Post-Intervention Comparisons).....	237
6.2.2	Template Analysis of Focus Groups (Pre- and Post-Intervention Comparisons)	244
6.2.3	Emergent Themes from Template Analysis of Pre- and Post-Intervention Group Meetings and Focus Groups Transcripts - Data Triangulation Method	266
6.3	Analyses of the Two Questionnaires.....	286
6.3.1	Statistical Analysis of Questionnaire 1 — Group Work Behaviours	286
6.3.2	Statistical Analysis of Questionnaire 2 — Compassionate Engagement and Action Scale	289
6.4	Chapter Summary	291
6.5	Conclusion.....	293
7.	CHAPTER 7	297
	Discussion	297
7.0	Introduction	297
7.1	Communicative Barriers Among Students in Online Group Meetings	298
7.2	Key Findings of the Study.....	299
7.2.1	Enhancement of Social Experience.....	301
7.2.2	Enhancement of Learning Experience.....	302
7.2.3	Social Experience Mediated Learning Experience	302
7.2.4	Changing Levels of Self-compassion, Compassion to Others and Compassion from Others	303
7.3	Switching the Cameras on During the Group Meetings.....	305
7.4	Screen Gaze in Online Group Meetings.....	307
7.4.1	Sustained Scree Gaze in Online Group Meetings	308
7.4.2	New Avenues from Changes of Spatial Dimensions in Small Group Meetings Online	311
7.5	Embedding CSCC for Group/Team Meetings Online	314
7.6	Application of a Shared Virtual Background	317
7.6.1	Psychological Impact of the Shared Virtual Background	318
7.6.2	The Issues Associated with Using a Shared Virtual Background	319
7.7	Development of CSCC in Sri Lankan STEM Students in UK-based Universities and Sri Lankan-based Universities.....	320
7.8	Addressing the Theoretical Concerns Pertinent to the Study.....	322
7.9	Returning to My Motivation for Conducting the Study.....	324

7.10	Chapter Summary	326
8.	CHAPTER 8	327
	Conclusions	327
8.0	Introduction	327
8.1	Study Contribution	329
8.1.1	Contribution to Theory.....	329
8.1.2	Contribution to Practice.....	332
8.1.3	Contribution to Policy.....	333
8.2	Recommendations	335
8.2.1	Viable Group Size	335
8.2.2	Application of Shared Virtual Background	335
8.3	Limitations and Future Research.....	336
8.3.1	Limitations and Obstacles to Implementing CSCC and Potential Solutions	336
8.3.2	Future Research	338
8.4	Sustainability	339
8.5	Summary	340
	REFERENCES.....	343
	APPENDIX A Cycle 1	386
	Supplementary Materials and Results.....	386
A.1.	Wilcoxon Signed-Rank Test Results – Cycle 1	387
A.1.1.	Cycle 1: Group 1.....	387
A.1.2.	Cycle 1: Group 2.....	388
A.2.	R Plots – Cycle 1	390
A.2.1.	Cycle 1: Group 1.....	390
A.2.2.	Cycle 1: Group 2.....	393
A.3.	Results of Microsoft Excel Analysis – Cycle 1	399
A.3.1.	Cycle 1: Group 1.....	400
A.3.2.	Cycle 1: Group 2.....	406
A.4.	Template Analysis of Focus Group Transcriptions – Cycle 1	414
A.5.	Ethnographic Field Notes – Cycle 1.....	415
A.5.1.	Cycle 1/ Group 1 – Pre-Intervention.....	415
A.5.2.	Cycle 1/ Group 1 – Post-Intervention.....	418
A.5.3.	Cycle 1/ Group 2 – Pre-Intervention.....	420

A.5.4.	Cycle 1/ Group 2 – Post-Intervention	422
A.6.	Template Analysis of PreIGMs and PostIGMs – Cycle 1	424
A.7.	Template Analysis of Pre- and Post-Intervention Focus Groups – Cycle 1	431
A.8.	SPSS Analysis of Questionnaire 1 on Group Work Behaviours – Cycle 1	448
A.9.	SPSS Analysis of Questionnaire 2 on Compassionate Engagement and Action Scale – Cycle 1	449
APPENDIX B Cycle 2		450
Supplementary Materials and Results		450
B.1.	Wilcoxon Signed-Rank Test Results – Cycle 2	451
B.1.1.	Cycle 2: Group 1	451
B.1.2.	Cycle 2: Group 2	452
B.1.3.	Cycle 2: Group 3	453
B.2.	R Plots – Cycle 2	455
B.2.1.	Cycle 2: Group 1	455
B.2.2.	Cycle 2: Group 2	458
B.2.3.	Cycle 2: Group 3	463
B.3.	Results of Microsoft Excel Analysis – Cycle 2	467
B.3.1.	Cycle 2: Group 1	468
B.3.2.	Cycle 2: Group 2	474
B.3.3.	Cycle 2: Group 3	482
B.4.	Template Analysis of Focus Group Transcriptions – Cycle 2	490
B.5.	Ethnographic Field Notes – Cycle 2	493
B.5.1.	Cycle 2/ Group 1: Pre-Intervention	493
B.5.2.	Cycle 2/ Group 1: Post-Intervention	496
B.5.3.	Cycle 2/ Group 2: Pre-Intervention	498
B.5.4.	Cycle 2/ Group 2: Post-Intervention	501
B.5.5.	Cycle 2/ Group 3: Pre-Intervention	503
B.5.6.	Cycle 2/ Group 3: Post-Intervention	506
B.6.	Template Analysis of PreIGMs and PostIGMs – Cycle 2	509
B.7.	Template Analysis of Pre- and Post-Intervention Focus Groups – Cycle 2	514
B.8.	SPSS Analysis of Questionnaire 1 on Group Work Behaviours – Cycle 2	529
B.9.	SPSS Analysis of Questionnaire 2 on Compassionate Engagement and Action Scale – Cycle 2	530
APPENDIX C Cycle 3		531

Supplementary Materials and Results	531
C.1. Wilcoxon Signed-Rank Test Results – Cycle 3	532
C.1.1. Cycle 3: Group 1.....	532
C.1.2. Cycle 3: Group 2.....	533
C.1.3. Cycle 3: Group 3.....	534
C.1.4. Cycle 3: Groups 1, 2 & 3 - Presenters, Presenters’ Audience Members and Discussants.....	535
C.2. R Plots – Cycle 3	536
C.2.1. Cycle 3: Group 1.....	536
C.2.2. Cycle 3: Group 2.....	539
C.2.3. Cycle 3: Group 3.....	544
C.3. Results of Microsoft Excel Analysis – Cycle 3	548
C.3.1. Cycle 3: Group 1.....	549
C.3.2. Cycle 3: Group 2.....	555
C.3.3. Cycle 3: Group 3.....	563
C.4. Template Analysis of Focus Group Transcriptions – Cycle 3	571
C.5. Ethnographic Field Notes – Cycle 3.....	577
C.5.1. Cycle 3/ Group 1: Pre-Intervention.....	577
C.5.2. Cycle 3/ Group 1: Post-Intervention.....	580
C.5.3. Cycle 3/ Group 2: Pre-Intervention.....	582
C.5.4. Cycle 3/ Group 2: Post-Intervention.....	585
C.5.5. Cycle 3/ Group 3: Pre-Intervention.....	588
C.5.6. Cycle 3/ Group 3: Post-Intervention.....	591
C.6. Template Analysis of PreIGMs and PostIGMs – Cycle 3	594
C.7. Template Analysis of Pre-Intervention Focus Groups – Cycle 3.....	600
C.8. SPSS Analysis of Questionnaire 1 on Group Work Behaviours – Cycle 3.....	621
C.9. SPSS Analysis of Questionnaire 2 on Compassionate Engagement and Action Scale – Cycle 3.....	622
APPENDIX D Questionnaires	623
D.1. Questionnaire 1 on Group Work Behaviours.....	624
D.2. Questionnaire 2 on The Compassionate Engagement and Action Scale.....	628
APPENDIX E Focus Group Questions	635
E.1. Pre-Intervention Focus Group Questions	636
E.2. Post-Intervention Focus Group Questions	638
APPENDIX F PowerPoint Presentation on CSCC	641

APPENDIX G Shared Virtual Backgrounds.....	647
APPENDIX H Poster Designed to Invite Students.....	653
APPENDIX I Ethics Approval Notifications	655
APPENDIX J Research Publications.....	660

LIST OF TABLES

Table 4.1: Three Assumptions Fulfilled to Run the Wilcoxon Signed-Rank Test to Compare Pre- vs Post-intervention Screen Gaze of the Group Members.....	109
Table 4.2: Three Assumptions Fulfilled to Run the Wilcoxon Signed-Rank Test to Compare Pre- vs Post-intervention Questionnaire Data.....	114
Table 4.3: Student Participants – (Cycle 1, Group 1).	116
Table 4.4: Cycle 1 Student Participants – (Cycle 1, Group 2).....	117
Table 4.5: Student Participants by Stages and Data Collection Methods (Cycle 1).....	117
Table 4.6: Methodological Amendments after Analysing Cycle 1 Data.....	118
Table 4.7: Student Participants – (Cycle 2, Group 1).	121
Table 4.8: Student Participants – (Cycle 2, Group 2).	121
Table 4.9: Student Participants – (Cycle 2, Group 3).....	121
Table 4.10: Student Participants by Stages and Data Collection Methods (Cycle 2).	121
Table 4.11: Student Participants – (Cycle 3, Group 1).....	122
Table 4.12: Student Participants – (Cycle 3, not included in the data analysis).....	123
Table 4.13: Student Participants – (Cycle 3, Group 2).....	123
Table 4.14: Student Participants – (Cycle 3, Group 3).....	123
Table 4.15: Student Participants by Stages and Data Collection Methods (Cycle 3).	123
Table 4.16: Three Phases of the Study with Participants and Research Instruments Used in Three Cycles.....	124
Table 4.17: Research Question and Data Collection Tools Used to Address Them.....	127

Table 5.1: Field Notes Observations of Non-verbal Communications: Emergent Themes from the Analyses of the Pre Vs the Post-Intervention Group Meetings Transcriptions.	149
Table 5.2: Example Student Statements on the Two Emergent Key Themes During the Post-Intervention Focus Groups (Cycle 1)......	150
Table 5.3: Verbal Communications: Comparison of PreIGM vs PostIGM Instances of Emergent Themes.....	164
Table 5.4: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycle 1)......	166
Table 5.5: Emergent Themes from Template Analysis of the Pre-vs Post-intervention Focus Group Transcripts.....	169
Table 5.6: Template Analysis of PreIFGs and PostIFGs – Example Transcription Extracts on Verbal Communication (Cycle 1)......	172
Table 5.7: Wilcoxon Signed-Rank Test Results – Questionnaire 1: Group Work Behaviours (Pre- vs Post-Intervention) Cycle 2.....	194
Table 5.8: Wilcoxon Singed Rank Test Results – Questionnaire 2: Compassionate Engagement & Action Scale (Pre Vs Post-Intervention) Cycle 1.	195
Table 5.9: Answering Research Questions through the Data Analyses of Cycle 1.....	202
Table 6.1: The Wilcoxon Signed-Rank Test p value Results for Screen Gaze Behaviour of Group Members as to the Roles They Perform in the Groups (Cycle 2)......	209
Table 6.2: The Wilcoxon Signed-Rank Test p value Results for Screen Gaze Behaviour of Group Members as to the Roles They Perform in the Groups (Cycle 3)......	211
Table 6.3: Qualitative Data Analyses Pertaining to the Non-verbal Communication.....	226

Table 6.4: Field Note Observations of Non-verbal Communications: Emergent Themes from the Analyses of the Pre Vs the Post-Intervention Group Meetings Transcriptions.	228
Table 6.5: Example Student Statements on the Three Key Emergent Themes – The Post-Intervention Focus Groups (Cycles 2 and 3).	229
Table 6.6: Themes that Emerged under Verbal Communication (PreIGMs Vs PostIGMs).	238
Table 6.7: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycles 2 & 3).	240
Table 6.8: Emergent Themes from Template Analysis of the Pre- and Post-Intervention Focus Groups.	245
Table 6.9: Template Analysis of PreIFGs and PostIFGs – Example Transcription Extracts on Verbal Communication (Cycles 2 & 3).	248
Table 6.10: The Virtual Backgrounds Selected by Each Group.	279
Table 6.11: Emergent Themes of Template Analysis of the Post-intervention Focus Groups.	282
Table 6.12: Emergent Themes in Relation to Applying a Shared Virtual Background – Post-Intervention Focus Groups.	283
Table 6.13: Wilcoxon Signed-Rank Test Results – Questionnaire 1: Group Work Behaviours (Pre- Vs Post-Intervention) Cycle 2.	287
Table 6.14: Wilcoxon Signed-Rank Test Results – Questionnaire 1: Group Work Behaviours (Pre Vs Post- Intervention) Cycle 3.	289
Table 6.15: Wilcoxon Singed Rank Test Results – Questionnaire 2: Compassionate Engagement & Action Scale (Pre Vs Post-Intervention) Cycle 2.	290

Table 6.16: Wilcoxon Signed Rank Test Results – Questionnaire 2: Compassionate Engagement & Action Scale (Pre Vs Post-Intervention) Cycle 3. 291

Table 6.17: Research Questions, Tools for Addressing Them, and Results (Cycles 2 and 3).
..... 294

LIST OF FIGURES

Figure 2.1: G.C.E. (O/L) Examination (2008-2015) Student Pass Rate Percentage for the above Subjects.....	14
Figure 2.2: The Brain's Emotion Regulation System.....	24
Figure 2.3: Threat and Drive System Activators amongst Sri Lankan HE Students Sustained by Wider Socio-Economic, Historical and Political Contexts.....	30
Figure 4.1: Action Research Cycle (Source: Zuber-Skerritt, 2001, p. 15).....	77
Figure 4.2: Cyclical AR Model (Source: Burns, 2010, p. 9 adapted from Kemmis and McTaggart, 1988).....	79
Figure 4.3 Sequence of the Data Collection Process.....	80
Figure 4.4: The Three Phases of a Cycle of the Current Research.....	88
Figure 5.1: Cycle 1, Group 1 Members' Screen Gaze During S2's Pre- Vs Post-Intervention Journal Article Presentations.	137
Figure 5.2: Cycle 1, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S2's Journal Articles.	138
Figure 5.3: Whole Group's Average Screen Gaze During S2's Journal Article Presentation (Pre-Intervention).....	141
Figure 5.4: Whole Group's Average Screen Gaze During S2's Journal Article Presentation (Post-Intervention).....	142
Figure 5.5: Whole Group's Screen Gaze During S2's Journal Article Presentation (Pre Vs Post-Intervention).....	143
Figure 5.6: Whole Group's Average Screen Gaze During Discussion of S2's Journal Article (Pre-Intervention).....	144

Figure 5.7: Whole Group’s Screen Gaze During Discussion of S2’s Journal Article (Post-Intervention).....	145
Figure 5.8: Whole Group Screen Gaze During Discussion of S2’s Journal Article (Pre- Vs Post-Intervention).....	146
Figure 6.1: Cycle 2, Group 1 Members’ Screen Gaze During S9’s Pre- Vs Post-Intervention Journal Article Presentations (Excluding S12).....	213
Figure 6.2: Cycle 2, Group 1 Members’ Screen Gaze During Pre- Vs Post-Intervention Group Discussions of S9’s Journal Articles.....	215
Figure 6.3: Cycle 3, Group 1 Members’ Screen Gaze During S21’s Pre Vs Post-Intervention Journal Article Presentations.	216
Figure 6.4: Cycle 3, Group 1 Members’ Screen Gaze During Pre- Vs Post-Intervention Group Discussions of S21’s Journal Articles.....	218
Figure 6.5: Whole Group’s Screen Gaze During S9’s Journal Article Presentation (Pre-Intervention).....	220
Figure 6.6: Whole Group’s Screen Gaze During S9’s Journal Article Presentation (Post-Intervention).....	222
Figure 6.7: Whole Group’s Screen Gaze During Group Discussion of S9’s Journal Article (Pre-Intervention).....	223
Figure 6.8: Whole Group’s Screen Gaze During Group Discussion on S9’s Journal Article (Post-Intervention).....	224
Figure 6.9: Virtual Background: The Caribbean Sea with Moving Waves and Waving Leaves of a Palm Tree.....	279
Figure 6.10: Virtual Background: Sri Lankan Greenery Hillside with St. Clair Fall.....	280
Figure 6.11: Virtual Background: Opened Window to Greenery Environment.....	281

Figure 7.1 Triangulation of Results from Template Analyses of Transcription of Group Meetings, Focus Groups and Micro-ethnography - Common Themes that Emerged from All Three Cycles of the Study (Post-intervention)..... 300

CHAPTER 1

Introduction

1.0 Introduction

This study investigated whether or not and, if so, how, an understanding of the Cognitive Skills of Compassionate Communications (CSCC) is relevant to Sri Lankan-based Higher Education (HE) Science, Technology, Engineering, and Mathematics (STEM) students in Sri Lankan universities despite clear evidence of social political differences and tensions between Sinhalese, Tamil, and Muslim students in the country. The psychobiological model of compassion (The Compassionate Mind Foundation) was used as the theoretical model to map the wider socio-economic, political, and historical context in Sri Lanka to the current study.

The investigation was carried out amongst a sample of students from the UK (Cycle 1) and in (Cycles 2 and 3) a challenging Sri Lankan national environment, where the community had been polarized over many years through imperial interventions in the country that led to a 30-year civil war (1980-2009). This was followed ten years later by

the Easter bomb attacks by Islamic extremists in three churches and four hotels across the country. The latter had led to campuses being closed for more than two months in some cases, just as this Ph.D. study began. Further, disconnection amongst and between students became entrenched due to the COVID-19 pandemic driven shift to online (Bauer et al, 2020; Stanford University, 2020). Consequently, students' heightened sense of social isolation or loneliness may have detrimental psychological consequences: lower overall cognitive performance and diminished quality of life (Aleman and Sommer 2022; Cacioppo and Hawkley, 2009; Hawkley & Cacioppo, 2010) and reduction of educational experience in online meetings (McBrien et al., 2019). Taken together, this study was situated in a context that was likely to robustly test the appropriacy, theory, and (online) application of the target pedagogy via the research questions (see Section 1.1).

Regarding the online education including group work in relation to this study's focus, research reported students become more engaged in their learning if they turn on their cameras during online video conferencing (Nilsen et al., 2013). Further, research shows that the issue related to students' loneliness/isolation especially during the pandemic (COVID-19) was further aggravated by the widely reported students' reluctance to keep their cameras switched on to be fully present (Bui et al., 2020; Bedenlier et al., 2021; Castelli and Sarvary, 2021; Gherhes et al., 2021; McBrien, 2019) or their non-use of the cameras (Norman, 2020). Moreover, Bauer et al. (2020), Stanford University (2020), and Schwenck and Pryor (2021) highlight the entrenching of disconnection amongst and between students through online delivery in HE, and Young and Bruce (2020) discuss the lack of a consistently satisfying experience for students in online educational settings due to isolation and limited interaction because of their reluctance to switch their cameras on. Students' non-use of webcams resulted with poorer interactions and less

comprehensive discussions (Kim, 2013; Kim et al., 2011). Author:inner group AEDiL (2021) report that instructors felt insecure, helpless, and frustrated as a result of students not switching on their cameras. Research by Zhao et al. (2020) and Lin et al. (2021) highlights students' reluctance to switch on their cameras due to shyness, privacy concerns, pressure from their peers to talk, and a perceived lack of appearance to be present. Similarly, due to nervousness, fear of exposure, embarrassment, shyness, and the possibility of background intrusions, many students decline to switch their cameras in online sessions (Gherheş et al., 2021).

As Zhao et al. (2020) found in their study, the non-use of cameras negatively affected the interactions among students as well as teacher and students as students' non-verbal communication was '*diminished drastically*' (p. 96), and also the quality of their verbal communications declined. For example, the teachers encountered difficulties in checking the real-time students' pronunciations with their facial expressions and evaluating student engagement with the course materials. Further, Zhao et al. (2020) point out that:

Communication practice and discussion periods also lacked a sense of authenticity possessed by face-to-face classes (p. 94).

However, Zhao et al. (2020) do not discuss solutions to address the problems they discovered. Palacios et al. (2022), identify students' realization of the difficulties of performing as a group when the cameras were off:

Shy students hide behind the camera and microphone, and they made it difficult to work in groups (p. 686).

Moreover, this keeping their cameras switched off also impeded learning efforts by students due to a lack of social connection to classmates and difficulties in taking part actively, lack of motivation to contribute to the group discussions, loss of focus, and wandering (as they keep the webcam turned off) during live sessions (Lin et al., 2021).

Moreover, in the study by Lin et al. (2021), students reported that they experienced decreased engagement in relation to their social experience and cited challenges in terms of maintaining effective communication and connections with their peers over Zoom, including issues related to cognitive and behavioural engagement, as a cause.

Research has suggested several possible solutions for students to encourage their engagement in active learning within the online communities (Cacioppo et al, 2009; Katchen, 1992; Leung, 2021, Schwenck, 2021), including encouraging the use of microphones, asking irrelevant questions in order breaking the ice and making students feel comfortable (Palacios et al., 2022) and making it compulsory for learners to turn on their cameras throughout online sessions to ensure they stay focused (Lin et al., 2021). Yet there is very little research discussing the explicit role of compassion, which is defined as a psychobiological motivation (P. Gilbert, 2019). This understanding of compassion is relevant to students taking action to enhance their own and their peers' educational and social experiences related to their online group tasks. So far, no study has discussed motivating students to continue to keep their cameras switched on willingly to take part in online group meetings.

So far, T. Gilbert (2016, 2017, 2018, 2019) and Harvey et al. (2020) have experimented with compassion-focused pedagogy for small group discussions. In this context, compassion is defined as a psychobiological motivation (P. Gilbert, 2017) "to notice (without normalising) one's own or others' distress or disadvantage and then take (wise) action to reduce or prevent this" (T. Gilbert, 2015, p. iii). This definition underpins the practical strategies (cognitive) that students as well as staff can apply to manage their task-focused group meetings compassionately.

T. Gilbert (2016) found that the two most problematic and common behaviours in small group work, according to students, were the behaviour of over talkers/ monopolisers (often the most anxious person in the group (Yalom 1985; Yalom and Leszcz, 2005), and non-contributors to group work discussions. Strategies co-developed with students to help address these behaviours were found to be successful in reducing communicative barriers including between and amongst white and Black, Asian, Minority Ethnic (BAME) students. However, this Compassion focused Pedagogy (CFP) was developed pre-COVID-19 in the United Kingdom and the focus was on the physical classroom (face-to-face) context not on online group discussions.

Therefore, in relation to key aspects of inclusion, excluding, and avoidant eye contact and the evidence techniques (developed for use in the offline classroom context to address these) that cannot be used in the same way in the online context, this study investigates what alternative, compassion-focused techniques could be developed for group work discussions conducted online. Other areas of difficulty in adapting the compassionate pedagogy for group work are being investigated during online group meetings but the above are key examples. Thus, the present research investigated the application of the science of compassion (CSCC) for HE online group work management.

1.1 Research Questions

Core Research Question

1. Can developing HE students in CSCC be adapted for online group meetings amongst UK-based and Sri Lanka-based Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

Sub Research Questions

2. **In UK HEIs**, can developing students in CSCC be adapted for online group meetings amongst Sri Lankan STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings ?
3. **In Sri Lankan HEIs**, can developing students in CSCC be adapted for online group meetings amongst STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?
4. In relation to questions 2 and 3, are there any observable differences in students' behaviours in their pre- vs post-intervention online group meetings (before and after the CSCC intervention session)?
5. If an adaptation of CSCC to the online format is possible, in what ways, if any, and with what results (for their social and learning experiences of online group work) might Sri Lankan STEM students who are based in Sri Lankan universities respond to this developmental training.
 - 5.a. In what ways might the responses of Sri Lankan-based students be similar, or different from the responses of UK-based Sri Lankan students?

1.2. Organization of Chapters

This dissertation constructs of eight chapters. A succinct description of each chapter is given below.

Chapter 1: Introduction

This chapter provides an outline to the dissertation presenting research questions and briefly introducing each chapter.

Chapter 2: Background

This chapter introduces the reader to the background, problem, and the researcher's motivation for conducting this study. This includes exploring the possibility of ethnic

polarization reignited by socio-political stimulus. Moreover, this chapter explains the overall research process in brief within the research framework.

Chapter 3: Literature Review

The third chapter presents a comprehensive review of previous literature pertinent to address the current research questions. This consists of development of hypothesis. Further, this chapter underlines the empirical gaps in existing literature rationalizing the significance of conducting the current study.

Chapter 4: Methodology

The fourth chapter highlights the main research approach, including theoretical and methodological choices on key areas of focus of the study with rationale. This includes the implementation of Action Research (AR) as the overarching approach to the current investigation and the selection of the mixed method to better address the current research questions. Moreover, this chapter consists of rationalizing the selection of the study population, sample, and research tools for data collection as well as data analysis with explanations of each and every tool selected. Further, the whole procedure of the current research is explained with how the initial research design is developed for three stages in conducting the three Cycles of the current Action Research.

Chapter 5: Findings of Cycle 1

This chapter offers the findings of both quantitative as well as qualitative analyses of the data related to Cycle 1. The modifications identified to conduct the Cycle 2 are also indicated at the end of this Chapter. Finally, a summary table of answering research questions through the data analyses of Cycle 1 is presented.

Chapter 6: Findings of Cycle 2 and Cycle 3

This chapter compares and contrasts the findings of quantitative and qualitative analyses of the data related to Cycles 2 and 3. A summary table of how the study findings responded to each research question in this study was presented at the end of the chapter.

Chapter 7: Discussion

The results from all three Cycles are discussed related to the (Chapter 3) literature review. Chapter 7 critically evaluates the construction and development of group cohesion, social experience, learning experience, and social experience mediated learning experience among university students in their post-intervention group meetings online compared to the pre-intervention group sessions. The study's findings support the shaping of the intervention session on CSCC for university students in order to enhance their ways of group work management by being pro-socially cooperative with one another.

Chapter 8: Conclusions

The chapter summarises the entire thesis by highlighting the contributions of this research to the practice, theory, and policy of Compassionate focused HE student group/teamwork amongst Sri Lankan STEM students. Further, it discusses the limitations and future research directions.

Please consider that the word 'training' refers to the *development of CSCC in students*, hence *CSCC intervention*, *developmental training* are used interchangeably throughout this dissertation.

CHAPTER 2

Background of the Study and Its Rationale

2.0 Introduction

This chapter explores the current study's background and provides the rationale for conducting the research. First, the chapter presents a more detailed account of the wider socio, political, historical, and economic background of Sri Lanka (SL) because this will inform the reasons for the study. Second, and in response to the effects of the above on fragmenting student communities in the country, the chapter explores the psychobiological model (the three-circles model) of compassion (The Compassionate Mind Foundation) as it is the study's main theoretical base. Then, this psychobiological model is mapped onto the above wider social, political, historical, and economic contexts in Sri Lanka. Next, concerning student community-building, challenges to conducting group work effectively in Sri Lanka are explored focusing on the development of CSCC for

HE's online group tasks. These prevailing challenges illustrate the background, identification of the problems, and the reasons for the study.

2.1 Sri Lanka's Wider Socio-Economic, Historical and Political Background

2.1.1 Imperialism and Its Impacts

Sri Lanka was under colonial rule from 1505 to 1948 as a result of being invaded by three nations: the Portuguese (during 1505-1658), the Dutch (during 1658-1796), and the British (during 1796-1948). The British empire invaded Sri Lanka's coastal areas in 1796, then occupied the whole country in 1815. Despite SL's independence in 1948, there were three factors of British imperial influence that are relevant to this study:

- The British established a legislative council in 1833 and an equal number of seats were allocated to represent both SL's majority (Sinhalese) and minority (Tamil) populations. However, continuous legislative reforms from Donoughmore (1931) to Soulbury (1947) changed the previous balance of political power, creating inter-ethnic enmity (Gunasingam, 1999).
- English became an important language to learn in SL, especially for positions in government and, more generally, for socio-economic mobility. Specifically for my study, even today there is unequal access to English language education in SL schools depending on whether they are urban or rural. Mostly the resources (human and physical) are centralized towards urban schools and those students have more opportunities than rural students to gain exposure in English. This disadvantages many students (especially if they are from rural

areas due to the lack of competency¹ in English when they enter the universities) because the medium of instruction is English for the majority of HE degree programmes delivered in SL universities.

- Arising partly from these and other legacies of Imperialism, a 30-year civil war (1980 - 2009) broke out along the same lines of divisions between the LTTE (Liberation Tigers of Tamil Eelam) and the SL government.

2.1.2 Linguistic Imperialism

The influence of the English introduced to the school system as a medium of instruction during the colonial era caused the creation of a new elite group in SL society who used English as a 'sword' (*Kaduwa*) to disadvantage others who were/are not competent and communicating in English. The establishment of the Ceylon² Civil Service in 1833 emphasized the requirement for the use of English. In time, this "contributed to the creation of a westernized elite, whose members would spearhead the drive for independence in the twentieth century" (Ross and Savanda, 1988, p. 18). Imperialism did not only affect the formation of new elitist social strata in Sri Lanka but was a root cause of the Sri Lankan civil war which lasted for 30 years (Sabaratnam, 2012; Jayapalan, 2015; Internationalist Communist Forum, 2006) and which further polarized Sri Lankan society (see Section 2.1.6).

¹ Majority of the students who attend rural schools demonstrate limited proficiency in communicating in English. This is due to a number of reasons including inadequate exposure to English as in most cases they do not have a teacher to teach the English language in the school, the ineffectiveness of the teaching methods, and are unable to develop their English language skills during their school education.

² Ceylon is the name used by the British for Sri Lanka.

To be clear, the absence of benefits and opportunities for part of the population caused social uprisings in Sri Lankan society. The Sinhala-only Act resulted in the first rebellion opposed to domination of English, but it also remains as a significant turning point for the SL nationalists to regain the country's political and socioeconomic power. Then, the youth uprising in 1971 led by a socialistic movement resulted in the assassination of more than 10,000 youths. Further, there was another uprising by the Tamil rural community in the 1980s along with strong negative sentiments towards the English language and those who used it (Kandiah, 1984) during the post-independence era. In Sri Lanka's Northern and Eastern areas, Tamil community initiated 'Pure Tamil' movement in order to gain equal privileges compared to Sinhala-only movement. However, Tamil community failed to realize rural Sinhalese' effort on defeating the hegemonic status of language English, which was a common opponent for both (Sittarage, 2018). Failure to address the dissatisfaction contributed to the 30-year civil war which resulted in national-level economic sanctions and hostility and disappointment for both Tamils and Sinhalese.

Moreover, Medawattegedera (2015, p. 39) describes,

the emergence of a new 'elite' group among students who, because they study in the 'English medium,' see themselves as superior to and distant themselves from the mother tongue medium students.

This has increased social polarization among students' communities, especially in HE. According to some studies, the concept of *Kaduwa* representing English appears to be disappearing rapidly (Samarakkody, 2001; Widyalkara, 2009). The Sri Lankan government has made efforts to market English not as a weapon (*Kaduwa*) which divide people with power to dominate but as a tool (*Manne*) to introduce English as a 'life skill.' However, Medawattegedera (2015, p. 39) states, "the ineffectiveness of ministry

circulars and campaigns to position English as a tool rather than a weapon”. The target stakeholders' perspectives and practises indicate the ongoing tensions about English in Sri Lankan society (Medawattegedera, 2015).

It appears as though the Kaduwa syndrome has renewed itself via new wielders of the English language as a weapon – a weapon which may yet take a few more decades to transform itself into a tool (ibid, p. 48).

2.1.3 English Education in Sri Lanka

In the 1990s, special attention was focused on teaching English as a second language (ESL) to all students by the Sri Lankan government. This initiation was implemented with the purposes of building national harmony between ethnically diverse communities and, equipping the youth with required English language skills to acquire modern employment opportunities to contribute to the development of the island (De Mel, 2001 in Karunaratne, 2009).

Though English is taught as a mandatory subject from kindergarten to advanced level in schools, the majority of students do not achieve the expected levels of English language proficiency. In other words, there is a higher failure rate for English in national level examinations (GCE O/L and GCE A/L) than for any other subjects in these exams. Figure 2.1 shows the students' pass rates of G.C.E (O/L) subjects during 2010-2019 nationally.

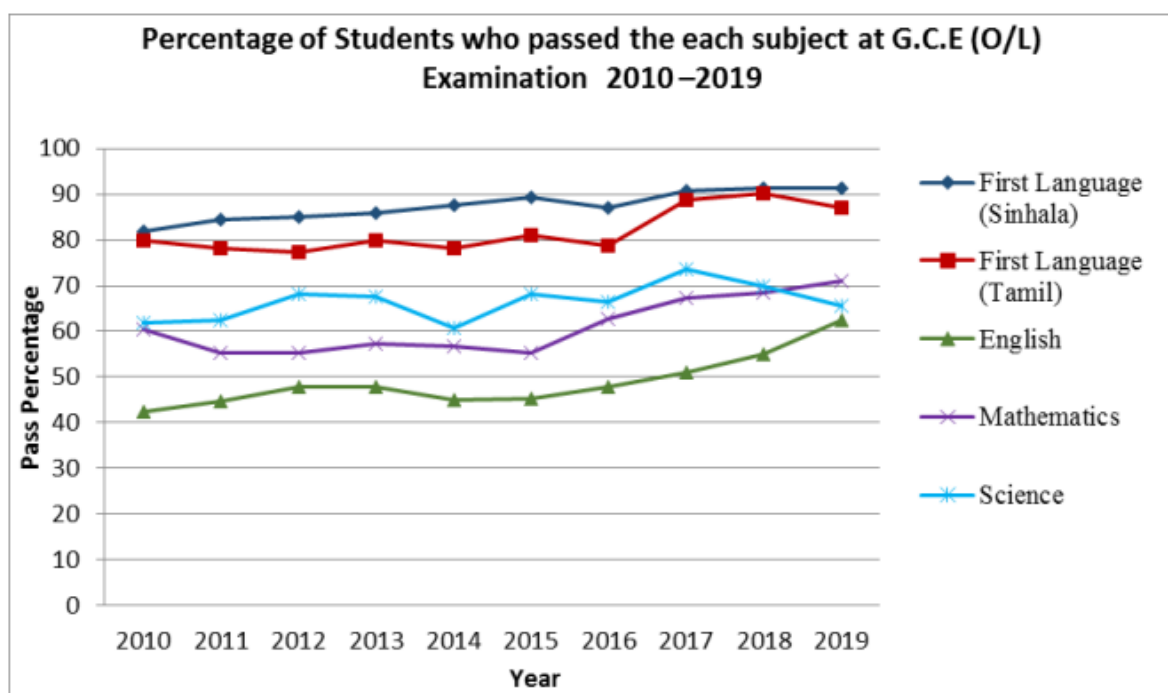


Figure 2.1: G.C.E. (O/L) Examination (2008-2015) Student Pass Rate Percentage for the above Subjects.

Source: Annual Performance Report – 2020, Ministry of Education (July 2021, p. 27).

As Figure 2.1 indicates, the pass rate for English is less than 65% throughout the period considered. A similar result was evidenced at the GCE (A/L) ‘General English’ subject during 2016-2019 from the Department of Examination, Sri Lanka as well as my own observation as a co-controlling chief examiner³ for GCE (A/L) ‘General English’ examination paper from 2016 to 2019.

Among the challenges in the process of teaching English as a second language in Sri Lankan contexts, lack of physical and human resources, the lack of exposure for learners to practise English language skills, students’ fear of failure and lack of motivation to achieve the competency in English are highlighted (The World Bank, 2009). On the one

³ Lecturers facilitate as co-controlling chief examiners for national-level examinations’ paper marking procedures in Sri Lanka to ensure the accuracy and credibility of the papermaking process.

hand, these challenges prevent teachers from being effective in teaching English and on the other hand prevent students from achieving the expected outcomes of English medium education.

2.1.4 State of English Medium Instructions in Sri Lankan Higher Education

Most Sri Lankan state universities had to adapt English medium instruction for their degree programmes, with no preliminary training for the academic staff. Currently, lectures of all 15 state universities are conducted mostly in English as the medium of instruction. However, research indicates problems with this, as outlined by Jayathilake et al., (2021).

Of the students who pass A/L, only 2% can get into non-fee state universities in Sri Lanka. Additionally, the majority of students encounter difficulties in communicating in English when they enter universities. This is inevitable, first, as students follow the school education in their vernacular language and have to make a sudden shift to English as their medium of instruction after entering university. Second, some students have not been taught English in their schools at all or there were issues in teaching methods and materials used and/or the learning environment that are conducive to learning English. Even though there are studies focusing on English language teaching and learning in universities, the above challenges have not yet been able to overcome.

The end-result of teaching English to students throughout their academic life, commencing from primary school and culminating in the university, has so far resulted in complete failure. The problem of graduate unemployment in Sri Lanka is mainly due to graduates' lack of proficiency in two main areas: English language and vocational skills. (Attanayake, 2017, p. 2).

Therefore, after entering state universities, many students who have previously been taught in their mother tongue (Sinhalese or Tamil) become frustrated when they must follow their degree programmes in English. As a result, some students give up the precious opportunity of a university education. Further, students for whom communicating in English is difficult are less likely to achieve good degree outcomes (Nawaz, 2016; Rathnayake, 2013). Difficulties in English comprehension during lectures, seminars, and tutorials not only discourage these students but they may also witness the lecturer directing his or her attention toward those who communicate effectively in English and therefore tend to neglect those who cannot communicate well in English. This negative effect causes further loss of confidence in asking or answering questions.

As Nawaz (2016) has identified, students in English medium instruction (EMI) classes have difficulties coping with both their language and their subject classes.

Studying in EMI does not seem to help them develop their language proficiency either. students had lower language proficiency at entry. This is due to various reasons like school-level issues and lack of motivation. This limited language proficiency may affect their successful learning of content subjects and at the same time developing language proficiency further by following English medium instructions seems to be difficult for them. (p.165)

Moreover, Research highlights the communicative difficulties encountered by the student when trying to perform in English in schools and universities (Fernando, and Kadirgamar, 2010⁴; Nawaz, 2016). In university, this can damage the students' self-esteem and discourage their desire to learn not only English but even to study in general and so lead to negative impacts on their overall results. Razeem (2019) highlights the contributing

⁴ Education in Sri Lanka: A casualty of nationalism By Marshal Fernando and Santasilan Kadirgamar.

factors that affect poorer standards of English among undergraduates: the psychological dimensions; shyness and fear of using English and lack of human and physical resources including technical and visual aids.

We realized the importance of English soon after coming to the university. However, we fear the language and are shy to talk in English. We feel bad when some of our friends tease us when we start talking in English (Interview 2 with student internee as cited in Razeem, 2019).

Hence, most of the students look upon this subject (English) with dread and carry the fear through the years. Their worry and depression results in poor performance at the end of the year (Razeem, 2019, p. 203-204).

Due to its top-tier placement of the Sri Lankan education, English has brought out changes during past years from the colonial era (1815) to post-independence (after 1948). The history and development of the language English in Sri Lankan contexts reflect that, not only international realities and manifestations of power influence linguistic choices but also multifaceted national demands, aspirations, and tensions as well as the political agendas of the ruling parties of the country. Since the country's independence in 1948, changes of ruling parties influenced the changes of strategic priority assigned to English, both as a medium of instruction and as a subject of the curriculum (Coperahewa, 2009; Hayes, 2010; Nesiiah, 1945; Perera et al., 2004; Punchi, 2001).

Many educators and researchers (Little et. al 2018; Attanayake, 2017; Aloysius, 2015; Jayasundara et al., 2013; Jayasundara and Premarathna, 2011; Canagarajah, 1999) have discussed the pressing issues, in particular the concerns related to English language education in Sri Lankan contexts. They report a failure to address these issues in an effective manner through government policy decision-making, administration, teaching, and learning.

As a lecturer and researcher in Sri Lankan HE, I observed the multifaceted difficulties encountered by teachers and students in English language teaching and learning first hand and this led to current study.

2.1.5 Employability

In line with the national development goals of the government, overcoming the above communicative barriers is important for accelerating science and technology-led development in education (CAPE Sri Lanka, 2016).

Indeed, Perera and Canagarajah (2010) emphasize that a good command of English, science, and technology are the building blocks of the proposed educational reforms in Sri Lanka. But as the World Bank (2009) indicates,

... the English language skills of a large proportion of graduates [in Sri Lanka] are well below the threshold expected by private sector firms (p. E3).

Amarasuriya (2015) also highlights the dire need of enhancing the English language skills, communication skills, and socio-emotional skills of SL undergraduates to close the existing gap in employing graduates in relevant fields.

A lack of adequate English language and communication skills both written and spoken in the workforce is a significant drawback faced by employers. (Department for International Trade, 2017, P. 27)

Further, Dundar et al. (2017), in a World Bank report on Sri Lankan HE, identify a lack of professional skills: communication, proficiency in the English language, business skills, and ability to work as a team among undergraduates. They emphasise the importance of improving these skills amongst SL HE students. Further, in order to fulfil the needs of industry, a necessity of programmes for constant quality improvements in Sri Lankan higher education system are highlighted (Munasinghe and Jayawardena, 1999).

Dale (2014) indicates the value of incorporating new technologies in language education not as “a bolt-on or reward, but as an integral part of the language learning process” (p.1). He adds that this integration not only develops language skills but supports fostering the four c's: communication, creativity, collaboration, and critical thinking among learners. This notion of the development of the four c's is important for the current study.

Of particular importance to the proposed study, the World Bank has gone further and highlighted the importance of science and technology, English language competency and socio-emotional skills development amongst undergraduates in Sri Lankan universities (Dundar et al., 2017). Indeed, these are the criteria for which the World Bank has allocated financial sources to Sri Lankan state universities in 2019 which has allowed this study.

2.1.6 Impacts of Civil War (Summary on Historical Difficulties, Social Destruction, Fracturing of Sri Lankan Communities)

Sri Lanka was able to cease the 30-year civil war in 2009 against the LTTE (Liberation Tigers of Tamil Eelam), a group fought for a Tamil Eelam in Sri Lanka's Northeast. This brought to an end the frequent bombings during that time of civilians on buses, in temples, and trains as people went about their business. Fear led towards the closure of all schools across the country for sometimes three months at a time, further impacting the education of the young. The scars caused by this long period of terrorism are yet to be cured. The war caused a major, deeply internalised fracturing of Sri Lankan communities that still harms ethnic cohesion in socially destructive ways. Moreover, mental health issues caused by the war are still a social problem as Sri Lanka still

struggles to offer sufficient treatment to address the current, ongoing problems related to psychological wellbeing caused by the ethnic conflict (Muraleetharan, 2016; Somasundaram and Jamunanantha, 2002). The number of suicides increase dramatically, reaching 17.1 per 100,000 citizens in 2012, ranking Sri Lanka the 22nd in the world among the countries with the highest suicidal cases (Knipe et al., 2015). In ironic ways perhaps, English as a common language is today considered by some as a way to repair ethnic cohesion across the country:

... after 30 years of civil war, the teaching and learning of English play a vital role in the creation of common identities among young people divided by ethnicity and class (Little et. al 2018, p. 2).

Research highlights the importance of English in Sri Lankan context as one of the ingredients in Sri sustaining peace, sustained growth of the economic, and enhancing equity after cessation of the civil war in 2009 (Aturupane, and Wikramanayake, 2011; Aturupane et al., 2011; Little and Green, 2009; Little and Hettige, 2013; World Bank 2011). But my thesis is that emphasis on English language learning alone, especially with difficulties of access to it, is not going to be enough in SL education to rebuild cohesion as the National Committee on Education (2009) argue:

... it is recognized that those who do better in English have an edge over the majority of students who cannot effectively communicate in English with the inevitable result that the latter is debarred from social mobility, again leading to social polarization (p. 97).

Despite the fact that concern for English has grown as a result of increased ownership and educational options such as private schools and international university courses, the expected social harmony has not yet been achieved.

2.1.7 Impacts of the 2019 Easter Bomb Attack in Sri Lanka

The civil war tensions and social polarization among Sri Lankan communities were re-ignited by the Easter bomb attacks in 2019 (10 years after the cessation of the civil war). The deadly blasts in eight places⁵ island-wide by Islamic extremists killed hundreds of people on Easter Sunday (April 21, 2019).

Thus, security measures were tightened generally and all schools, state universities and several other higher education institutes were closed by the government. It took one to two months for universities to recommence their academic activities (Alwis, 2019; Adaderana, 2019a). But the development of new fractions across Sri Lanka had been observed irrespective of the student community in the higher education sector. Thus, all fifteen state universities were closed again just a few weeks after the recommencement of academic activities due to student unrest⁶ within the universities (Adaderana, 2019b; Daily Mirror, 2019; News First, 2019).

⁵ Table 2.1: Timeline and the Locations of the Bombings on April 21, 2019 (Source: Sunday Times, 2019, April 28).

Time (UTC+05:30)	Locations
8:25 am	Colombo: Shrine of St. Anthony Church
8:45 am	Negombo: St. Sebastian's Church
9:05 am	Batticaloa: Zion Church
9:15 – 9:20 am	Colombo: Cinnamon Grand Colombo , Kingsbury Hotel , Shangri-La Hotel
2:00 pm	Dehiwala: Tropical Inn
2:15 pm	Dematagoda: Housing complex

⁶ A number of students were arrested for generating 'propaganda' at Colombo University, possession of images of Liberation Tigers of Tamil Eelam (LTTE) leader Velupillai Prabhakaran and LTTE theoretician Anton Balasingham (Adaderana, 2019b), and/or for having maintained close contact with a suicide bomber responsible for the attack on the Cinnamon Grand Hotel on April 21, 2019 (News First, May 21, 2019).

2.1.8 Impacts of the COVID-19 Pandemic

Just 10 months after the bombings, the pandemic, COVID-19 shifted teaching and learning out of the classroom to be online in higher education. Students' reluctance to switch on their cameras was widely reported in HE during synchronous teaching and learning including group work. Thus, entrenched disconnection among and between HE students became a problem for student communities worldwide regardless of their socio economic, educational, or demographic, diversities (Bauer et al., 2020; Stanford University, 2020). This has been shown in studies of students to have negative psychological implications, including lower overall cognitive performance and a poorer quality of life (Aleman and Sommer, 2022; Cacioppo and Hawkley, 2009; Hawkley and Cacioppo, 2010). These pandemic-driven negative effects in combination with the consequences of university closures due to the Easter bombing re-ignited the tensions and feelings of social isolation among Sri Lankan HE student communities further exacerbating social polarization.

2.2 Theoretical Background: Compassion

In this research, compassion is defined as a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it (P. Gilbert and Choden, 2013; Jinpa, 2015; Lama, 1995; Ricard, 2015). As outlined by the Compassionate Mind Foundation, applying this understanding in education to team/group work contextualises the above definition as noticing the distress and disadvantage of self as well as others and taking wise action to reduce or prevent them.

P. Gilbert (2005) and Lambert et al. (2013) highlight the significance of feeling safe and secure in trusted relationships for enhancing human motivation in learning and meaningful social and professional work. Under these circumstances, people are likely to be more creative (Dale, 2014) and productive in the tasks they engage in (Bolman and Gallos, 2011; P. Gilbert 2005; Rock and Cox, 2012; Steffens et al., 2014; Tan, 2014).

2.2.1 The Psychobiological Model of Compassion

According to the Compassionate Mind Foundation, humans switch between three mood-regulating systems: threat, drive, and soothing (Figure 2.2).

Mindfulness and Clinical Psychology Solutions (2019) states that

Each system is associated with different brain regions and different brain chemistry. Distress is caused by an imbalance between the systems, often associated with the underdevelopment of the soothing system (p. 4).

Human brains are hard-wired to be vigilant to threats (fight, flight, or freeze); this threat sensitive mechanism has allowed species to survive. The trouble is that this threat system, when it is activated, can deactivate the ability of the brain to involve in tasks which require a higher-level of thinking capacity such as problem-solving and decision making (Cozolino, 2013). The drive system is the second mood-regulatory system which facilitates us to strive to accomplish what we want or need (or what we believe we need). Overstimulation of the threat and the drive systems causes an imbalance between the three mood regulating systems; the soothing system is underdeveloped. This leads towards distress or psychological difficulties to both individuals and groups.

The soothing system, the brain's third mood-regulatory system is stimulated by giving or receiving care from oneself or others and allows us to focus while thinking more calmly, and rationally. This soothing system of the human brain can be trained, in ways that

facilitates to maintain balance between all three mood-regulating systems (P. Gilbert et al., 2009). Figure 2.2 below demonstrates these three mood-regulatory systems in human brains and their functions.

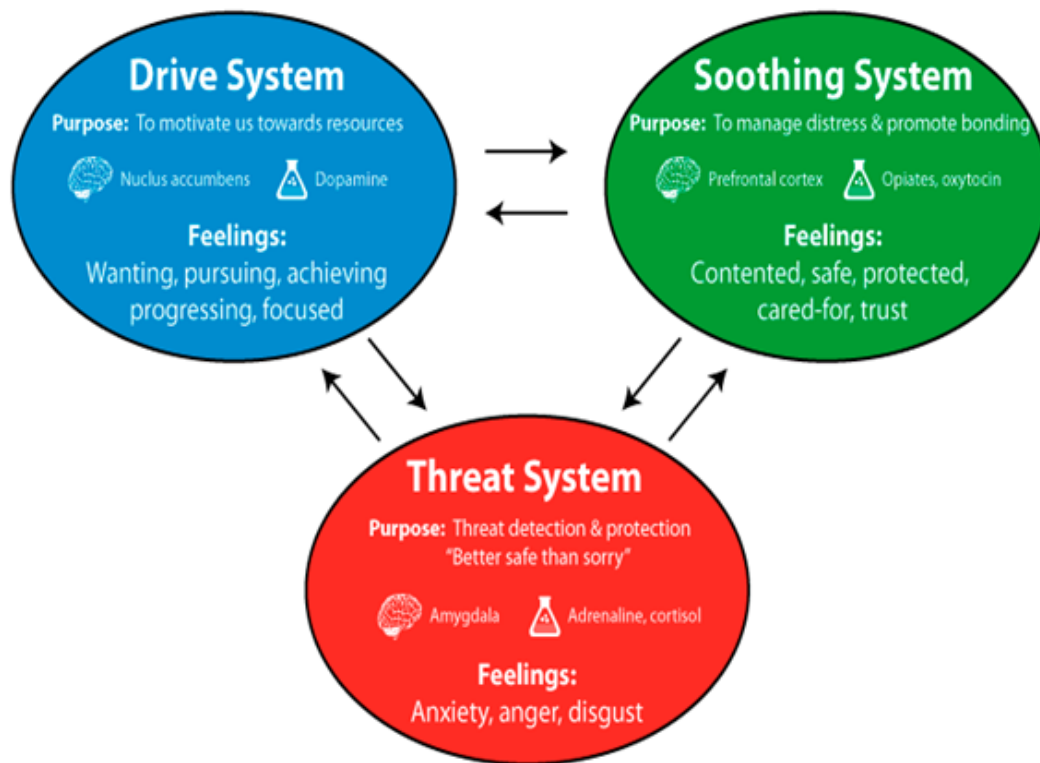


Figure 2.2: The Brain's Emotion Regulation System.

(Source: adapted by Mindfulness and Clinical Psychology Solutions 2019, p .4, from P. Gilbert, 2005).

The balance between these three systems is harmed in people who oscillate primarily between the threat and the drive two systems, that is, between aversion (the threat system which activates through fight, flight or freeze responses to perceived social or other threats) and striving (the drive system which is active during the brains' efforts to address the threat) (P. Gilbert et al., 2009). This type of brain activity can draw people into loops of brooding, rumination and (particularly anticipatory) worry, and therefore striving to address the perceived threat(s). The purpose of such striving is to avoid inferiority (P. Gilbert et al., 2009) including amongst university students (P. Gilbert et al.,

2010). Researcher argues that the high levels of threat from Sri Lanka's wider socio-economic, political and historical context has had an influence on the wider research population's collective threat system, including that of students, but that the drive system too amongst many Sri Lankan students is overstimulated because of barriers to entrance into HE caused by, for example, requirements for good English to be accepted there. Moving from the macro to the micro in HE can be achieved through closer attention to group work as a possible place to reduce overstimulation of the threat system and inappropriate, unfair over stimulation of the drive system.

2.2.2 Applying the Three Circles Model of Compassion in HE Group Work

In P. Gilbert (2005)'s psychobiological model of compassion (Figure 2.2), there are three orientations of compassion: self-compassion, sensitivity to compassion from others, and compassion for others. These will be considered in the current study related to the effects on participants of the study's intervention (developmental training) session (see Methodology, Section 4.3.2, p. 84).

Considering the theoretical base of compassion as psychobiological motivation in the human brain, compassion is a valued notion among learners and staff across ethnicities, cultures, and nationalities. Five points show how this is useful in group work. First, the connections between affect and learning are recognised (Cozolino, 2013; P. Gilbert and Procter, 2006; T. Gilbert, 2016; Gkonou and Mercer, 2017; Gill and Ursuleanu, 2017; Kingston, 2008). Second, reducing anxiety/stress and creating psychological safety are important for learning (Page-Gould et al., 2008; Worline and Dutton, 2017). Third, the associations between self-compassion and studying are also underlined (P. Gilbert, 2005; Neff et al., 2005). Fourth, compassion is associated with groups because the psychological

safety it facilitates have been found to improve group/team critical thinking (T. Gilbert et al., 2018), including in the form of innovation and creativity (Poorkavoos, 2016). Fifth, the practice of assessing compassionate communications in group work in HE is unlikely to disadvantage students according to their religions, ethnicities, or backgrounds (T. Gilbert, 2017, 2018).

T. Gilbert et al. (2018) explain the significance of enhancing students' practical application of compassionate communication strategies in group work/teamwork. This is so that students can effectively address communicative difficulties that commonly arise in group work, as they might for Sri Lankan students for the above reasons.

Specifically, this kind of team pedagogy means that students require to be supported in practical ways to disrupt threat-system driven anti group behaviours: (a) monopolising behaviours of one or more individuals in group meetings, and (b) non-participation in such meetings by others. This support can contribute to activating a team's/group's collective soothing system, including that of the monopoliser who may be, according to Yalom (1985) and Yalom and Leszcz (2005) the most anxious person in the group. Monopolising could be seen as the overactivation of the drive system as a response to their threat system-based anxiety. This study investigated whether and, if so, how learning in terms of Cognitive Skills of Compassionate Communication (CSCC) could help ethnically mixed groups of Sri Lankan students to down-regulate possible interference (in their group interactions) from the threat system and instead activate the soothing system for better social and learning experiences than the groups had reported in their previous online group work. In relation to this, the next section will explore the empirical findings of the brain's threat and drive systems (The Compassionate Mind Foundation).

2.2.3 Activation of Threat and Drive Systems in Brains

Following the three circles model seen in Figure 2.2, mental health issues are linked with the overstimulation of threat and drive systems of our brains and the underdevelopment of the soothing system in the brain.

Researchers highlight the continued increase of mental health issues among the HE students and staff (e.g., Waddington, 2019). Even before the pandemic, the Institute for Public Policy Research (IPPR) reported growing numbers of students experiencing/suffering from issues related to mental wellbeing (Thorley, 2017). Gorczyński (2018) also identified a greater increase in mental health problems among academics and students than ever before. He highlighted those symptoms of at least a mild mental disorder were reported by 43% of academic staff. Times Higher Education (2018), quoting a talk by Professor Gail Kinma reported that in 2018, 50% of the total sample of 6439 university academic staff were experiencing mental health-damaging stress.

In 2018/2019 there were 18 student suicides at Bristol University, UK (Wills, 2022). Further, the Office of the National Statistics (2017) highlighted the increasing levels of anxiety, depression, and suicides among students in higher education. According to the Guardian (2018), over the past 10 years, there are escalating rates of suicides among student communities in England and Wales with a total of 1,330 student (committed suicide) deaths. From those student deaths, 83 % (1,109) was reported from undergraduate level students and 17% (221) of the student deaths was reported among postgraduate level students. Moreover, after conducting a survey on the extent of mental

health problems among students in UK universities, YouGov (2016) reports that one in every four students experience issues related to psychological wellbeing.

2.3 The Rationale for the Study

2.3.1 Sri Lankan Students' Mental Health and Wellbeing

Manpreet and Maheshwari (2015) state that the process of acquiring education as a stressful experience and researchers indicate the prevalence of increasing stress levels (academic, personal, and social) among university students during their academic career (Dahanayake et al., 2022; Kuruppuarachchi et al., 2012; Wickramasinghe et al., 2023).

According to Amarasuriya et al. (2015), nearly 10% of the undergraduates in Sri Lanka screened positive for major depression and she highlights the poor help-seeking practices of students. Moreover, Yazdani et al. (2010) state that stress can be a barrier to students' learning, in particular aspects of focusing their attention, decision-making, effective problem-solving, and achieving other required skills in their learning setting. Further, stress is linked to the increase of anxiety and depression, and researchers claim that there is a positive correlation between these stress, anxiety, and depression (Kurebayashi et al., 2012; Lopes and Nihei, 2021; Manpreet and Maheshwari, 2015). Similarly, it was recognized that poor status in psychological wellbeing is correlated with poorer performance in education (Bruffaerts et al., 2018; Rathnayake and Ekanayaka, 2016) due to stress overload (Poh Keong et al., 2015).

Bruffaerts et al. (2018) indicate the possibility of avoiding the long-term risks associated with mental health issues by intervening early, at a critical transition point in young lives since mental health issues can have extensive consequences for the future generation,

they argue. Hence, the question that arises is how HE students can be helped to overcome increasing stress levels by creating psychologically safe spaces for them to be creative and innovative and not only for achieving a sense of belonging but also academic success. The high prevalence of mental health issues worldwide in youths, in particular among university students, requires research exploring effective pedagogical tools to address them. This means, as to the theoretical base of the current research, the activation or stimulation of the soothing system to protect the balance between all three systems in the brain: threat, drive, and soothing.

One way to address this could be through the science of compassion because compassion is a motivation, not an emotion (Compassionate Mind Foundation). A growing amount of research shows that compassion to self or others enhances one's own and/or others' soothing systems while downregulating the brain's threat and drive systems.

Klimecki et al. (2014) found that the neural networks of compassion draw on the differently located neural circuitry of empathy and this is relevant for 'noticing, not normalising, distress or disadvantaging of self or others' which requires cognitive work. Further, to distinguish compassion from empathy, P. Gilbert (2019)⁷ argues for the necessity of engagement through empathic awareness, but then focusing on helpful action because just being overwhelmed by empathic engagement would not be helpful. The Harvard biologist, Sapolsky (2017) similarly discusses this disabling kind of empathy.

At this point mapping the Compassionate Mind Foundation's psychobiological model of compassion onto Sri Lanka's wider socio-economic, historical, and political contexts is

⁷ Email communication to the Compassion-in-HE JISC mail list: May 30, 2019, 9:19 PM.

helpful for a deeper understanding of the current issues in Sri Lankan HE outlined in Sections 2.1.4 to 2.1.8.

2.3.2 Three Circles Model: Mapped onto Sri Lanka's Wider Socio-Economic, Historical and Political Contexts

To support this study, the above psychobiological model which is widely used for Compassionate Mind Training (CMT) (Beaumont et al., 2017; Maratos et al., 2019; P. Gilbert and Procter, 2006) has been mapped onto the current overlapping socio-economic, historical and political contexts of Sri Lankan HE (see Section 2.1) as shown in Figure 2.3.

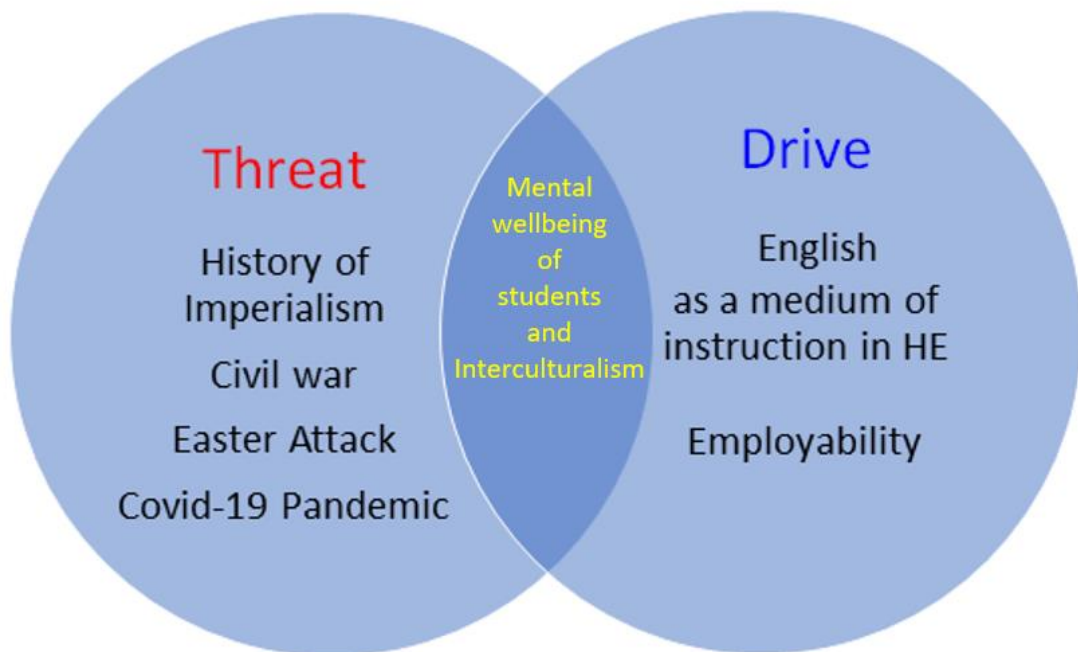


Figure 2.3: Threat and Drive System Activators amongst Sri Lankan HE Students Sustained by Wider Socio-Economic, Historical and Political Contexts.

Figure 2.3 shows the activators of the threat (caused by the history of imperialism, civil war, and Easter attack) and the drive (caused by English medium instructions and

challenges related to employability) systems of Sri Lankan HE students' brains. As discussed above in Section 2.1, undergraduates in contemporary Sri Lankan higher education encounter numerous challenges. The history of imperialism, social stigma from the 30-year civil war, and new tensions created by the 2019 Easter attack further exacerbated the fracturing of (ethnically diverse) student communities in HE. The negative effects of the COVID-19 pandemic further increased student isolation influencing the psychological well-being of the students.

At the same time, failure to achieve the required skills for the world of work, i.e., competency in English, social skills, critical thinking, and collaborative working skills, damages their employment opportunities (CAPE Sri Lanka, 2016; Department for International Trade, 2017; Dundar et al., 2017; Razeem, 2019). All of these factors can activate the drive systems of their brains.

This study seeks to address these types of stresses through contextualizing Cognitive Skills of Compassionate Communication and what it may be able to offer ethnically diverse individual students within online group or team work specifically. This is aligned with the psychobiological model's underlying explanation and understanding of compassion to stimulate and maintain the soothing system, the third mood regulatory system by connecting the caring system, which is common to all mammals, with the neocortex where the processes of reasoning and imagination are located. Evidence of the activation of this third component amongst SL students in their group work could be identified through how, if at all, students demonstrate (in real-time online group work), their attention to compassionate action for themselves and others in the form of their communications (P. Gilbert and Procter, 2006; P. Gilbert et al., 2017), specifically in online group meetings.

2.4 Moving Forward

The United Nations Sustainable Development Summit (2015) set out seventeen Sustainable Development Goals (SDGs) for (193) countries to achieve by 2030. Sri Lanka is one of these. The country's current wider socio-economic, political, and historical context has damaged chances of achieving these goals by 2030 (Daily Mirror, 2019), but it seemed that some of them aligned with this study. Examples are the goals set for quality education including of English, the reduction of inequalities including gender inequality the promotion of sustained inclusive economic growth. Goal 11 is of particular interest to this study because it relates to healthy lives/wellbeing and to making cities and human settlements inclusive, safe, resilient, and sustainable. HE education has a major role to play in the science-based community building that will be required for this. This research directly contributes to addressing the three areas of interest (education in technology, the sciences, and socio-emotional skills) in line with the aims of the World Bank who agreed to invest in Sri Lankan universities/this study.

2.5 Chapter Summary

The chapter has provided an overview of the prevailing wider socio-economic, historical, and political context and their impacts on dividing student communities that were already fragile in SL HE. Next, the chapter introduced the study's theoretical background including the psychobiological model of compassion as potentially useful and relevant to finding solutions to the above. The theory of the psychobiological model of compassion was then mapped on the wider collective psychology that is affected by socio-economic, historical, and political context in Sri Lanka. In other words, this chapter has provided the

foundation for exploring a novel avenue of assisting students to strengthen their community cohesion, by learning to collaborate in online group meetings with an understanding how with the application of the science of compassion could help them with this.

CHAPTER 3

Literature Review

3.0 Introduction

The prime purpose of this literature review chapter is to explore the literature for a theoretical and philosophical base to address the core research question,

Can developing HE students in CSCC be adapted for online group meetings amongst UK-based and Sri Lanka-based Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

This chapter set out my search of the related literature while critically evaluating the applicability of the science of compassion in online educational settings and looking for their most significant relevance to the practical task of the enhancement of online group work management skills of Sri Lankan HE STEM students.

Section 3.1 explores the science of compassion in relation to different disciplines and how that in turn relates to the current study. Section 3.2 of the chapter discusses and evaluates the previous findings related to group tasks in current HE including but not limiting to students' camera use in online group meetings and the importance of screen gaze. Section

3.3 involves exploring previous literature on how students in HE might benefit from the science of compassion applied in group work. This is relevant to building communicative ease in offline group work meetings and discussions (Harvey et al., 2020; T. Gilbert, 2017). Next, Section 3.4 presents some other theoretical aspects relevant to this study. Finally, Section 3.5 offers a summary of this chapter.

3.1 Science of Compassion

Since the current study was to explore the development of the Cognitive Skills of Compassionate Communication (CSCC) for online group work management, it was important to investigate the existing literature on the science of compassion and its applicability in student teamwork in the field of education.

3.1.1 What is Compassion?

The concept, compassion is inherent in many spiritual as well as philosophical traditions. Philosopher Schopenhauer (1788-1860) considered compassion as “one of humans’ central motives” (as cited in P. Gilbert, 2017, p. 2). At present, there is growing research on compassion connected with a growing number of fields including Psychology, Neuroscience, Anthropology, Physiology, and Group Psychotherapy.

Research emphasises the place of compassion in Buddhism, the works of Confucius, and Aristotle underlining its cross-cultural value and recognition (Goetz et al., 2010). This implies the universality of compassion.

Buddhist compassion is the result of understanding one is part of a greater whole and is interdependent and linked to that whole. Further, Jinpa (2015), Lama (1995) and Ricard (2015) clarify the Buddhist concept of ‘Bodhichitta’ (a compassionate mind) which is the

desire/wish for all beings (including oneself) to become free from their suffering and its causes.

In the Brahma Vihara Sutta, Buddha explained compassion is one of the four sublime states of mind⁸. Nyanaponika Thero (1994, p. 1) outlines compassion according to the Brahma-vihara Sutta as follows:

compassion should be non-exclusive and impartial, not bound by selective preferences or prejudices. A mind that has attained to that boundlessness ... will not harbor any national, racial, religious or class hatred.

Further, Compassion (Karuna) can be explained according to Buddha's teaching as,

Compassion ... knows, understands, and is ready to help. Compassion is strength and gives strength: this is the highest compassion.
(Nyanaponika Thero, 1994, p. 3).

In other words, compassion is connected with an understanding the suffering of other persons (Nussbaum, 1996).

Compassion is described in terms of a four-part process (Worline and Dutton, 2017):

1. Noticing the presence of suffering.
2. Creating meaning for the suffering that encourages a desire to eliminate it.
3. Having concerns with empathy.
4. Taking action.

At Central Connecticut State University (CCSU), compassion is identified in relation to action (especially for particular types of suffering): not just a sentimental attachment to those who have experienced trauma or violent crime, but also an active effort to reduce that suffering whenever possible to make things better for them. (Billias, 2017).

⁸ Metta (Loving Kindness), Karuna (Compassion), Muditha (Friendliness), Upekka (Equanimity).

3.1.2 Understandings of Compassion

Compassion is defined as sensitivity to the one's own and other people's suffering and taking wise action to reduce or prevent that in group psychotherapy (P. Gilbert, 2019, 2017, 2005; Bates, 2005; Lama, 1995) in neuroscience (Colonnello et al., 2017; Immordino-Yang et al., 2009; Klimecki, 2019; Klimecki et al., 2019, 2014, 2013; Weng et al., 2013), physiology (Keltner, 2012, 2015) and anthropology (Spikins, 2015, 2018; Goetz et al., 2010).

3.1.2.1 Compassion in Anthropology

According to the literature in anthropology too, compassion is defined as the act of noticing, observing, and attending to the emotional or physical suffering (distress or disadvantaging) of another with the intention of acting to reduce or prevent it (Spikins, 2015, 2018; Boas, 1938). Further, researchers recognize the ability of compassion to build, reinforce, and sustain social relationships between individuals (Clark, 1997; Dalai Lama, 1995; Glaser, 2005; Lutz and White, 1986; Wuthnow, 1990). But compassion can be seen to support positive relationships building within and between communities (Godin, 2020). In affiliation with the Compassionate Mind Foundation and through drawing on anthropology and psychology-based understandings of compassion for the application of compassion to student teamwork, compassion can be defined as a teamwork context as:

Noticing (not normalizing) distress or disadvantaging of oneself and/or others, and taking wise action to prevent or reduce that (T. Gilbert, 2015, p. iii).

It is this definition of compassion, contextualized for (off-line) teamwork, that this study has adopted.

3.1.2.2 Compassion in Psychology

As compassion enhances the emotional attunement of people or their sense of being able to determine the emotional state of another person (Cassell, 2002). Lonczak's (2019), findings are offered next in Table 3.1. It is a summary of the benefits of compassion from his findings from 14 research studies related to compassion in the psychology literature.

Table 3.1 Research Studies Exploring the Benefits and Correlates of Compassion.

Main Findings	Citation
Increased compassion is related to increased happiness and decreased depression	Shapira and Mongrain, 2010
Compassion interventions promote social connection	Seppala, Rossomando, and Doty, 2013
Compassion interacts with social support to buffer against physiological reactivity to stress	Cosley, McCoy, Saslow, and Epel, 2010
Compassionate love is related to long-term HIV survival	Ironson, Kremer, and Lucette, 2018
Compassion is reported by patients and nurses as an important motivator of cooperative behaviour between patients and staff aimed at achieving important care outcomes	Van der Cingel, 2011
Compassion is associated with improved parent-child relationships	Duncan, Coatsworth, and Greenberg, 2009
Compassion for teachers expressed by colleagues is linked to increased teacher job satisfaction, organizational commitment, and sense of emotional vigor	Eldora and Shoshani, 2016
High self-criticism and low habitual self-compassion are related to a higher risk of depression	Ehret, Joormann, and Berking, 2014
Self-compassion buffers the impact of stress via self-kindness and positive cognitive restructuring	Allen and Leary, 2010
Self-compassion is related to increased well-being	Zessin, Dickhäuser, and Garbade, 2015
Self-compassion buffers against anxiety, and is linked to increased psychological well-being	Neff, Kirkpatrick, and Rude, 2007
Self-compassion is associated with positive aging	Phillips and Ferguson, 2013
Self-compassion is related to reduced post-traumatic Stress Disorder (PTSD) symptom severity	Thompson and Waltz, 2008
Self-compassion is linked to reduced burn-out among medical professionals	Mills and Chapman, 2016

Source : Lonczak (2019, p. 2).

3.1.2.3 *Compassion in Physiology*

According to Keltner (2015), practicing compassion is the major trigger of personal happiness, improving brain functioning (left hemispheric activity), immune functioning, and increasing life expectancy.

3.1.2.4 *Compassion in Neuroscience*

Neuroscience research indicates that most people are hard-wired to engage in prosocial behaviour. (Brittian and Humphries, 2015, Eisenberg, 2006; Neff, 2011; Schairer, 2016). Findings of Klimecki et al. (2013) on compassion training (experimental group $n = 28$) compared with memory training (control group $n = 30$) suggest that:

the deliberate cultivation of compassion offers a new coping strategy that fosters positive affect even when confronted with the distress of others (p. 1552).

... in comparison to other techniques for increasing positive affect, compassion benefits both, the person who experiences it (through strengthening positive affect) and the recipient of compassion (through fostering prosocial motivation) (p. 1560).

Further, Klimecki (2019) indicates the positive benefits of compassionate training on intergroup and interpersonal connections suggesting the effect of compassion to reduce intergroup conflicts. Immordino-Yang et al. (2007, 2009) state that compassion fosters cooperative acts in social groups. Further, they identify that compassion has had a long evolutionary function to help ensure our species' survival (Immordino-Yang et al., 2009). On the other hand, the reptilian brain in all mammals including humans is activated to fight, flight or freeze, by real or imagined threats (Trower and P. Gilbert, 1989, P. Gilbert, 2016).

In task-focused teams, this can direct cognitive functioning towards social defense mechanisms that are associated with how one is appearing in the eyes of others (T. Gilbert, 2017). In this situation, how to deal with this lived experience of threat

effectively in the competitive environment of HE, without damaging the construction of social communities in learning and working settings, is important.

To change this threat-related survival response, researchers such as Garland et al. (2009) Shapiro et al. (2006, 2012) emphasise the importance of purposeful amygdala downregulation and stimulation of executive processes through mindful training. However, the results of a recently completed My Resilience in Adolescence (Myriad) study on mindfulness in schools have been reported to be disappointing with students reporting boredom with the study during their participation (Kuyken et al, 2022).

3.1.3 Benefits of Compassion

The growing body of research indicates the physical as well as psychological benefits to self and others when people are trained in compassion.

3.1.3.1 *Compassion Can Motivate Action*

Condon et al. (2013) employed a test to measure (n = 39) participants' compassion toward others, using control and experimental groups. The participants were sat, one by one, in a theatrical waiting space with other two individuals (actors) sitting on either side of the participant, when an individual (actor) entered on crutches, seeming to be in considerable pain. Both actors ignored the one came with crutches, sending signals to others not to intervene. The individuals who had participated in compassionate training as part of the experiment were 50% more likely to take care of the one in pain than the control group.

3.1.3.2 *Compassion Enhances Pro-Social Behaviours and Academic Excellence*

Compassion training has been shown to enhance individuals' compassionate responses, and thus, leads to increased pro-social behavior (Kemeny et al., 2012; Leiberg et al., 2011;

Weng et al., 2014) Merging discoveries in brain research with the skills of nonviolent communication, Hart and Hodson (2004) indicate how compassion creates an emotionally safe environment that leads to better learning and academic excellence. Further, they highlight that compassion inside classrooms is associated with enhanced collaboration building trust, reducing conflict, and maximizing the potential of each student through relationship-centered classrooms (Hart and Hodson, 2004).

3.1.3.3 Compassionate Training Improves Positive Affect and Accuracy of Empathy

Further, Klimecki et al. (2014) indicate the results of training participants in empathy and compassion: participants' empathic as well as negative emotional responses towards distress of others were increased after training in empathy, however, the compassionate training down-regulated negative emotional response and increased brain activation associated with positive affect, reward, and social connectedness.

Mascaro et al. (2013) explore the impacts of cognitive-based compassion training (CBCT) on empathic accuracy which means the capacity of an individual to perceive and understand another person's emotions more accurately. Specifically, this means having comprehensive and precise knowledge about the contents of another one's mind, including how the person feels. Participants ($n = 21$) received functional MRI scans when they were completing a task (called Reading the Mind in the Eyes Test [RMET]) on empathic accuracy. Compared to their control group, their findings suggest the use of CBCT in behavioural interventions enhanced empathic accuracy. This is important for the above definition of compassion in teams, because 'noticing, not normalizing distress, or disadvantaging of others' does require empathic attention to the quality of other people's lived experiences.

At the same time though, empathy by itself does not guarantee an intention to help others. By itself, it can even be used to increase suffering and exploitation. In this study, therefore, empathy is a cognitive skill that should not be understood to come automatically with good intentions (The Compassionate Mind Foundation). Empathy can be used to bully others. It is a powerful tool for advertisers to profit through recognition and manipulation of consumers' insecurities about their bodies, houses, cars, etc., i.e., how they appear in the eyes of others (The Compassionate Mind Foundation).

3.1.3.4 Compassion Leads to Being More Helpful

Leiberg et al. (2011) investigated the helpfulness of participants through playing a game called the *Zurich Prosocial Game* (ZPG). In this study, they investigated whether participants reciprocated favours or responded when others suffered from distress and how they calculated the cost of support. Beforehand they employed short-term training for participants either as compassion training (for the experimental group) or memory training (for the control group). Results showed the compassion-trained group manifested more prosocial behaviour (they were more helpful toward others) compared to the control group (Leiberg et al., 2011).

Researchers indicate that human motivation towards their learning and social or professional work in a meaningful manner is elevated if people feel psychologically secure and safe (P. Gilbert, 2005; Lambert et al., 2013; Steffens et al., 2014). Further, if they feel safe, human beings are likely to be more creative and productive in the tasks they engage in (Bolman and Gallos 2011; P. Gilbert, 2005; Rock and Cox 2012; Tan 2012; Steffens et al., 2014). This will be further discussed in the next section on safeness and learning.

3.1.4 Safeness and Learning

Cozolino (2013) emphasizes the priority of felt social safety in learning contexts so that people can attach to (including collaborating and cooperating with) others:

The neural circuitry that assesses the environment for danger also serves as the infrastructure of attachment circuitry in social animals so that safeness and learning have evolved as interdependent processes (Cozolino, 2013, p. 241)

Again then, cognitive processing is unavailable when people feel insecure because their brain is preoccupied with monitoring potential external threats or dangers (Cozolino, 2013). Gill and Ursuleanu (2017) indicate the importance of making students feel safe for them to achieve the expected outcomes of education, further illustrating the impact of compassion on increasing learning-related safety. Moreover, as P. Gilbert explains, feeling protected leads children and adults to being more imaginative in solving problems and to being more consolidative in their thinking.

Hence, safeguarding individual self-esteem may hinder the developing of the notion of a mutually dependent self-concept (Neff et al., 2007), and thus this investigation focuses the “cohesion of the discussion group as a single, thinking organism” (T. Gilbert et al., 2018, p. 8). In a similar way, Billias (2017) also indicates how anxiety in the learning setting, e.g., from negative experiences or past memories, can negatively affect students’ learning ability:

In times of fear and anxiety, the verbal centres of the left hemisphere tend to shut down, impairing the semantic and narrative aspects of learning that are central to academic success (p. 144).

On the other hand, self-compassion, compassion received from others, and compassion given to others (see Section 3.1.7, pp. 45 – 47) (as these stimulate releasing the neuropeptide oxytocin) can downregulate the threat system of the brain (P. Gilbert, 2016,

2017; Depue and Morrone-Strupinsky, 2005). With this interdependency between safeness and learning, assistance can be provided through attention to compassion in teaching and learning. Therefore, this research project focused on addressing this under-researched area, in this case, by exploring the development of Sri Lankan STEM⁹ students in their use, or not, in their online group meetings of the Cognitive Skills of Compassionate Communication (once these had been offered to them). This was important as the application in online meetings cannot be identical to the application in offline meetings mainly due to the obvious online constraints on the extensive use of eye contact strategies which are available when people meet physically in person.

3.1.5 The Current Study – Theory of Compassion

When introducing Compassionate Mind model, P. Gilbert (2017, p. 2) further explains the two key psychologies of compassion: a) *sensitivity* to the suffering/distress of self and others and b) a commitment to try to alleviate and prevent it through wise action.

- i. *Motivated attention/ engagement and motivated action. ... the first component is linked to the motivation and competencies to engage with suffering with attentional sensitivity to distress signals.*
- ii. *The second involves acquiring the wisdom and skills to act to alleviate and prevent suffering in self and others. (P. Gilbert, 2017, p. 2)*

3.1.5.1 Psychobiological Model of Compassion for This Study

The Compassionate Mind Foundation's psychobiological model of compassion proposes that the brain has three systems of emotion regulation: threat, drive, and soothing and that our brains switch between them to regulate our emotions. This model has been used

⁹ Science, Technology, Engineering, and Mathematics (STEM) - in accordance with World Bank funding goals for Sri Lanka.

for this study to identify the activation of threat and drive systems of HE students' brains (see Figure 2.2). The brain may become trapped in rumination loops (due to oversensitivity to threats) without the brain's self-soothing system's (trainable) intervening effect. (P. Gilbert, 2005, 2017). In the current individualistically competitive HE environment (Chickering, 2010), this situation can mean excessive rumination by students on the potential to be unsuccessful, and then to stress and anxiety.

3.1.6 Compassion as Motivation

The current study focuses on compassion not as an emotion but as a psychobiologically determined motivation to care for self and/or others (P. Gilbert et al. 2017). T. Gilbert's definition of compassion in teams (as approved by the Compassionate Mind Foundation) is used in this study of online groups where it is defined as a well-intentioned vigilance: to notice one's own and/or others' suffering; and wise decision-making about what to do to reduce or prevent that suffering. Both of these psychologies are cognitive skills, no matter what emotion may or may not accompany them.¹⁰ This identical twin approach of being 1.) "motivated to engage with suffering" and 2.) "motivated to act wisely" (P. Gilbert, 2017, P. 2) is also greatly consistent with compassion in Buddhism (Jinpa, 2015).

3.1.7 The Three Orientations of Compassion

P. Gilbert et al. (2017, p. 5) outline "three orientations of compassion: self-compassion, compassion for other people, and sensitivity to compassion from other people". In the current research, these three orientations of compassion are taken into consideration.

¹⁰ Please Refer to Section 2.2, pp. 22-27.

3.1.7.1 Compassion for Others

P. Gilbert et al. (2017, p. 5) explain that,

compassion for others requires a motivation to be helpful, capable of noticing and orienting to distress signals (indicators of suffering), capable of tolerating any distress feelings that arise, and capable of non-judgemental empathic connection with the suffering of others. In addition, of course, is the second psychology, which is a preparedness to do something (wisely) to try to alleviate and prevent suffering (be it consoling, validating or some action).

Moreover, Buddhism and the research from other scholars outline a number of psychological, physical, and health-related benefits of practicing and developing compassion for others (Jinpa, 2015; Ricard, 2015; Singer and Bolz, 2013).

3.1.7.2 Sensitivity to Compassion from Others

This orientation indicates the capacity to recognise compassion from people. It has been found that a lack of self-compassion, despite high self-esteem, is associated with increased difficulty in recognizing compassion to the self from others (Compassionate Mind Foundation). This is another reason why the often-competitive nature of self-esteem can be problematic as explained below (see Section 3.1.7.3.1, p. 48). Conversely, Hermanto and Zuroff's (2016) study found that being less open and less receptive to compassion is correlated with lower levels of self-compassion, thus corroborating the inter-relationships between these inward and outward-looking types of compassion. Further, P. Gilbert et al. (2011) ascertain the substantial link between fears of receiving compassion from others and resistance towards being self-compassionate however, considerably less resistance and fear towards being compassionate to others. Moreover, Hermanto et al. (2016) reveal that being receptive to compassion from others protects individuals from negative effects such as depression and self-criticism. In a similar vein, Brown (2010) and George (1989) highlight the effectiveness of having compassionate

and caring relationships for safeguarding the effects of negative life experiences. Research on compassion can therefore assess “the degree to which individuals feel themselves to be in supportive environments” according to context (teams, in this case) where people have compassionate competencies (P. Gilbert et al., 2017, p. 6). This literature helps us understand compassion as a social mentality (P. Gilbert et al., 2017).

3.1.7.3 Self-compassion

The concept of self-compassion was discussed in Buddhism between the 6th and 4th centuries BCE¹¹. Neff (2003) identifies it in a similar way:

Neff (2003a, p. 87) suggests that:

Self-compassion is being affected by and open to one’s own suffering, rather than ignoring or distancing oneself from it, and inspiring the desire to do something good to lessen one’s own suffering and cure oneself. Offering nonjudgmental understanding to one’s suffering, inadequacies, and failings is another aspect of self-compassion that helps one perceive their experience as a part of the wider human experience.

Another purpose of self-compassion is explained by Meechan et al. (2014, p. 14) through their analogy of the aircraft briefing on use of oxygen masks in emergency situations:

If it drops down, fit your own oxygen mask before helping others... that’s because if you can’t breathe, you’re not going to be much use to anyone else! And it’s the same with compassion – if you’re not demonstrating compassion towards yourself, you’re less able to demonstrate it towards others.

Neff (2003a) identifies three key components of self-compassion:

- Understanding own experiences as a natural aspect of being a human;
- Being mindful of own emotions and feelings, which may be painful, and having a balanced attitude towards those feelings (rather than being trapped); and

¹¹ Before Common Era.

-
- Practicing non-judgmental acceptance of oneself and, eventually, being self-compassionate.

Overall, being self-compassionate has been shown to promote personal satisfaction while decreasing anxiety, stress, depression, and thus is likely to strengthen resilience and mental well-being. (Neff, 2003).

3.1.7.3.1 Self-esteem Vs Self-compassion

Since the two words *self-esteem* and *self-compassion* involve two different mental conditions, it is vital to draw a clear distinction between them.

Neff (2003a, p. 85) identifies self-esteem as a weaker alternative for purposefully, measured, self-compassion.

Because of its non-evaluative and interconnected nature, it should also counter the tendencies towards narcissism, self-centeredness, and downward social comparison that have been associated with attempts to maintain self-esteem.

She argues too that a high level of self-esteem is a problematic construct because it measures oneself against others and leads to competitive individualism. However, self-esteem is associated with better performance in terms of fluency and confidence in speaking. T. Gilbert (2015, pp. 45, 46), confirms this view:

Once thinking processes that are in conflict or discordant have come to light, they are available to be challenged and tested. This is not the same kind of conflict and competition that is pursued for the technical triumphs of performance: being the most articulate, the most fluent, or the most confident speaker. ... personal performance based on high self-esteem is experienced only when things are going well. When confidence is diminished by perceiving the achievement of others as greater than one's own, self-esteem can be reduced disproportionately quickly.

Thus, for my study, attention to 'self-esteem' would not support healthy group discussion processes. On the contrary, self-esteem depends more on external signals of

success than on community with others (Kingston, 2008). T. Gilbert et al. (2018, p. 7) argue that:

self-compassion calls on incisive cognitive work to be done so that irrationalities in assessing the self can be more easily identified and dismantled.

When learners, in particular, accomplish their need to belong to a peer group, their motivation rises, and negative behaviours such as anxiousness, avoiding courses, and disengaging with others are reduced. (Bandura, 1997; Zimmerman et al., 1992). This sense of belonging is known to contribute toward enhanced participation in the classroom, effective and intensive use of language for communication, and successful educational performance (Gkonou and Mercer, 2017).

In contrast, Kingston (2008) identified a link between higher drop-out rates (HDR) of high-achieving HE students and their higher levels of self-esteem (as identified through use of the Petrides Trait Emotional Intelligence questionnaire) compared to lower dropout rates (LDR) of students with lower levels of self-esteem:

HDR course participants have high self-esteem and a good level of interpersonal skills but are controlled by their emotions and exhibit an external locus of control. This manifests itself in a distrust of peers as a source of support and a reactive attitude to self-improvement. Typical LDR course participants have low self-esteem and a good level of intrapersonal skills but have developed the ability to control their emotions and exhibit an internal locus of control (Kingston, 2008, p. 128).

Supplementary literature from clinical psychology refers to prejudice (Aberson et al., 2000) and narcissism (Bushman and Baumeister, 1998) as also having connections with self-esteem. These findings may have implications, respectively, for some drivers of monopolising behaviours and, in terms of stereotyping, prejudice, and other types of heuristic reasoning (Pitner and Sakamoto, 2005).

Therefore, it is worth paying attention to self-compassion as it depends less on external factors for its maintenance and can be cultivated in the human mind to create positive effects for self and others. As P. Gilbert (2005) suggests, the threat alert system of the brain can be deactivated by self-compassion. This is made possible by the brain's release of oxytocin (Depue and Morrone-Strupinsky, 2005). In other words, compassion facilitates self-soothing (see Section 3.1.7.3 for more details.)

These findings pave the way for focusing more attention on promoting the science of compassion among students in the higher education arena, especially to facilitate students enhancing the soothing system in their brains and others' and so downregulating the threat system in their own and others' brains during task-focused group work.

Thus, the focus of my study was to explore whether the use of CSCC by mixed ethnicity Sri Lankan students in the UK and then another sample inside Sri Lankan universities could be developed among these students in group/ teamwork including for comparison of results.

3.2 The Group Tasks in Current HE

In educational settings, group/teamwork is employed at all levels as a tool for learning. The advantages of learning collaboratively in groups are well-established by scientific research. Group work is an educational strategy that has been extensively employed in face-to-face classroom learning situations and the literature on cooperative learning provides much research demonstrating the advantages of placing students in teams/groups to work for learning (Cohen, 1994; Johnson and Johnson, 1999). However,

there is still a scarcity of research on the dynamics of team/group work and the factors that influence the learning capacity of the students.

Existing research explores aspects related to whether the members of a group act as individuals within their group or as a single organism/group (T. Gilbert, 2015; Hammar Chiriac and Granström, 2012; Underwood, 2003). Working as a group is distinguished by all members being engaged in and contributing to a shared task/assessment to generate a collaborative result (Galton and Williamson, 1992; Hammar Chiriac, 2011). However, not all teams/groups work with shared partnerships as a group; instead, individuals work in a team/group, which, is common in an academic environment (Granström, 2006).

It is evident that current higher education does not tend to particularly promote group solidarity or unity but competitive individualism (Marturano et al., 2010; Johnson et al, 1998) and this does not support the collective thinking process or raise collective group intelligence (Duhigg, 2016; P. Gilbert, 2012).

Much of this difficulty may be mediated helpfully through a compassionate communications approach to team meeting management in which each student is responsible for their communicative style and its impacts on others. For example, research highlights negative consequences for experience and outcomes of HE student group work when some individuals may tend to intentionally or unintentionally monopolise (over talk) in group activities (monopolisers) while others may not speak much or at all, and so do not contribute to group discussions (non-contributors). As Yalom and Leszcz (2005) state, a monopoliser is often the most anxious person in the group and this monopolising behaviour leads to reducing the groups' collective intelligence as the other members in the group may then not get much chance to speak,

and so support the group's efforts to think together even if they would like to (T. Gilbert et al., 2017). In studies in STEM and the social sciences, these two negative group behaviours have been identified as major communicative difficulties within teams which prevent collective intelligence building through multiple perspectives (ibid).

Thus, Goetz et al. (2010, p. 364) highlight a need for more research on

the appraisals, experience, displays and physiology of compassion.

3.2.1 Group Work and Social Relationships

As explained by Hommes et al. (2012) social relationships with colleagues are a strong predictor of learning. Further, and similar to Kingston (2008), Wilcox et al. (2005) highlight the important influence of social relationships and friendships on undergraduates' attainment and progression. A highly appropriate opportunity and space in which to cultivate such peer relationships are in good preparation for, and practice of HE group/teamwork meetings.

Supporting this notion, Akyol and Garrison (2013) and Garrison et al. (1999) emphasize social presence as one of the three key fundamentals related to students' collaborative learning experiences (the other two are cognitive presence and teaching presence). Decuyper et al. (2010) and Mathieu et al. (2000) also highlight the significance of shared psychological models (i.e., the capability to identify the strengths and flaws of the members of the group and develop a 'common ground' for collaborative task performance). Similarly, the significance of small group work and social relationships in these has been shown to be helpful in reducing conflicts and directing the group's attention toward more cognitive gains (Curşeu et al, 2011).

3.2.2 Group Work and Academic Performances

Learners who work in partnership on tasks are more determined to be successful than those who work on their own individually (Gillies, 2003). As a result, team/group work can promote both educational content learning and developing social competencies. In higher education, group work is commonly employed as a pedagogical tool in the classroom but non-reflectively chosen group activities could lead to less desirable outcomes. Instead, a reflective decision made on group work task design is likely to be more conducive to beneficial students' experiences and improved learning (Gillies and Boyle, 2011; Galton et al., 2009; Hammar Chiriac and Granström, 2012).

However, as highlighted in previous research (Zhao et al., 2020, Lin et al., 2022), having too many students in groups negatively affects group learning and academic performance. This is reflected in the accounts of respondents in different studies:

There were too many of us ..., so it got quite tedious (Zhao et al., 2020, p. 96).

I think a lot [of students] will just be like they are not motivated (Lin et al., 2022, p. 186).

3.2.3 Social Relationships and Academic Performance

According to the studies (Hommes et al., 2012; Rienties et al., 2015), there is a tendency for high-performing students in university to be connected within classroom social networks. Consequently, high-performing students had higher participation in group work because of their wide-ranging social and learning interactions with their classmates (Mittelmeier et al., 2016). However, Kingston's findings (2008, p. 135) provide a different picture. Her findings:

...characterise the HDR [Higher Drop-out Rates] Course participants as perceiving themselves to be controlled by their emotions and exhibiting an

external locus of control, allowing them to maintain their high levels of self - esteem ...[while]they fail to trust their peers as additional sources of academic support, [This] can produce a spiral of negative affect and, if ignored, has the potential to increase the student's vulnerability to dropping out. ... the LDR [Lower Drop-out Rates] course participants, ... perceiving themselves to be more in control of their emotions... and coping with emotional reactions. ... they also trust their peers as an additional source of support where appropriate. The LDR course participant's motivation to proactively adapt to the new environment decreases their vulnerability to dropping out.

On this issue of emotional intelligence, in 2002, UNESCO¹² launched an international campaign to explicitly promote emotional intelligence learning in the classroom. The United Nations' statement of 10 basic Emotional Quotient (EQ) principles¹³ was sent to education ministries throughout the world with the purpose of promoting social and emotional learning in schools. It is important, therefore, that this research project focuses on developing compassionate communications to support the achievement of these principles.

3.2.4 Online Group Work Meetings

The skills which are expected to be developed through group work can only be developed if the students actively participate in the group task and collaborate (Pavlov et al., 2021).

Collaboration is defined as:

a collective process ... where all of the participants are jointly involved for task performance (Roselli, 2016, p. 255).

However, according to Vygotsky (1978), collaborative learning requires all participants' *engagement* to accomplish a pertinent goal. This notion of students' engagement consists

¹² UNESCO (The United Nations Educational, Scientific and Cultural Organization) is the UN's agency established in 1945 in order to promote sharing of information, concepts, and culture.

¹³ These principles were drawn from Goleman et al. (2002), who indicate a reduction of problems related to bullying, violence, disciplinary matters, and drug abuse in schools with a higher EQ and ability to improve academic performance and behavior with a solid basis in emotional intelligence.

of cognitive, behavioural, and/or psychological practices within social contexts (Bronfenbrenner, 1977; Newmann, 1992; Finn, 1993) and it requires students' intellectual and social engagement (Dunleavy et al., 2012). Further, ongoing interactions between one another (Kuh and Iiu, 2001; Lundberg and Schreiner, 2004) and active participation rather than passive listening during group discussions (Hrastinski, 2009) foster successful collaborative learning.

Thus, ensuring a safe and supportive environment for students to enhance engagement and interactivity (Carini et al., 2006; Parsons and Taylor, 2011) and to explore and collaborate (Parsons and Taylor, 2011) is important for the achievement of academic goals. However, Hrastinski (2009), Tam (2000) have indicated the difficulty of achieving this in online environments due to participants' physical distance from one another.

3.2.4.1 Advantages Associated with Online Group Meetings

According to Cunningham (1992), students can only set out to challenge their own worldviews and get an understanding of others' perspectives through collaborative learning.

Based on their study of experimenting with more than 375 investigations on societal interdependence and academic achievement, Johnson, and Johnson (1996) claim that collaborative learning "results in significantly higher achievement and retention than does competitive and individualistic learning" (p. 1022). In their views, collaborative learning is always preferable to competitive and individualistic learning since it involves more creative problem-solving and conceptual complexity. If relationships are more positive among group members, absenteeism and dropout rates tend to decrease, especially where members listen to peers and commit to one another's learning success (Johnson and Johnson, 1996).

Although group work is unquestionably a powerful teaching method from the instructor's perspective, students frequently have conflicting feelings of it (Bacon et al., 1999; Strong and Anderson, 1990). Some people find it difficult to collaborate with others because they worry about 'freeloaders' or dominating personalities that take over the group. These problems can also be associated with online group work meetings which are discussed next.

3.2.4.2 Challenges Associated with Online Group Meetings

Previous research has identified the challenges of online group meetings which are related to the students' disconnection and feeling self-isolation as discussed below.

3.2.4.2.1 Disconnection/Disengagement

As highlighted by researchers (e.g., Fung, 2007; Hrastinski, 2009; Jaldemark et al., 2005; Producers et al., 2022), online collaboration in group work is challenging due to the participants' distance from one another in the virtual environments. Churchill and Snowdon (1998) also indicated that collaboration in an online learning setting can be hindered due to the unavailability of shared physical space, and hence no visible contact. More than 20 years later, Afrouz and Crisp (2021) state that communication and engagement in online group work continue to be a challenge and Pardasani et al. (2012) report students' feelings of being less connected in online learning compared to face-to-face learning. Moreover, the difficulty of performing group work including group discussions was also highlighted. (Chhetri, 2020; Fung, 2007).

3.2.4.2.2 Students' Physical and Psychological Isolation

Bentley et al. (2015) and Davis et al. (2019) argue that the existence of this physical distance between group members in online learning can result in emotional distance,

miscommunications, and isolation. Researchers also noticed the isolation and alienation felt by the students when they engage in academic activities online and their reluctance to participate in online groups (Goldingay and Land, 2014, Muhria et al., 2023). Moreover, research shows, students' ability to communicate with their teachers and peers was often restricted when learning online due to anxiety, boredom, and physical discomfort (Barrot, 2021), a lack of connections and fewer interactions (Ewing and Cooper, 2021; McAllister, 2013; Noble and Russell, 2013; Okech et al., 2014), issues related to concentration and interactions (Bui et al., 2021; Chhetri, 2020), feeling isolation (Gillett-Swan, 2017), lack of emotional connectedness felt by the students (Pardasani et al., 2012), communicative barriers due to limited nonverbal signals (Mahyoob, 2020; Sawrikar et al., 2015) increased stress and concentrating difficulties (Lemay et al., 2021). Overall, it seems there is broad agreement with Koh and Hill (2009) who identified communication difficulties, misunderstandings, and a perceived lack of sense of community as the challenges encountered by the students while engaging in online group meetings. However, there is very limited research conducted to address these identified issues in relation to online group work management.

3.3 Practical Compassion in Group Work

In response to these kinds of issues, this research project suggests the practicality of embedding the science of compassion in student group work pedagogy.

As suggested by T. Gilbert et al. (2017), compassion can be contextualised for specific purposes of communicative ease in face-to-face task-focused group/teamwork through particular micro-skills of compassionate communication skills that are both verbal and non-verbal. Further, T. Gilbert (2012; 2016; 2017) argues for Compassion-focused

Pedagogy (CfP) for group or teamwork in higher education and describes two effects that have been observed and student-reported in comparison to control groups: an apparent increase in social connectedness among students, notably in relation to student interculturalisation processes (Cantle, 2011; Zapata-Barrero, 2013), and an enhanced learning experience as evidenced through statistical analysis of control versus intervention groups' academic performance per individual student. However, there were no studies of attempts found in literature to transfer this pedagogy online.

One difficulty may be that T. Gilbert (2015) points out the critical importance of three kinds of eye contact in face-to-face group discussions but that not all of these can be used in online meetings in the same way as in face-to-face meetings. The three are discussed from this perspective now.

Inclusive eye contact – this means that whenever anyone in the team speaks, no matter what they say, they spread their eye contact back and forth to share it with everyone in the team/group as they speak, as though the team/group was one single organism. The perception by each listener in the group that the speaker is demonstrating purposeful attention to them has been associated with participation-equalizing effects across the whole group and with improved team decision-making and problem-solving (Vertegaal et al, 2002, 2003). Inclusive eye contact is a major component of the non-verbal micro-skills of compassionate communications in teams. This is partly explained by new research by Dal Monte et al. (2022) who have identified that in four regions of the brain, there are neurons that function specifically to extract meaning from the social gaze. But this raises questions again about how this unconscious brain activity might be changed in the online small group context, where everyone may be seen at once in the small space of a single screen.

Excluding eye contact – this tends to be linked with monopolising behaviour. That is, it has been found that monopolising students tend to fix or continue to keep eye contact with just one member of the group. This may be because, as Yalom and Leszcz (2005) state the monopoliser is often the most anxious person in the group. This in turn suggests threat system stimulation in the monopoliser. There are techniques and strategies that can be used by the person with whom the monopoliser has fixed eye contact, if that person is able to ‘notice’ (as required by the first above component of compassion) this kind of exclusion of others in the group. The accidental colluder (i.e., the person who the monopoliser fixates on) can channel the monopoliser’s eye gaze to others. This has been found to be an effective strategy in disrupting the monopolising behaviour and this may be linked to Dal Monte et al.’s (2022) findings. But again, this is not a strategy that can be used online. Moreover, if the monopoliser appears to fix everyone in the space of one screen with eye contact, it is not clear how a monopoliser’s behaviour can be disrupted to allow other perspectives in the group to be heard.

In exploring these problems and how they might be solved, this study will offer an intervention: a development session for its student participants to explore the practical strategies of compassion (see Section 4.3.2 in Methodology Chapter), with opportunities to practice. It will explore what might happen if students are encouraged to be mindful of when monopolising can be disrupted by thanking the monopoliser for a ‘crucial,’ or ‘critical,’ or ‘relevant’ or ‘interesting’ point and why it is so. Then in the same breath, the disrupter can again use the names of the group members and a warm tone, to invite another to add something to that. In other words, it may be that this use of others’ names and a voice tone can be particularly highlighted in the development session to help compensate for the loss of eye contact agency. But this will need to be investigated.

From group psychotherapy, Bion (1971) argued that an alpha pair in a group (i.e., a pair who appeared to dominate their group), was a typical route into whole group dysfunction.

Avoidant eye gaze – The student who avoids the gaze of others is, therefore, unable to notice signals of non-verbal support around the group such as encouragement, agreement, enjoyment, or lack of understanding. Also, this student is not signalling interest in others through the above social gaze (Dal Monte et al, 2022), even briefly. This may be a particular problem for presenters in groups if they read notes with their heads down throughout. This may be more difficult for other students to intervene in if they are online. Further, online, avoidant eye contact by some students could mean having the camera off completely. During COVID-19 this has become a widely reported issue in the literature (see next section). Reflecting on the above, from here I will refer to eye contact (in class) as screen gaze for the online context.

3.3.1 The Importance of Screen Gaze Online

Dillenbourg and Schneider (1995) emphasise three essential conditions to succeed in online group work. First, they highlight the requirement of online groups to be ideally small and, second, the need to work together to complete the group task. Third is the importance of unmuted voices/microphones and cameras on (for full presence) of students for effective communication in online groups.

However, with the sudden pandemic-driven shift to online platforms in almost all of fields of education, educators highlight that one of the main challenges they encounter is students' keeping their cameras switched off. This issue has been widely discussed in recent literature:

One common tension that we have experienced as Higher Education (HE) educators and language instructors, which has also been signalled by many colleagues in everyday conversations, is that students turn their cameras off, while we, as teachers, expect students to be present via camera. We tend to pressurise students to turn their cameras on, forcing participation (Pavlov et al., 2021, p. 228).

Gherheş et al. (2021) point out how students' continuity of keeping off their cameras in online learning sessions has influenced teachers' main dissatisfaction resulting in them being less motivated to teach. This indicates another aspect of the teaching and learning process as keeping the webcam off not only has a negative impact on students and their learning process but on teachers and their teaching, too.

The focus of previous research was mainly on exploring issues and challenges in online group work including reduced collaborative engagement due to a lack of effective communication and connecting (Lin et al., 2022), lack of campus socialization and student-reported difficulty in conducting group work (Adnan and Anwar, 2020), reduced motivation and learning efforts of the students (Almendingen, 2021). Moreover, Ferri et al. (2020) highlighted a lack of students' interactivity and motivation, a lack of students' and teachers' social and cognitive presence,¹⁴ and a lack of human interaction between teachers and students as well as among the students. Researchers indicated students' disagreement to keep their cameras on due to anxiety/shyness or privacy concerns about their personal space/appearance (Gherheş et al., 2021; Tobi et al., 2021; Li et al., 2021). Far fewer studies investigated whether camera use can foster collaborative learning (Pavlov et al., 2021). In the field of education, online groups have not received much attention specifically in relation to the use of technology as the primary means of

¹⁴ the ability to construct meaning through sustained communication within a community of inquiry.

communication and geographically dispersed members. Further, even though a number of studies highlighted the issue of students turning off their cameras in online educational settings as a major challenge globally (Bedenlier et al., 2021; Brunet et al., 2007; Kozar 2015; Nilsen et al., 2013), hardly any studies have looked at how to motivate students to turn on their cameras in online learning environments (Jayasundara et al, 2022).

3.3.2 Applying the Three Circles Model of Compassion in HE Group Work

As outlined above, T. Gilbert et al. (2018) explain why and how students need to be supported in practical, evidence-based ways to co-construct for each other psychological safeness. Compassion offers this kind of safeness¹⁵ in the workplace too (Worline and Dutton, 2017). In other words, compassion contributes to activating the soothing system including for the monopoliser.

However, when compared with the use of compassion in other domains such as neuroscience (Immordino- Yang et al., 2009), psychology (Page-Gould et al., 2008), group and individual clinical psychotherapy (P. Gilbert et al., 2005, 2009, 2010, 2017, 2018, 2019), there has been limited work done on an empirical understanding of compassion in the domain of practical HE pedagogy. Hence the next section will discuss the importance of the science of compassion for education.

3.3.3 Why Compassion in HE?

Duhigg (2016) reports on the use of kind action in the workplace team. A \$5M study by Google (Project Aristotle) was carried out to identify the major features of the company's 'perfect' (most innovative and resilient) teams. Google could not identify any key common

¹⁵ Safety can be understood a physical state of being safe. Safeness can be understood to be the psychological state of feeling safe.

feature, variables, or patterns of the “most resilient and innovative teams, except for one lead” (Duhigg, 2016, p. 5). All the teams appeared to have their own interior standards of group behaviours. Project Aristotle then focused attention on exploring the behavioural norms of Google’s outstanding teams. What they found was that in these teams, the members made one another feel secure and safe and they found two behaviours of safeness-building in particular that appeared to “raise the collective group intelligence” (Duhigg, 2016, p. 5). The first behavioural norm was equitable sharing of speaking time by the members together. Second, these members were skilful at intuiting others’ feelings through their expressions, and non-verbal signals including tone of voice. It was further identified that, in other teams, the “collective intelligence declined” if one or both of these behavioural norms did not exist “even if, individually, all the members were exceptionally bright” (Duhigg, 2016, p. 5). In particular, monopolising – over-talking – in team/group discussions by one or two members “hobbled” the processes of collective critical thinking (Duhigg, 2016).

In terms of shy students who sometimes tend not contribute much to group discussions, even when there is no monopoliser, it is important to note that as P. Gilbert and Proctor’s (2006) study illustrates the transformative capability of compassion training has been found to be effective at optimizing performance in persons who experience high levels of self-criticism and shame. Many HE students face this. Similarly, Page-Gould et al. (2008) report, the effect of race-based rejection sensitivity caused high cortisol (stress hormone) levels in non-white students.¹⁶

¹⁶ Her study looked at how Latino and white American students could be helped to integrate with each other more, in a US University.

In contrast, a study conducted at San Diego State University (SDSU) in California on students pursuing higher education leadership through a training programme on mindfulness-based compassion cultivation named Integrative Inquiry (INIQ) reports a significant reduction of participants' stress and anxiety while identifying the escalation of students' attention, and cognitive regulation (e.g., mindfulness). Furthermore, students reported developed self-compassion, compassion given to others, awareness of having outcomes of their choices, and enhanced resilience (Ludvik, 2016). In UK HE too, Gibbs (2015, p. 229) states that:

Compassion gives rise to altruism, generosity, social connectedness and kindness towards oneself and others, focused on others, which naturally results in greater social connectedness.

Statistical evidence of the impacts of compassion-focused pedagogy in class (i.e., offline) is that group and individual critical thinking performances improve in teamwork where CCSC is assessed, as students take care to reduce individualist competitiveness in the group so that the group thinking processes can be enhanced (T. Gilbert et al., 2018). Moreover, students demonstrated and reported increased motivation to enhance others' social as well as learning experiences in discussion seminars through the practice of compassionate behavioural interventions (ibid).

The difficulty with this is that this study cannot and does not intend to assess students in a formal, meaningful way, but to explore whether the pedagogy can be used online.

3.3.4 Effectiveness of Compassion in Reducing Stress/Anxiety

Over the last ten to fifteen years, a growing body of evidence has been recorded on the effectiveness of training in compassion (and in particular self-compassion) in minimizing stress. These include studies on the importance of compassion-based mediations in

increasing compassion and empathy (Brito et al., 2018) and decreasing negative emotions such as stress, anxiety, and depression (Kirby et al., 2017).

Discussing the lessons learned by three USA universities (Western Connecticut State University, Central Connecticut State University and University of Saint Joseph) after becoming campuses of compassion, Billias (2017, p. 153) concludes that:

At both CCSU and WCSU, it [compassion] has found a home at the intersection of psychology and education, focusing on the emotional and social benefits which compassion and mindfulness training may bring to participants.

Moreover, Gill and Ursuleanu (2017, p. 228) explain that:

We feel compassion is central to a student's university. Our experiences have shown that students need compassion in order to succeed and demonstrated that implementation of compassionate actions can significantly help enhance the students' experience, giving them motivation and helping their progression in their studies.

Highlighting the essentiality of compassion in the contemporary higher education setting, Gibbs (2015, p. 230) too states:

It is critically important for students to be compassionate to themselves, as well as others, and to set out ways in which compassion can scaffold how we build a society through the graduates whom we produce; a society where compassion is a multicultural notion that is recognised as inclusive of the diverse student populations that we serve.

My study explored how compassion can be operationalised in student learning through its task design for teamwork, i.e., in task-focused meetings.

3.4 Other Related Theoretical Aspects

This study can be related to a combination of the other five useful learning and teaching theories that support the design of the group task.

Five other theoretical aspects: constructivism (Vygotsky, 1978, 1987), constructionism (Papert, 1991, 1964, 2004), intersubjectivity theory (Roselli, 2016), self-organized

learning environment (SOLE), and reinforcement theory of motivation (Skinner, 1938) are discussed here.

3.4.1 Constructivism

The current study approach supports the idea that social interactions are fundamental to learning (Vygotsky, 1978) and constructivism is informed by this. Associated with constructivism (Alanazi, 2016), the importance of paying attention to learners as well as designing learning settings to be collaborative and interactive for students is also highlighted, which is the focus of my study too.

Constructivism is also criticised for minimum guidance (Kirschner, 2006; Brown, 1994; Hardiman, 2020; Moreno, 2004; Tuovinen, 1999). Hence, the current study's "intervention—to develop Cognitive Skills of Compassionate Communications (CSCC) of learners during their online task-focused group work meetings—was designed to provide participants the guidance on the appropriate application and recognition of these cognitive skills raising their awareness and understanding to better manage group work meetings.

Constructivism emphasises students' interests and abilities to achieve distinct educational goals. Contrarily, constructionism concentrates on the manner of learning which is discussed next.

3.4.2 Constructionism

According to constructionism theory (Paper, 1928-2016), students learn best when they are actively creating their own knowledge structures in a field that has personal significance to them. In other words, constructionism promotes student-centred learning

where they use what is already known to acquire new knowledge (Alesandrini, 2002).

And:

... learning is most effective when part of an activity the learner experiences as constructing a meaningful product (Sabelli, 2008, p. 193).

Further, as explained by Alanazi (2016, p. 5), in constructionist learning:

Learning outcomes can be seen, critiqued, and used by others, and that knowledge is constructed by practicing skills physically, not just intangibly.

However, constructionists consider that learners must exhibit the outcomes of their learning in a tangible manner to refine their thinking process effectively (Papert and Harel, 1991). This requirement is addressed in my study. Hence this current study's "intervention—to develop Cognitive Skills of Compassionate Communications (CSCC) of learners during their online task-focused group work meetings—was designed to allow the kinds of student interactions that might lead towards tangible outcomes, namely assessable outcomes of shared contribution, inclusivity, and group criticality. In this sense, the study also aligns with constructionism (Jayasundara et al., 2022, p. 4) which advocates that learners need adequate guidelines to create tangible outcomes to facilitate their learning outcomes to be authentic (Kirschner, 2006). The CSCC intervention session (delivered to students as the intervention) was focused on sharing their learning with one another other (in this instance from self-chosen, peer-reviewed articles relevant to their STEM disciplines) and so nurturing one another's learning. Tangible outcomes of this e.g., in students videoed, real-time, critical perspective-taking through unpredictable turns in the talk in their group work meetings, could in principle be conducted in the future, (as for offline) again without the need for the real-time teacher/ tutor supervision or even the presence of a teacher/tutor (Jayasundara et al., 2022, p. 4). (see Section 4.3 in Methodology Chapter).

3.4.3 Intersubjectivity Theory

The intersubjectivity theory is one of the theories that helps to better understand virtual collaboration (Roselli, 2016). This theory derives from the social constructivist principles of Vygotsky. According to this theory, students gain knowledge through interacting and collaborating with their teacher, their peers, and the course materials. Students are constantly communicating with one another, with their teacher, their course materials, and their surroundings, as their surroundings cannot be detached from the personal experiences of each learner. This theory has clear overlaps with my study. And it helps to illuminate my thinking about how this kind of learning is possible if there is not equal participation so that the intersubjectivity becomes limited.

3.4.4 SOLE and Reinforcement Theory of Motivation

The notion of Self-Organized Learning Environment (SOLE) (Mitra, 2018) is relevant to my study. In relation to Mitra's SOLE and to my study, reinforcement theory is also pertinent. It places a strong emphasis on the effects of human behaviour as a motivating factor, which can be either positive or negative. As confirmed by Gorden (1987), B. F. Skinner's (1938) reinforcement theory of motivation which identifies "positive reinforcements—in this study that could mean encouragement, attention, appreciation, and validation—as promoting potentials for more frequent enactments of desired behaviours. Hence, in relation to the current study's developmental training intervention, this theory too provides insights into the management by students of their group work" (Jayasundara et al., 2022, p. 4).

3.5 Chapter Summary

This chapter has presented the theoretical overview of the study critically evaluating the previous literature in relation to the development of CSCC. It has done this in consideration of online group work management as a possible way to help address the divisions in student communities in Sri Lankan HE that are associated with wider socioeconomic, historical, and political factors. Accordingly, the literature in relation to the science of compassion and its development and/or application in a number of fields, such as neuroscience, psychology, and group psychotherapy, has highlighted that there are only a limited number of studies of the science of compassion that have been carried out in the field of education. In particular, there was no research found on the adaptability of empirically understood compassion in communications in group or team meetings that are held online. The next chapters will set out this study's work to address that research gap.

CHAPTER 4

Research Methodology

4.0 Introduction

This chapter presents an overall approach to the research methodology. Section 4.1 indicates the research questions and Section 4.2 provides detailed description to the Action Research (AR) approach. AR was selected for this study on the experience of students engaging in HE group meetings because the holistic lived experience of using Cognitive Skills of Compassionate Communication for online group management explores areas of opportunity for the higher education sector to implement (or not) for facilitative newly designed strategies focusing on online small group discussions of the students in HE to help to achieve group management skills. Then, Section 4.3 explains the structure of three Cycles conducted in this study and their methods. Section 4.4 entails in describing sampling and data collection while Section 4.5 explains the overarching methodology of data analysis. Sections 4.6, 4.7 and 4.8 offers information about participants and modifications related to the Cycles 1, 2 and 3 respectively. Section 4.9 explains modifications to the intervention session and Section 4.10 specifies the tools

used to address the research questions. The Ethics approval was obtained from the University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority (ECDA) to conduct this study under the protocol number cHUM/PGT/UH/04345. This is discussed in more detail in Section 4.11. Finally, Section 4.12 provides a summary of this chapter.

Grounded Theory (GT) was initially considered for this study but was rejected for the following reasons:

- a. GT's possibility of over-fragmentation of data which may lead to themes being lost (Alvesson and Skoldberg, 2009).
- b. GT discourages reading, particularly on theory (as this might bias the study even before the data is collected). But few people come to conduct a piece of research without thoughts and beliefs that have come from reading that was done perhaps years earlier (Thomas and James, 2006), even if these are now unconscious. Moreover, the study required considerable pre-reading on the underlying psychobiology of compassion for this study to be carried out. Also, this Action Research was novel in scope and a review of previous literature facilitated the researcher's closer attention to a range of group behaviours that might easily have been missed with a consequence for appropriate data collection. This in turn influenced the design and development of each Cycle after data analysis. This does not mean that GT was not used at all. Template Analysis (TA) includes attention to constant data comparison and TA does acknowledge GT for this. Constant comparison of the data was used in this study.

Moreover, Phenomenological Research Methodology was also considered but rejected as it requires:

-
- a. the use of a distinct researcher stance and approach to achieve its goal.
 - b. extended, in-depth interviews with participants; sometimes investigators have to interview the same participant multiple times to obtain a complete image of their experience with the pertinent phenomenon.

Action Research which was first developed by Lewin (1946) avoids the above difficulties and was selected for several other reasons too:

- a. Complete cycles of research can be compared with each other at the end of the study, thus offering the chance to trial an educational intervention.
- b. Results are used to identify what parts of this intervention should be modified, improved, or removed, and on the basis of them, a second cycle (and potentially a third) can then be conducted (Cohen et al., 2007; Kemmis and McTaggart, 1992; McNiff and Whitehead, 2002; Zuber-Skerritt, 2005).
- c. AR facilitates the use of mixed (i.e., both qualitative and quantitative) methods, which were required (see Section 4.2) throughout the UK-based pilot (Cycle 1) and SL-based main study (Cycles 2 and 3).

The proposed study was conducted to explore whether, and, if so, in what ways, developing diverse students in the use of compassionate communication strategies for group work (T. Gilbert, 2016, 2017, 2018, 2019) could be effective in online group work meetings of, specifically, non-native English-speaking Sri Lankan students enrolled in STEM programs. The study explores and attempts to reduce well-reported communicative barriers between Tamil, Sinhalese, and Muslim students. These difficulties are related to the country's civil conflict, for example, its recent 30-year civil war and more recently still, terrorist atrocities reported globally (See Section 2.1 in Chapter 2 for more details). Only one week before the researcher arrived in the UK (May

2019) to begin the doctoral programme, the tensions of that civil war re-ignited across Sri Lanka. All 15 state universities were shut down (some for more than two months) to ease tensions between students. COVID-19 has further separated students from each other in Sri Lanka, as in other countries. According to UK government policy on social (physical) distancing, all data for the whole study would have to be collected online anyway.

Sri Lankan students were thus an appropriate sample for an intervention designed on compassionate communication for managing online group works, provided they could be convinced to turn their cameras on as part of optimal development of Cognitive Skills of Compassionate Communications in the online group work meeting setting.

4.1 Research Questions

Core Research Question

1. Can developing HE students in CSCC be adapted for online group meetings amongst UK-based and Sri Lanka-based Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

Sub Research Questions

2. **In UK HEIs**, can developing students in CSCC be adapted for online group meetings amongst Sri Lankan STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?
3. **In Sri Lankan HEIs**, can developing students in CSCC be adapted for online group meetings amongst STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

-
4. In relation to question 2 and 3, are there any observable differences in students' behaviours in their pre- vs post-intervention online group work meetings (before and after the CSCC intervention session)?
 5. If an adaptation of CSCC to the online format is possible, in what ways, if any, and with what results (for their social and learning experiences of online group work) might Sri Lankan STEM students who are based in Sri Lankan universities respond to this developmental training.
 - 5.a. In what ways the responses of Sri Lankan-based students be similar, or different from the responses of UK-based Sri Lankan students?

4.2 Action Research Approach

There are several definitions available for Action Research in the literature. The action is placed within the continuing social processes of a specific research. As explained by Carr and Kemmis (1986, p. 162):

Action Research is simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.

Further, Kemmis and McTaggart (1988) clarify:

Action Research is a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices as well as their understanding of those practices and the situations in which the practices are carried out. The approach is only Action Research when it is collaborative, though it is important to realise that Action Research of the group is achieved through the critically examined action of individual group members (pp. 5, 6).

According to Burns (2009), it is the combination of action and research.

Action Research is the combination and interaction of two modes of activity – action and societal contexts, whether they be classrooms, schools, or whole organizations, and typically involves developments and interventions into those processes to bring about improvement and change.

The research is located within the systematic observation and analysis of the developments and changes that eventuate in order to identify the underlying rationale for the action and to make further changes as required based on findings and outcomes (pp. 289, 290).

Here, Burns (2009, p. 290) highlights bridging “the gap between the ideal (the most effective ways of doing things) and the real (the actual ways of doing things) in social situation” as the driving purpose for conducting AR. Moreover, Burns (2015), indicates that the involvement of Action Research is as

a self-reflective, systematic, and critical approach to an enquiry by participants who are at the same time members of the research community. The aim is to identify problematic situations or issues considered by the participants to be worthy of investigation in order to bring about critically informed changes in practice. Action Research is underpinned by democratic principles in that ownership of change is invested in those who conduct the research (p. 188).

Further, as Kemmis and McTaggart (1988) and Burns (1999) suggest, the characteristic process of AR is a spiral (cyclic) of movements between action and research.

Action Research is defined by Somekh (1993) as:

a flexible methodology, not merely in terms of being eclectic in research methods, but more fundamentally in need to adapt to the social and political situation in which it is employed (p. 29).

4.2.1 Why Action Research?

This study arose from my own experiences and observations of the struggling nature of students in group work in HE classrooms being a lecturer in English in Sri Lankan higher education. I have observed how some students struggle to perform in their group work while some tend to dominate others in the group where the disparities of voice and representation among students are evident. Moreover, Turner (2009) and T. Gilbert (2016) supported this view in recognizing how these anti-group behaviours are unintentionally assisted institutionally, including by academic staff. From that follows the

researcher's focus should be to explore what kind of acts are needed to address this issue while facilitating students having equal opportunities and voice during their group work.

As Burns (2010) suggests,

Doing AR usually helps us to articulate and deepen our personal theoretical ideas about teaching (p. 14)

A literature survey and my own observation during more than twelve years of teaching in the higher education sector led me to select the Action Research approach for this study as it is flexible and ideally suited to address my research questions.

Moreover, Action Research is sustainable as this approach helps identify and refine techniques while cycles continue and findings of recent research have shown that the “ideologies and stereotypes which govern inter-group relations should not be viewed as individual character traits but that they are anchored in cultural standards, and that their stability and their change depend largely on happenings in groups as groups” (Lewin, 1946 cited in Adelman 1993, p. 16).

4.2.2 Action Research Spiral¹⁷ (Cycle)

Through a review of the literature and the researcher's own observations, Action Research has been identified as a suitable approach for the current study to trial and experiment explicit, long-standing attention to practical compassion for group work management in higher education. Further, as already outlined above, this strategy allows for refinement of the methodology while making necessary adjustments or changes if needed through completing each cycle of the experimentation process. Even though

¹⁷ In my study there was an ongoing (iterative) spiral of Action Research through 3 Cycles.

several models can be found in the literature on Action Research, Zuber-Skerritt's (2001) model shown here reflects Action Research spirals.

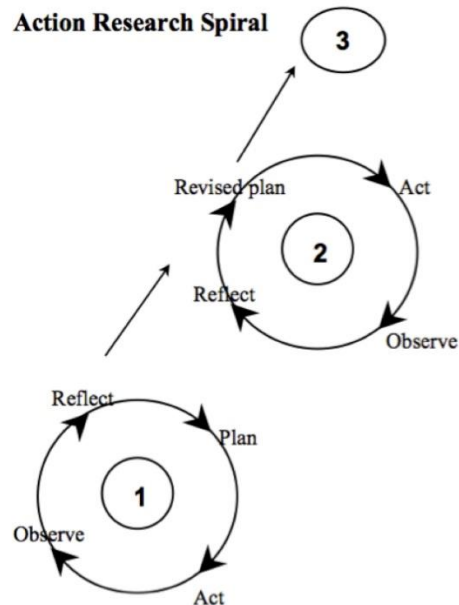


Figure 4.1: Action Research Cycle (Source: Zuber-Skerritt, 2001, p. 15).

4.2.3 Basic Phases in Action Research

Kemmis and McTaggart (1988) outline four phases of Action Research where the first may become an ongoing spiral (iterative) of cycles that continue until a satisfying result is obtained and the action researcher believes it is time to stop. They explain four steps as follows (p. 189):

1. Plan

In this phase, a problem or issue is identified, and a plan of action is developed to improve a certain aspect of the area of the research. This is a forward-looking phase where the consideration is focused on:

- a. what kind of research is feasible to conduct depending on the realities and limitations of the context of teaching;

and

- b. what are the possible prospective enhancements according to the researcher's perspective?

2. Action

In this phase, the plan is thoroughly studied, and it entails certain purposeful interventions into the teaching scenario that is implemented over a set length of time. These deliberate interventions are informed critically as the action researcher challenges the hypotheses about the existing situation and design novel and alternative approaches of things to be done.

3. Observation

Throughout this step, the action researcher systematically observes the consequences or the effects of the activity and the actions, context, and opinions of everyone involved are documented. This is a stage of collecting data being 'open-eyed' and 'open-minded' on about what is going on.

4. Reflection

This phase involves, reflecting on, evaluating, and describing the outcomes of the activity to make sense of the results and to gain better understanding of the investigated subject. Depending on the outcome obtained, the action researcher might decide to continue additional cycles for further development of the particular aspect of teaching, and/or to disseminate the research findings as part of the researcher's continued professional development.

This iterative nature of the Action Research methodology is depicted in Figure 4.2. This model was selected to be presented as it very concisely summarises the indispensable phrases of Action Research.

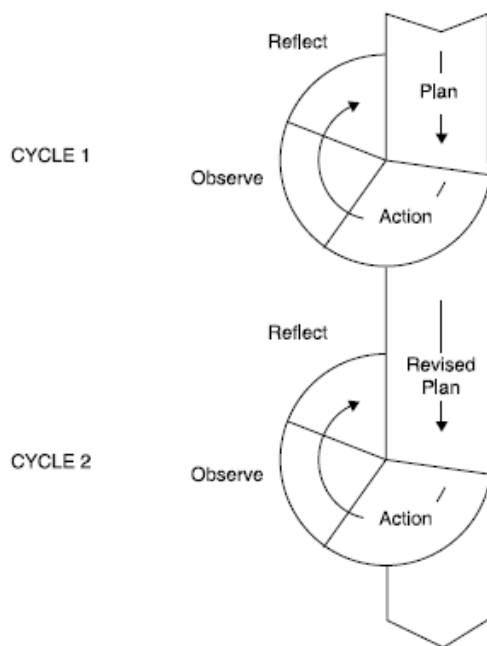


Figure 4.2: Cyclical AR Model (Source: Burns, 2010, p. 9 adapted from Kemmis and McTaggart, 1988).

The steps of Action Research are generally agreed on by Cohen et al. (2007), Kemmis and McTaggart (1992), McNiff and Whitehead (2002), and Zuber-Skerritt (2005) to be as follows:

1. Observing the existing practice
2. Identifying where the improvement is required
3. Deciding an approach to address these areas
4. Putting that into practice (trying that out)
5. Observing and reflecting on outcomes and processes involved
6. Responding, adapting, and adjusting what was done in response to the results obtained
7. Continuing from step 4 above until required

In this Action Research, steps 1, 2 and 3 have been addressed in Chapter 2 (Background), Chapter 3 (Literature Review) and here again in Chapter 4 (Methodology). Conducting Cycle 1 is Step 4, the analysis of the data is Step 5 and the results found from this analysis

are presented in Chapter 5. Step 6 identifies possible necessary modifications of the methodology from Cycle 1 to conduct Cycles 2 and 3 in order to address issues arising as the research process unfolded. Step 7 was to conduct Cycle 2 (second iteration) and Cycle 3 (third iteration). The findings from Cycles 2 and 3 are presented in Chapter 6.

4.2.4 Action Research Cycles of the Current Study

The research consisted of three main Action Research Cycles:

1. Cycle 1
2. Cycle 2
3. Cycle 3

Figure 4.3 below visualizes the sequence of data collection for the study based on the three cycles of Action Research.

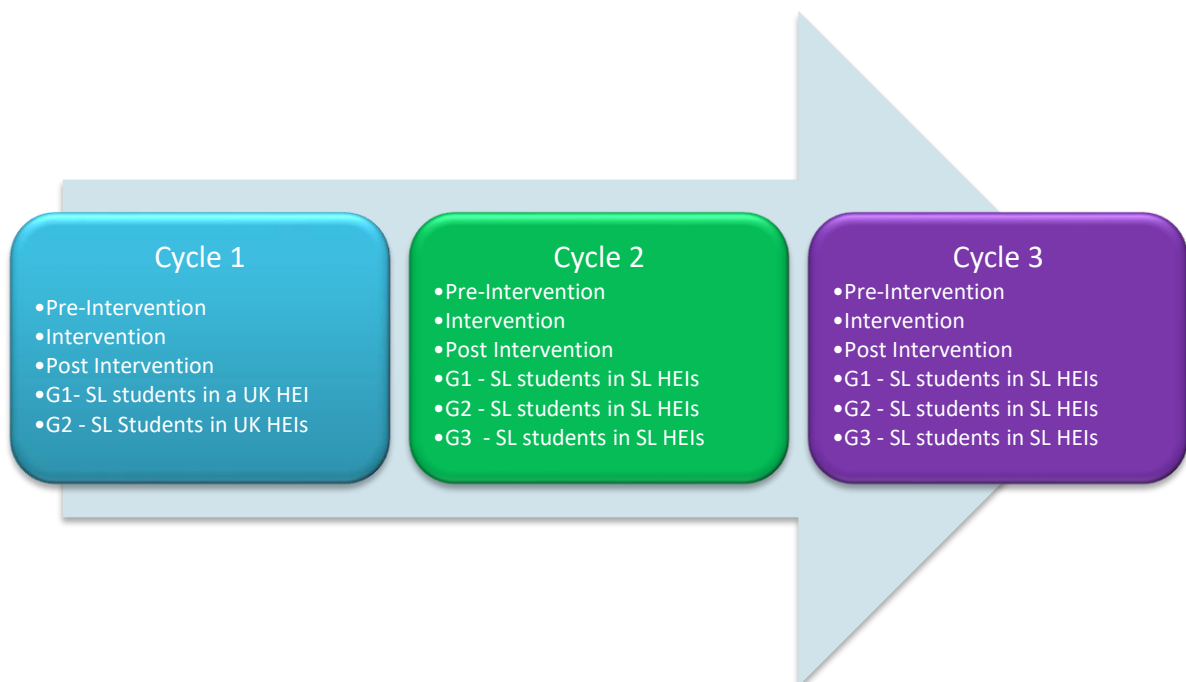


Figure 4.3 Sequence of the Data Collection Process.

Further, the ethnographic method was also considered for the current research to be employed in order to observe and analyse the non-verbal communication cues and signals of the participants.

4.2.5 Ethnography

In this Action Research, ethnography has also been applied as a part of the overall research frame. Ethnography, which is based on inductive methodology is popular among the social science researchers (Saunders et al., 2009). This ethnographic analysis derived from social anthropology enables scholars to deeply explore social phenomena inside the society. The ethnographic analysis methods rely heavily on descriptive analysis, which is based on observations, interviews, and discussions, etc., researchers or data collectors have to thoroughly examine the research phenomenon. However, in the studies conducted based on ethnography, the researchers and data collectors have to thoroughly examine the research phenomenon to better understand any social circumstance in real (Eriksson and Kovalainen, 2008). In contrast to the other methods, ethnographic analysis provides the flexibility to adapt to the research setting. Based on what is being noticed or considered, this method aids the investigators in creating a novel thought pattern (Radway, 1988). Further, ethnography is regarded as one of the most reliable ways for identifying crucial features in daily behaviours/practices and determining how ancient social norms are carried out inside the current communities (Radway, 1988). Hence, this could be used to identify the participants' real behaviours in their educational settings as well.

The researcher focused on the experience and perspectives of the participants in the data collection process that is most appropriate to the research problem of the present study. The interactions between the participants were also observed.

4.3 Structure of Three Cycles and Their Methods in Current Study

This study involves exploring whether developing students in CSCC will enhance, undermine, or have no effect on their social and learning experiences especially focusing on HE online group work meetings. Hence, under the Action Research approach, three main cycles were conducted to answer the research questions. There were three main phases conducted in each cycle to better investigate and answer the research questions: Pre-intervention, Intervention, and post-intervention. This study implements a mixed method to collect and also to analyse the data. The structure of each cycle and their methods are discussed in detail next.

All cycles consisted of three main phases. All sessions for each group have been conducted online using MS Teams in Cycles 1 and then, due to access problems in Sri Lanka, in Zoom for Cycles 2 and 3 (see Section 4.4.3 for change of Teams to Zoom platform).

4.3.1 The Pre-Intervention

Each group was comprised of four students. The procedure applied in this study is outlined below.

a. Video Recorded Pre-Intervention Group Work Meetings (PreIGMs)

During the Pre-intervention, four students per group participated in Task-focused Group Meetings online as follows and were video-recorded.

-
- The group decided the order of presenting their journal articles at the initial point and then, each group member presented a self-chosen journal article from their own STEM field to the group.
 - After that, all group members joined the follow-up group discussion of the presented journal article where the whole group discussed it.

This procedure was repeated by all four group members in each group.

b. Video Recorded Pre-Intervention Focus Groups/Interviews (PreFGs)

At the completion of their group work meeting online, all group members took part in a focus group and/or semi-structured interview¹⁸ to explain their lived experiences (in relation to social and learning aspects) of this discussion. These focus groups/interviews were video recorded. Further, group members were invited to compare and contrast their pre-intervention group work experience with any other task-focused group work meetings they had partaken online previously (comprising but not restricted to the changes to the mode of teaching associated with COVID-19 pandemic).

c. Pre-Intervention Online Questionnaires

All group members were invited to fill out two questionnaires online providing them with two separate links to access them. (These two questionnaires were made available via the Online Survey platform). (See [Appendix D](#), pp. 424-435).

¹⁸ The semi-structured interviews were conducted if a group member was unable to take part in the focus group partially or on the whole due to technical difficulty or time constraints.

4.3.2 The Intervention

The intervention session comprised a 90-min developmental training in the development of Cognitive Skills of Compassionate Communications (CSCC) for task-focused online group meetings. During this interactive intervention session, participants were introduced to the key theory of compassion in terms of human brain functioning in particular emotional regulatory systems. This included an explanation of the psychobiological model of compassion (The Compassionate Mind Foundation). Then, the group members were introduced to practical strategies for developing CSCC in online group settings. The design of the intervention session allowed students to understand the science-based rationales for their using the following practical strategies of CSCC to help students demonstrate their full attention to all members in the group:

a. Non-verbal examples.

When speaking to the group: ensuring that attention is paid to the group members through sustained screen gaze and checking their understanding including by observing their faces for signals of e.g., level of interest, understanding or confusion, and then responding appropriately to those signals (e.g., pausing repeating or re-phrasing).

When others speak: Nodding, encouraging (e.g., thumbs up, smiling) including to show agreement and/or understanding; or, indicating lack of understanding, e.g., by facial expression and/or hand waving; or else waving to call for a turn without interrupting (digital or physical hand waves).

NB: Thus, it becomes clear to students why the support of each other's psychological safety, as others protect theirs, requires camera use across the group.

Allowance of reasonable silences to let the group think and process what has been said so far without jumping straight in at the expense of (shyer, and/or international) students hoping to speak.

b. Verbal examples.

Using warm voice tone and addressing group members by their names to:

Intervene in non-contributing behaviours by inviting the quieter student(s) to add their view if they would like to. All other members are equally responsible for offering these opportunities *in this way*, during the group meeting.

If/when a speaker 'freezes' (c.f. threat system activation), others may prompt to help, not opportunistically, take over the talk. Or the speaker in difficulty may ask another for help, e.g., 'could you help me out here please, Shathmi?'

Intervene in monopolising behaviour, by *validating* the monopoliser for a ('useful'/'relevant'/'crucial'/'helpful'/'key'/'interesting') point just made and why it was so (before e.g., going on to invite another to speak, as above).

Thanking/complimenting others for their contributions; with reasons where useful, critically.

Demonstrating in the discussion that close attention was paid to each speaker, e.g., through *relevant* responses, such as questions, points, perspectives and/or ideas.

The above are examples are the key, evidence-based features of compassionate communication strategies (for team meetings) offered during the intervention 90 min intervention session.

c. Interactive aspect of the session. (This was applied in Cycle 2 onwards)

To assist in the learning of these, the interactive component of the intervention session included:

-
- i. Inviting students to explain a group work that had taken part in any of their academic discipline so the others to discuss, so that everyone had the chance to put into practice the above skills during this discussion.
 - ii. The lecturer/facilitator attempted to disrupt the flow of shared discussion as a monopoliser and then as a non-contributor for the group members to employ the above compassionate strategies to address those behaviours effectively. (This was experimented with the students only during Cycle 3)

This intervention session was important to addressing negative group behaviours in particular dismantling monopolising/dominating behaviours, including non-verbal means and without silencing any group member; and non-contributing behaviours, mindfully creating safe spaces for everyone to contribute to the group discussion. Students were guided on when and how to identify and deploy the strategies and how, these strategies could be adapted (from their use in offline groups/teams meeting) to online group meetings in relation to compassion focused theory and suggestions of participants. The researcher was the facilitator to conduct the teaching and developmental training sessions on CSCC to all the groups, hence the facilitator was the same throughout this study. The CSCC intervention session was conducted in English. The lecturer's role in this study was to facilitate the learners' understanding of the theoretical basis for and the practical applicability of CSCC in online group work meetings.

4.3.3 The Post-Intervention

During post-intervention task-focused group meetings (PostIGMs) online, group members were invited to apply the strategies they had agreed to (in the interventions session above), being in the same groups as in their pre-intervention session. The post-intervention session consisted of the following:

a. Video Recorded Post-Intervention Group Work Meetings (PostIGMs)

The same groups (as in pre-intervention) took part in post-intervention group work meetings online.

- After deciding on the order of presenting their journal articles to the group, each group member presented their second journal article selected from their own related to STEM field.
- Then all group members joined the follow-up group discussion in relation to the presented journal article.

This procedure was repeated by all members in each group until all four journal articles were presented and discussed by the group.

b. Video Recorded Focus Groups/Interviews (PostIFGs)

Then they participated in a focus group and/or interviews to explain their lived experiences of the discussion in comparison with the pre-intervention group work meeting as explained above in Section 4.3.1 so that the results between pre-and post-intervention could be compared.

c. Online Questionnaires

All group members were provided with two separate links again to access the same two questionnaires (which were filled out in their pre-intervention) online. (These two questionnaires made available on the Online Survey platform and can be found in [Appendix D](#), pp. 424-435). Hence, the results between pre-and post-intervention could be compared.

The three phases of each cycle can be represented graphically as follows:

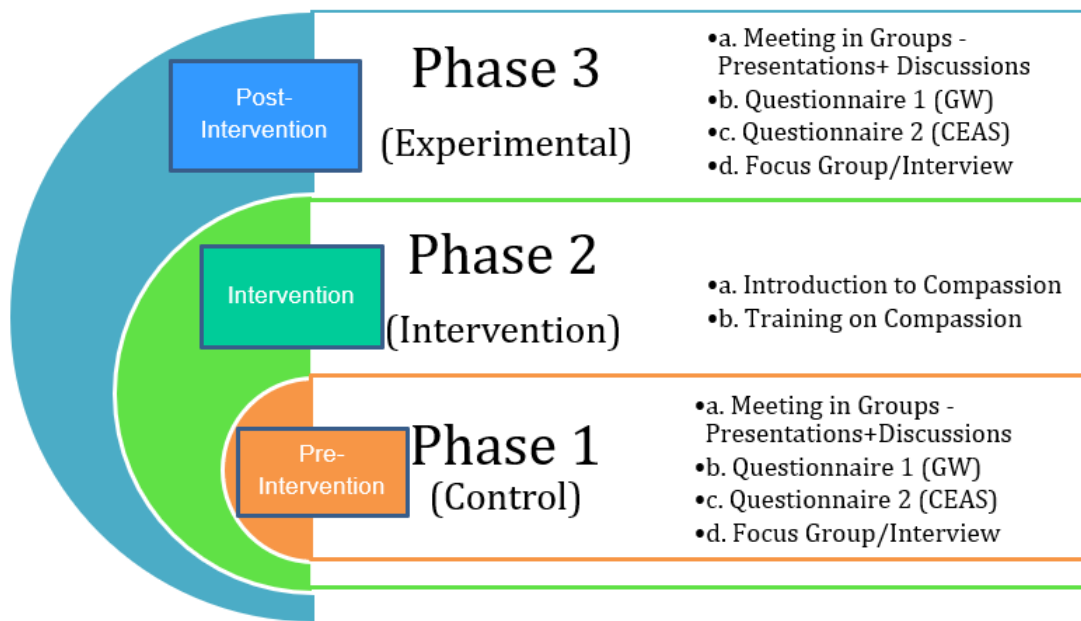


Figure 4.4: The Three Phases of a Cycle of the Current Research.

4.3.4 The Rationale for Employing Separate Subject-Related Journal Articles for Group Work Meetings in This Study

Each Participant was asked to select any of two separate journal articles related to their subject area to be presented and discussed in the pre-intervention and the post-intervention group meetings. Hence, every member came to the group meeting with a separate journal article which differed from the usual design of the discussion groups conducted in HE where the lecturer usually gives the students only one research article to be discussed in the group.

This was done intentionally as this design of the group work allowed.

- students to search for current research on their field of study,
- students to select any journal article of their own interest but still relevant to their field of study,

-
- c. everyone to bring new knowledge so that each of them has new knowledge to disseminate within the group (thus, ownership of knowledge is there with everyone group member, so they can share that with the group).

Consequently, eight separate journal articles (four articles for the pre-intervention group meeting and four for the post-intervention group meeting) were discussed in two group meetings that were part of the data collection without being limited to one article/content for each group in each cycle. This helped to avoid the effects of participants being more confident or more expressive because they had already discussed the content. For this reason, having two different articles discussed by each member for two group meetings (pre-and post-intervention) was favoured since this ensured a like-for-like comparison between the pre- and post-intervention group discussions in this respect.

4.4 Sampling and Data Collection

Data collection was conducted both qualitatively and quantitatively before, during and after the CSCC intervention session. The sampling methods of the study are described next.

4.4.1 Sampling Methods

To recruit the study sample for Cycle 1, the following methods were employed:

- a. posting a poster ([Appendix H](#), p. 654) on social media sites inviting students to take part in the study.
- b. emailing the poster to the Students' Unions of the UK universities requesting them to circulate it among the Sri Lankan STEM students.

-
- c. emailing the poster to friends asking them to circulate it among their friends who study in UK universities.

Here, for Cycle 1, convenience sampling was the main method used to select the participants. As McCombes (2019) suggests, convenience sampling is often suitable for investigative research where the aim is not to assess a hypothesis about an extensive population but to enhance a preliminary understanding of a population which is under-researched or small. However, for Cycle 1 maximum variation sampling was also employed to ensure a balanced representation (i.e., as proportionate as possible) of genders and ethnicities.

To recruit the sample for Cycles 2 and 3, the following methods were employed:¹⁹

- a. a poster was designed explaining the project. This was emailed, together with a volunteer participants registration link, to all Departments Heads and/or Faculty Deans in five ($n = 5$) Sri Lankan universities. All of them agreed to circulate the poster and the registration link amongst their second-year STEM students.²⁰
- b. After volunteer participant students had registered via a link, the necessary strata (gender and membership of either the Sinhalese, Tamil, and Muslim groups in SL] were identified and their status as STEM students checked.

The researcher contacted the participants individually to meet them online to ensure that,

- i. each student was willing to read two articles related to their degree programme in preparation for the study – one article for the pre-intervention discussion and one for the post-intervention discussion.

¹⁹ Permission for collecting data from their STEM student bodies had first been given, in writing, by all participating universities.

²⁰ In each of these universities, a central English Language teaching department (or faculty) serves students across the whole university. In the two other universities, this was not the case. Instead, each separate faculty or department had its own in-house use English language teaching team.

-
- ii. possible dates when they might be available could be identified.
 - iii. the internet connection and technical equipment were adequate for participation in the study. When my meeting showed this was not the case, I thanked the volunteer participant, released them from the offer, and contacted an alternative suitable participant instead.²¹

Stratified sampling (Thomas, 2020) was combined with maximum variation sampling (Cohen, 2006). This was for a balanced representation of all target groups (Muslim, Sinhalese, and Tamil) and gender²². Stratified sampling allows the researcher to draw more accurate conclusions by ensuring the proper representation of every sub-group in the study sample.

As Thomas (2020) outlines, stratified sampling helps ensure a reflection of the diversity of the target population. Patton (2001) points out that employing more than one sampling technique can be essential if the research questions are to be addressed properly, as is the case in this study.

4.4.2 Data Collecting Methods

Primary data were collected through five tools: video recordings of all the group work meetings, focus groups/interviews, ethnographic field notes, and two questionnaires (questionnaire on previous group work experiences, compassionate engagement, and action scale) before and after the CSCC intervention session.

²¹ While this was no guarantee that there would be no internet connection problems during the study, it helped to reduce the risk of this.

²² Sri Lanka's University Grants Commission (UGC) (2020) identified that females made up 49% of undergraduates enrolled in STEM subjects in Sri Lankan universities compared to 35% globally.

4.4.2.1 Video Recorded Group Work Meetings

Video recordings were made while students were engaged in their pre-and-post-CSCC intervention session. Discussion groups comprised four participants. This is in keeping with extant research on optimal task-focused, discussion group size for classroom discussions with the peers (Apedoe et al., 2012; Corr g  and Michinov, 2021; Vujovic et al., 2022). The behaviours (for example group monopolisers/dominators/over-talkers, and/or quiet/non-contributing students) are both understood in group psychotherapy to often be the result of anxiety (Yalom and Leszcz, 2005). This was a key guiding principle for conducting the study sensitively. Along with any other possible critical (behavioural) incidents such behaviours, and how they are mediated by unfolding interactions in the group, were identified in the video recording footage. Then these were transcribed verbatim and inserted into NVivo (Pro 12) software for analysis.

4.4.2.2 Video Recorded Focus Groups/Interviews

The focus groups/the interviews (semi-structured) were conducted with the students immediately after their PreIGM and PostIGM to further explore individuals' social as well as learning experiences of group/teamwork and their own explanations for this. These were video recorded. Then these were transcribed verbatim and imported into NVivo Pro 12 for analysis.

4.4.2.3 Ethnographic Field Notes/Observation Field Notes

All video-recorded discussions and the focus groups/interviews were carefully analysed to identify the paralinguistic features of the participants to analyse the ethnographic aspect. Further, the research used observation field notes while the participants engaged in the group meeting and the focus group to note down any critical incidents or/and behaviours of the participants.

4.4.2.4 Questionnaire 1 on Group Work Behaviours (GW)

Questionnaire 1 on Group Work Behaviours (see [Appendix D.1](#), p. 624) implemented in both pre- and post-intervention explored the experiences of group members related to the common group behaviours that had been cited by the host university staff and students—in their experience—most destructive to the effectiveness of physical face-to-face group work meetings (T. Gilbert, 2016). In research of students from two UK universities across four disciplines in relation to offline group meetings, both T. Gilbert (2016, 2017, 2018), and Harvey et al. (2020) had recognised that monopolising (speaking so much in the group meetings that other group members have little or no chance to speak) and non-contributing (not contributing to the group communication or speaking very little in the group meetings) were the two group behaviours that undermined inclusivity and group's critical thinking the most in physical face-to-face group meetings. However, it was unclear whether or not meeting online alter responses towards exhibited behaviours, thus this required to be explored. Additionally, two Likert scale questions were added related to students' confidence in engaging in group meetings (University of Hertfordshire, 2020). Moreover, there were some questions to explore participants' demographic information and their perceived level of proficiency in English language.

4.4.2.5 Questionnaire 2 on Compassionate Engagement and Action Scale (CEAS)

The Compassionate Engagement and Action Scale (CEAS) developed by the Compassionate Mind Foundation was employed in this study (see [Appendix D.2](#), p. 628). This questionnaire was used to identify participants' levels of self-compassion [which strongly contrasts with the competitive individualistic element of self-esteem (Neff, 2007; Kingston, 2008)] compassion given to others and sensitivity (recognition) to

compassion received from others. All three types of compassion are identified to mediate one another (The Compassionate Mind Foundation).

Participants were asked to rate each statement of the Compassionate Engagement and Action Scale according to the frequency of its occurrence on a scale of 1 to 10 (1 = *Never*; 10 = *Always*). This questionnaire was implemented in the current study considering the focus of compassion; 'compassion given to others,' 'sensitivity to compassion received from others' and 'self-compassion' which are significant to be discovered among students who belong to culturally, ethnically, and socially diverse backgrounds. Further, the statements used in these scales indicate a more realistic approach as they consisted of both positive as well as negative statements. The researcher believed that participants would not be embarrassed or confused as the scale's questions and statements were clear and precise and no questions regarding sensitive issues pertaining to ethnic or religious backgrounds were included.

These two questionnaires were created in Online Survey (previously known as Bristol Online Survey - BOS) and the resulting links were sent to participants immediately after they had taken part in their first (pre-intervention) and final (post-intervention) group discussions.

4.4.2.6 Measures/Scales for Compassion - Rationalizing

There are several measures found in previous studies on the topic that are widely available and used in line with compassion-focused scholarly works in an array of fields (Allen and P. Gilbert, 1995; Crocker and Canevello, 2008, 2012; Neff, 2003; P. Gilbert, 2017). These measures were thoroughly studied and only two were selected (refer to the Sections above 4.4.2.4 and 4.4.2.5 for a discussion of the selection and appropriateness of these measures) for the current study, as other measures were decided to be

inappropriate for the current study. The reasons for deselection and the inappropriacy of the measures are explained in detail below.

4.4.2.6.1 Measures Deselected for Current Study

1. Social Compassion Scale

This social compassion scale was created in order to determine self-perception of social rank and relative social standing (Allen and P. Gilbert, 1995). This 11-item scale employs a semantic differential methodology. Respondents are required to rate themselves on a ten-point scale after comparing them globally to other individuals (e.g., *In relation to others, I feel: 1 = incompetent, 10 = competent, 1 = undesirable, 10 = desirable*). As indicated by Allan and P. Gilbert (1995, 1997), this scale has been discovered to have high reliability with both population, clinical and students.

However, this scale was not selected for the current research since the wording of the items might trigger certain sensitivities among students. For example, the current study sample consisted of different ethnic and cultural groups of students, they might be more sensitive to the wordings such as; *1 = undesirable, 10 = desirable* and may become confusing when asking themselves ‘desirable in which context?’ as this might imply different circumstances to the participants from diverse ethnic and cultural backgrounds.

2. Compassionate Love Scale

This measure is consisted of two versions: one focusing on family and friends and the other one focusing on strangers (Sprecher and Fehr, 2005). This measure was not used in the current study as the concept of love as defined in western context, “usually implies liking, wanting to be close to, and enjoy” and is different from compassion (P. Gilbert et al., 2017, p. 5). Love, however, has a different meaning and definition in the Buddhist

context, namely “wishing all beings to be free suffering and find happiness” (Ricard, 2015) which is more closely related to compassion than the western understanding of the term.

P. Gilbert et al. (2017) state that the “more powerful forms of compassion are for the people we *may not like* and certainly do not love. It is similar for ourselves; compassion for the things that we dislike in us may be more difficult than the things we accept. So, love (in a lay-western context) is a different construct from compassion” (p. 5).

3. Measuring Compassion for Others through Self-image and Compassionate Goals

This approach focusing on the desire to help others was developed to assess compassion given to others by Crocker and Canevello (2008, 2012). Students were asked to assess their level of engagement in “compassionate” goals such as wanting to be supportive to others and being sensitive towards their necessities. These motivations were compared by Crocker and Canevello (2008, 2012) with “self-image” goals, such as wanting other people to perceive you are correct and prevent displaying own mistakes. However, as P. Gilbert et al. (2017) suggest, “these two motivations were clearly related to different social and mental health outcomes. Compassionate goals were linked to feeling connected, low conflict, and better mental health than self-image goals. Self-image goals tended to be negatively related to these outcomes” (p. 5). As indicated by Crocker et al. (2010), certainly, the more self-centred, shame-centred, and competitive people are more likely to suffer from depression. Thus, this approach was not employed in the current study as the current study is not about mental health outcomes.

4. Self-Compassion Scale

This widely employed Self-Compassion Scale (SCS) (Neff, 2003) uses bipolar constructs: kindness vs self-judgement, common humanity vs isolation, and mindfulness vs self-absorption/over-identification to measure self-compassion. As recognized through research, poor self-compassion scores are substantially connected with depression (Neff, 2015), shame, self-criticism, and paranoia (Mills et al., 2007) and mental health difficulties (Costa et al., 2015; MacBeth and Gumley, 2012; Neff, 2007) post-traumatic stress disorder (Hoffart et al., 2015). However, there is debate about these constructions and how they are measured, especially pertinent to the combination of negative and positive elements into one single construct and scale (Costa et al., 2015; López et al., 2016; Muris and Petrocchi, 2017). One criticism was that one could be high or low on both and still receive the same score. This scale is freely accessible at www.self-compassion.org. In her reviews, Neff also discusses the pertinent issues (Neff and Dahm 2015, Neff and Germer, 2017).

In addition, Neff and Germer (2017) identifies the issue and argues that self-compassion primarily improves positive well-being through enhanced self-kindness, common humanity, and mindfulness linked with a compassionate state of mind which in turn lessens psychopathology through declined self-judgment, over-identification, and isolation. Because of these issues and debates, it was decided to not to use this scale for the current study.

4.4.3 Choosing an Online Platform for Data Collection

For Cycle 1, the online platform used for data collection was MS Teams since this was the recommendation of the host university for all its academic and research activities.

Further, at the time of my data collection, the host university did not have the licence for Zoom. However, for Cycles 2 and 3, the Zoom online platform was used. This is due to the reachability of the study participants from Sri Lankan universities. All Sri Lankan state universities use Zoom platform for online academic and research activities due to its data management features, ease of use, security options, and cost-effectiveness. Moreover, Zoom is advised for critically evaluating and advancing innovations in online approaches (Archibald et al., 2019). Furthermore, Zoom is also recognized as an appropriate tool in the process of collecting qualitative and quantitative data of this study.

4.5 Data Analysis - The Overarching Methodology

Action Research made use of both qualitative and quantitative (mixed) methods throughout all three cycles. This study's qualitative data were analysed using Template Analysis considering its appropriacy for investigations involving applied psychology, as this research study does. It also incorporates some characteristics of Grounded Theory, such as constant comparison of data sets throughout the investigation, however excluding some of the well-documented weaknesses of Grounded Theory (e.g., over-fragmentation of data and avoidance of pre-reading) that would be inappropriate for the current research (see also Sections 4.0 above and 4.5.2.1 below).

4.5.1 Qualitative Methods

Qualitative methods (Template Analysis in particular) were used to analyse data from group meetings and focus groups/interviews conducted online. Micro-ethnographic methodology was also used to analyse non-verbal communications inside the group members recorded online group meetings. This enabled the study of group behaviours

from sample to sample (for example of, possibly, group monopolisers/dominators/over-talkers, and/or quiet/non-contributing students which are both understood in group psychotherapy [Yalom and Leszcz, 2005]) to often be the result of anxiety. This is a key guiding principle for conducting the study sensitively. Along with any other possible critical (behavioural) incidents (see Section 3.2 in Literature Review Chapter), such behaviours and how they are mediated by unfolding interactions in the group, were identified in the video footage and analysed using ethnographic methods. The results were compared between the pre- and post-intervention and also between three cycles.

4.5.1.1 *Template Analysis (TA)*

The term Template Analysis (TA) is an approach of analysing the qualitative data thematically. TA was the overarching approach employed in this study to identify significant themes from data including transcriptions of group meetings and focus groups/interviews. Further, TA is recognised as a thematic analysis technique appropriate for research in applied psychology. (King, 1998; 2004; Brooks, 2014). A helpful feature of TA is that, like Grounded Theory (GT), it encourages the researcher to analyse the data and constantly compare them as the data are collected (Lewin, 1946; Strauss and Corbin, 1994). However, Template Analysis does not allow over fragmentation of the data (atomizing into such small pieces) as it can result in the loss of significant themes and which is one of the main criticisms of Grounded Theory (Alvesson and Sköldbberg, 2009). However, this degree of fragmenting of the data cannot be observed in the use of Template Analysis as an approach for data analysis, Template Analysis does admit its obligation to Grounded Theory as comparison of the data constantly. Therefore, within fewer atomised data, constant comparison conducted

within data from up to 04 participants per discussion group and focus group remains manageable.

TA entails developing a coding frame 'template,' which organises the themes recognized by the researcher(s) as significant in a data set, in an effective and meaningful manner. Hierarchical coding is underlined using broader themes encompassing sequentially narrower, more specific ones.

TA allows for the researcher to start with highly pertinent a priori themes. However, these themes may be dispensed or modified if they do not provide evidence to be appropriate or useful to the actual data being reviewed. After defining priori themes, the next phase in the data analysis is to read through the data and mark in some manner any sections which seem to provide information that is pertinent to the research questions. If not, new themes are created to incorporate the relevant information and organised into a preliminary template. This approach is often used following preliminary coding of a subset of data, for example, carefully reading and then coding the first three of 32 transcripts in this research. The entire data set is then applied using this first template, which is changed after carefully examining all transcripts. After coding all the transcripts to the template and determining the final version of it, this template serves as the framework for investigator to complete the writing up of the study findings through illumination or interpretation of the data (King, 2004).

NVivo (Pro 12) software was employed to support the data coding for TA. All transcripts of group work meetings and focus groups related to both the pre-and the post-intervention were uploaded into NVivo (Pro 12) for analysis (see Section 4.5.1.3 below). Micro ethnographic methods have been used as part of TA to analyse the online group meeting data. This facilitates the study of group behaviours from sample to sample. Any

critical instances (interactions of note) and how those incidents are mediated by unfolding interactions in the group are identified in the recorded online meeting footage and then analysed. The results have been compared between both pre-and post-intervention in each cycle.

However, many scholars have doubted using qualitative methods in scientific investigations due to issues related to validity and reliability (Marshall and Rossman, 1995; Patton, 2002). Triangulation has been recommended to address these issues by the researchers (Thurmond, 2001; Wilson, 2014). Triangulation enables a researcher to investigate convergence and collaboration in order to offer credibility for a study's conclusions (Bowen, 2009). In this study, the group meetings and semi-structured focus groups/interviews of Sri Lankan students in higher education in STEM fields were used as the primary qualitative data collection methods, and alongside these were the results of ethnographic observations of these and of the questionnaires in order to build good base for the triangulation of all results.

4.5.1.1.1 Pre- and Post-Intervention Group Work Meetings (PreIGMs, PostIGMs)

Student group work meetings conducted during pre- and post-intervention were video recorded and transcribed. Then the transcripts of pre- and post-intervention group meetings were uploaded into NVivo. The transcripts were separately analysed (for pre- and post-intervention) by applying TA. The data coding was conducted using NVivo (Pro 12) to identify the themes (see Section 4.5.1.3). Next, the emergent themes from the pre-intervention group meetings were compared with the themes that emerged from the post-intervention group meetings.

4.5.1.1.2 Pre- and Post-Intervention Focus Groups/Interviews

The focus groups/interviews conducted after each pre- and post-intervention group meeting were also video recorded and transcribed. All these transcripts were inserted into NVivo (Pro 12), and the coding of data was conducted employing the same procedure as above (see Section 4.5.1.3).

4.5.1.2 Ethnographic Analysis

Ethnography is popular amongst social scientists (Saunders et al., 2009) and developed from social anthropology and allows scholars to study the individuals and their culture in a more explorative manner.

Ethnography came to refer to a combination of first-hand investigation and description of cultures, and the theoretical interpretation of the data this produced. (Hammersley, 2015, p. 1).

The ethnographic analysis method enables scholars to explore the subject being studied through descriptive terms (Radway, 1988). Ethnographic methods achieve a thick, rich analysis of qualitative data (ibid). Additionally, it enhances the research experience by adding richness and texture (Hannabuss, 2000). Hence, for this study, a close analysis of group work behaviours of students was conducted using McDermott's (1988) micro-ethnographic methodology (repeated close observation by the researcher). This was possible with the video-recordings of group meetings before and after the intervention. The micro-ethnographic field notes taken during the group meetings were re-visited from the video recordings.

Specifically, McDermott's methods were used in this study to analyse the video-recorded student behaviours, second by second, in their pre and post CSCC intervention group work meetings.

To be clear, the analysis was conducted, second by second, on the video recorded behaviours of:

- a. Each group member when presenting their journal article to the group (presenters).
- b. The remaining three group members (when one member is presenting) during each presentation (listeners).
- c. All four students during the immediate follow-up group discussion after presenting each article (discussants).

The video recordings were repeatedly trawled to non-verbal communications as not to miss any of them. Then, all evidence of non-verbal communication (e.g., smiling, nodding, screen gaze, long silences, giving a thumb up) was manually added to these transcripts at the seconds/points that they occurred.

Then, from this qualitative data, it was possible to draw out particular themes that appeared most aligned with the group's overall behaviours and compared before and after the 90-minute CSCC intervention session. The researcher repeatedly observed the video recordings to closely analyse any critical occurrences (interactions of note), and how the group members responded to them throughout unfolding the group's interactions. Then results of these qualitative analyses on both pre-and post-intervention group meetings were compared to investigate whether there were any changes in group members' behaviours in terms of individual and/or group after the CSCC intervention session.

Among its features are first, methodical attention to nonverbal and listener behaviours simultaneously, second, a thematic focus on mutual, simultaneous, and successive influences among participants in interaction, the construction of labile situated social identities, and the management of culture difference (Garcez, 1997, P. 188).

Micro-ethnography helps identify how interactions are organized socially and culturally in specific contextual settings.

4.5.1.3 NVivo (Pro 12) Analytical Tool

NVivo has become a popular qualitative data analysis software among the researchers who use qualitative data worldwide due to its user-friendliness and the powerful coding techniques. Further, this software was chosen as an analytical tool as it offered an additional way (for triangulation purposes) to code transcriptions (Boyatzis, 1998) where they indicated critical incidents within the overall TA process.

The three main steps of analysing the qualitative data collected through group meetings' source files transcriptions are as follows:

4.5.1.3.1 Open Coding / Free Coding

Exploring the primary content is the main purpose of open coding. This is carried out through reading and re-reading the transcripts and breaking data into discrete components without interpreting those codes (King and Horrocks, 2010). In this study, not to miss any key related information, the line-by-line coding was performed.

4.5.1.3.2 Axial Coding / Categorical Coding

The second phase of the coding process involved in categorizing the open codes based on the relevant literature. Reading through the transcripts and analytically sorting data into categories. This process comprised constant comparisons with other codes to ensure that only related codes are grouped together, thereby presenting the most appropriate and informative meaning (King and Horrocks, 2010).

4.5.1.3.3 Developing Themes

The final phase of Template Analysis involves allowing major themes to emerge. As explained by King and Horrocks (2010), the broader themes which cover different aspects of the considered theme emerge in this stage. Furthermore, it should be able to disclose the study's fundamental principles, elements, and characteristics. Furthermore, emerging of themes is regarded as a process comprised of "defining and refining" (Braun and Clarke, 2006). In this study, the emergent themes were first included in tentative coding frame and then discussed with a senior researcher. Thereafter, the coding frame which comprised of all emergent themes was finalized.

Although the TA using NVivo has been presented above in simple terms, it requires time, patience and energy since the same transcripts had to be read and reread several times in order not to lose any single significant item or idea. Moreover, the entire methodology of data processing was iterative (Stepchenkova et al., 2009). In other words, this means revisiting the data several times and making changes to the initially identified levels of codes during the coding process. Finally, this constant reviewing and making changes to the coding structure in the data analysis process resulted in a strong coding hierarchy (frame).

4.5.2 Data Analysis Methods Considered but Deselected

The TA was not the only method considered for the study as several data analysis methods were considered before selecting one. However, the following methods were rejected for the current study considering the inappropriacy which is reasoned out next.

4.5.2.1 Grounded Theory

Even though the researcher considered using Grounded Theory (GT) by Glaser and Strauss (1967) to recognise themes in data, it was not used due to some weaknesses as mentioned above (see Section 4.0). For the reasons outlined below, Template Analysis was chosen as the data analysis method instead.

Designing of the initial study was supported with previous literature research. The theoretical base to interpret the data generated and analysed through the research was accumulated from the literature findings. Concerning Grounded Theory, fundamental disregard for literature findings is considered to present too great a risk for comprehensive theory building.

4.5.2.2 Content Analysis

Content analysis (CA) is a technique for condensing large amounts of writing into fewer classifications through coding (Kleinheksel, 2020). Coding is used to identify the meaning of the messages in texts, videos, audios, or images. Assigning labels for these units of meaning is referred to as themes. These identified themes are then grouped together into different categories that are relevant to each other through their context or content. However, this method was not selected for analysing data in the current research because of the weakness of this method: causality cannot be established, since working with textual data alone tends to disregard the context. Due to these drawbacks, research may fail to meet its objectives and content analysis cannot extract any deeper meaning or clarification for the data patterns rising as it only describes the data. Hence Template Analysis was favoured for analysis purposes of this study data.

4.5.3 Quantitative Methods

The quantitative data collected from the group meetings before and after the CSCC intervention related to screen gaze behaviour of the students were analysed employing three methods as follows.

- a. Wilcoxon Signed-Rank Test was employed using the R programming language to statistically analyse the respondents' pre- vs post-intervention screen gaze behaviour.
- b. R Plots were created to analyse and then visually represent group members' screen gaze behaviour individually during each journal article presentation and follow-up discussion. This was done for both pre-and post-intervention group meetings to make the comparison.
- c. Microsoft Excel Scatter charts were generated to identify each group's average percentage screen gaze during each presentation and follow-up discussion in both pre- and post-intervention group meetings.

Further, data collected through two questionnaires after the pre-and post-intervention group meetings were analysed using SPSS (version 27) software to investigate whether there is/are any differences of students' group behaviour and compassionate actions before and after the CSCC intervention session.

4.5.3.1 R Programming Language — Wilcoxon Signed-Rank Test

R was employed to analyse the screen gaze data of each participant per presentation and follow-up discussion during pre-and post-intervention group meetings.

Wilcoxon Signed-Rank Test was administered using R to explore if there is any statistically significant difference of respondents' screen gaze behaviour during pre- and post-intervention group meetings.

The Wilcoxon Signed-Rank Test developed in 1945 by Frank Wilcoxon is a nonparametric²³ equivalent to the (parametric) paired samples t-test. Two dependent samples with ordinal data are compared using the Wilcoxon Signed-Rank. However, it does not assume normal distribution in the data while the paired sample t-test does and is therefore inappropriate in the data of this study since they do not meet the prerequisites regarding the normal distribution of the population (the distribution of the current study data [i.e., students' screen gaze behaviours] cannot be assumed).

Moreover, as highlighted by King and Eckersley (2019), even though the sign test can be employed to test both one-sample and two-sample paired data, the Wilcoxon Signed-Rank Test is more effective than the sign test for both of the tasks since it considers the magnitudes of the differences rather than just their signs. In the current study, the Wilcoxon Signed-Rank Test is performed to compare two sets of data from the same respondents. However, three assumptions have to be verified in order to enable the test to be performed (to qualify for administering this test) to obtain valid results (Laerd, 2018).

Assumptions

1. The dependent variable should be measured at the ordinal or continuous scale. Here ordinal variables include Likert items (e.g., from *strongly agree* through to *strongly disagree*), and ranking categories (e.g., from *Never* to *Always*). Continuous variables refer to the numerical variable whose value is attained by measuring. These variables can take almost any kind of numerical value and can be further

²³ Non-parametric tests are performed when a specific distribution cannot be assumed, and they rank data rather than taking absolute differences into account.

divided into meaningful smaller increments including decimal and fractional values. Continuous variables are measured generally on scales such as temperature, height, and weight etc.

2. The independent variable has to consist of two categorical, related groups or matched pairs. The presence of the same subjects in both categories indicates that they are in related groupings. Because each subject has been assessed twice on the same dependent variable, it is conceivable to have the same subjects in each group.
3. The distribution of the differences between the two related groups requires to be symmetrical in shape. However, even if the data fails to meet this assumption, often there is a resolution to circumvent it, for example, transforming the data to obtain a symmetrically-shaped distribution of differences or conducting a sign test as a replacement for the Wilcoxon Signed-Rank Test.

Table 4.1: Three Assumptions Fulfilled to Run the Wilcoxon Signed-Rank Test to Compare Pre- vs Post-intervention Screen Gaze of the Group Members.

Assumption	Screen Gaze
1	Time measured in seconds.
2	Same participants present for both pre-and post-intervention presentations + small group discussions.
3	Since time durations spent by group members (pre- vs post-intervention) on presentations and discussions were different, all time durations of presentations and follow-up discussions were converted into percentages. Then these percentages were used to compare pre- vs post-intervention screen gaze of each group member.

The screen gaze data of this study pass all three assumptions as demonstrated in Table 4.1. Moreover, considering the sample size and being non-parametric, the Wilcoxon Signed-Rank Test was selected as the most suitable statistical test to analyse data as used in Révész et al. (2019).

Then the following steps were conducted:

1. Forming null hypothesis and alternative hypothesis and then choosing a degree of confidence. The null hypothesis refers that the median of the population of differences between the paired data is nil or zero. In contrast, the alternative hypothesis refers that it is not.
2. Compute the test statistic. This is done through feeding the pre- and post-intervention data into R.
3. Comparing the test statistic to *p value* which is the critical value. If the test statistics are less than the *p value*, then the null hypothesis is rejected and the alternative hypothesis is accepted.

4.5.3.1.1 Screen Gaze

There were three main steps applied to formulate screen gaze numerical data sets prior to include in analytical software.

1. Data were first derived from second-by-second scrutiny²⁴ of every student's video recorded screen gaze behaviour i.e., throughout every presentation (presenter

²⁴ Throughout this study, breaking screen gaze for just one second was not counted as a 'break' in screen gaze attention. This behaviour of thinking or pausing or blinking was not likely to be perceived by the other students as a break in attention to them as it was too brief and was not seen to disrupt the flow of communication.

and three listeners) and every group discussion (four discussants) during both the pre-and post-intervention task-focused group work meetings.

2. The duration of every presentation and each follow-up discussion was converted into percentages for comparative purposes. This was to remove any impact of differences in length of the pre-vs post-intervention group work meetings.
3. Then, two numerical data sets (pre- and post-intervention screen gaze) per each presentation and each follow-up discussion for each group member in each group were compiled in Microsoft Excel file for each cycle.
 - a. Total of 16 data sheets²⁵ were created for Cycle 1.
 - b. Total of 24 data sheets²⁶ were created for Cycle 2.
 - c. Total of 24 data sheets²⁷ were created for Cycle 3.

These initial data sets were used to prepare the required formats of data sets to conduct quantitative analysis of screen gaze behaviour of the students using R and Microsoft Excel as explained next.

To perform the Wilcoxon Signed-Rank Test in R, pre- vs post-intervention data on percentage screen gaze per each group member considering their roles during the presentations as 'presenters,' 'listeners' and then during follow-up discussions as 'discussants' were identified. Then these pre-vs post-intervention screen gaze data were analysed statistically employing the Wilcoxon Signed-Rank Test. This analysis helped to

²⁵ One data sheet per each presentation (presenter + 3 listeners) and per each follow-up discussion (4 discussants) was created including both pre-and post-intervention numerical data per each group member. $16 = 2$ (Presentation + follow up discussion) * 4 (members per group) * 2 (Groups).

²⁶ $24 = 2$ (Presentation + follow up discussion) * 4 (members per group) * 3 (Groups)

²⁷ $24 = 2$ (Presentation + follow up discussion) * 4 (members per group) * 3 (Groups)

identify the differences (increase/decrease or no effect) in screen gaze behaviour of the group members between pre- vs post-intervention group work meetings.

Each student presented a journal article (self-chosen) and then took part in follow-up discussion in each session before and after the CSCC intervention session, therefore presenters were independent of listeners. Each student is considered an independent data point. The hypotheses were developed as below:

Null hypothesis (H_0) - There is no difference in students' screen gaze behaviours that could be attributed to the CSCC intervention.

The alternative hypothesis (H_1) - There is a difference in students' screen gaze behaviour that could be attributed to the CSCC intervention.

4.5.3.1.2 Students' Presentations — Screen Gaze

Percentage screen gaze of every presenter and every listener in relation to the pre-and post-intervention group presentations in each group and each cycle were fed into R. These data were quantitatively analysed using Wilcoxon Signed-Rank Test to identify and compare the overall average screen gaze behaviour of each student before and after the CSCC intervention session. This data analysis facilitated to explore whether there was any statistically significant difference or not between the screen gaze behaviour of the individual group members when they present and listen to the presentations before and after the CSCC intervention session.

4.5.3.1.3 Students' Follow-up Group Discussions — Screen Gaze

The same procedure as above (Section 4.5.3.1.2) was applied to analyse the screen gaze behaviour of every discussant related to the pre-and post-intervention follow-up group discussions. After feeding pre- and post- intervention screen gaze data related to each discussant into R, a Wilcoxon Signed-Rank Test was carried out to identify and compare

the overall average screen gaze behaviour of each discussant before and after the CSCC intervention session. This data analysis facilitated to explore whether there was any statistically significant difference or not between the screen gaze behaviour of the individual group members during their follow-up group discussions before and after the CSCC intervention session.

4.5.3.2 R Plots to Analyse Individual Group Members Screen Gaze Behaviours Before and After the Intervention

Screen gaze data of each presenter and their listeners during each pre- vs post-intervention journal article presentation were fed into R to create plots to analyse and visually represent the screen gaze behaviour of group members individually during each presentation. Then the pre-vs post-intervention screen gaze data of each discussant during each follow-up discussion were also fed into R in order to analyse and visually represent each group member's screen gaze when they perform the role 'discussant' during their pre-vs post- intervention follow-up group discussions.

4.5.3.3 Microsoft Excel

Microsoft Excel was used to analyse and graphically illustrate the average screen gaze results of each group during each presentation and each follow-up discussion before and after the CSCC intervention session. This Microsoft Excel analysis helped to compare and contrast the group wise as in screen gaze behaviour per group before and after the CSCC intervention session.

4.5.3.4 SPSS Statistical Analytical Tool

Two questionnaires were delivered to participants immediately after they have taken part in their pre-intervention group work meetings and then again after the post-intervention group work meetings. Both questionnaires were set up on Online Survey

(BOS) and the link to these questionnaires were sent (via email or messaging) to participants. The statistical software SPSS (version 27) was employed to analyse the four data sets provided by each group in relation to these two questionnaires. The same questionnaires were employed during both pre- and post-intervention for comparative purposes.

Table 4.2: Three Assumptions Fulfilled to Run the Wilcoxon Signed-Rank Test to Compare Pre- vs Post-intervention Questionnaire Data.

Assumption	Questionnaire 1 (GW)	Questionnaire 2 (CEAS)
1	Likert scale items	Likert scale items
2	Same participants present for both pre- and post-intervention presentations + small group discussions.	Same participants present for both pre- and post-intervention presentations + small group discussions.
3	The same questionnaire was administered before (pre) and after (post) the CSCC intervention session.	The same questionnaire was administered before (pre) and after (post) the CSCC intervention.

Each questionnaire is briefly explained below.

4.5.3.4.1 Questionnaire 1 on Group Work Behaviours (GWB)

Both pre-and post-intervention, questionnaire 1 on Group Work Behaviours (see [Appendix D.1](#), p. 624) is analysed quantitatively employing the Wilcoxon Signed-Rank Test to investigate whether there are any changes or not in their group work behaviours before and after the CSCC intervention session.

4.5.3.4.2 Questionnaire 2 on Compassionate Engagement and Action Scale (CEAS)

This questionnaire (see [Appendix D.2](#), p. 628) data before and after the intervention were also analysed quantitatively employing the Wilcoxon Signed-Rank Test to evaluate possible

changes (if any) in group work behaviours in relation to any or all of the above three aspects of compassion, and as observed/noted by the group, respectively.

These two questionnaires were designed to identify and explore changes, if any, in the respondents' experiences of self and others that might be attributable to the CSCC intervention session for group work meetings conducted online.

All quantitative results from both iterations of both questionnaires, in three cycles of the study, are triangulated with results from all of the qualitative data sets.

4.5.4 Data Triangulation

This study triangulated the data, collected from the use of different data collection tools. As explained by Easterby-Smith et al. (1991), there are four different types of triangulation: (1) data triangulation (when the data collection is done from different sources or at different times); (2) investigator triangulation (when the data collection is done by different researchers independently); (3) theory triangulation (when a theory from one discipline is chosen and used to explain a phenomenon in another discipline); and (4) methodological triangulation (when multiple methodologies, including qualitative and quantitative techniques, are used to investigate a single matter. The selection of scientific measures and strategies that do not share the same methodological weakness (devoid errors and biases) is critical to triangulation (Decrop, 1999). The validity of the research findings is increased if the findings from different methodologies are comparable and yield similar results (Thurmond, 2001). In relation to Easterby-Smith et al. (1991) the current study employs (1) data triangulation, (4) methodological triangulation and to a certain extent (3) theory triangulation, i.e., in this study triangulation of theory from psychology, sociology and pedagogic theories).

4.6. Cycle 1

In Cycle 1, a total of two groups comprised of 8 students (4 from a single UK HEI and 4 from multiple UK HEIs) participated in the study.

Key: Cycles 1, 2, 3

CS - Computer Science

En. – Engineering

FG - Focus Group

F – Female

IC - Introduction to Compassion

Int - Interview

M – Male

Q1 - Questionnaire 1

Q2 - Questionnaire 2

GM - Small Group Discussion

SECS - School of Engineering and Computer Sciences

STEM - Sciences, Technology, Engineering and Mathematics

DTC – Developmental Training on CSCC

4.6.1. Participants

Cycle 1 - (Group 1)

Table 4.3: Student Participants – (Cycle 1, Group 1).

Students	S1	S2	S3	S4
SECS	En.	En.	CS	CS
Level	UG	UG	PG	PG
Gender	M	M	F	M
Ethnicity	Sinhala	Sinhala	Sinhala	Sinhala ²⁸

²⁸ Due to an examination matter, the female Tamil student who consented to participate in this group could not attend the group meeting. Hence, a Sinhala male student had to replace her.

Cycle 1 - (Group 2)

This consists of students from multiple universities in the UK.

Table 4.4: Cycle 1 Student Participants – (Cycle 1, Group 2).

Students	S5	S6	S7	S8
STEM	En.	CS	IT	Sci
Level	UG	PG	PG	UG
Gender	M	F	M	M
Ethnicity	Sinhala	Tamil	Sinhala	Muslim

Table 4.5: Student Participants by Stages and Data Collection Methods (Cycle 1).

	Pre-Intervention					Intervention		Post-Intervention				Total	
	Q1	GM	FG	Int	Q2	IC	DTC	GM	Q1	FG	Int		Q2
Steps	8				8				8			8	
Questionnaire	8				8				8			8	
Participation	8	8	8	1	8	8	8	8	8	8	1		8
Video recording		√	√			√	√	√		√	√		

Total number of participants: $n = 8$.

4.7 Cycle 2

This cycle consists of three student groups each comprised of four students from multiple universities in Sri Lanka.

4.7.1 Modifications to Cycle 2

What emerged from Cycle 1 for the development of the methodology to be more appropriate to the delivery of CSCC intervention session online into the Cycle 2 is recognized (as per Action Research discussed in Section 4.2) as follows:

Table 4.6: Methodological Amendments after Analysing Cycle 1 Data.

Amendments	Rationale
1. Change of Platform from MS Teams to Zoom	<p>Due to the COVID-19 pandemic, the unexpected and unpredictable circumstances have made the whole Sri Lankan education system to be shifted online to secure the health and wellbeing of the teachers as well as students while continuing the educational process without being disrupted. With the closure of all academic institutes (including 15 state universities and about 40 other state and non-state tertiary education institutions) on March 12, 2020, HEIs utilized existing Moodle-based learning management systems to ease the effects of disrupted learning.</p> <p>a. Introducing Zoom online video conferencing for all Sri Lankan HEIs.</p> <p>To facilitate online education, LEARN²⁹ was connected to university web servers. The utilization of Zoom is monitored daily by the network as all HEIs in Sri Lanka adopted Zoom for their online education. Besides, all students were provided with free access to university web servers by the internet service providers in Sri Lanka until August 17, 2020. during the COVID-19 pandemic (Asian Development Bank and Lanka Education & Research Network, 2020).</p> <p>b. The data so far suggested that the psychological benefits of the speed meet for larger, offline (classroom-based) groups (T. Gilbert, 2016, 2017,2018, 2019; Harvey et al., 2021) might also have been helpful for the online group work meetings.</p> <p>c. At that point in time, MS Teams 'breakout rooms' required setting up parallel MS Teams meetings.</p> <p>d. After investigation of the breakout room facilities of MS Teams, Blackboard, and Zoom, Zoom was identified as being particularly helpful for thinking</p>

²⁹ LEARN (The Lanka Education and Research Network) is an association registered under the Companies Act of Sri Lanka and works as a specialized internet service provider for education and research purposes. It provides a high-speed backbone network connecting the Ministry of Education, UGC, and state higher education and research institutions. LEARN functioning as an internet service provider facilitated whitelisting university web servers for access to online tertiary education during COVID-19.

	about ways that may be scaled up for groups larger than four, and/or multiple groups of four in larger seminar cohorts.
2. Introducing an interactive session at the end of the CSCC intervention	<p>In Cycle 1 it was observed the lack of opportunities for students to get practical aspects of using the CSCC before their PostIGMs. Hence, an interactive session was preferred at the end of the CSCC intervention session.</p> <p>Therefore, the CSCC intervention session was extended to Cycle 2 with an added short interactive session for group members to practise compassionate communications within their group.</p>
3. Use of a Common/ Shared Virtual Background	<p>The careful observation of difficulties encountered by the individual group members on continuing their compassionate and task-focused attention to their group during the group work meetings in Cycle 1 revealed the following.</p> <p>i.e.,</p> <ol style="list-style-type: none"> a. When a non-group member (a family member or a friend) entered the student's room /physical space]. <ol style="list-style-type: none"> i. It seemed sometimes that the student was aware (therefore some autonomic attention was being given to) the presence of someone else in the room. ii. Sometimes this was followed by verbal or nonverbal communication between the student and that non-group member. b. Therefore, the research design response to this was the consideration of the use of a shared virtual background for GMs in Cycles 2 and 3 because, <ol style="list-style-type: none"> i. This could create virtual, visual boundaries around each student within a single commonly experienced background/ environment. This would limit the visual fields so that no group member would be visually aware of the presence of anyone outside the group. ii. Exaggerated body movements of turning away to communicate outside the group would be highlighted to the whole group because the student would likely completely disappear from screen. c. Questions emerging for Cycle 2 (main study) in Sri Lanka. <ol style="list-style-type: none"> i. What kinds of backgrounds should be chosen and why, and who should choose it?

	<p>ii. The psychological impact of the shared space/environment and the possible effect on group cohesion?</p> <p>This too was explored for inclusion in the methodology for Cycle 2 study.</p>
<p>4. Focus Group: Questions to deepen the understanding of observable behavioural changes of students.</p>	<p>During Cycle 1, the comparison of pre- and post-intervention explored the changes or shifts in students' behaviours:</p> <p>In the post-intervention discussion, it was observed several incidents where students facilitated the voices of their group members. E.g., S2 elicited S1's ideas by noticing S1's quietness. In contrast, during the pre-intervention discussion, hardly ever members facilitated the others' voices in this respect.</p> <p>Since the data analysis reveals that <i>Creating opportunities for others to speak</i> emerged as a major category under the theme, '<i>Social Connectedness</i>', it was worth ascertaining that aspect further in the main study to deepen understanding of those behavioural changes from the students' perceptions.</p> <p>Hence, the questions were drafted to be investigated in the main study,</p> <p>When there is an observable silence during the group discussion,</p> <ol style="list-style-type: none"> 1. Did you feel about inviting quiet member/s to talk? 2. What do you think about what thoughts encourage you to invite quiet members to talk? 3. Any techniques on inviting quiet member/s to contribute to the group discussion (Getting out of their threat systems (downregulating the threat system) which is all about permitting them to act differently. 4. Hence, questioning deeply on <ul style="list-style-type: none"> Why have students done/not done inviting quiet member/s to contribute to the group discussion? What is/are the feeling/s behind that action? What are the reasons behind that? (Downregulating the threat system to get away from anxiety)

4.7.2 Participants

Table 4.7: Student Participants – (Cycle 2, Group 1).

Students	S9	S10	S11	S12
STEM	En.	Sci.	ICT	CS
Level	UG	UG	UG	UG
Gender	M	M	F	F
Ethnicity	Sinhalese	Muslim	Tamil	Muslim

Table 4.8: Student Participants – (Cycle 2, Group 2).

Students	S13	S14	S15	S16
STEM	Sci.	ICT	En.	Sci.
Level	UG	UG	UG	UG
Gender	M	M	F	F
Ethnicity	Sinhalese	Tamil	Tamil	Muslim

Table 4.9: Student Participants – (Cycle 2, Group 3).

Students	S17	S18	S19	S20
STEM	Sci.	Sci.	En.	Sci.
Level	UG	UG	UG	UG
Gender	F	M	M	F
Ethnicity	Sinhalese	Sinhalese	Muslim	Tamil

Table 4.10: Student Participants by Stages and Data Collection Methods (Cycle 2).

	Pre-Intervention					Intervention		Post-Intervention					Total
	Q1	GM	FG	Int	Q2	IC	DTC	GM	Q1	FG	Int	Q2	
Steps	12				12								
Questionnaire	12				12								
Participation	12	12	12	12	12	12	12	12	12	12		12	12
Video recording		√	√	√		√	√	√		√			

Total number of participants: $n = 12$.

4.8 Cycle 3

This cycle consists of three student groups each comprised of four students from multiple universities in Sri Lanka.

4.8.1 Modification to Cycle 3

In order to extend opportunities for students to get more practical aspects of using the CSCC before their PostIGMs, an enhanced activity with researcher's mediation as a group member was added to the interactive session at the end of the CSCC intervention session. In this session, the researcher set up a group discussion with herself as a group member and asked students to address how the researcher then contributed nothing (i.e., was silent) and then monopolised the discussion. This was a benefit of Action Research, and this enhanced exercise was conducted for student practice, to check their understanding, and their confidence too.

4.8.2 Participants

Cycle 3 – (Group 1)

Table 4.11: Student Participants – (Cycle 3, Group 1).

Students	S21	S22	S23	S24
STEM	Sci.	Sci	En.	Sci.
Level	UG	UG	UG	UG
Gender	F	F	M	M
Ethnicity	Sinhalese	Tamil	Sinhalese	Muslim

Due to the network issues encountered by all group members during the post-intervention group meeting, the comparison between pre- and post-intervention could not be possible with the student group consisted of S25, S26, S27 and S28. Hence, these data were not considered for analysis.

Table 4.12: Student Participants – (Cycle 3, not included in the data analysis).

Students	S25	S26	S27	S28
STEM	Sci.	En.	Sci.	En.
Level	UG	UG	UG	UG
Gender	F	F	F	M
Ethnicity	Sinhalese	Tamil	Muslim	Tamil

Table 4.13: Student Participants – (Cycle 3, Group 2).

Students	S29	S30	S31	S32
STEM	Sci.	Sci.	Sci.	En.
Level	UG	UG	UG	UG
Gender	M	F	F	M
Ethnicity	Sinhalese	Sinhalese	Muslim	Tamil

Table 4.14: Student Participants – (Cycle 3, Group 3).

Students	S33	S34	S35	S36
STEM	Sci.	Sci.	En.	Sci.
Level	UG	UG	UG	UG
Gender	F	F	M	M
Ethnicity	Sinhalese	Tamil	Muslim	Tamil

Table 4.15: Student Participants by Stages and Data Collection Methods (Cycle 3).

Steps	Pre-Intervention					Intervention		Post-Intervention					Total
	GM	Q1	FG	Int	Q2	IC	DTC	GM	Q1	FG	Int	Q2	
Questionnaire	12				12								
Participation	12	12	12	12	12	12	12	12	12	12		12	12
Video recording		√	√	√		√	√	√		√			

Total number of participants: $n = 12$.

4.9 Modifications to Intervention Session from Cycles 1 to 2 and 2 to 3

Table 4.16 summarises the research framework consisting of three cycles and their participants and research instruments.

Table 4.16: Three Phases of the Study with Participants and Research Instruments Used in Three Cycles.

	Steps	Cycle 1	Cycle 2	Cycle 3
Participants	Step 01,02, 03	Two groups of Sri Lankan (international) STEM students from UK universities . Group 1: 4 students from one UK University. Group 2: 4 students from 4 UK universities.	Three groups of STEM students from five Sri Lankan state universities . (Four students from 4 separate universities per each group).	Three groups of STEM students from five Sri Lankan state universities . (Four students from 4 separate universities per each group).
Research Instruments	Step 01: Pre-Intervention	1. Small Group Work Meeting. 2. Questionnaire on Group Work Behaviours (GWB). 3. Compassionate Engagement and Action Scale (CEAS). 4. Focus Group/ Interview.	1. Small Group Work Meeting. 2. Questionnaire on Group Work Behaviours (QGW). 3. Compassionate Engagement and Action Scale (CEAS). 4. Focus Group/ Interview.	1. Small Group Work Meeting. 2. Questionnaire on Group Work Behaviours (GWB). 3. Compassionate Engagement and Action Scale (CEAS) 4. Focus Group/ Interview.
	Step 02 : Intervention	1. Introduction to Compassion. 2. Developmental training on CCCC.	1. Introduction to Compassion. 2. Developmental training on CCCC. 3. Interactive session.	1. Introduction to Compassion. 2. Developmental training on CCCC. 3. Interactive session. 4. Mediation of facilitator as a monopoliser and then as a non-contributor for the group members to employ CCCC.

	Step 03: Post- Intervention	<ol style="list-style-type: none"> 1. Small Group Work Meeting. 2. Questionnaire on Group Work Behaviours (GWB). 3. Compassionate Engagement and Action Scale (CEAS). 4. Focus Group/ Interview. 	<ol style="list-style-type: none"> 1. Small Group Work Meeting. 2. Questionnaire on Group Work Behaviours (GWB). 3. Compassionate Engagement and Action Scale (CEAS). 4. Focus Group/ Interview. 	<ol style="list-style-type: none"> 1. Small Group Work Meeting. 2. Questionnaire on Group Work Behaviours (GWB). 3. Compassionate Engagement and Action Scale (CEAS). 4. Focus Group/ Interview.
--	-----------------------------------	--	--	--

- a. *Introduction to Compassion* – The researcher delivered a session online via MS Teams (to Cycle 1) via Zoom (to Cycle 2 and 3) using a PowerPoint presentation where students were introduced to compassion with the explanation of the theory behind that concept especially focusing on the definition of compassion ‘sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it’ (P. Gilbert and Choden, 2013; Jinpa, 2015; Lama, 1995; Ricard, 2015). In this session, self-compassion, compassion for others and sensitivity for compassion from others are explained allowing them to gain the idea of compassion towards self and others. This was the first part of the presentation conducted by the researcher (please see [Appendix F](#), pp. 641-646 on the presentation slides).
- b. *Developmental training on CSCC*: Students took part in an online developmental training session which is the second part of the presentation done by the researcher on compassionate communications strategies for group work. Students were encouraged to apply the compassionate strategies after introducing them how to use these strategies practically during a group discussion. Observation field notes and video recordings of this CSCC intervention

session enabled the researcher to investigate participants' real-time responses to and their lived experience of being developed in Cognitive Skills of Compassionate Communications. These responses were further explored in focus groups/interviews held after the post-intervention group discussion. The results of this analysis were triangulated with the field notes and video recording evidence.

Step 1 introduced the basics of group discussions and in Step 2 all participants were introduced to the practical application of the science of compassion while drawing their attention to understanding strategies to be used in developing their group communication and team management skills highlighting each one's responsibility in contributing everyone's communicative ease during their group works.

- c. Step 3 was introduced in Cycle 2 and consisted of an interactive session of a group work meeting and the observation stage where group members as peers are invited to observe their own as well as other group members' performances including compassionate, student-managed, group learning through their guided group discussion/work activities while paying more attention to their body language.
- d. Step 4 was added in Cycle 3 and consisted of the trainer's mediation as a group member to act as a monopoliser as well as a non-contributor at different times encouraging the group members to take necessary compassionate actions to manage their group work.

Next section presents an overview of how the research questions of the study are addressed using chosen data collection tools.

4.10 Addressing Research Questions

Table 4.17 demonstrates the tools of data collection selected to address each research question. Then how these data collection tools were employed is explained.

Table 4.17: Research Question and Data Collection Tools Used to Address Them.

Research Question	Selected Data Collection Tools
<p>Core-Research Question</p> <p>1. Can developing HE students in CSCC be adapted for online group meetings amongst UK-based and Sri Lanka-based Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?</p>	<p>Cycle 1 Cycle 2 and Cycle 3 Data</p> <p>1. Comparing findings from Cycles 1, 2 and 3. (Please see below a, b, and c.)</p>
<p>Sub Research Questions.</p> <p>2. In UK HEIs, can developing students in CSCC be adapted for online group meetings amongst Sri Lankan STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?</p>	<p>Cycle 1 Data</p> <p>1. Video recordings of group meetings. 2. Transcripts of students' group meetings. 3. Two questionnaires. 4. Transcripts of focus groups/interviews. 5. Discussion group observation/field notes.</p>
<p>3. In Sri Lankan HEIs, can developing students in CSCC be adapted for online group meetings amongst STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?</p>	<p>Cycles 2 and 3 Data</p> <p>1. Video recordings of group meetings. 2. Transcripts of students' group meetings. 3. Two questionnaires. 4. Transcripts of focus groups/interviews. 5. Discussion group observation/field notes.</p>
<p>4. In relation to questions 2 and 3, are there any observable differences in students' behaviours in their pre- vs post-intervention online group meetings (before and after the CSCC intervention session intervention)?</p>	<p>Comparing pre-vs post-intervention results of each Cycle (please see above data collection tools).</p>

5. If an adaptation of CSCC to the online format is possible, in what ways, if any, and with what results (for their social and learning experiences of online group work) might Sri Lankan STEM students who are based in Sri Lankan universities respond to this developmental training.	Cycles 1, 2 & 3 data
5.a. In what ways the responses of Sri Lankan-based students be similar, or different from the responses of UK-based Sri Lankan students?	Comparing findings of Cycle 1 with the findings of Cycles 2 & 3 (please see the data collection tools above).

4.11 Ethics Approval for the Study

The Ethics approval was obtained from the University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority (ECDA) to collect data from the human participants under the protocol number: cHUM/PGT/UH/04345 (see [Appendix I](#), pp. 655-659). However, with the outbreak of COVID-19 pandemic, the researcher had to change the direction of the research with the difficulty of meeting participants face to face during that time and collecting data. Therefore, the amendments were made to the originally approved ethics application acHUM/PGT/UH/04345(1) especially focusing on collecting data from human participants online acHUM/PGT/UH/04345(2). Further, to obtain the students' perspectives and behaviours in multiple HEIs, an amendment was made to collect data from participants from four separate UK universities for the pilot study. This participant sample adjustment for the pilot had no impact on the procedures already in place and approved by the Committee in relation to safeguarding participant well-being in the study. Also, this change meant

that the pilot more closely aligned to what happened in the main study which also recruited participants from multiple universities in Sri Lanka.

4.12 Chapter Summary

This chapter explained the methodology starting from the introduction and then the explanation of the data collection procedure of the study in detail including the pre-pilot study, pilot study and the main study. Further, it described the step-by-step procedure with the graphical presentation of a cycle of the Action Research approach and the research framework. Moreover, the chapter indicated how each research question is addressed through each data collection method. Thereafter, the design of the procedure with data analysis methods were explained in detail with the Action Research approach. The tools selected for the study was described with the deselected tools also indicated with reasoning. The participants for each cycle were categorized and presented as this research consisted of three cycles in total. Cycle 1 (pilot study) involved in collecting data from the students from one UK HEI for Group 1 and from students of multiple UK HEIs for Group 2. Then, the Cycles 2 and 3 (main study) were conducted with the students from multiple Sri Lankan HEIs. Five data collection tools were employed as the combination of them facilitates constant comparison while allowing the researcher to triangulate the data. For analytical purposes, Template Analysis, a type of thematic analysis was employed to analyse the qualitative data and NVivo Pro 12 was utilized for this procedure. The reasons for selecting this particular method as well as why other analysis methods were rejected was also explained. Finally, information on ethics approval and the summary of the chapter were provided.

CHAPTER 5

Findings Cycle 1

5.0 Introduction

This Chapter presents the findings of Cycle1 of the study. All respondents – Sri Lankan STEM students — were based in five UK HEIs. The first group consisted of four students from one UK HEI and the second group consisted of four students from 4 separate UK HEIs. These findings respond to the following research questions.

2. **In UK HEIs**, can developing students in CSCC be adapted for online group meetings amongst Sri Lankan STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings ?
4. Are there any observable differences in respondents' behaviours during their group work meetings before and after the CSCC intervention session intervention?

In Chapter 5, the pre-and post-intervention findings are compared through the data collection and analysis methods, both qualitative and quantitative, that were explained in the Methodology Chapter. Here in Chapter 5, the quantitative results are, mainly

presented and explained first, and then the main body of the qualitative results follow, to inform the results of the completed analysis of the quantitative data sets.

This chapter is organized around the themes that emerged from Cycle 1 (the UK groups). The first overarching theme to arise was *Non-verbal Communications* (Section 5.1), and these were *screen gaze*, *nodding*, and the treatment of *long silences*. The second overarching theme was *Verbal Communications* (Section 5.2), under which three themes emerged, namely: *Social experience*, *Learning experience*, and *Social experience mediated Learning experience*. Section 5.3 focuses on the pre-and post-intervention responses to two questionnaires. The first of these (see [Appendix D.1](#), p. 624) was on Group Work Behaviours and the other (see [Appendix D.2](#), p. 628) was the Compassionate Engagement and Action Scale (The Compassionate Mind Foundation). Next, for this Action Research, Section 5.4 presents the Summary of the findings from the UK-based Cycle 1. Section 5.5 provides conclusions to the findings from Cycle 1 while identifying methodological adjustments made in preparation for Cycle 2.

5.1 Non-verbal Communications

To explore these, the researcher conducted a second-by-second micro-ethnographic observation of the non-verbal behaviour of every student, one by one, through the videos of all the pre-and post-intervention task-focused group work meetings (Box 5.1 to Box 5.2, pp. 153-156 respectively, show examples of this micro-ethnography) in each group's individual journal article presentations, and then again throughout the follow-up group discussions. This was on students' experience of their PreIGM meeting, and how that had compared for them with their previous group work experiences. The researcher noticed

that there seemed to be a lot of discomfort in all the groups with switching on the camera, or if students did use their cameras, they seemed uncomfortable with screen gaze (looking at their screens) to engage directly with others. This was an important indicator of what was going to be a key challenge to students using the compassionate communications pedagogy in groups which depended so much in face-to-face class on inclusive eye gaze, and so screen gaze was identified as a theme to be investigated closely. So far, the observations of timings and counting of when students were or were not looking at their screens in the PreIGMs were conducted, second by second and again in the PostIGMs.

As the time duration of each presentation/discussion is different, to facilitate comparison among various presentations/discussions (pre- and post-intervention), the overall duration of each presentation/discussion has been normalised. As a result, the time instances during a presentation become a percentage of the overall duration of that presentation. For example, the overall duration of pre-intervention presentation 1 Cycle 1 Group 1 is 172 seconds. After the normalisation, a percentage value of 25% refers to the time instance at 43 second in pre-intervention presentation 1. In contrast, the same value of 25% refers to the time instance at 60 second in post-intervention presentation 1 Cycle 1 Group 1 as the overall duration of post-intervention presentation 1 is 240 seconds. Thus, for comparison of Cycle 1's two groups' pre-and post-intervention, the researcher now had two sets of numerical data for each presentation and each follow-up discussion per each group.

The comparisons were made through the analysis of these quantitative data sets using the R programming language (R). Then to explore further the results from this, the quantitative data on each group's average screen gaze were submitted into Microsoft

Excel and this not only offered a new perspective for new findings from the data but also helped overall triangulation of the different results sets. Then, an analysis of the other kinds of qualitative data available from all the above transcriptions was conducted using Template Analysis (TA) supported by the use of NVivo (Pro 12).

Overall, the main qualitative and quantitative data findings for pre-and post-intervention non-verbal communications in the groups informed statistically significant increases to screen gaze attentiveness and a reduction in long, unresolved silences. The prevalence of one specific validating gesture nodding was seen and so this was selected for close study and found to increase notably, post-intervention. The evidence for these apparent changes in non-verbal behaviours is presented next.

5.1.1 Analysis of Quantitative Data — Students' Screen Gaze Behaviours

To compare and contrast screen gaze and related behaviours of respondents, before and after the CSCC intervention session, this section presents the results of three quantitative analyses for how the results of each might (or might not) inform each other.

- a. Wilcoxon Signed-Rank Test was employed using the R Programming Language (R) to statistically analyse the pre- vs post-intervention screen gaze behaviours of the group members as to the roles they performed (presenter, listener, discussant) in groups.
- b. R Plots were created to analyse and then visually represent group members' screen gaze behaviour individually during each journal article presentation and each follow-up discussion. This was done for both pre-and post-intervention group meetings to make the comparison.
- c. Microsoft Excel Scatter charts were created to identify each group's percentage screen gaze sustained during each journal article presentation and each follow-up discussion in both pre-and post-intervention group meetings.

5.1.1.1 Statistical Analysis — Wilcoxon Signed-Rank Test – Comparison of Screen Gaze Behaviours of Group Members

This test was run in R to identify whether there was any difference between the pre- vs post-intervention screen gaze behaviour of the group members. (For more about this please see Section 4.5.3.1 in Methodology Chapter).

The Wilcoxon Signed-Rank Test for screen gaze timing data in pre- and post-intervention for the Cycle 1 Group 1 of $n = 4$, $p < 0.001$ indicates that there is a significant difference in screen gaze behaviour of the group members after the CSCC intervention session. Therefore, the null hypothesis³⁰ (H_0) that says there is no difference between the screen gaze behaviour of group members before and after the CSCC intervention session ought to be rejected. In other words, there is marked improvement in group members screen gaze behaviour of the group members after the CSCC intervention session. This meant that there was less than a 1% probability that the null hypothesis is true and therefore it can be rejected and the alternative hypothesis (H_1)³¹ can be accepted, i.e., that there is a difference between pre- and post-intervention screen gaze behaviour of the group members. Since the p value is less than 0.001, it indicates that there is statistically significant increase in group members' sustained screen gaze (when they listened to the presentations and discussed the respective articles) after the CSCC intervention session.

³⁰ The null hypothesis states that there is no difference between the two group meetings being studied (the CSCC intervention session) does not affect the group performances/behaviours).

³¹ The alternative hypothesis is the one you would believe if the null hypothesis is concluded to be untrue. The alternative hypothesis states that the independent variable (CSCC intervention session) did affect the dependent variable, and the results are significant in terms of supporting the theory being investigated (i.e., not due to chance).

5.1.1.1.1 Presenters

The percentage screen gaze of all the presenters (Cycle 1) was considered separately for each group. Analysis revealed an increase in the sustained screen gaze of all the presenters after the CSCC intervention session. This increase was found not to be statistically significant ($p = 0.0625$).

5.1.1.1.2 Listeners (Presenter's audience members)

There was a statistically significant increase ($p < 0.001$) in sustained screen gaze of those who were *listening* to the presenters, after the CSCC intervention session. As this was less than a 1% probability, that the null could be true, the null hypothesis was rejected, and the alternative hypothesis was accepted. In other words, the results indicated a statistically significant increase in sustained screen gaze of the listeners to each journal article presentation, after the CSCC intervention session.

5.1.1.1.3 Discussants (Screen gaze behaviours during the discussion component of the group work)

Similarly, a statistically significant increase in sustained screen gaze of the group members after the CSCC intervention session was found ($p < 0.001$) during their follow-up discussions.

Overall, for both groups, the analysis showed an improvement in all members' sustained screen gaze after the CSCC intervention session. The results were statistically significant for listeners to the presentations and then, following each of the presentations, for all discussion group members ($p < 0.001$). (See [Appendix A.1](#), pp. 387-389 for the complete set of Wilcoxon Signed-Rank Test results for both groups in Cycle 1). The results there

show that the above results were overall representative of all the Wilcoxon Signed-Rank Tests for both groups.

5.1.1.2 R Plots — Individual Group Members Screen Gaze Behaviours Before and After the Intervention

R plots were created to analyse and then to graphically show the screen gaze behaviour of all group members during each individual presentation. Then more R plots were created separately to show the individual screen gaze behaviour of group members during every follow-up discussion. Below, for Group 1 in Cycle 1, the first presenter's and his listeners' screen gaze behaviour during pre- vs post-intervention group work meetings are presented in Figure 5.1.

5.1.1.2.1 Cycle 1: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

S2 was the first presenter of Group 1 and the graphical illustration of this group members' percentage screen gaze during S2's pre- vs post-intervention journal article presentations is shown next in Figure 5.1.

In Figure 5.1 and Figure 5.2 (and for all other such plots in [Appendix A.2](#), pp. 390-398), the orange bars represent the percentage screen gaze (during presentations and follow-up discussions) of group members *before* the CSCC intervention session (pre-intervention). The turquoise bars represent the percentage screen gaze of the members *after* the CSCC intervention session (post-intervention). The straight horizontal line in each figure marks the minimum increase in screen gaze attentiveness after the CSCC intervention session for each group's members.

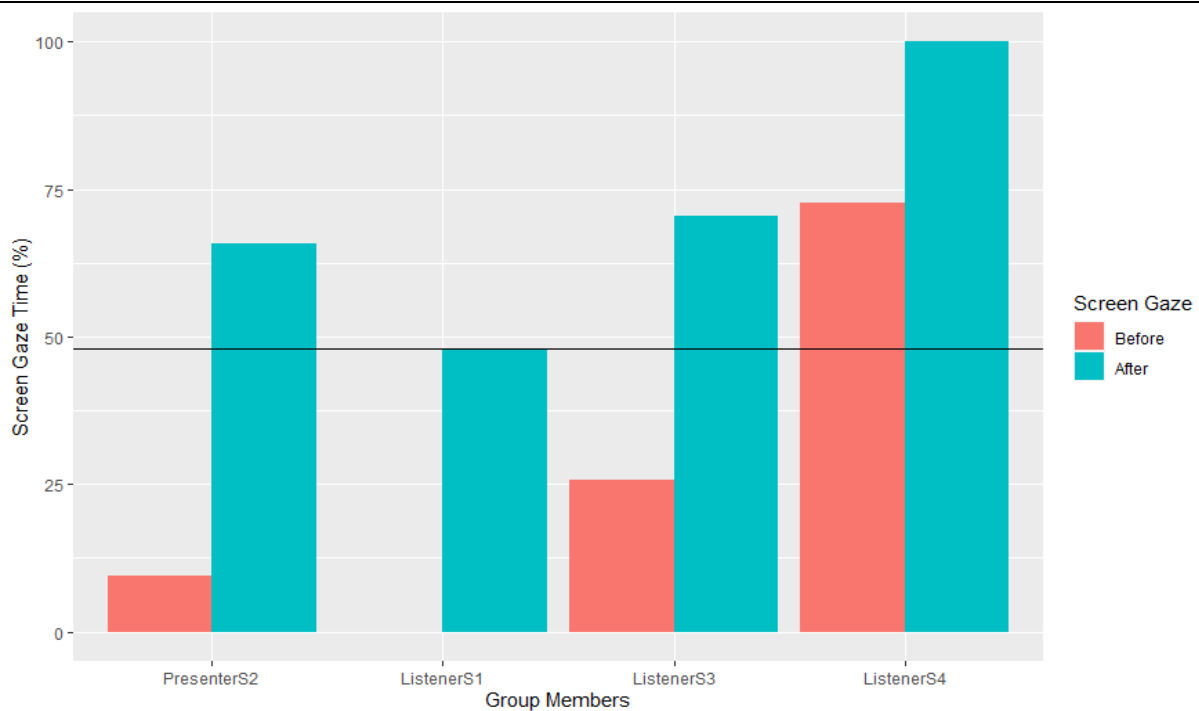


Figure 5.1: Cycle 1, Group 1 Members' Screen Gaze During S2's Pre- Vs Post-Intervention Journal Article Presentations.

Figure 5.1 shows that *before* the CSCC intervention session, S2 (while presenting his article), sustained his screen gaze for 9.40% of the time while S1, S3 and S4 (his listeners) sustained their screen gaze for 0%, 25.64% and 72.65% of S2's presentation time, respectively. In contrast, *after* the CSCC intervention session, S2 (the presenter) sustained his screen gaze for 65.75% of the time during his journal article presentation. Listeners S1 and S3 sustained their screen gaze respectively for 47.95 % and 70.55% of the time during S2's presentation (up from 0% for S2's previous presentation), and listener S4 sustained his screen gaze throughout the whole of S2's previous presentation³².

³² Throughout this study, breaking screen gaze for one second was not counted as a break in screen gaze to the group.

These results were found to be representative of all presenters' screen gaze and that of their listeners. To evidence this, the remaining figures ($n = 7$) of all presenters and their listeners (Groups 1 and 2) are shown in [Appendix A.2](#).

5.1.1.2.2 Cycle 1: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions

Here, Figure 5.2 illustrates Group 1's members' percentage screen gaze during their PreIGD³³ vs PostIGD³⁴ of S2's two self-chosen journal articles.

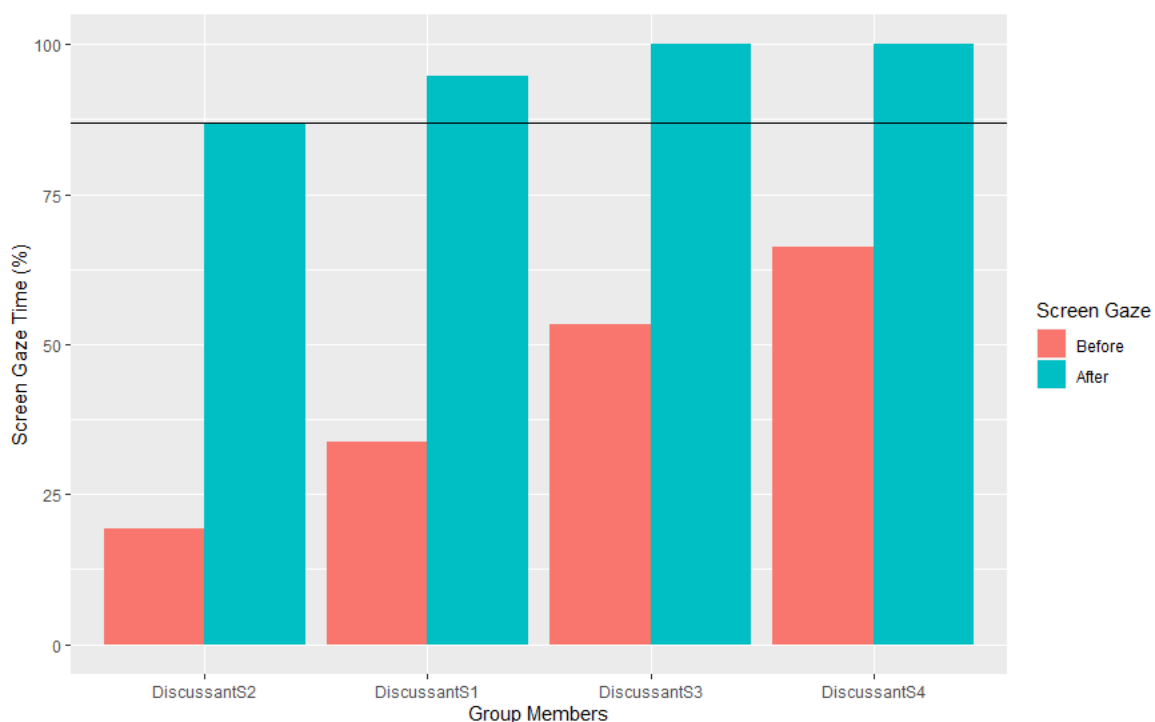


Figure 5.2: Cycle 1, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S2's Journal Articles.

Figure 5.2 shows that *before* the CSCC intervention session, during the follow-up discussion of S2's journal article, the discussants: S2, S1, S3 and S4 sustained their screen gaze for 19.28%, 33.73%, 53.41% and 66.27% of the discussion time, respectively. In

³³ The acronym, PreIGD is used to indicate **Pre-Intervention Group Discussion** throughout this dissertation.

³⁴ The acronym PostIGD is used to indicate **Post-Intervention Group Discussion** throughout this dissertation.

contrast, *after* the CSCC intervention session, S2 and S1 sustained their screen gaze for 86.90% and 94.64% respectively. while S3 and S4 sustained their screen gaze throughout the whole of the discussion.

These results were found to be representative of all discussants' screen gaze during the follow-up discussions after each presentation. The remaining plots ($n = 7$) for all discussants in Groups 1 and 2 are shown in [Appendix A.2](#) (pp. 392-398).

Overall, the above plots indicate a substantial increase in sustained screen gaze of all group members during both journal article presentations and follow-up discussions, after the CSCC intervention session.

The next section compares the pre-and post-intervention results of the whole group's average screen gaze during each group's presentations and follow-up discussions explored through Microsoft Excel.

5.1.1.3 Microsoft Excel Analysis — Whole Group's Average Screen Gaze Before and After the CSCC Intervention Session

To confirm or disconfirm these results, the screen gaze data were analysed again using Microsoft Excel (to further explore and compare participants' screen gaze behaviour before and after the CSCC intervention session). This method also offered the opportunity to compare and contrast each group's (not individual members') average screen gaze results during each pre- vs post-intervention journal article presentation and follow-up discussion with all groups in Cycle 1. The duration of screen gaze and non-screen gaze time were converted into percentages. Using micro examination of the video recordings, as explained above, all group members' screen gaze percentage times during each journal article presentation and each follow-up discussion had already been identified and recorded by the researcher per group member, second by second, and so was available

for new analysis in Microsoft Excel. Below in Figure 5.3 are the Microsoft Excel findings of (S2) first presenter's³⁵ presentation and follow-up discussion in Group 1 (Cycle 1). Please see [Appendix A.3](#), pp. 399-413 for Microsoft Excel analysis results for each remaining participant's journal article pre- and post-intervention presentations and follow-up discussions ($n = 24$). In Figure 5.3: Whole Group's Average Screen Gaze During S2's Journal Article Presentation (Pre-Intervention) to Figure 5.8 below (and all figures in [Appendix A.3](#)), the Y-axis indicates each group's average screen gaze values as follows.

- 0 = no one (0%) offers screen gaze attentiveness at any time in the meeting.
- 0.25 = only one group member (25%) offers screen gaze attentiveness.
- 0.5 = two members of the group (50%) offer screen gaze attentiveness.
- 0.75 = three members of the group (75%) offer screen gaze attentiveness.
- 1 = all four members (100%) offer screen gaze attentiveness.

It was found overall that the example set of results below, were representative of participants' pre- and post-intervention screen gaze behaviour across both groups in Cycle 1 as seen in [Appendix A.3](#).

5.1.1.3.1 Cycle 1: Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

In the example below, Figure 5.3: Whole Group's Average Screen Gaze During S2's Journal Article Presentation (Pre-Intervention) shows the average screen gaze of the whole of Group 1 during S2's presentation of his first (i.e., pre-intervention) chosen journal article in blue.

³⁵ S2 was the first presenter of Group 1 in Cycle 1.

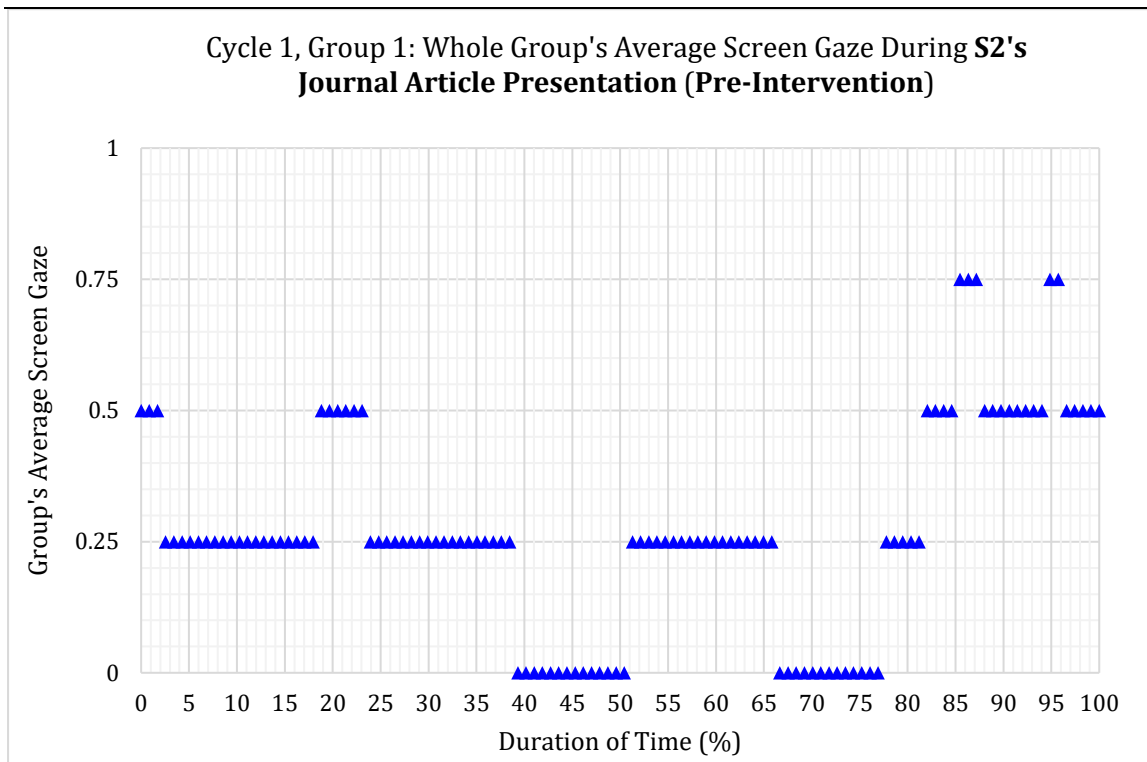


Figure 5.3: Whole Group's Average Screen Gaze During S2's Journal Article Presentation (Pre-Intervention).

The blue triangles on the 0.25-mark show that only one group member sustained screen gaze throughout almost all of S2's presentation before the intervention. As can be seen in Figure 5.3 three group members sustained screen gaze together (i.e., at the same time) only on two occasions.

This result is consistent with the other group members' pre-intervention journal article presentations in Cycle 1. Please see [Appendix A.3](#), pp. 400-401 (Group 1) pp. 406-408 (Group 2) for all ($n = 7$) remaining figures.

Figure 5.4 shows the average screen gaze of the whole of Group 1 during S2's presentation of his second (i.e., post-intervention) journal article in red.

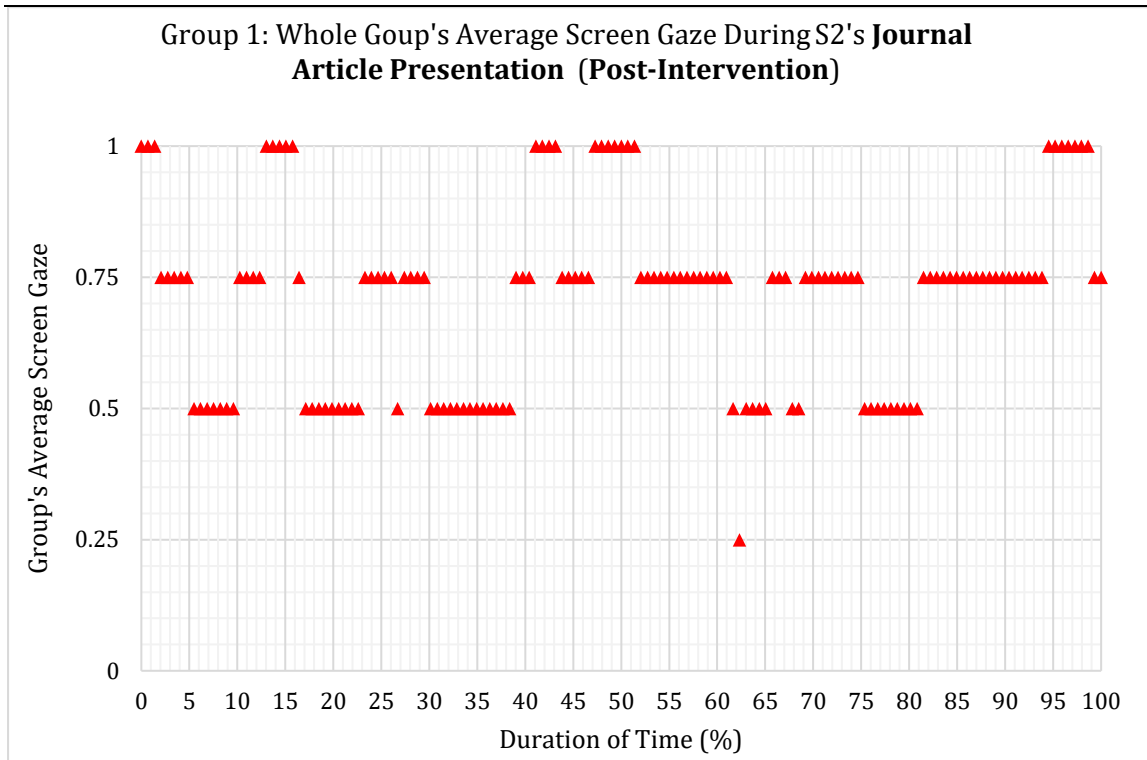


Figure 5.4: Whole Group's Average Screen Gaze During S2's Journal Article Presentation (Post-Intervention).

Most of the red triangles are at the 0.75 mark, it can be seen that the three group members (i.e., 75% of the group) sustained screen gaze during most of S2's presentation after the intervention. As can be seen in Figure 5.4 all four members sustained screen gaze together (i.e., at the same time) for considerably more time than they did during S2's pre-intervention journal article presentation.

This result is consistent with the other group members' screen gaze behaviours during post-intervention journal article presentations in Cycle 1 as can be seen in [Appendix A.3](#), pp. 401-402 (Group 1) pp. 408-410 (Group 2) which shows the remaining ($n = 7$) figures.

5.1.1.3.2 Cycle 1: Group 1- Whole Group's Average Screen Gaze During Pre- Vs Post- Intervention Presentations

Figure 5.5 compares the average screen gaze of the whole of Group 1 (before and after the intervention) during S2's presentation of his two journal articles, respectively. Illustrations for all pre- vs post-intervention comparison figures were changed into lines (from triangles) to make the comparison clearer to see. The blue line represents the average screen gaze of the whole group before the intervention. The red line represents the average screen gaze of the whole group after the intervention.

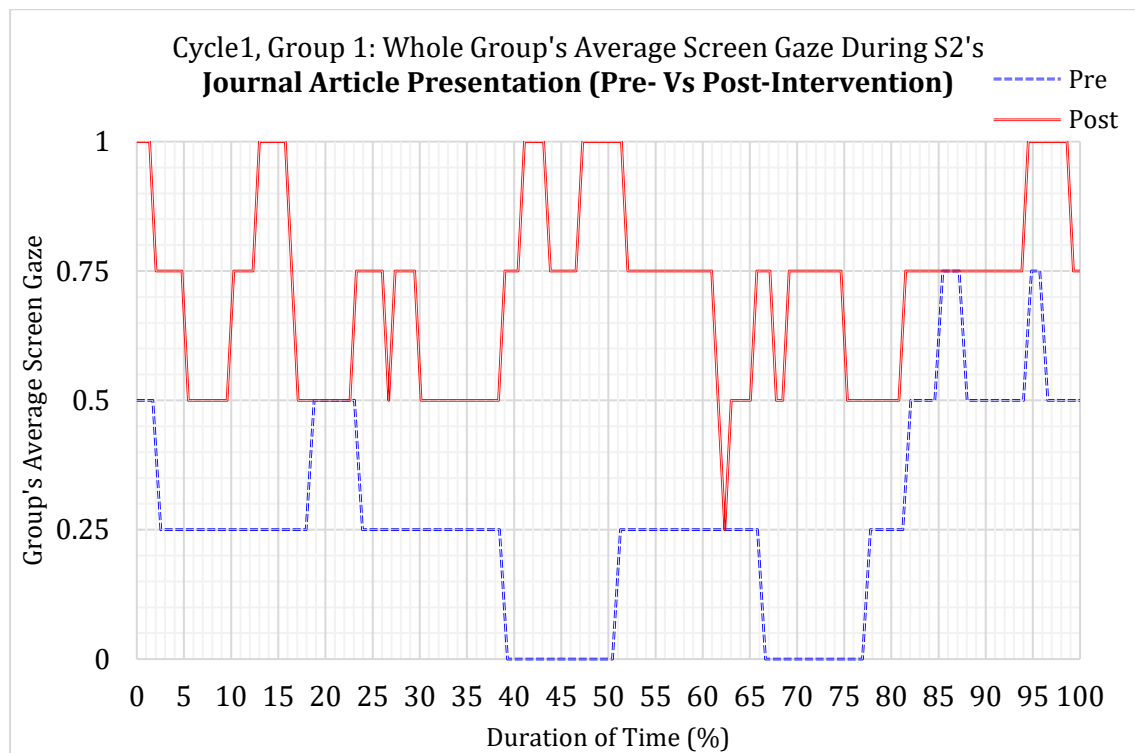


Figure 5.5: Whole Group's Screen Gaze During S2's Journal Article Presentation (Pre Vs Post-Intervention).

The blue line shows that in the pre-intervention group work meeting, respondents looked much less at their screens to demonstrate their attention to their fellow group members. The red line indicates that during post-intervention group work meetings (i.e., for both groups), at any one time, either 75% of the group (3 members) or else 100% of the group (all 4 members) were looking at their screens throughout S2's post-intervention article

presentation. Pre-and post-intervention results as shown in example Figure 5.5 were representative of the Microsoft Excel results for the majority of the other group members' journal article presentations.

5.1.1.3.3 Cycle 1: Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Group Discussions

Figure 5.6 in the example below, shows the average screen gaze of the whole of Group 1 during the follow-up *discussion* after S2's first (i.e., pre-intervention) journal article.

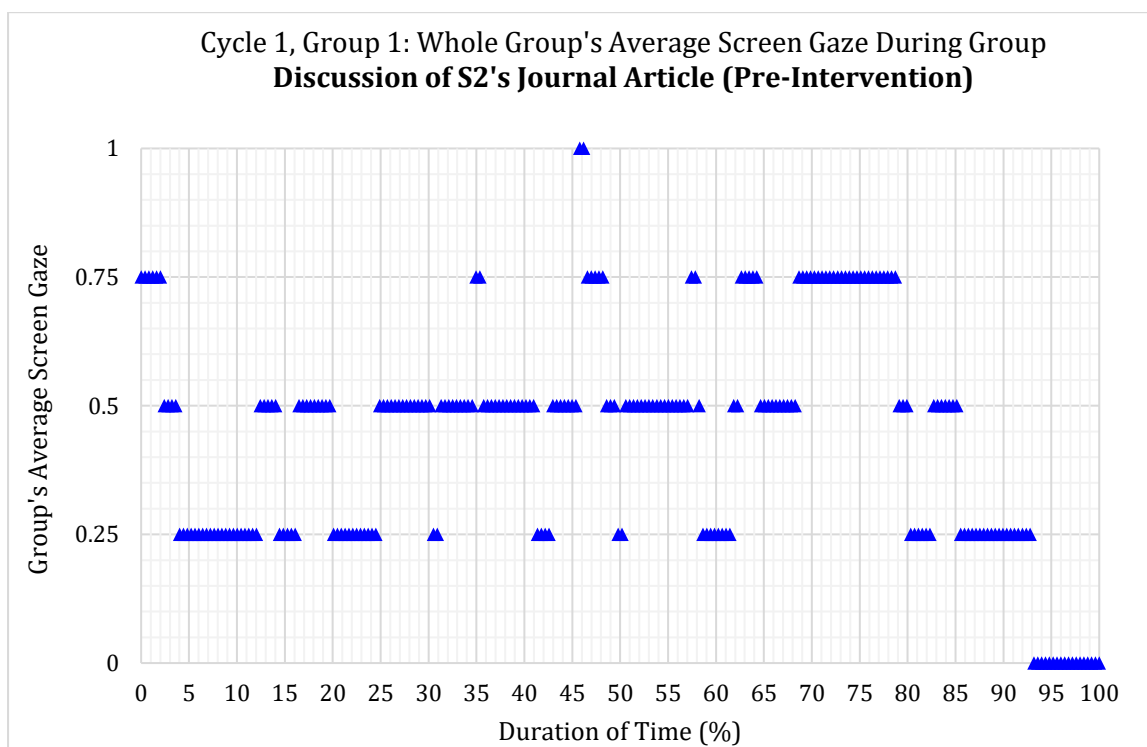


Figure 5.6: Whole Group's Average Screen Gaze During Discussion of S2's Journal Article (Pre-Intervention).

The blue triangles seen at the 0.25 and 0.5 marks indicate that only one or two members sustained screen gaze at any time during the whole group *discussion* of S2's article before the intervention, except briefly, once only, as shown at the top of the Figure.

As shown in [Appendix A.3](#), pp. 403-404 (Group 1), pp. 410-411 (Group 2) this result is representative of what was found for the pre- vs post-intervention follow-up group discussion in both of Cycle 1's groups.

5.1.1.3.4 Cycle 2: Group 1- Whole Group's Average Screen Gaze During Post-Intervention Discussions

Figure 5.7 shows the average screen gaze of the whole of Group 1 during the follow-up *discussion* of S2's second (i.e., post-intervention) journal article presentation.

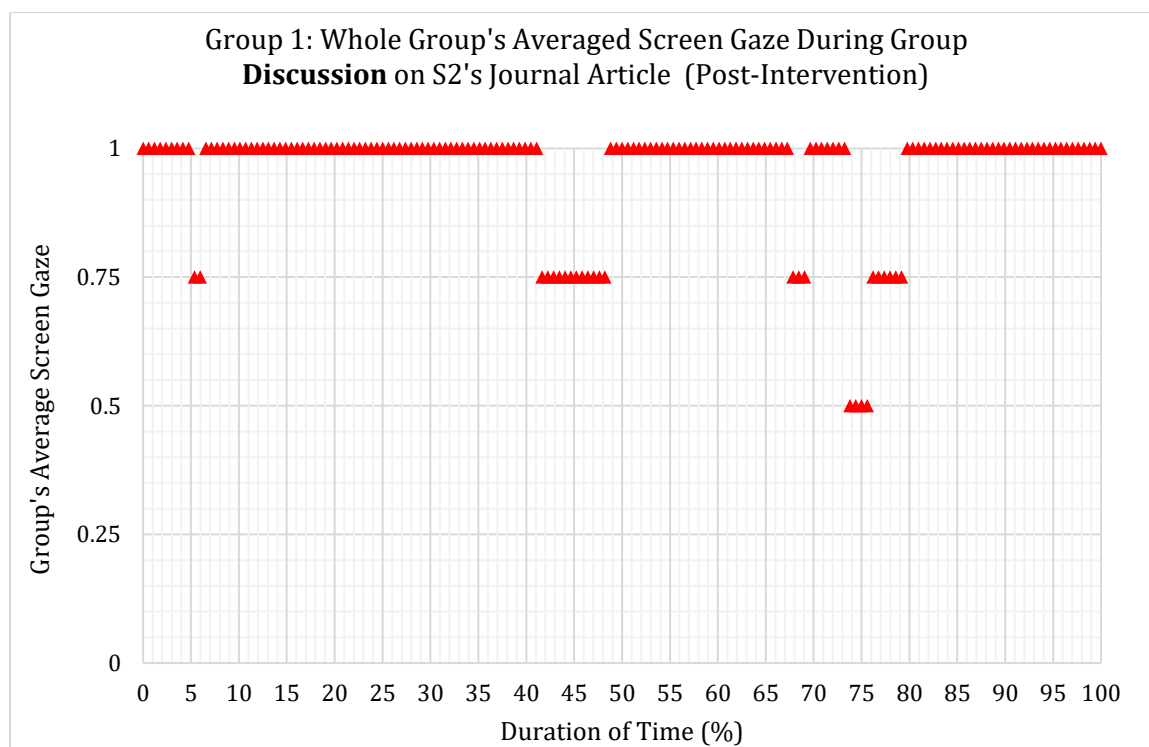


Figure 5.7: Whole Group's Screen Gaze During Discussion of S2's Journal Article (Post-Intervention).

The red triangles at the 1 mark represent all four members of Group 1, including S2 (i.e., 100% of the group) sustained screen gaze throughout the discussion after the intervention. This increased use of screen gaze is helpful because the group discussion is where the work of stimulating and developing a critical view of the article is meant (by the task design and CSCC strategies) to be shared across the whole group. The screen gaze

results for the discussion shown in Figure 5.7: Whole Group's Screen Gaze During Discussion of S2's Journal Article (Post-Intervention) were consistent with both groups in Cycle 1 (see Appendix A.3, pp. 404-406 [Group 1] pp. 412-413 [Group 2] for all remaining figures to see this.)

5.1.1.3.5 Cycle 2: Group 1- Whole Group's Average Screen Gaze During Pre- Vs Post-Intervention Discussions

Figure 5.8 compares the average screen gaze of Group 1 during its whole group follow-up discussions (i.e., before and after the intervention) on S2's two journal articles, respectively.

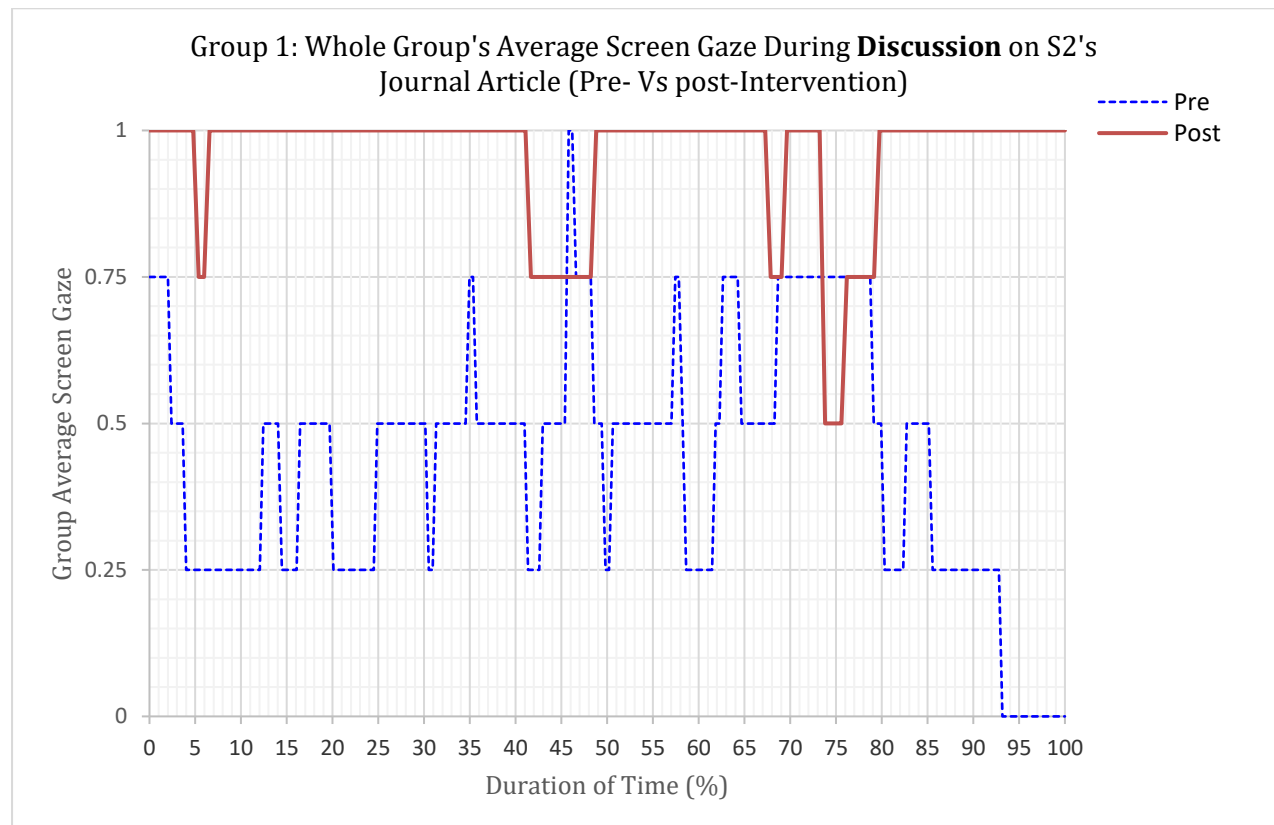


Figure 5.8: Whole Group Screen Gaze During Discussion of S2's Journal Article (Pre- Vs Post-Intervention).

The blue line represents the average screen gaze of the whole of Group 1's follow-up discussion of S2's first article (before the intervention). The red line shows the average

screen gaze of the whole of Group 1 during the follow-up discussion of S2's second journal article (after the intervention). The red line appears stable at the 1 mark for most of the time during the post-intervention discussion indicating that 100% of the group (i.e., four members: S2, S1, S3 and S4) sustained their screen gaze throughout this group discussion after the intervention. When compared with the pre-intervention (blue line), respondents were found to sustain screen gaze notably more times in post-intervention group discussion. These pre- and post-intervention results for Group 1 in Figure 5.8 are representative of what was also found for both groups in Cycle 1.

The purpose of sustaining screen gaze was for group members to continue monitoring their own and others' body language including where the support of other group members may be needed. This was explained during the CSCC intervention session (See [Appendix F](#), pp. 641-646). During the PostIGMs screen gaze was sustained much more across both groups than in the PreIGMs.

Overall, the Microsoft Excel analysis of results of Cycle 1 indicated a substantial increase in respondents' average screen gaze after the CSCC intervention session. In terms of triangulation, these results appear to corroborate the results obtained from the use of the Wilcoxon Signed-Rank Test (see Section 5.1.1.1) and plots created through the R (see Section 5.1.1.2).

Importantly, all of the quantitative results so far do not mean that I could be sure the CSCC was the only cause of the changes seen in these tests. Perhaps the fact that the students were meeting again and becoming more familiar with each other was part of the reason for the quite rapid change in these unconscious behaviours. Therefore, next, to explore what might, or might not, have contributed to the quite rapid changes in screen gaze

behaviours identified above, the results of the analysis of the qualitative data sets are explored which informed the above results.

5.1.2 Analysis of Qualitative Data — Observation Field Notes (Non-verbal Communications)

To deepen understanding of the non-verbal communication of respondents, before and after the CSCC intervention session, this section presents the results from six qualitative analyses under three headings as shown below:

- i. Template Analysis of field notes embedded into the transcripts of the pre-and post-Intervention group meetings.
- ii. Template Analysis of transcripts of the pre- and post-intervention focus groups.
- iii. Ethnographic Analysis of the pre-and post-Intervention group meetings.

Results from each of these data sets were then compared against each other and then triangulated with the above quantitative findings.

5.1.2.1 *Template Analysis of the Field Notes Embedded into Transcripts of PreIGMs and PostIGMs (Cycles 2 and 3)*

All evidence of *non-verbal communication* (e.g., screen gaze, nodding, treatment of long silences, smiling, giving a ‘thumbs up’) were manually added to these transcripts at the seconds/points that they occurred. Then, all transcripts ($n = 4^{36}$) were uploaded into NVivo software. Template Analysis (TA) was conducted separately for pre-and then for post-intervention transcripts embedded with field notes of the group work meetings using NVivo 12 (Pro 12). The following section presents the findings of the pre-intervention group work meetings in relation to non-verbal communication.

³⁶ $n = 4$ PreIGMs transcripts [1 (Group 1) + 1 (Group 2)] and PostIGMs transcripts [1 (Group1) + 1 (Group 2) transcripts.

5.1.2.1.1 Analysis of Field Notes Embedded into Transcripts of PreIGMs

This analysis revealed the emergence of two sub-themes (avoidant/breaking screen gaze and long silences) and these sub-themes were then identified under one theme, 'Disruptors' (See Section 4.5.1.3 in Methodology Chapter for the procedure of NVivo analysis). This is how the qualitative data overall was seen to be offering '*non-verbal communication*' as a main, overarching theme. For a summary of this please see Table 5.1 below.

5.1.2.1.2 Analysis of Field Notes Embedded into Transcripts of PostIGMs

Three emergent sub-themes from this analysis were: reduction of avoiding/breaking screen gaze, reduction of long silences, and increase of nodding.

These sub-themes were then identified under two themes 'Disruptors' and 'Facilitators.' Overall, '*non-verbal communications*' was confirmed to be an overarching emergent theme for Cycle 1, as Table 5.1 shows in its comparison of the instances of these disruptors and facilitators during pre- and post-intervention group meetings.

Table 5.1: Field Notes Observations of Non-verbal Communications: Emergent Themes from the Analyses of the Pre Vs the Post-Intervention Group Meetings Transcriptions.

Overarching Theme	Theme	Sub-theme	Cycle 1			
			Pre-intervention		Post-intervention	
			Frequency (59)	%	Frequency (119)	%
Non-verbal Communication	Disruptors	Breaking screen gaze	49	83.5	18	15.13
		Long silences ³⁷	10	16.95	4	3.36
	Facilitators	Nodding	--	--	97	81.51

³⁷ These were not reasonable silences in which the group appeared to pause to think but were overlong and this suggested breakdowns in the group's communicative ease with each other.

Next section illustrates the focus group findings, i.e., students' verbal accounts of their changing experiences (from the pre- and post-CSCC) of their own and each other's.

5.1.2.2 *Template Analysis of Focus Group Transcripts*

Analysis of the post-intervention focus group transcripts of Cycle 1 again revealed the two sub-themes: screen gaze and nodding. The respondents showed a decrease in avoiding/breaking screen gaze and increased occurrences of nodding during their PostIGMs. Example focus group transcripts extracts are presented in Table 5.2 next. Note that under the table heading, 'Frequency,' can be seen the number of times the particular theme was talked about by participants, overall, e.g., 6 times for screen gaze in Cycle 1. Table 5.2 offers just three example statements, one per each theme. Please see [Appendix A.4](#), p. 414 for all the student focus group statements that were related to these themes.

Table 5.2: Example Student Statements on the Two Emergent Key Themes During the Post-Intervention Focus Groups (Cycle 1).

Main Theme	Frequency	Cycle 1
		Students' Statements
Screen Gaze	6	S2: <i>I can see, when I was discussing when I was presenting my article, people are curious, and their facial expressions that drive me to keep on going to complete my article. (TR PostIFG, G1)</i>
		S6: <i>I'm scared to make eye contact because I'm scared like if they have this blank look on their face like they don't understand what I'm saying. After this discussion, I think, I tried my best to like to look at everyone. So that's one thing that I'm trying. I will improve in the future. (TR PostIFG, G2)</i>
		S8: <i>... in the discussion is a lot more eye contact with everyone. So that was quite good response. (TR PostIFG, G2)</i>
Nodding	5	S8: <i>... when I was talking like all you guys are nodding heads, so it gives you more confidence like you guys actually paying attention. So, this is quite good strategy. (TR PostIFG, G2)</i>
		S6: <i>For me like, Hasim has already said it [above], like while I was looking at them, they were nodding. (TR PostIFG, G2)</i>

S8: *So, when someone's talking, you know that little nod of like clarification of they were listening to you. (TR PostIFG, G2)*

Note³⁸

During the post-intervention focus groups, the above statements and those in [Appendix A.4](#) (p. 414) taken together, indicated that students' attention was apparently mainly on these two themes (screen gaze and nodding), although the researcher asked them one question³⁹ about what responses they have noticed from the group members to the used strategies.

Overall, these themes were not evidenced in the talk of the pre-intervention focus groups. That is to say, the CCSC appears to have channeled students' closer attention to their own and each other's non-verbal communications and the significance of these for communicative ease in the group.

Next, the examples of field-noted micro-ethnographic observations of the pre-and the post-intervention videos of the group work meetings related to Cycle 1 ($n = 8$ out of a total of $n = 32$) are presented. Micro-ethnographic analysis of what was actually observed in non-verbal communication was important to support, or not, students' accounts (in Table 5.2 and [Appendix A.4](#), p. 414) of their screen gaze behaviours.

5.1.2.3 Micro-Ethnographic Analysis

The micro-ethnographic analysis of all group members' behaviours during all *first* article presentations in each group, and then again in their follow-up group discussions, are presented below. This was done for both the pre-and the post-intervention group work

³⁸ The acronyms used in all tables indicate: S(n)= The unique code to identify each student, TR= Transcription, PostIFG = Post-Intervention Focus Group, G(n) = Group (number).

³⁹ Focus group Q3: Can you remember any responses to the strategies you used in the group?

meetings, for comparative purposes. Again, the choice of the first article presentation and follow-up discussion in each group was for consistency with the example quantitative data analysed in Sections 5.1.1 above. As there, the examples here were found to be representative of the rest of the ethnographic analysis results presented in [Appendix A.5](#), pp. 415-423, i.e., for all presentations and their follow-up discussions in both Groups 1 and 2.

Box 5.1 to Box 5.4 below, show typical examples of what emerged from the micro-ethnographic analysis. The light-coloured boxes, Box 5.1 and Box 5.2 describe group members' behaviours during the presentations of the first article (Box 5.1) in the group and then follow-up discussions (Box 5.2) before the CSCC intervention session. The darker coloured boxes that follow, Box 5.3 and Box 5.4, describe the same behaviours, respectively, after the intervention. It will be seen that the data in these boxes appear to corroborate the data analysed via Microsoft Excel and R in Sections 5.1.1 above.)

5.1.2.1.3 Cycle 1: Pre-Intervention Group Meeting (PreIGM) - Micro-Ethnography Results

The first of the two groups in Cycle 1 were STEM Sri Lankan students from one UK university. In this, Group 1, the order of individual presentations was: S2, S4, S1, then S3. Below is an example from the pre-intervention screen gaze behaviour of S2 during his presentation to his fellow group members. The behaviour seen in Box 5.1, below was characteristic, pre-intervention, of all the participants in both groups (Cycle 1) when they were presenting to the rest of the group. [Appendix A.5](#), (pp. 415-423) shows that there were very similar results for each presenter in both Groups 1 and 2 of Cycle 1. That is to say, the results for pre-intervention screen gaze attentiveness during the task-focused meetings for Cycle 1, were found to be similarly fragmented, erratic, and unpredictable

across all participants in both UK groups irrespective of close examinations through the videos for disconfirming evidence of this by any group member.

Box 5.1: Group 1 Pre-Intervention Screen Gaze Micro-Ethnography Results of Group Members During S2's Journal Article Presentation.

<p>Group 1/Pre-intervention screen gaze behaviour of group members during S2's presentation</p>
<p>Total time duration: 1 m 57 s.</p>
<ol style="list-style-type: none"> 1. S2 breaks screen gaze with others throughout most of his presentation and with many hesitation fillers ('mmm'; 'um'; 'er'). He rubs his forehead several times [00:04:57- 00:05:03] while presenting. He breaks screen gaze for a combined total of one minute and 56 seconds. At no point, even for one second during S2's 2-minute presentation does he witness the whole small group's full-screen gaze attention on him. When he has finished presenting his article, he releases a deep breath. 2. S1 breaks screen gaze (downward eye gaze) throughout S2's presentation. He does not look even once at the presenter or other group members. Even after S2 finishes his presentation, S1 does not look at the group but keeps his eye gaze downward. At no point, even for one second during S2's two minutes presentation does S1 witness the whole small group's similar screen gaze behaviour during S2's presentation. 3. S3 breaks screen gaze for a combined total of 1 m and 27 s. 4. S4 breaks screen gaze for a combined total of 32 s.

The point of presenting the data in this form is that it can capture critical incidents that mediated screen gaze amongst the team members during article presentations.

A pattern that emerged from the field note observations for both groups of Cycle 1 (when someone was presenting) was that breaking from screen gaze by a presenter appeared to encourage breaking of screen gaze attention amongst other members too; they appeared more easily distracted within their individual physical environments. For example, S4 in Group 1, had the whole group's screen gaze attention until he broke screen gaze himself to continue looking downward at his notes through nearly all his presentation. This may have facilitated S2's obvious, several verbal communications with

his brother who came into the room during S4's presentation. When this happened, S1 also began to repeatedly break his screen gaze.

Thinking about the outcomes of failures to maintain inclusive eye contact around the group by any speaker whenever they spoke during the *offline* use of compassionate team meetings, two similar outcomes were apparent for this study's online groups when any presenter broke screen gaze:

- i. the presenter could not notice other group members' non-verbal signals, if any, of their understanding or lack of understanding of what the presenter was saying. Neither could the presenter witness any possible cues of encouragement, surprise, interest, boredom, agreement, or disagreement around the group in real-time.
- ii. the other group members *could* see that presenter was not attending to them or, therefore, any non-verbal responses from them to what the presenter was saying. Thus, there may have seemed little point in their offering non-verbal signals of engagement.

Both of these phenomena contrast against the first component of compassion which is to '*notice* the distress or disadvantaging of self and others.' This cannot be done without attention in full presence, to each other in a team meeting. The finding here can be understood through what is demonstrated by Vertegaal et al (2003). Their eye-tracking study explored the role of eye gaze in video conferencing group work in which, where when every participant thought that the speaker was addressing them individually (via personal eye contact), the spread of participation of the group members equalised, and the quality of problem-solving and decision-making was enhanced. This is important for the next section on screen gaze practice during the *discussion* of the above presentations of each student's chosen article.

Box 5.2: Group 1 Pre-Intervention Screen Gaze Micro-Ethnography Results of Group Members During Group Discussion of the Article Presented by S2.

Group 1/Pre-intervention screen gaze behaviours of group members during group discussion of the article presented by S2.

Total time duration: 4 m 9 s.

1. S2 breaks screen gaze for a combined total of 3 m and 21 s.
2. S1 breaks screen gaze (looks downward, left side, and bends his head down where others cannot see his face as he looks away) for a combined total of 2 m and 45 s.
3. S3 breaks screen gaze for a combined total of 1 m and 54 s as she looks away while touching her hair.
4. S4 breaks screen gaze for a combined total of 1 m and 24 s during this discussion as he rolls his eyes looking up and closes his eyes [00:08:13-00:08:23] and talks without sustaining screen gaze.
5. Screen gaze was broken with S2 by three students for a combined total of 3 m and 21 s. This means that during the discussion, group members collectively sustained screen gaze with S2 only for 48 s in total. All the other times, one or two or all member/s were looking away from the screen.

During this pre-intervention discussion, screen gaze behaviours were found to be representative of what can be seen in Box 5.2, for all the other group members' presentations, i.e., in both groups. (See this in [Appendices A.5.1 & A.5.3](#), pp. 415-418 & 420-422).

5.1.2.3.2 Cycle 1: Post-Intervention Group Meeting (PostIGM) – Screen Gaze Micro-Ethnography Results

Overall, the field notes evidenced that screen gaze was better sustained across both groups in Cycle 1 after the CSCC intervention session than before. Box 5.3 below is an example of the ethnographic field notes related to the screen gaze attentiveness of S2, during the presentation of his *post-intervention* article, and that of his team members while he was presenting it.

Box 5.3: Group 1 Post-Intervention Screen Gaze Micro-Ethnography Results of Group Members During S2's Journal Article Presentation.

Group 1/Post-intervention screen gaze behaviours of group members during S2's presentation

Total time duration: 2 m and 26 s.

1. Although S2 (presenter) breaks his screen gaze for a combined total of 50s, he appears better motivated to try to sustain his screen gaze throughout his presentation. His brother enters the room and makes several attempts to talk to him but S2 does not answer him, raising his palm to the screen to show his brother behind him that he is occupied.
2. S1 breaks screen gaze for a combined total of 1 m and 16 s during S2's presentation, in contrast to no screen gaze at all during S2's pre intervention presentation.
3. S3 breaks screen gaze for a combined total of 43 s and all the other time she sustains screen gaze.
4. S4 sustains his screen gaze throughout the whole presentation.

Next, in Box 5.4 are example field note records of screen gaze across the group during its *discussion* of S2's post-intervention article.

Box 5.4: Group 1 Post-Intervention Screen Gaze Micro-Ethnography Results during Discussion of the Article Presented by S2.

Group1/Post-intervention screen gaze behaviours during **discussion** of the article presented by S2.

Time duration: 2 m and 48 s.

1. S2 breaks screen gaze for a combined total of 22 s.
2. S1 breaks screen gaze for a combined total of 9 s.
3. S3 sustains (does not break) screen gaze throughout the whole discussion on S2's research article.
4. S4 sustains (does not break) his screen gaze during the whole of the discussion time.

Overall, it was evident that screen gaze was better sustained across the groups in Cycle 1 in PostIGMs than PreIGMs. This can be seen in [Appendices A.5.2 & A.5.4](#) (pp. 418-420 & 422-448) where all of the pre-and post-intervention micro-ethnographic results for Cycle 1 are found. Taken together these micro-ethnographic data inform and appear to

corroborate what was found in the quantitative data above in Sections 5.1.1.1 to 5.1.1.3 regarding screen gaze.

5.1.3 Screen Gaze — Sustaining vs Not-sustaining (Breaking)

The study findings indicated the reasons for group members' breaking screen gaze (extensively evidenced during PreIGMs) as well as sustaining screen gaze (significantly evidenced during PostIGMs).

5.1.3.1.1 Reasons Associated with Screen Gaze: Non-sustaining/Avoidant/Breaking

Micro-ethnographic analysis revealed more about the reasons for breaking screen gaze. Unfocused Attention: During the PreIGMs, the speakers' breaking screen gaze was observed leading to the breaking of other group members' screen gaze. Examples from each, Groups 1 and 2 are as follows,

Box 5.5: Group 1 Pre-Intervention Micro-ethnography Results of Group Members During S4's Journal Article Presentation.

<p>Group 1/Pre-intervention screen gaze behaviour during S4's journal article presentation.</p>
<p>Total presentation time: 5 m & 25 s.</p>
<p>Speaker</p> <p>While presenting his journal article to the group, S4 appears to be mainly reading, eyes down, at the expense of maintaining optimal screen gaze. His screen gaze connection to others is infrequent and fleeting.</p>
<p>Listeners</p> <p>Throughout S4's presentation, S1 does not focus his attention to the presenter but looks down then does his own work moving left and right sides and looks back from his left side.</p> <p>S2 communicates with his brother who is behind S2, sitting on the sofa in the room.</p> <p>S3 touches her hair and looks away from the screen.</p>

The same behaviours were observed in Group 2 as shown in Box 5.6 below.

Box 5.6: Group 1 Pre-Intervention Micro-ethnography Results of Group Members During S6's Journal Article Presentation.

Group 2/Pre-intervention screen gaze behaviours during S6's journal article presentation.

Total presentation time: 2 m & 16 s.

Speaker

S6 looks at her notes and breaks screen gaze continually during her presentation for an extended period of time looking up, down and sides often.

Listener

S5 breaks screen gaze at 33 second while taking his mobile phone on his hand and looking at his phone for an extended period of time 1 m and 53 s where he rarely looks at screen which lasts less than 3 seconds per once.

- i. External Communication: In the pre-intervention group discussion, it was observed frequent verbal as well as non-verbal communication of the group members with external personnel (in their rooms). Out of all four members in the discussion group (Group 1), two students repeatedly communicated with somebody else in their rooms.

Box 5.7: Group 1 Pre-Intervention Micro-ethnography Results of Group Members During S4's Journal Article Presentation.

Group 1/Pre-intervention screen gaze behaviour of S2 during S4's journal article presentation

Total Presentation time: 5 m & 25 s

1. [00:12:15-00:12:25] S2 moves his right hand to backward expecting something or giving something to a person sitting behind him. Then he looks behind and communicates nonverbally with that person
2. [00:13:26- 00:13:34] S1 looks at his left side and it seems non-verbally communicating with someone outside their group. Time to time he looks at left side continually till 00:13:56.
3. [00:14:00-00:14:12] S2 communicates verbally with someone (outside the group) behind him turning his head backward from his right side.
4. [00:15:21- 00:15:29] S2 again communicates non-verbally with someone behind him turning his head backward.
5. [00:20:41- 00:20:44] S2 rubs his left side of the neck and turns his head towards someone behind him.
6. [21.43- 21.55] S2 again communicates verbally with someone in his room turning his head backward. His mic is muted, so others can't hear that conversation outside the discussion.
7. [00:29:48 - 00:30:04] S1 turns his head to his left side and communicates non-verbally with someone outside of the group.

There are reasons why people are easily distracted and look away from their colleagues on screen, including busy schedules, lack of a private room to work in, outside noise etc. At the same time, participants confirmed that pre-intervention, they have been more likely breaking their own screen gaze when they noticed a speaker or (when they were presenting themselves) another listener was breaking screen gaze (looking away).

This finding confirmed that when the speaker or any other member of the group (a listener) broke screen gaze, the other members also tended to break their screen gaze as students were mirroring this behaviour.

However, the post-intervention results suggest there was more “ostentatious listening” (Duhigg, 2016, p. 5) after the CSCC intervention session than before.

5.1.3.1.2 Reasons Associated with Screen Gaze: Sustaining

i. Focused attention

In comparison to pre-intervention sessions, students appeared to be paying more attention to the group during both presentations, and then again in follow-up discussions, including through non-verbal signals.

[At 00:15:48] [S1 leans forward more towards the computer to direct a question to S4]

[At 00:15:48- 00:17:07] [S2 and S3 sustain screen gaze with group members when S1 directs a question to S4]

S1: *I think ... using these strategies helps me focus and attract, more to the conversation that we had.* (TR PostIFG, G1, C1)

The above findings highlight students’ tendency to focus on group discussion after the CSCC intervention session.

ii. Avoiding external communication

Overall, the intervention appeared to reduce breaking screen gaze where continued monopolising was not a simultaneous problem. For example, student 2 (Group 1, pre-intervention) was approached by his brother from behind and S2 repeatedly turned away from the online discussion to converse with his brother. Post-intervention, the same situation arose despite repeated approaches by his brother talking to S2 behind him, S2 did not once break screen gaze with his group and did not respond to his brother. It appears that S2 was trying to avoid externally communicating with his brother but paying

more attention to the group. It appears that S2 was not unhappy, upset or annoyed with his brother, S2 was just limiting his communication with his brother. It cannot be observed any sense of irritation or frustration. To better understand why he behaved differently; the researcher conducted a telephone interview with S2. Then, S2 explained the enhancement of his understanding of the impacts of individual communicative (verbal/non-verbal) behaviours on the whole group after the CSCC intervention session (i.e., his external communication may disturb the group's attention and whole discussion). Thus, he intentionally refrained from communicating with/responding to his brother during the group discussion⁴⁰. S2's behaviour after the intervention session provides an example of addressing such behaviours through CSCC in online group work. Similarly, during the post-intervention (Group 2), an individual entered the room while S5 was participating in the discussion. In response, S5, without breaking his screen gaze, stretched his left arm out and held it low and behind him for a few moments as though he was trying to block the other person from approaching. The other person left the room and S5 continued his listening to the group.

As a result of these incidents, the main study (Cycles 2 and 3) students have explored the use of a shared common background of their own choice with the researcher.

5.1.4 Summary: Non-verbal Communications Cycle 1

This is a summary of the data presented above in Sections 5.1.1.1 to 5.1.2 (non-verbal communications). Three sub-themes emerged from close observation of the group work under *non-verbal communication*: screen gaze, long silences (disruptors); and nodding

⁴⁰ Personal Communication on September 18, 2020, at 4.10 pm (GMT)

(facilitator). Compared to the pre-intervention group meetings, the post-intervention screen gaze breaking, frequency of long silences (i.e., of 10 seconds or more) were found to be decreased while frequency of nodding was found to be increased. These findings were supported by the findings in Section 5.2.2 which explored students' accounts (during their focus groups) of their lived experiences of the task-focused group meetings before and after the CSCC intervention session.

The communicative usefulness of nodding for ways of validating others was explored with group members during the CSCC intervention session. Briefly, students agreed and acted on its usefulness to demonstrate active listening and/or understanding and/or agreeing and/or encouragement of a speaker to continue. Further, how students could intervene to resolve long silences was also discussed with students during the CSCC intervention session (See [Appendix F](#), p. 641). Both of these strategies were demonstrated by the group members during their PostIGMs in contrast to their PreIGMs. Evidence of how students mediated to reduce long silences and their use of nodding were identified above in Table 5.2.

Conclusion of findings above in relation to research questions 2 and 4.

RQ 2: Both quantitative and qualitative findings so far indicate the possibility of adapting the development of HE students in compassion-focused communications for use in online group meetings. This adaptation was possible in online group meetings with the mindful use of non-verbal signals and cues (i.e., sustained screen gaze, nodding and reduction of long silences).

RQ 4: The results indicate a statistically significant increase in sustained screen gaze behaviour of the UK-based Sri Lankan students after the CSCC intervention session especially when they listen to others' presentations and when they were involved in the follow-up discussions. Further, in relation to non-verbal communication, both groups reported increased use of nodding and reduction of long silences after the CSCC intervention session.

In summary, in relation to non-verbal communication, both groups reported and demonstrated a reduction of avoiding/breaking screen gaze (an increase in sustained screen gaze), a reduction of long silences and the use of nodding after the CSCC intervention session.

5.2 Verbal Communication

The findings in this section respond to research questions 2 and 4 (see Section 4.1).

Verbal communication of the respondents was investigated quantitatively and qualitatively using the transcripts of the pre-and post-intervention group meetings and focus groups. This was done using Template Analysis supported by NVivo (Pro 12).

Overall, the main findings for pre- and post-intervention *verbal communications* were these. The intervention appeared to enhance group members' *Social, Learning experiences* and *Social experience mediated learning experience*. These findings are now examined separately and in more depth. Below, Table 5.3, Table 5.4 and their related [Appendix A.6](#) (pp. 424-430) explore evidence of enhanced social and learning experiences in all the PostIGMs when compared to the PreIGMs.

Then Table 5.5, Table 5.6 and their related [Appendix A.7](#) (pp. 431-447) identify what the focus groups noticed of this if anything, and if they did, what they thought explained it.

5.2.1 Template Analysis of Group Work Meetings' Transcripts (Pre- and Post-Intervention Comparisons)

Set out next in Table 6.6 are the three main themes (1st column) that emerged under *Verbal communication*. Their sub-themes are in the 2nd column (called focused codes) and *their evidence* are in the 3rd column (called free codes). (These codes are explained in the Section 4.5.1.3 in Methodology Chapter).

Table 5.3: Verbal Communications: Comparison of PreIGM Vs PostIGM Instances of Emergent Themes.

3 Themes	8 Sub-themes	Evidence	Cycle 1 - Frequency	
			Pre-Intervention	Post-Intervention
Social Experience	<i>Disruptions to Group Cohesion</i>	Interruptions; Simultaneous talk; Competitive individualism	09	00
	<i>Validation</i>	Expressing gratitude; Complimenting others' efforts; Inviting group members by their names.	02	44
	<i>Social Connectedness</i>	Apologizing; Creating opportunities for others to speak; Social risk-taking	03	24
		<i>Sub Total</i>	14	68
Learning Experience	<i>Productive Participation</i>	Knowledge dissemination & Critical perspectives	01	14
	<i>Purposeful Facilitation</i>	Seeking clarification; Keeping focus	04	20
		<i>Sub Total</i>	05	34
Social Experience Mediated Learning Experience	<i>Psychological Safety</i>	Reported reduction of anxiety	00	02
	<i>Notion of Equal Agency</i>	Negative	12	00
		Positive	00	06
		<i>Sub Total</i>	12	08
		<i>Grand Total</i>	31	110

Next, examples transcription extracts of the evidence referred to by this table are provided in Table 5.4 below (but for the more examples please see [Appendix A.6](#), pp. 424-430).

Table 5.4: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycle 1).

Theme	Sub-theme	Students' Statements	
		Pre-Intervention	Post-Intervention
1. Social Experience			
Disruptions to Group Cohesion	Simultaneous talk	<p>S4: <i>If you can tell us the subject area-</i></p> <p>S2: <i>-I think-</i></p> <p><i>[00:06:35 S2, S4 and S1 talk at the same time, but S2 continues his talk, other two were neglected]</i></p> <p>(TR, PreIGM, G1)</p>	--
	Competitive individualism	<p><i>[00:01:47 Though invited to, S7 does not negotiate with others about the order of presenting but he immediately he raises his hand and says that he goes first]</i></p> <p>S7: <i>I'll go first.</i></p> <p>S8: <i>I can go first because I want to ...</i></p> <p>(TR, PreIGM, G2)</p>	--
	Interruptions	<p>S7: <i>No right now it's actually running on the terminal it is not like-</i></p> <p>S5: <i>- Aha, okay, terminal okay, that's producing data.</i></p> <p><i>[S5 interrupts S7 before he completes his answer and talks over him]</i> (TR, PreIGM, G2)</p>	--

Validation	Validating other's expressions	S4: <i>So, I think this is quite clear now, right?</i> [00:16:38 - 00:19:37 S4 speaks continuously without sustaining screen gaze - an extended period of downward eye gaze] S2: <i>Yeah.</i> (TR, PreIGM, G1)	S7: <i>It makes sense and also in the recommendations, they mentioned that it's a wired process ...; so it would obviously be helpful.</i> (TR, PostIGM, G2)
	Expressing gratitude	S5: <i>Okay. Thank you.</i> [After S7 answers S5's question]. (TR, PreIGM, G2)	S3: <i>Thank you Jenuru.</i> (TR, PostIGM, G1)
	Inviting others by their names	--	S2: <i>Okay, so Liyan, that's about my article ... let's go for Liyan's article now.</i> (TR, PostIGM, G1)
	Complimenting	--	S7: <i>You really pretty much explained it well.</i> (TR, PostIGM, G2)
Social Connectedness	Apologizing	S4: <i>I can't really pronounce it. We can say Stealineous Carpentesis someone [unsure]. Sorry about that.</i> (TR, PreIGM, G1)	S4: <i>I can't really hear you, sorry can you, can you, once again, tell the last bit?</i> (TR, PostIGM, G1)
	Creating opportunities for others to speak	--	S3: <i>Liyan you seem like you have a question? You can go ahead.</i> (TR, PostIGM, G1)
	Social risk taking	--	S2: <i>Jenuru [laughing, to S1] I know you are more curious on that, yeah, just go ahead man.</i> (TR, PostIGM, G1)
2. Learning Experience			
Purposeful Facilitations	Keeping focus	--	S2: <i>I like to add something...</i> (TR, PostIGM, G1)
	Seeking clarification	S1: <i>I think it is better if you could clarify more about the IP calling.</i> (TR, PreIGM, G1)	S4: <i>I have something to ask from you. Can you tell this once again using a minute like in your own words to like in a simpler form because I didn't</i>

				<i>get the whole meaning of it? Sorry about that. (TR, PostIGM, G1)</i>
Productive Participation	Knowledge dissemination and critical Perspectives	S4: <i>If you can tell me the difference now, actually nowadays Mercedes is talking about video processing. ... so, if you can compare the effectiveness of your system and the video processing system, uh, uh, that would help, uh, for us to understand about your system. (TR, PreIGM, G1)</i>		S2: <i>I have one question for Jenuru [S1]. Is there any specific applications that you use, you mentioned something like a fibre optic gyroscope, right? Is that available in Aerospace, Automotive or submarine? (TR, PostIGM, G1)</i> S7: <i>Yeah. It could be automated, uh, but right now it's a manual process. They just ... the reason they want to do it was to make a neural network was to make an AI that can do that. I mean - I mean the accuracy and all that. Their paper doesn't really mention the accuracy of it, but it's just an idea so, they could work on it with time. (TR, PostIGM, G2)</i>
3. Social Experience Mediated Learning Experience				
Psychological Safety	Reduction of anxiety	--		S4: <i>Jenuru is smiling today, first time I saw that. (TR, PostIGM, G1)</i>
Notion of Equal Agency	Negative	S3: <i>Any questions? [After presenting her journal article]. (TR, PreIGM, G1)</i>	--	
	Positive	--		S8: <i>So, yeah, that's what I've learned from this article, and would you guys like to discuss it? (TR, PostIGM, G2)</i>

Appendix A.6 (pp. 424-430) shows more examples on students' statements of PreIGM and PostIGM related to the themes seen here in Table 5.3 and Table 5.4.

Next, the findings of Template Analyses of the pre- and post-intervention focus group transcripts are presented.

5.2.2 Template Analysis of the Focus Groups' Transcripts (Pre-Intervention Vs Post-Intervention)

The focus groups were conducted twice (after the PreIGMs and after the PostIGMs for each group) to explore group members' reflections on their group work before and after the CSCC intervention session.

The analysis of the pre-intervention focus groups' transcripts revealed emergence of five main themes: *Social experience*, *Learning experience*, *Social experience mediated learning experiences*, *Group management strategies* and *Student views on the task designed for attention to compassion*. These themes revealed students' experiences related to their previous online group work meetings in the university (before participating in this study) and then related to the pre-and post-intervention group work experience (during this study). Table 5.5 below summarises the emergent themes in Cycle 1 followed example extracts of the PreIFGs transcripts presented in Table 5.6.

Table 5.5: Emergent Themes from Template Analysis of the Pre- Vs Post-intervention Focus Groups Transcripts.

Theme	Sub-theme	Evidence	Cycle 1 - Frequency	
			PreIFGs	PostIGFs
Social Experience				
	Disruption to Group Cohesion [Common Group Work Behaviours (Pre- Study)]	Inequality of sharing time/dominating; Non-contribution; Cliques; The feeling of being left out	54	--
	Social Connectedness	Enhancing interactivity; Increasing social comfort; Improving listening; Building confidence; Creating opportunities for others to speak; Enhancing team spirit	--	47
		Sub Total	54	47

Learning Experience				
	Productive Participation	Knowledge dissemination & Critical perspectives	02	06
	Purposeful Facilitation	Keeping focus; Seeking clarification	--	15
		Sub Total	02	21
Social Experience Meditated Learning Experience				
	Psychological Safety	Social anxiety: Difficulty of communicating in English as second language; Confusion of understanding; Reluctance to switch on cameras	13	--
		Reported reduction of anxiety; Improving communicating in English; Willingness to switch on cameras	--	53
	Notion of Equal Agency	Negative	--	--
		Positive	--	12
		Sub Total	13	65
Group Management Strategies				
	Strategies Used to Enhance Group Engagement (Pre- Study)	Assigning task-specific roles; Questioning; Appointing a leader; Allocating time slots; Removing non-engaging members from the group	14	--
	Strategies Used to Manage PostIGMs	CSCC: Expressing gratitude; Inviting group members by their names; Addressing monopolising behaviour; Complimenting others' efforts; Questioning with compassion; More explanations/simple language; Sustaining screen gaze; Nodding; Smiling	--	26
		Student Developed: Concerning about the group when selecting journal article; Observing all four faces	--	08
		Sub Total	14	34

Student Views on the Task Designed for Attention to Compassion				
	Task Design	Negative	--	--
		Positive	12	16
		Sub Total	12	16
	Grand Total		95	183

Next, an *example* of the pre-and post-intervention focus groups' evidence pertaining to each theme noted in Table 5.5, is provided next in Table 5.6. It will be seen that the group management strategies students reported using in their previous meetings (under the heading, pre-intervention) are different from those under the heading post interventions. The examples transcription extracts shown below were characteristic of what was found across these pre-and post-intervention focus group data sets. To see this, please refer to [Appendix A.7](#) (pp. 431-447) for further examples.

Table 5.6: Template Analysis of PreIFGs and PostIFGs – Example Transcription Extracts on Verbal Communication (Cycle 1).

Main Theme	Sub-theme	Students' Statements	
		Pre-Intervention	Post-Intervention
1. Social Experience			
Disruption to Group Cohesion [Common Group Work Behaviours (Pre-Study)]	Inequality of sharing time/ Dominating	<p>S4: ... He was like a talking, talking, talking and 20 minutes went, around one hour like the ... yeah, we tried all possible ways to stop the, uh, the third person. Somehow no one could stop him and it took more than I think more than one hour. And uh lastly what happened I couldn't even do the conclusion. (TR, PreIFG, G1)</p> <p>S3: What happens actually, sometimes the whole group is left out and one person is leading the whole group the whole time. (TR, PreIFG, G1)</p> <p>S5: Discussion one, so it's mainly like someone else is leading as everyone else is just listening. (TR, PreIFG, G2)</p>	--
	Non-contributing	<p>S4: So, in my case what I felt actually that the groups I joined with uh they came up with like very lower level of knowledge. Some people didn't even talk. (TR, PreIFG, G1)</p> <p>S7: ...nobody is going to ask any questions ... they are shy for some reasons. (TR, PreIFG, G2)</p>	--

	<p>S8: <i>Some people are so used to be quiet ones and you are told, 'no I'm not ready to do it' and stuff like that. (TR, PreIFG, G2)</i></p>	
Feeling of being left out	<p>S13: <i>I had some ideas that is totally different from others. So in some occasions, I have been left (out) from some discussion due to those ideas. (TR, PreIFG, G2)</i></p> <p>S17: <i>...I've seen that if you don't encourage the other person to talk right, he wouldn't be talking because everybody is not the same. ...; if you don't encourage that person to come forward and speak, he or she would not. (TR, PreIFG, G3)</i></p>	
Cliques	<p>S1: <i>Normally in the group chat, like let's say in a course. Yeah, uh, what people tend to do is, when they have friends, if they know, if they know some people outside from that group, they tend to talk to each other more than the other group members. It's kind of killing the mood situation in the group meetings. (TR, PreIFG, G1)</i></p> <p>S2: <i>Yeah, I agree with Jenuru ... sometimes I have seen that ...l, when people are doing a group discussion, some people do backchatting. (TR, PreIFG, G1)</i></p> <p>S4: <i>... they like having own discussions. So, this is happening in the class meetings as well ...we hear their private conversations</i></p>	--

			<i>...they don't bother about the discussion or the meeting that we are in. (TR, PreIFG, G1)</i>
Social connectedness	Enhancing interactivity	--	<p>S4: <i>... today I think after using the techniques [CSCC], by implementing the techniques ... now everyone is interacting. (TR, PostIFG, G1)</i></p> <p>S2: <i>... to be honest, ... they were really engaging. (TR, PostIFG, G1)</i></p> <p>S1: <i>So, these things [compassionate communication strategies] help us to keep the relationship like that interaction with each other. (TR, PostIFG, G1).</i></p>
	Improving listening	--	<p>S2: <i>So, after this session [CSCC] I like I've learned a lot to listen to others. (TR, PostIFG, G1)</i></p> <p>S5: <i>For me, uh, what happened was ...because I was able to allow them, I was able to give them a chance to speak ...So, I think I was really offending them before when I was talking ... I mean I try to listen to them and then break the points now [down?]. So, I found ...that was more positively taken from the others. (TR, PostIFG, G1)</i></p> <p>S6: <i>So, they were listening. That's why they had this question. (TR, PostIFG, G2)</i></p>
	Increasing social comfort	--	<p>S3: <i>In this group work, it is less technical and more real when we talk and I think that it brought a relaxed mood around all four of us. (TR, PostIFG, G1)</i></p>

			<p>S2: ... after the training they get more comfortable with each other, and they they had I I could see more more and more expressions when how they interest about the topics they need when we discuss. (TR, PostIFG, G1)</p> <p>S8: But now we feel much more comfortable in how we interact. (TR, PostIFG, G2)</p>
	Building confidence	--	<p>S8: So, it gives you more confidence like you guys actually paying attention. So, this is quite good strategy. (TR, PostIFG, G2)</p>
	Creating opportunities for others to speak	--	<p>S1: So basically, using these strategies means that if a person is unfocused, ...using this strategy we can ask him or her to come and join the conversation or the discussion. (TR, PostIFG, G1)</p>
	Enhancing team spirit		<p>S5: Also, I think like if we use these skills in real life when we meet, each other. We would be able to be expressing ourselves I guess, ... we can put it into practice. ... the feelings that we have will be a big bonding. (TR, PostIFG, G2)</p>
2. Learning Experience			
Productive Participation	Knowledge dissemination and critical perspectives	<p>S4: ... some areas are highly technical, so we need to study, my assumption actually for this discussion we should have notified about the discussion areas before the discussion. (TR, PreIFG, G1)</p>	<p>S2: I've learned so many things after engaging in this discussion. (TR, PostIFG, G1)</p> <p>S6: ...I invite someone into the discussion, um ... they might be sitting there and they don't understand what's going on. ...by trying to be compassionate, like we invite someone to engage in the discussion. By that, they'll start thinking on that warm [sic] and then they will</p>

			<p>S2: ... we are doing different subjects each and everyone, so I think it is advantages like likewise if we could arrange like before kind of an article. If you assign us to read and give our thoughts so everyone has uh kind of a background on that as well. So, I think that way it is more uh It will be more productive like this kind of conversation. (TR, PreIFG, G1)</p>	<p>have thoughts like [to] implement, like giving ideas into that discussion. (TR, PostIFG, G1)</p> <p>S3: I think the more comfortable you are in a meeting, the more you learn. (TR, PostIFG, G1)</p>
Purposeful Facilitations	Keeping focus	--		<p>S1: The strategies [are] helping us to focus uh, when we are out of focus like that, it helps to understand, helps for our learning process. (TR, PostIFG, G1)</p> <p>S3: More you are enthusiastic and more you want to interact and, uh, actually you do it. ...: once I started interacting and they start interacting with me and explaining in a very good way. Then I'm actually very free to express my opinions you know, whatever I have to say, I'm very comfortable to say. So, I think it [CSCC] actually helps a lot in learning. (TR, PostIFG, G1)</p>
	Seeking clarification	--		<p>S4: ... I had that incident. Jenuru said something that I couldn't understand. So, I was asking the same question again and again. ...we don't want to ... it looks odd you know when you ask the same thing again and again. ... [But] sometimes you learn, you learn something from that, somehow ... without ignoring that. [Letting it go.] So that's how ... using the [CSCC]</p>

skills will help you to have a better learning. (TR, PostIFG, G1)

S5: *... they have asked me questions.* (TR, PostIFG, G2).

3. Social Experience Mediated Learning Experience

Psychological Safety	Social anxiety	S7: <i>I was really feeling nervous.</i> (TR, PreIFG, G2)	--
	Reported reduction of anxiety	--	S6: <i>I' m [I was] scared to make eye contact because I' m scared if they have this blank look on their faces like they don' t understand what I' m saying. I' ll have to repeat something. I' m scared of that. After this discussion, I think, I tried my best to look at everyone.</i> (TR, PostIFG, G2)
	Difficulty of communicating in English as Second Language	S4: <i>[inaudible] When you speak in different languages [not mother tongue], so things may not come out naturally, ... you may not get the real idea that someone is having in their mind, so that will be a problem.</i> (TR, PreIFG, G1)	--
		S6: <i>For me personally, yes ... I felt, I felt it personally like when I came in, like I didn' t know ...even though I knew like what</i>	S7: <i>I didn't like people asking me questions in presentations [laughs]. But now I like that. As I went through the session [CSCC] and realized what I was doing. I mean I should be more compassionate. I learned that [laughs].</i> (TR, PostIFG, G2).

the lecturer was asking but I was not able to convey it because I was scared of my English ... like I maybe make mistakes and everyone gonna laugh at it. So yeah, like yeah English places a major part I would say so. (TR, PreIFG, G2)

Improving
communicating
in English

S4: *... don't know whether you have noticed. I didn't say anything anything to Jenuru because he's not smiling ... so, now, I'm saying all the time because I know, that will not affect badly and he's not misunderstanding that so that is there now. So, I have like some sort of openness there so ... I can tell something to him so he will more open to us. So, likewise by using the technique we try to do we try to get familiar then the tools that are helping us to like gain many things. (TR, PostIFG, G1).*

S2: *I think throughout the session everyone engaged really well and I didn't see much difficulties. As Liyan said it, like when someone is speaking, everyone muted their microphones because the background noise and things like that, so they become much more helpful for the speaker to engage. (TR, PostIFG, G1).*

S8: *Now I know how to get discussions flowing even if someone is talking or not. (TR, PostIFG, G2).*

Reluctance to
Switching
cameras on

S7: *I have noticed people tend to speak more uh with the camera off than if it's on. (TR, PreIFG, G2)*

Willingness to Switching cameras on	--	<p>S6: <i>I would also say about having the webcam turned on. The other day, I didn't want to, but then I think by having it turned on like we can see each other and it like makes us more like friendly. (TR, PostIFG, G2)</i></p> <p>S2: <i>... I think, yeah it [CSCC intervention session] helps us to show a lot of our interest or involvement in this discussion. (TR, PostIFG, G1)</i></p>
The notion of Equal Agency	--	<p>S7: <i>... after we present something, instead of asking 'Any questions?' , we could be more inviting. Uh, the way I used, 'any questions?.' The reason I did it was, to [laughs] not to get any questions. (TR, PostIFG, G12)</i></p>
4. Group Management Strategies		
Used Strategies to Enhance Engagement (Pre-Study)	Questioning	<p>S1: <i>If we consider about a group meeting, if someone is out of the focus, what I normally do is ask a question about what I know. (TR, PreIFG, G1)</i></p>
	Appointing a Leader	<p>S2: <i>...when I was working with groups, so we basically appoint a group leader. (TR, PreIFG, G1)</i></p>
	Removing non-engaging members from the group	<p>S4: <i>... what I do is I will straight away complain and remove the person from the group, otherwise this will not work. Yeah, so anyway so I have a very negative experience with that. That's why I'm talking negatively. (TR, PreIFG, G1)</i></p>

Assigning task-specific roles	S2: <i>... we divide our roles ... if we divide the workload ... we can take everyone's attention at a point rather than just one person or two just going through all the conversations. (TR, PreIFG, G1)</i>
Strategies used to Manage PostIGMs	CSCC
Inviting others by their names	S5: <i>Hasim invited me to speak. (TR, PostIFG, G2)</i>
Expressing gratitude	S4: <i>In my case, ... what I learn actually now when I, uh, taking over from Meth actually I usually didn't say thank you because those things are usually don't take like don't bother to say those things actually. So, this change, actually I was I was saying like thank you Meth and I took it like a smooth change from Meth to me. (TR, PostIFG, G1)</i>
Addressing monopolising	S2: <i>... sometimes people might think like, I'm dominating, sometimes, but after this [CSCC intervention session] I feel, yeah, there are certain rules. There are certain things to be covered and quite good understanding. (TR, PostIFG, G1)</i>
Complimenting	S6: <i>...they appreciate the others' efforts. (TR, PostIFG, G2).</i>
Warm Tone	S6: <i>And by trying to be compassionate we invite someone to engage in the discussion. By that, they'll start thinking on that warm tone and then they will have thoughts, like giving ideas into that discussion. (TR, PostIFG, G2).</i>

Sustained screen gaze	S2: <i>I can see when I was discussing when I was presenting my article like people are curious and their facial expressions. (TR, PostIFG, G1)</i>
Nodding	S1: <i>So, I think nodding is helping. So, when I do that, people - the one who uh, speaking is - they know that I understand it and they try to continue the continue their talking rather than explaining the same thing. (TR, PostIFG, G1)</i>
Student Developed	
Smiling	S2: <i>I've seen - when I'm talking, they're curious - their facial expressions, how they smile. (TR, PostIFG, G1)</i>
Offering more Explanations	S2: <i>... like Jenuru, if he's like little bit out of understanding, I can see how his face is different. So, I intend to express [explain] it a lot. (TR, PostIFG, G1)</i>
Questioning with Compassion	S4: <i>... when I listened to Jenuru actually ... he was not smiling always. ... I don't know whether it's the topic is boring itself to him as well so I was like going ahead asking question to make it more attractive and like more in a way that we can discuss further about the subject. So, I think I felt like uh that changed uh everything back to the track. I mean like by doing that it was like ... people are interested uh listening to ... his subject so he come up with a different way of explaining the thing and the other people also got interacted with that. I think that went useful for all others and him as well to uh express what he wanted to say. I did that [on] purpose actually. (TR, PostIFG, G1)</i>

Concerning about the group when selecting journal article	S7: <i>Well, for me, I tried to think about it this meeting beforehand and I kind of focused on finding a research paper that everyone would have some kind of relation to it. (TR, PostIFG, G2)</i>
Observing all four faces (Not only the Speaker)	S2: <i>I have seen when I'm talking people are when they're curious of their facial expressions. (TR, PostIFG, G1)</i>
5. Student Views on the Task Designed for Attention to Compassion	
Negative	--
Positive	<p>S3: <i>And each one was given an equal opportunity to describe first and equal opportunity to question and answer time. (TR, PostIFG, G1)</i></p> <p>S4: <i>... actually, it's it's [compassionate communication] something like valuable, So, I can use it I think this is useful for our future. (TR, PostIFG, G1)</i></p> <p>S2: <i>In two weeks ' time we have our VIVA as well, so I think it [CSCC] is much more beneficial for that. (TR, PostIFG, G1)</i></p> <p>S8: <i>So, it helps in and many different aspects of life that you wouldn't expect (TR, PostIFG, G2)</i></p>

5.2.3 Emergent Themes from Template Analysis of Pre- and Post-Intervention Group Meetings and Focus Groups Transcripts - Data Triangulation Method

As shown in Table 5.3 and Table 5.4, the Template Analysis conducted using the PreIGMs and PostIGMs transcripts revealed three different themes: *Social experience*; *Learning experience*; and *Social experience mediated learning experience*. These themes were related to how students behaved and communicated during their pre- and post-intervention group work meetings. As shown in Table 5.5 and Table 5.6, the Template Analysis of the PreIFGs and PostIFGs transcripts indicated the emergence of five themes: *Social experience*, *Learning experience*, *Social experience mediated learning experience combined*, *Group management strategies* and *Student views on the task designed for attention to compassion*. These themes were related to respondents' previous group work experiences (outside this study), and then, their group work experiences during the pre- and post-intervention group meetings. However, first three themes that emerged from both analyses were found to be common. All themes are discussed next.

5.2.3.1 Theme 1: Social Experience

In relation to the intervention's effects, if any, on social experiences, the analysis of the pre- and post-intervention group meetings' transcripts explored three sub-themes: disruption to group cohesion, validation and social connectedness as shown in Section 5.2.1 (Table 5.3 and Table 5.4). Similarly, Social connectedness was also identified as a sub-theme under social experience from the analysis of pre- and post-intervention focus groups transcripts as seen in Table 5.5 and Table 5.6. These sub-themes are explained next.

5.2.3.1.1 Sub-theme 1: Disruptions to Group Cohesion

Under this negative aspect of social experience, the identified evidence were: Interruptions, Simultaneous talk (talking over each other) and Competitive individualism. As seen in Table 5.3. in the PreIGMs, a total of 9 occurrences of these disruptive behaviours were seen. However, during the PostIGMs, none of these behaviours were found as shown in Table 5.4 and in in [Appendix A.6](#) (pp. 424-430). Here is an example of the contrast.

Before each of the PreIGMs (as for the PostIGMs too), group members were given 20 seconds to decide on who would present in which order, but in the PreIGMs this appeared to be disregarded. Across both PreIGMs, no one asked anyone else when/in what order they would prefer to present their journal articles to the group. At the same time, there was some competitiveness by some group members to present first. In contrast, at the start of the PostIGMs, the group members asked each other who would like to present in what order before the first presentation began. Interestingly, this was not part of the CSCC intervention session.

As revealed from the analysis of the PostFGs transcripts, students had talked about common group behaviours they had experienced before the study, and these were mainly: inequality of sharing time/ dominating; non-contribution; feelings of being left out by the group and cliques. These negative aspects or the disruptors to group cohesion in online group behaviours confirmed the findings of previous research (T. Gilbert, 2016). What is interesting is that students had strategies for dealing with some of these issues before this study, but their strategies changed post CSCC, as explained under Section 5.

5.2.3.1.2 Sub-theme 2: Validation

As evidenced in Table 5.4 and [Appendix A.6](#) (pp. 424-430), it was seen in both groups that, in contrast to the PreIGMs, participants validated each other more frequently in the PostIGMs. This was done by, for example, expressing gratitude, inviting others by their names (to present/to join in the discussion), complimenting other group members' efforts and/or assuring other team members that their questions, worries or experiences were shared. For example, S1, who contributed very little to the follow-up discussions during his PreIGM, was invited more often to speak and a generally greater amount of inclusive attention to him appeared to support and validate him, as when he joined the laughter in the group after receiving a compliment from his peers on his presentation. Incidents like this showed how an act of validation by group members could lead to an effect on the whole group's social and learning experience.

Validating behaviour in group meetings had been discussed [for example, in relation to Leahy (2005)] as part of the CSCC intervention session.

5.2.3.1.3 Sub-theme 3: Social Connectedness

In the pre- and post-intervention group work meetings transcripts, social connectedness was evidenced by students' apologies to each other, creating opportunities for others to speak (including giving way to others when more than one student spoke simultaneously), and social risk-taking. Group members' expressions of apology for unclear or inaudible contributions, inadequate explanations, interruptions, unpreparedness to present the journal article, or technical difficulties were made on 3

occasions⁴¹ during the PreIGMs, rising to 24 occasions⁴² during the PostIGMs. The purpose of apologising e.g., for talking over others, seemed intended to reduce the chance that some might feel marginalised by other group members. This recalls Race for Equality findings by the NUS (2010) which referred to the marginalisation of BAME students during discussions and debates in the classroom as a major problem. This willingness to apologize and why it is important, had been discussed during the CSCC intervention session (See [Appendix F](#), pp. 641-646).

Explicitly creating opportunities for others to speak (including giving way for others to speak⁴³) by the group members was not evidenced during the PreIGMs but was seen during the PostIGMs (see Table 5.4 and [Appendix A.6](#), pp. 424-430).

Social connectedness was also evidenced from the analysis of PostIFGs transcripts where students compared their Pre-vs post-intervention group work experiences. These student experiences were reported in relation to: enhancing interactivity, improving listening, increasing social comfort, building confidence, and creating opportunities for others to speak as seen in Table 5.6 and [Appendix A.7](#) (pp. 431-447).

5.2.3.2 Theme 2: Learning Experience

Two sub-themes emerged under learning experience: *productive participation and purposeful facilitation*.

⁴¹ Three group members: S1 (G1), S4(G1), and S7(G2) were observed apologizing on a total of 3 occasions during PreIGMs in Cycle 1.

⁴² Five group members S1, S3, S4 (G1), S6, S7 (G2) were observed apologising on a total of 7 occasions during PostIGMs in Cycle 1.

⁴³ when simultaneous talk occurred or when a group member shows interest in speaking.

5.2.3.2.1 Sub-theme 1: Productive Participation

Though there was very little evidence during the PreIGMs, of critical perspective taking⁴⁴ or knowledge sharing⁴⁵, both were seen on 14 occasions and more obviously during the PostIGMs. That is, students asked more questions of the whole group, and they offered arguments and/or explanations of ideas, yet none of this was used to interrupt any presenter or discussant.

Similarly, *productive participation* emerged as a sub-theme from the student reported evidence in post-intervention focus groups. This evidence was related to enhancement of their knowledge and how they felt they had been able to help each other to enhance critical perspectives with the application of CSCC in their PostIGMs.

5.2.3.2.2 Sub-theme 2: Purposeful Facilitations

This included group members' purposeful facilitations of each other to enhance the whole group's learning experience through keeping their focus and seeking clarifications. Though the group members seldom (only four times) asked for clarification during the PreIGMs, efforts to seek clarifications from peers and keeping focus were evidenced during the PostIGM on 20 occasions, and this appeared to aid follow-up discussions which were more critical in the PostIGMs (see Table 5.4 and [Appendix A.6](#), pp. 424-430). This purposeful facilitation was informed through the analysis of the PostFGs transcripts. There students explained their purposeful facilitations of each other were to enhance the

⁴⁴ E.g., Asking questions and offering reasonable arguments/evaluations/ideas or perceptions during the discussion of the presented journal articles.

⁴⁵ E.g., Sharing knowledge/understanding through questions/expressing ideas/offering practical/theoretical examples/ adding own experiences.

whole group's focus and learning experience (see Table 5.5 & Table 5.6 and [Appendix A.7](#) (pp. 431-447)).

5.2.3.3 Theme 3: Social Experience Mediated Learning Experience

Two emergent sub-themes under this theme are explained next.

5.2.3.3.1 Sub-theme 1: Psychological Safety

Group members appeared to overcome their pre-CSCC anxiety in the PostIGMs as seen in Table 5.3 and Table 5.4 (see [Appendix A.6](#), pp. 424-430 for more example transcription extracts) and this was also confirmed through the analysis of the PostIFGs transcripts. During the focus groups that followed the pre-intervention group meetings, students discussed their experiences in relation to what they had experienced before as well as during the PreIGMs.

In relation to communicating in English as a Second Language (ESL), students talked about experiences of being demotivated to communicate in English in their previous group meetings due to perceived social anxiety (thinking that others might laugh at them if they made mistakes, or they might not be able to communicate competently compared to others), e.g.:

S7: *Let's say one of us is not great [in communicating in] English, so I wouldn't obviously feel good talking to anybody.* (TR, PreIFG, G2, C1)

However, students' statements in the PostIFGs indicated a change in this thinking:

S7: *... when it comes to the English, speaking English actually is very much proportionate to how much you try to speak right, and it's obviously a game of trial and error. ... If the team members are supportive of it, they would not be anxious to speak. They would not be embarrassed about making mistakes.* (TR, PreIFG, G2, C1)

S4: *Generally, the more you talk and more you listen by using the [CSCC] techniques that will help you to engage much more into the conversation, so that will actually help you develop English language skills.* (TR, PreIFG, G1, C1)

Further, as revealed in the PreIFGs, there was reluctance by some students to switch on their cameras, even if they could, during their previous group meetings and PreIGMs as well. Moreover, researcher had to request group members several times to switch their cameras on during their PreIGMs. Again, social anxiety appeared to be the main reason. Here is an example of what was said about this.

S8: *So, a lot of friends I know who are introverts they can't actually do group work, ... they are more quiet and stay behind the camera. (TR, PreIFGs, G2, C1)*

S8: *... when your camera is turned off and you hear voice you don't know whose voice is coming. ... we didn't know, their facial expressions ... all that paranoia or what they look like when they speak to you. (TR, PreIFG, G2, C1)*

In contrast, during the PostIFGs, students stated that they preferred to speak with their cameras on, as here:

S6: *I would also say about having the webcam turned on. The other day, I didn't want to, but then I think by having it turned on like we can see each other, and it makes us more friendly. (TR, PostIFG, G2, C1).*

The (student-reported) motivation to switch their cameras on appeared to have not only arisen because cameras facilitated group members' observations (noticing) of their own and others' non-verbal communications. In addition to that, if someone needed help in understanding, others could then see this requirement if they paid attention (i.e., 'noticed' c.f. the definition of compassion). Hence, this ability of 'noticing' facilitated developing their own strategies to reduce or prevent this kind of distress or disadvantaging of others (as seen in Table 5.5).

S2: *... if he [Jenuru] is like a little bit out of understanding, I can see how his face is different. So, I intend to express [explain] it a lot. (TR, PostIFG, G1, C1)*

Overall, analysis of the PreIFGs transcripts revealed that levels of psychological safety were not optimal due to social anxieties which the students explained as above. In contrast, in the PostIFGs transcripts students reported reductions of their anxiety. This may also have explained how the groups achieved a more equalised level of agency, or participation, during their PostIFGs. This means that social efforts to help others contribute led to better group learning, showing that social experiences did mediate learning (positively here). But the notion of equal agency can also be discussed from another point of view, as follows.

5.2.3.3.2 Sub-theme 2: Notion of Equal Agency

During the PreIFGs i.e., when a student finished their presentation, the presenter often used a problematic prompt to stimulate discussion: ‘Any questions?’ as though they were inviting a panel interview, not a critical whole group discussion of the content of the presentation. This did not support equal participation of the group discussions as seen in Table 5.6. However, during the PostIFGs this tendency of the presenter to seek questions was substituted with more productively worded invitations to speak (e.g., ‘Would you guys like to discuss it further?’⁴⁶) as shown in Table 5.6. Please also see [Appendix A.6](#) (pp. 424-430) for more such evidence from the PostIFG transcripts.

5.2.3.4 Theme 4: Group Management Strategies

The analysis of the PreIFGs revealed students’ usage of strategies to manage their previous group work. Then, analysis of the PostIFGs indicated positive alterations to those previously used strategies by the students after the CSCC intervention session.

⁴⁶ S6’s expression after her Post-Intervention Journal Article Presentation in Transcription TR PostIFG, G2, C1.

5.2.3.3.3 Sub-theme 1: Strategies Used to Enhance Group Engagement (Pre-study)

Students described the following five strategies that they had used in their previous group meetings (before this study): assigning task-specific roles, questioning, appointing a leader, allocating time slots (to each group member), and removing non-engaging members from the group. However, as shown in Table 5.6 and [Appendix A.7](#) (pp. 431-447), in their PostFGs, students revealed more about their amendments to these strategies to manage their PostIGMs differently, as discussed next.

5.2.3.4.2 Sub-theme 2: Strategies Used to Manage the PostIGMs

Application of the compassionate communications strategies (offered and explained during the CSCC intervention session) was noticed by the students during their PostIGM, and they discussed what they had seen and done during their post-intervention focus groups. Interestingly though, in addition to the compassionate communications strategies that had been offered (e.g., expressing gratitude, inviting group members by their names, addressing monopolising behaviour, complimenting others' efforts, questioning with compassion, providing more explanations using simple language, smiling, sustaining screen gaze, nodding), students were clearly already developing their own compassionate communication strategies and (considering the group when selecting journal articles, and observing all four faces during group meeting) to manage their PostIGMs.

5.2.3.5 Theme 5: Student Views on the Task Designed for Attention to Compassion

Analyses of the PreIFGs transcripts highlighted the social anxiety of students thinking that they would not have sufficient background knowledge to understand others' PreIGMs journal article presentations (as seen in the Table 5.6). (Thus, the need for

students to feel psychologically safe enough to ask for clarification so that they could fully participate in the discussions.)

Yet at the same time, even in the PreIGMs, students liked having self-chosen journal articles brought by each group member (c.f. Sugata Mitra and the self-organised learning environment, see p. 68 and they liked having four members in a group to present and critique them as evidenced in Table 5.6 above). But this feedback was due to two factors in the compassion-focused task design (to share knowledge and the task of criticality) not on the management of the group's communicative interactions – the third required factor of the task design.

In their previous academic group work, none of the students had experienced the task design used in this study (individual presentations and then group discussion of the content). This was new to them all. Instead, students had previous experience of the whole class being given by the tutor a specific article(s) that everyone should read.

Overall, drawing together the evidence for social and learning experiences and how the first seemed to mediate the other, it appears that the CSCC intervention session did increase students' sensitivity to the quality of others' social and learning experiences during the post-intervention group meetings and follow-up focus group meetings too. Hence, the two components of compassion, *noticing* distress and/or disadvantaging and then *taking (wise) action* to reduce or prevent them were both evident from students after the CSCC intervention session. This raises questions about how these post-CSCC behaviours may have been internalised and so this result is offered cautiously and needs to be explored further. This is done in the following section.

5.3 Analysis of the Two Questionnaires

As quantitative data collection tools, two questionnaires were completed by all students before the pre-intervention group meetings and then again after the post-intervention group meetings (so four interactions in all). The before and after results for each questionnaire could then be compared, and the results are in this section. One questionnaire explored students' previous experiences of their own and others' group work behaviours (See Section 4.4.2.4 in Methodology and [Appendix D.1](#), p. 624). The second questionnaire was the Compassionate Mind Foundation's *Compassionate Engagement and Action Scale* (Please see this in full in [Appendix D.2](#), p. 628).

SPSS (version 27) was used to analyse the four data sets provided by each group in relation to these two questionnaires. Findings of each analysis are explained in brief next.⁴⁷

5.3.1 Statistical Analysis of Questionnaire 1 — Group Work Behaviours

This Likert scale questionnaire consisted of four main aspects: negative group behaviours⁴⁸ (adapted from T. Gilbert, 2012); confidence to engage in group work⁴⁹ (UH, 2020); demographic information; and level of English language proficiency. The findings from the Wilcoxon Signed-Rank Test in Table 6.13 below show those changes from pre-intervention negative group behaviours (itemized in the questionnaire) to more positive

⁴⁷ In all tables below, 6.20, 6.21, 6.22 and 6.23 all data points starting with 'B' (Before the CSCC intervention session) indicate the pre-intervention data and all the data points starting with 'A' (After the CSCC intervention session) indicate the post-intervention data.

⁴⁸ provided by staff and students of what kinds of behaviour, in their experience, most undermined the effectiveness of team meetings was used to survey hundreds of students regarding their *offline* team meeting experience before and after an in-class delivered session on compassionate small group communications in the classroom (T. Gilbert, 2016)

⁴⁹ The University of Hertfordshire's CfP group work reflection questions (UH Learning and Teaching Innovation Centre).

post-intervention behaviours, that were statistically significant at $p < 0.1$. It will be seen that the changes related, respectively to: what the students observed of their own group work behaviours; what they observed of *others'* group work behaviours; what they reported of their confidence to engage in group discussion; and their views on the influence (if any) of group discussion behaviours on learning.

Table 5.7: Wilcoxon Signed-Rank Test Results – Questionnaire 1: Group Work Behaviours (Pre- vs Post-Intervention) Cycle 2.

Item No.	The negative group behaviours that decreased from PreIGMS to PostIGMs with statistical significance	$p < 0.1$
	Self-observation of group work behaviours	
4.13	<i>Allowing others to speak too fast for everyone to understand them.</i>	0.083
	Observed behaviours of other group members	
5.14	<i>Not asking for more explanation when understanding becomes too difficult.</i>	0.083
	Confidence in Working in Groups (Likert)	
6.1	<i>How confident are you to engage in group discussion?</i>	0.083
	Influence of Group Behaviours on Learning (Likert)	
7.1	<i>Group discussion with other students usually leads to a better understanding of a topic.</i>	0.083

These results may suggest an increase in students 'noticing' their own less helpful behaviours in group discussions. 'Noticing' behaviours that may cause distress or disadvantaging of self or others is a core component of the definition of compassion on which the intervention pedagogy is based (as explained in Chapters 1 and 2).

These results for both groups of Cycle 1, indicated a statistically significant difference, $p = 0.05$, in students' responses to group work behaviours (that they observed in their own and other group members) after the CSCC intervention session intervention.

5.3.2 Statistical Analysis of Questionnaire 2 — Compassionate Engagement and Action Scale

The Wilcoxon Signed-Rank Test was employed to compare the before (pre-intervention) and after (post-intervention) data obtained from the participants through this questionnaire. As shown in Table 5.8, the results indicated a statistically significant difference of $p < 0.05$ between students' before and after CSCC responses to this questionnaire. There was stronger (i.e., statistically significant) evidence than before the CSCC intervention session of participants' compassion towards themselves (self-compassion) and of their noticing compassion from others, as in their responses to the following Likert scale statements [itemized in the Compassionate Engagement and Action Scale (CEAS) questionnaire]:

Table 5.8: Wilcoxon Singed-Rank Test Results – Questionnaire 2: Compassionate Engagement & Action Scale (Pre Vs Post-Intervention) Cycle 1.

Item No.	Items of the CEAS that showed positive change with statistical significance	$p < 0.05$
	Self-compassion	
4.	<i>I am emotionally moved by my distressed feelings or situations.</i>	0.049
6.	<i>I reflect on and make sense of my feelings of distress.</i>	0.048
	Compassion from others	
38.	<i>Others take the actions and do the things that will be helpful to me.</i>	0.020
39.	<i>Others treat me with feelings of support, helpfulness, and encouragement.</i>	0.034

This study had focused on how students could be compassionate to others in practical, evidence-based ways, but it appears here that this may have had an effect on the two other categories of compassion and these two in particular are known to closely mediate each other. That is to say, without self-compassion individuals can have difficulty

recognising compassion directed to them (P, Gilbert, 2009). (Please also see Chapter 7, Discussion and Conclusion).

Overall, both questionnaires offered further opportunities to better recognize and discover changes in the participants' experiences related to their own and other group members that might be attributable to the intervention session on developing CSCC for group work conducted in online setting.

5.4 Chapter Summary

This chapter presented the overall findings through quantitative and qualitative data analyses in Cycle 1 before and after the intervention. Five main quantitative analyses (on Screen gaze, and two Likert scale Questionnaires) were conducted using four analytical tools; NVivo (Pro 12), the R, SPSS (version 27) and Microsoft Excel. Further, visual illustrations were also done using Microsoft Excel and the R. Five qualitative analyses (the PreIGMs, the PostIGMs, the PreIFGs, the PostIFGs, and Micro-ethnography) were conducted using TA implementing the analytical tool NVivo (Pro 12). The findings were demonstrated under two major headings: *Non-verbal* and *Verbal communications*. Data triangulation demonstrated the emergence of three major themes under *Non-verbal communication*: screen gaze, long silences and nodding highlighting the reduction of avoiding screen gaze, long silences, and increased occurrences of nodding by the participants during post-intervention group meetings compared to their pre-intervention sessions. Triangulating both the quantitative and qualitative data on group meetings and focus groups, including comparison of pre- and post-intervention results revealed, post-intervention, a significant increase in group members' sustained screen

gaze to one another. Moreover, motives for changing students' motivation to visually present (turning on their cameras) in online group meetings were also discovered.

The three main themes that emerged under *Verbal communication* were: *Social experience*, *Learning experience*, and *Social experience mediated learning experience*. The data triangulation demonstrated the enhancement of group members' experiences related to all these three aspects after the CSCC intervention session. Further, the findings highlighted the development of positive group work behaviours with the application of CSCC. The findings underlined the applicability of CSCC especially in HE online group work meetings while emphasizing the significance of compassionate task design for better manage the group tasks.

In conclusion, the comparison of the pre- vs the post-intervention findings demonstrated a positive increase in students' *Social*, *Learning* and *Social experience mediated learning experience* of the group members after the CSCC intervention session.

5.5 Conclusions

So far, in contrast to the pre-intervention, the post-intervention data indicate some positive changes in verbal as well as non-verbal communications of group members in both groups with some consistency. This pattern is emerging when comparing researcher-observations with student-reported accounts of what aspects of students' social/learning experiences in the study group work appeared to be enhanced by their independent use of compassionate communications strategies.

Moreover, more active verbal as well as non-verbal expressions of the students were evidenced during post-intervention in contrast to pre-intervention. In both groups, smiling was reflected more often during the post-intervention than the pre-intervention

discussion which might be not because of the implementation of the CSCC but because they meet each other for the third time.

Moreover, findings of Cycle 1 highlight greater exposure to distractions when people meet online, than together physically. This is because there are four separate, physical spaces, not just four students, coming together and four times more sources of distraction to students than if they all met in the same room.

5.5.1 Adjustments to the Methodology from Cycle 1 into the Main Study

Although working online together may present these problems, the online context may also offer the possibility of unique solutions with psychological possibilities for group cohesion that would not be available in offline meetings. Therefore, the following will be taken forward from Cycle1, into the main study's methodology.

The careful observation of difficulties encountered by the individual group members on continuing their compassionate and task-focused attention to their group during the GMs in Cycle 1.

i.e.,

- a. When a non-group member (a family member or a friend) entered the student's room /physical space].
 - i. It seemed sometimes that the student was aware (therefore some autonomic attention was being given) of the presence of someone else in the room.
 - ii. Sometimes this was followed by verbal or nonverbal communication between the student and that non-group member.
- b. Therefore, the research design response to this was a consideration of the use of a shared virtual background for GMs in Cycles 2 and 3 because,

-
- i. This could create virtual, visual boundaries around each student within a single commonly experienced background/environment. This would limit the visual fields so that no group member would be visually aware of the presence of anyone outside the group.
 - ii. Exaggerated body movements of turning away to communicate outside the group would be highlighted to the whole group because the student would likely completely disappear from the screen.

5.5.1.1 Applying a Virtual Background

Applying virtual background facilitates minimizing the visual distractions in students' physical backgrounds as no one can see the presence of people in their own or other's physical locations. An applied background removes what is beyond a very small space around the participant. A difficulty with this is that four different shared backgrounds by four participants could themselves be a distraction from the group task. But consideration of this too offers new possibilities. It might be that a single background shared by all in the group could support unity and cohesion in the group, even beyond what might have been possible for an offline group sitting in a single physical space. This is a question about the specific kind of background that might be most suitable for unifying the space, in ways that might reduce also the psychological sense of distance and separateness from each other, that students appeared to experience in the initial discussions of Groups 1 and 2. Moreover, the above finding shows the importance of appropriate lighting and so it did seem likely that this should also be a factor to consider making the right choice of a shared/common background for the group.

Questions emerging for Cycle 2 and 3,

- i. What kinds of backgrounds should be chosen? and why, and who should choose it?

-
- ii. The psychological impact of the shared space/environment and the possible effect on group cohesion?

This too was explored for inclusion in the methodology for the main study.

5.5.1.2 Comparing Sri Lankan Context During Cycle 1 to the Main study

Since Cycle 1 was conducted during the time where the pandemic, COVID-19 started spreading around the world, much attention was not focused on shifting the teaching and learning into online in the context of Sri Lankan education, mainly because Sri Lankan education system was based on face-to-face formal classrooms.

All teaching and learning about the COVID-19 pandemic and how it mediates students' social expectations, as well as learning expectations, are just pertinent to this study as any other. During the pandemic, the unexpected and unpredictable challenge has made the whole education system to shift online to secure the health and wellbeing of the teachers as well as students while continuing the educational process without being disrupted. From 12 March 2020, all educational institutes (including 15 state universities and about 40 other state and nonstate higher educational institutes) were shut down by order of the government. HEIs utilized existing Moodle-based learning management systems to ease the effects of disrupted learning. To facilitate online education, LEARN⁵⁰ was connected to university web servers. The network could monitor the Zoom utilization daily as all HEIs adopted Zoom for online education. Moreover, during the

⁵⁰ LEARN (The Lanka Education and Research Network) is an association registered under the Companies Act of Sri Lanka and works as a specialized internet service provider for education and research purposes. It provides a high-speed backbone network connecting the Ministry of Education, UGC, and state higher education and research institutions. LEARN functioning as an internet service provider facilitated whitelisting university web servers for access to online tertiary education during COVID-19.

pandemic until 17 August 2020, all internet service providers in Sri Lanka offered free access to university web servers (Asian Development Bank and Lanka Education & Research Network, 2020).

The COVID-19 pandemic has caused further fragmentation of student communities reducing all students' opportunities for social interaction on campus with others including those who might not be of the same ethnic or religious group. A study exploring the students' motivation for online learning during the pandemic highlights that learning through formal classrooms is highly correlated with the motivation of learning than online (Presangani, 2020).

Next, Table 5.9 summarizes how the research questions were addressed through the findings of Cycle 1 data.

Table 5.9: Answering Research Questions through the Data Analyses of Cycle 1.

	Research Questions	Data and Tools Used	Research Results/Responses to the Questions
1.	<p>Core Research Question</p> <p>Can developing HE students in CSCC be adapted for online group meetings amongst UK-based Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?</p>	<ol style="list-style-type: none"> 1. Video recordings and transcripts of pre-vs post-intervention group meetings. 2. Video recordings and transcripts of pre-vs post-intervention focus groups. 3. Pre-vs post-intervention Ethnographic field notes. <p><i>Tool:</i> NVivo (Pro 12)</p> <p>Template analysis</p>	<p>The CSSC can be adapted for online use by:</p> <ol style="list-style-type: none"> i. Increased camera use. ii. Use of non-verbal signals and cues (nodding, treatment of long silences, thumbs-ups, raising hand). iii. Use of verbal communication (<i>Social:</i> validation, social connectedness; <i>Learning:</i> productive participation, purposeful facilitation; <i>Social mediated learning:</i> psychological safety, notion of equal agency). <p><i>Effects:</i></p> <p>Almost all students who participated in group discussions, focus groups/interviews, demonstrated and/or reported and substantiated positive effects for their social, learning, and social experience mediated learning experience of their group meetings through the use of the CSCC compared to when they did not use those strategies. These effects were evidenced in changes to all respondents' verbal and non-verbal communications after the CSCC intervention session, compared to before the intervention.</p>

2.	<p>Sub-Research Questions</p> <p>Are there any observable differences in students' behaviours in their pre- vs post-intervention online group meetings (before and after the CSCC intervention session intervention)?</p>	<p>1. Screen gaze data (pre vs post-CSCC).</p> <p><i>Tools : R - Wilcoxon Signed-Rank Test, R Plots Microsoft Excel</i></p> <p>2. Micro-ethnographic field notes.</p> <p><i>Tools : Micro-ethnographic analysis</i></p>	<p><i>Changes in Non-verbal Communication behaviours:</i></p> <p>The results show a significant increase in students' sustained screen gaze behaviours after the CSCC intervention session than pre-CSCC group meetings, especially as listeners and discussants (statistically significant increase).</p> <p>Students use of their non-verbal signals with positive impact (nodding and looking at the screen) were enhanced. It was evidenced their reduced use of non-verbal signals with negative impact (external communication, longer silences).</p>
		<p>1. Video recordings and transcripts of GMs (Pre Vs Post)</p> <p>2. Video recordings and Transcripts of Focus Groups</p> <p>3. Ethnographic field notes</p> <p><i>Tool: NVivo (Pro 12)</i></p>	<p><i>Changes in Verbal Communication behaviours:</i></p> <p>The results indicated the following:</p> <p>Reduction of disruptive behaviours: Disruption to group cohesion (interruptions, simultaneous talks, competitive individualism, inequality of sharing time [dominating/monopolising], non -contribution, cliques etc.).</p> <p>Increased prosocial behaviours: Validation (expressing gratitude, complementing others' efforts, inviting group members by their names); Social connectedness (creating opportunities for others to speak, social risks taking, interactivity, social comfort, listening, confidence, team spirit etc.).</p> <p>Increased learning behaviours: Productive participation (knowledge dissemination, critical perspective); Purposeful facilitation (seeking clarification, keeping focus).</p> <p>Social experience mediated learning experience were found post CSCC intervention sessions compared to the pre-intervention sessions.</p>

CHAPTER 6

Findings Cycle 2 & Cycle 3

6.0 Introduction

This chapter presents the findings of Cycle 2 and Cycle 3 (Main Study). These findings and their analysis respond to the following research questions (and the summary of responses to them is at the end of the chapter).

Core Research Question

1. Can developing HE students in CSCC be adapted for online group meetings amongst Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

Sub Research Questions

3. **In Sri Lankan HEIs**, can developing students in CSCC (created for students' offline task-focused teamwork meetings) be adapted for online group meetings amongst STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?
4. Are there any observable differences in respondents' behaviours during their group work meetings before and after the CSCC intervention session?

5. If an adaptation of CSCC to the online format is possible, in what ways, if any, and with what results (for their social and learning experiences of online group work) might Sri Lankan STEM students who are based in Sri Lankan universities respond to this developmental training?

5.a. In what ways might the responses of Sri Lankan-based students be similar, or different from the responses of UK-based Sri Lankan students?

Unlike Chapter 5's Cycle 1 which was conducted in five UK HEIs, all participants of Cycles 2 and 3 were from five Sri Lankan-based state universities. The findings of the main study - Cycles 2 and 3 - have been combined in this chapter. The use of Action Research in the Cycle 1 was continued in Cycles 2 and 3. Therefore, note that Cycle 3 participants received enhanced developmental training (see Section 4.3.2, p. 84 in Methodology Chapter for details of the session immediately after the 90-minute CSCC intervention session) compared to Cycle 2. Both Cycles consisted of 3 groups each. As in Chapter 5, the pre-and post-intervention data from Cycles 2 and 3 are compared through the same data collections and analysis methods, both qualitative and quantitative. The quantitative results are presented and explained first, and then informed by the results of the qualitative data analysis.

This chapter is organized around the same themes as those that emerged from Cycle 1. The first overarching theme was *Non-verbal Communication* (Section 6.1) from which three main themes emerged: screen gaze, nodding, and the reduction of long silences. The second overarching theme was *Verbal Communication* (Section 6.2), from which three main themes emerged: *Social experience*, *Learning experience* (of the group work) and *Social experience mediated learning experience* (how these experiences closely mediated each other negatively [pre-intervention] and more positively [post-intervention]). This section also discusses findings from the participants' perspectives on the overall compassion-

focused task design that is the subject of this study. Then, Section 6.3 compares the pre- and post-intervention responses to two questionnaires. The first questionnaire was on Group Work Behaviours (see [Appendix D.1](#), p. 624) and the other was the Compassionate Mind Foundation's Compassionate Engagement and Action Scale (see [Appendix D.2](#), p. 628). The chapter ends with a Summary (Sections 6.5) and Conclusion (Section 6.6).

6.1 Non-verbal Communications

The findings in this section respond to Research Questions 1 and 2 (above). Non-verbal communications of the respondents were investigated quantitatively and qualitatively using the pre- and post-intervention video recordings for observations and transcriptions of group work meetings.

Overall, the main findings for pre- and post-intervention non-verbal communications were that the CSCC intervention session:

- a. appeared to facilitate statistically significant increases in sustained screen gaze;
- b. a reduction in long, unresolved silences; and
- c. increased students' comfort with the use of observable validating gestures of close attention to each other. The prevalence of one specific validating gesture, nodding, was found to increase notably during the post-intervention teamwork communications among other validating gestures such as smiling at others and giving the thumbs up.

The evidence for these apparent changes in non-verbal behaviours is presented next with a close look at what happened to screen gaze as evidenced through micro-ethnographic analysis.

As explained in Chapter 5, (for Cycle 1) a second-by-second micro-ethnographic observation was conducted of the non-verbal behaviour of every student, one by one, through each group's video recordings of both their pre- (PreIGMs) and post-intervention task-focused group work meetings (PostIGMs) (see [Appendices B.5](#), pp. 493-509, and, [C.5](#), pp. 577-594 respectively, for examples of the micro-ethnographic analysis). Similarly, in Cycle 1, students' screen gaze was identified as one of the key themes to investigate closely through the ethnographic observation of both Cycles 2 and 3.

So far, the examination of timings and counting of when students were or were not looking at their screens in the PreIGMs were conducted, second by second and again in the PostIGMs. In line with Chapter 5 (see Section 5.1) for consistency and for comparative purposes, the overall duration of each presentation/discussion (pre- and post-intervention) has been normalised here for Cycles 2 and 3 as well.

Thus, for comparison of pre-and post-intervention screen gaze, the researcher had two sets of numerical data for each presentation and each follow-up discussion per each group in both Cycles 2 and 3.

The comparisons were made by submitting these quantitative data sets for analysis using the R. Then, to further explore the results from this, the quantitative data on each group's screen gaze were submitted to Microsoft Excel. This not only offered a new perspective for new findings from the data but also helped the overall triangulation of the different results sets. Then, an analysis of the other kinds of qualitative data available from all the above transcriptions was conducted using Template Analysis (TA) supported by the use of NVivo (Pro 12).

Overall, the main qualitative and quantitative data findings for pre-and post-intervention non-verbal communications in the groups informed statistically significant increases to

screen gaze attentiveness and a reduction in long, unresolved silences. The prevalence of one specific validating gesture nodding was seen and so this was selected for close study and found to increase notably, PostIGMs. The evidence for these apparent changes in non-verbal behaviours is presented next.

6.1.1 Analysis of Quantitative Data — Students' Screen Gaze Behaviours

To compare and contrast screen gaze and related behaviours of respondents, before and after the CSCC intervention session, this section presents the results of three quantitative analyses for how the results of each might (or might not) inform each other. (See Section 4.5.3.1.1 of the Methodology Chapter on the screen gaze data processing for these analyses).

In line with Chapter 5,

- a. Wilcoxon Signed-Rank Test was employed using the R to statistically analyse the pre-vs post-intervention screen gaze behaviours of the group members as to the roles they performed (presenter, listener, discussant) in groups.
- b. R Plots were created to analyse and then visually represent group members' screen gaze behaviour individually during each journal article presentation and each follow-up discussion. This was done for both pre-and post-intervention group meetings to make the comparison.
- c. Microsoft Excel Scatter charts were generated to identify each group's percentage screen gaze during each presentation and each follow-up discussion in both pre-and post-intervention group meetings.

6.1.1.1 Statistical Analysis — Wilcoxon Signed-Rank Test – Comparison of Screen Gaze Behaviours of Group Members

The Wilcoxon Signed-Rank Test was run through R for Cycles 2 and 3 to identify whether there was any difference in the screen gaze behaviour of the group members before and after the intervention. As explained in Section 4.5.3.1 of the Methodology Chapter, *p values* have been calculated to quantify the impact of the intervention on different types of respondents, namely presenters, listeners, and discussants. Table 6.1 shows the results for the three groups in Cycle 2 with the presenters in column 1, the listeners in column 2 and the discussants in column 3. There are four members per respondent type in each group. The results for Cycle 3 are presented in a similar table format in a later section.

Table 6.1: The Wilcoxon Signed-Rank Test *p value* Results for Screen Gaze Behaviour of Group Members as to the Roles They Perform in the Groups (Cycle 2).

Group number	Types of respondents		
	Presenters	Listeners	Discussants
Group 1	0.125	0.001953	0.0002441
Group 2	0.0625	0.002961	1.526e-05
Group 3	0.0625	0.009766	3.052e-05

Typically, $p < 0.05$ indicates that there is a significant difference in gaze behaviour of group members after the CSCC intervention session. In other words, there is noticeable improvement in the screen gaze behaviour of students after the CSCC intervention session. The null hypothesis (H_0) that says if there is no difference between the screen gaze behaviours of the group members before and after the CSCC, the intervention ought to be rejected and the alternative hypothesis (H_1)⁵¹ should be accepted. In the present studies,

⁵¹ The alternative hypothesis states that the independent variable (CSCC intervention session) did affect the dependent variable, and the results are significant in terms of supporting the theory being investigated (i.e., not due to chance). The alternative hypothesis is accepted if the null hypothesis is concluded to be untrue.

0.05 has been adopted as the threshold value of p for selecting hypothesis H_0 or H_1 as $p < 0.05$ means the probability of the null hypothesis being true is less than a 5%. In such cases, H_0 should be rejected and the alternative hypothesis H_1 should be accepted.

6.1.1.1.1 Presenters

The percentage screen gaze of all the presenters was considered independently for each group. The p values for the presenters as shown in Column 2, Table 6.1 revealed an increase in sustained screen gaze with all the twelve presenters after the CSCC intervention session. However, as indicated by the relatively high p values, the increase was found to be not statistically significant with the presenters.

6.1.1.1.2 Listeners (Presenter's audience members)

As shown in column 3 of Table 6.1, there was a statistically significant increase in sustained screen gaze of those *listening* to the presenters, after the CSCC intervention session. For all three groups, the p value is less than 0.01, meaning the probability of the null hypothesis being true is less than 1%. Hence, the null hypothesis H_0 should be rejected and the alternative hypothesis H_1 was accepted for the listeners.

6.1.1.1.3 Discussants (Screen gaze behaviours during the discussion component of the group work)

As shown in column 3 of Table 6.1, there is a statistically significant increase in sustained screen gaze of the group members during the follow-up discussions (PostIGDs)⁵² after the CSCC intervention.

⁵² The acronym PostIGDs is used to indicate the Post-Intervention Group Discussions throughout this dissertation.

Similar to Cycle 2, as demonstrated above, Table 6.2 below shows Wilcoxon Signed-Rank Test results for three groups of Cycle 3.

Table 6.2: The Wilcoxon Signed-Rank Test *p value* Results for Screen Gaze Behaviour of Group Members as to the Roles They Perform in the Groups (Cycle 3).

Group number	Types of respondents		
	Presenters	Listeners	Discussants
Group 1	0.125	0.0002441	1.526e-05
Group 2	0.1875	0.001709	0.0001526
Group 3	0.0625	0.0002441	0.0002407

As indicated in Table 6.2, there is a statistically significant increase in sustained screen gaze of the group members when they perform as listeners during the journal article presentations as well as discussants during the follow-up discussions after the CSCC intervention. Even though there is an increase in the sustained screen gaze of the presenters when they present their journal articles, this increase is not statistically significant.

Overall, for both Cycles 2 and 3, the results indicated an enhancement in all group members' sustained screen gaze after the CSCC intervention session. To be clear, this increase was statistically significant for both listeners to the presentations and then, following each of the presentations, all discussion group members ($p < 0.001$). Please see [Appendix B.1](#), pp. 451-454 (Cycle 2) and [Appendix C.1](#), pp. 532-535 (Cycle 3) for the complete set of Wilcoxon Signed-Rank Test results. The results there show that the above results were overall representative of all the Wilcoxon Signed-Rank Tests for all six groups of both Cycles.

6.1.1.2 R Plots — Individual Group Members Screen Gaze Behaviours Before and After the Intervention

R plots were created to analyse and graphically show the screen gaze behaviour of each individual group member during each presentation. Then more R plots were created separately to show the screen gaze behaviour of individual group member during every follow-up discussion.

For consistency with Cycle 1, next, the first presenter of Cycle 2 (Group 1) and his listeners' screen gaze behaviour during pre- vs post-intervention group work meetings are presented in Figure 6.1 below.

6.1.1.2.1 Cycle 2: Group 1- Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

Cycle 2 was comprised of three groups. S9 was the first presenter of Group 1 and the illustration of group members' percentage screen gaze during S9's PreIJAP⁵³ vs PostIJAP⁵⁴ is shown next in Figure 6.1⁵⁵.

In the following Figures, Figure 6.1 to Figure 6.4 and the rest of such figures in [Appendix B.2](#), pp. 455-466 (Cycle 2) and [Appendix C.2](#), pp. 536-547 (Cycle 3), the *orange* bars

⁵³ The acronym, PreIJAP is used to indicate the Pre-Intervention Journal Article Presentation throughout this dissertation.

⁵⁴ The acronym, PostIJAP is used to indicate the Post-Intervention Journal Article Presentation throughout this dissertation.

⁵⁵ S12 had to be discounted for the analysis due to her discontinuation of video during the PostIGMs (presentations + follow-up discussions) due to technical difficulty. (Please see Section 8.3.1 in Chapter 8)

- a) S12 switched her camera on and commenced her presentation, but as soon as she started presenting, she lost the network connection completely and was disconnected from the group. Though she tried several times to switch her camera on, every time she got disconnected. Hence, she had to present her selected journal article only with audio.
- b) She joined in with the communication 17 times during the PostIGD on S9's journal article.
- c) The researcher followed this situation up during the focus group afterwards where she emphasised her willingness to switch her camera on if the network connection had not failed.

Technical difficulties (internet connection breaks) encountered by participants were counted as non-screen gaze, as for S12, (i.e., frozen screen, camera off) during both the pre-and the post-intervention presentations and discussions.

represent the percentage screen gaze of group members *before* the CSCC intervention session while the *turquoise* bars represent the percentage screen gaze of the members *after*. Figure 6.1 is the R plot of presenter S9 during presentation while Figure 6.2 is the R plot for the same presenter during discussion session.

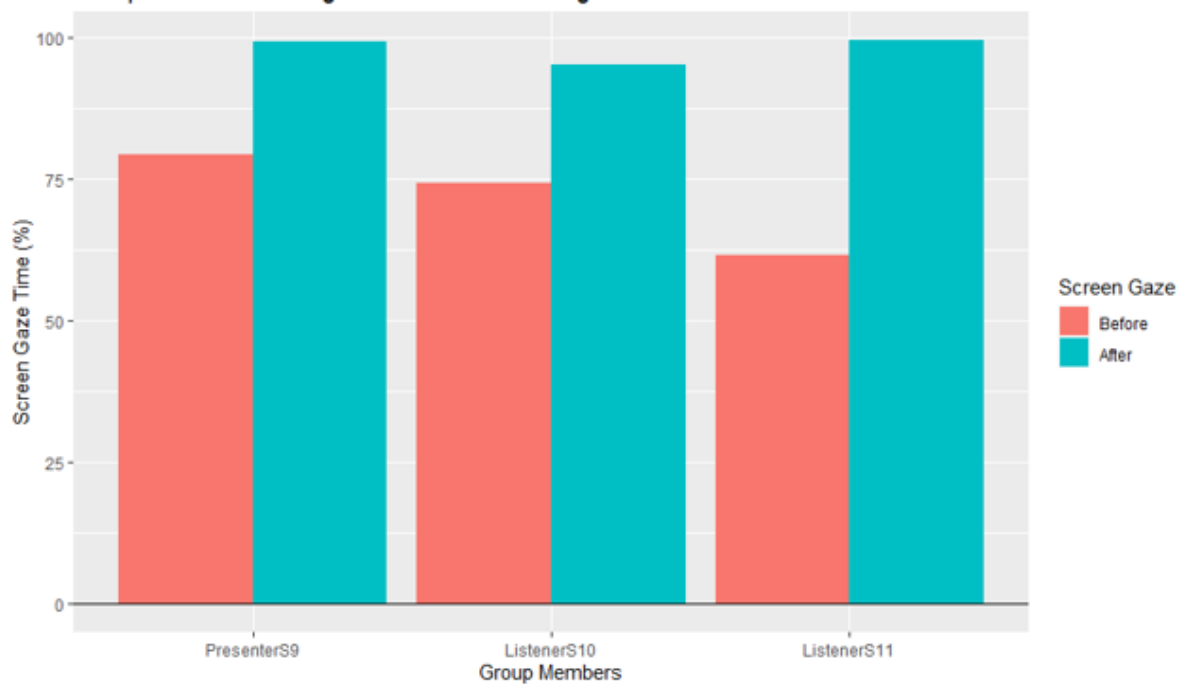


Figure 6.1: Cycle 2, Group 1 Members' Screen Gaze During S9's Pre- Vs Post-Intervention Journal Article Presentations (Excluding S12).

Figure 6.1 shows that *before* the CSCC intervention session, S9 (while presenting his article), sustained his screen gaze for 79.24% of the time while S10 and S11 (his listeners) sustained their screen gaze for 74.15% and 61.44% of S9's presentation time, respectively (please see footnote 55 on p. 212 for S12 in this group). In contrast, *after* the CSCC intervention session, S9 (the presenter) sustained his screen gaze through almost the

whole (99.18%) of his journal article presentation⁵⁶. Similarly, listener S11 sustained her screen gaze almost the whole of S9's presentation (up from 61.44% for S9's previous presentation to 99.46%); and listener S10 sustained his screen gaze for 95.10% (up from 74.15% for S9's previous presentation).

These results were found to be representative of all presenters' sustained screen gaze behaviour and that of their listeners. To evidence this, the remaining figures ($n = 15$) of all presenters and their listeners in Cycle 2 are shown in [Appendix B.2](#) (pp. 455, 458, 463).

The following section addresses the pre-and post-intervention results of group members' screen gaze during each group's follow-up *discussion* of each journal article presented in Cycle 2.

6.1.1.2.2 Cycle 2: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions

Here Figure 6.2 illustrates each of Group 1's (Cycle 2) members' percentage screen gaze during their PreIGD⁵⁷ vs PostIGD⁵⁸ of S9's two self-chosen journal articles.

⁵⁶ Throughout this study, breaking screen gaze for a one second was not counted as a break in screen gaze attentiveness to the group. (Please see Section 4.5.3.1.1 in Methodology Chapter).

⁵⁷ The acronym, PreIGD is used to indicate the Pre-Intervention Group Discussion throughout this dissertation.

⁵⁸ The acronym PostIGD is used to indicate the Post-Intervention Group Discussion throughout this dissertation.

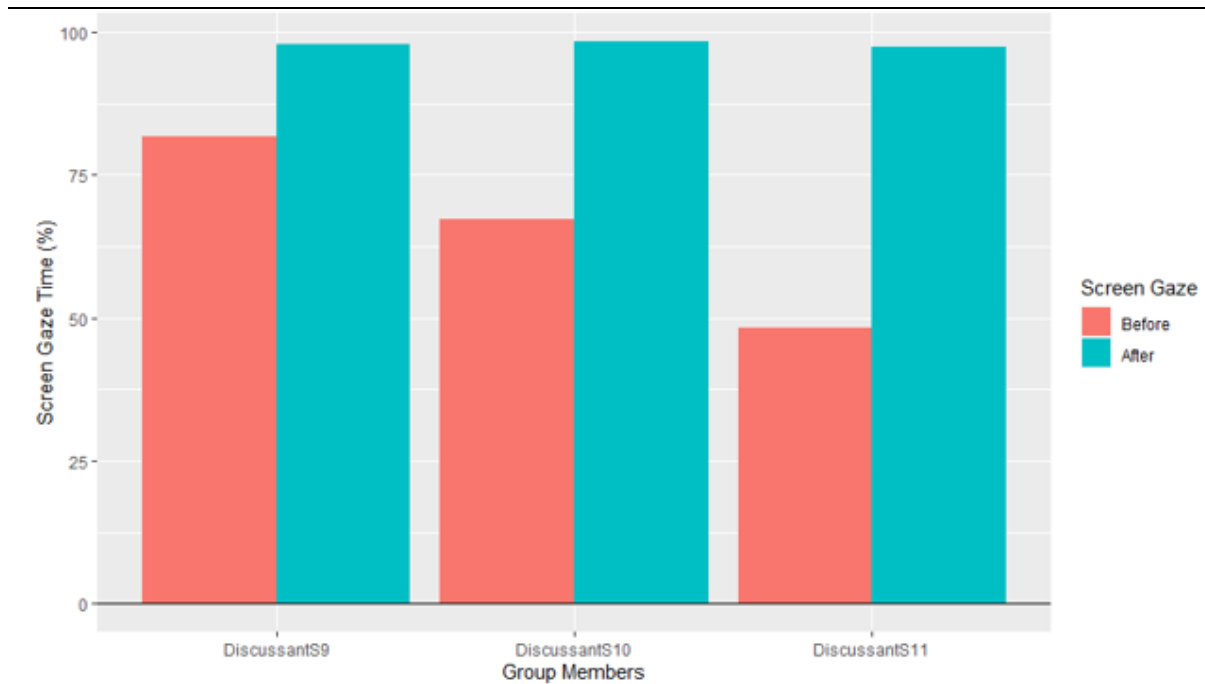


Figure 6.2: Cycle 2, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions of S9's Journal Articles.

Figure 5.2 shows that *before* the CSCC intervention session, during the follow-up discussion of S9's journal article, the discussants S9, S10 and S11 sustained their screen gaze for 81.82%, 67.13% and 48.25% of the discussion time respectively (see footnote 55 on p. 212 for S12 in this group). In contrast, *after* the CSCC intervention session, S9 (97.86%), S10 (98.39%) and S11 (97.32%) sustained their screen gaze through almost the whole of the discussion.

These results were found to be representative of all discussants' (in Group 1) screen gaze behaviours during the follow-up discussions after each presentation, that is in terms of increased screen gaze attentiveness. The remaining ($n = 11$) plots for all Cycle 2 discussants show this in [Appendix B.2](#) (pp. 457, 461, 465).

We turn now to Cycle 3 and keep in mind that for Cycle 3, an enhanced exercise was added immediately after the CSCC intervention session. As explained in the Methodology chapter (Section 4.3.2), the researcher set up a group discussion with herself as a group member

and asked students to address how the researcher contributed nothing (silent) and then monopolised the discussion. This was a benefit of Action Research, and this enhanced exercise was conducted for student practice, to check their understanding, and their confidence too. All three groups successfully intervened according to the compassionate principles and strategies they had been taught.

6.1.1.2.3 Cycle 3: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

S21 was the first presenter of Group 1 (Cycle 3) and the R-generated plot in Figure 6.3 shows percentage screen gaze of S21 and her listeners during the pre- vs post-intervention presentations of her self-chosen journal articles.

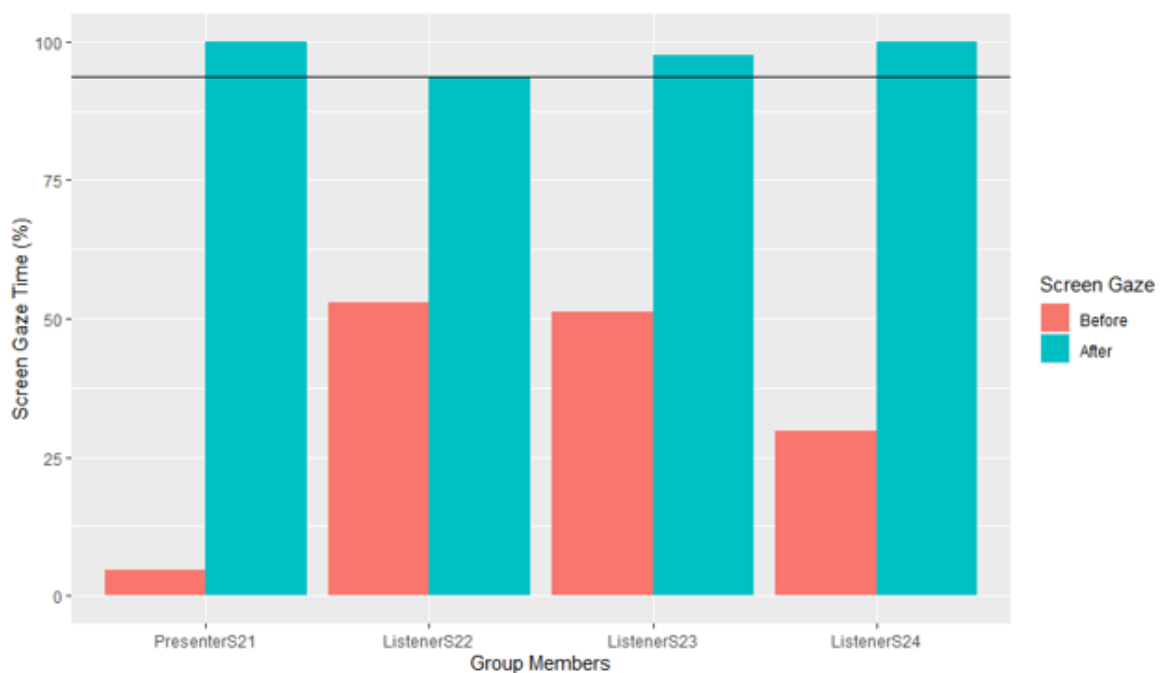


Figure 6.3: Cycle 3, Group 1 Members' Screen Gaze During S21's Pre Vs Post-Intervention Journal Article Presentations.

Figure 6.3 shows that *before* the CSCC intervention session, S21 (while presenting her article), sustained her screen gaze for 4.76%⁵⁹ of the time while S22, S23 and S24 (her listeners) sustained their screen gaze for 52.98%, 51.19% and 29.76% of the presentation time, respectively. In contrast, *after* the CSCC intervention session, S21 (the presenter) sustained her screen gaze throughout the whole (100%) of her journal article presentation. Similarly, listeners S22, S23 and S24 sustained their screen gaze through almost the whole of S21's presentation (up from 52% to 93.60%; 50% to 97.60%; 30% to 100% respectively for S21's previous presentation).

These results were found to be representative of all presenters' screen gaze and that of their listeners in Cycle 3. The remaining R plots for all Cycle 3 presenters and their listeners that show this are in [Appendix C.2](#) (pp. 536, 539, 544).

6.1.1.2.4 Cycle 3: Group 1- Members' Screen Gaze During Pre Vs Post-Intervention Group Discussions

For Group 1 (Cycle 3), the first discussion was held after S21 presented her chosen STEM journal article. Here is the graphical illustration of Group 1's members' sustained screen gaze during the pre- vs post-intervention discussions of S21's two articles.

⁵⁹ In the pre-intervention meeting, S21 switched off her video camera just after she started presenting and switched on again just after she completed presenting her chosen article. She had not met with any technical difficulties as her internet connection was good.

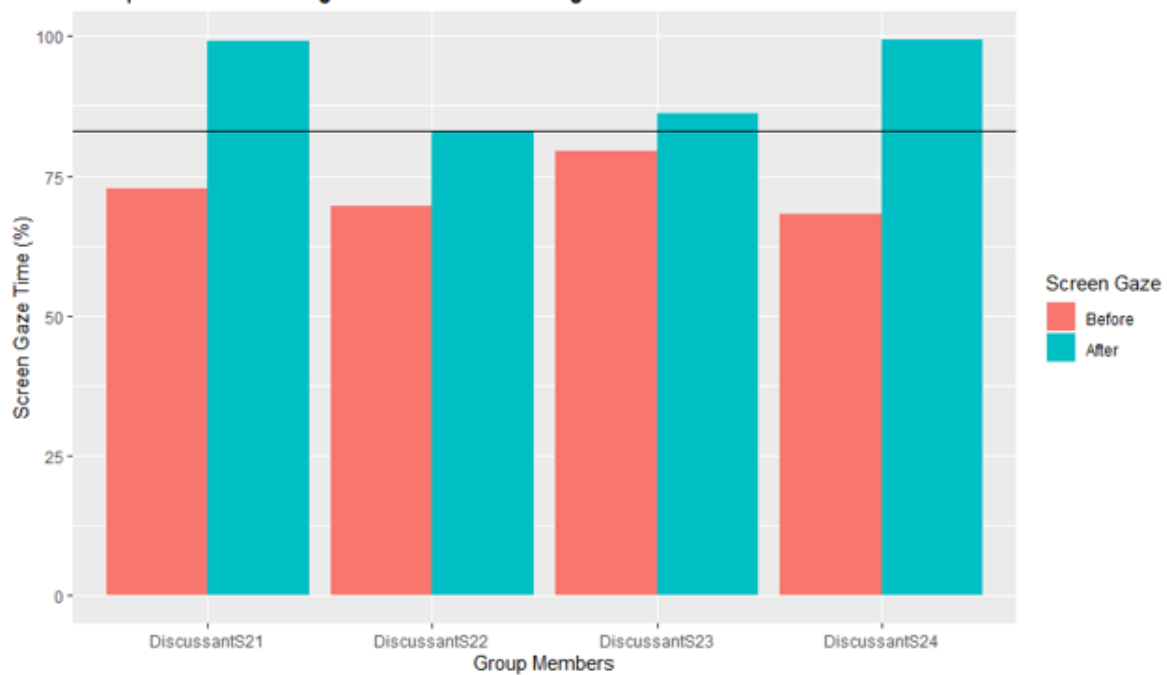


Figure 6.4: Cycle 3, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions of S21's Journal Articles.

Figure 6.4 shows that *before* the CSCC intervention session, during the follow-up discussion of S21's journal article, the discussants: S21, S22, S23 and S24 sustained their screen gaze attentiveness for 72.73%, 69.70%, 79.55% and 68.18% of the discussion time, respectively. In contrast, *after* the CSCC intervention session, S21 and S24 sustained their screen gaze through almost the whole of the discussion (99.08%, 99.39% respectively). S22 and S23 increased their screen gaze substantially (83.13% and 86.20% respectively) compared to their pre-intervention discussion on S21's article.

Except for S31 in Cycle 3's Group 3 (due to internet camera difficulties)⁶⁰ these results were found to be representative of all discussants in all three groups in Cycle 3 during their

⁶⁰ S20 (Cycle 2) and S31's (Cycle 3) camera function was intermittent during both pre and post group work meetings and in both follow up focus groups. In the Cycle 2, PostIGD S17 explained: *Hi Palavi, I would also like thank Palavi for presenting the article amidst all the difficulties she is experiencing right now.* (PreIGM, G3, C2) and in the Cycle 3, PreIGD S31 explained: *Sorry, connection issue ekak une.* (Sorry, there was a connection issue) (PreIGM, G2, C3).

follow-up discussions. The remaining figures for all discussants are shown in [Appendix C.2](#) (pp. 538, 542, 546).

Overall, taken together the complete set of figures in [Appendix C.2](#) shows a substantial increase in all group members' sustained screen gaze during presentations of journal articles and then during their follow-up discussions after the CSCC intervention session.

The next section compares the pre-and post-intervention results of the Whole Group's Screen Gaze during each group's presentations and follow-up discussions explored through Microsoft Excel.

6.1.1.3 Microsoft Excel Analysis — Whole Group's Screen Gaze Before and After the CSCC Intervention Session (Cycles 2 and 3)

As for Cycle 1, where Microsoft Excel was used for the same purpose (see Section 5.1.1.3 in Chapter 5, p. 139), the durations of screen gaze and non-screen gaze time were converted into percentages. Below in Figure 6.5 the results of (S9) first presenter's⁶¹ presentation and follow-up discussion in Group 1 (Cycle 2) are shown. Microsoft Excel analysis results for each remaining participant's journal article presentations ($n = 46$) and follow-up group discussions ($n = 46$) are shown in [Appendix B.3](#) (pp. 467-489) for Cycle 2 and [Appendix C.3](#) (pp. 548-570) for Cycle 3. In Figure 6.5 to Figure 6.8 below (and all such figures in [Appendices B.3](#) (Cycle 2) and [C.3](#) (Cycle 3), the Y-axis indicates each group's screen gaze values are as follows.

- 0 = no one (0%) offers screen gaze attentiveness at any time in the meeting.
- 0.25 = only one group member (25%) offers screen gaze attentiveness.
- 0.5 = two members of the group (50%) offer sustained screen gaze attentiveness.

⁶¹ S9 was the first presenter of the group 1 in Cycle 2.

- 0.75 = three members of the group (75%) offer screen gaze attentiveness.
- 1 = all four members (100%) offer screen gaze attentiveness.

In Figure 6.5 and Figure 6.6, the fraction value on the Y-axis indicates the proportion of group members that were offering screen gaze at different time instances during a presentation.

It was found overall that the example set of results below, were representative of participants' pre-and post-intervention screen gaze behaviour across the groups in both Cycles 2 and 3 as seen in [Appendices B.3](#) and [C.3](#) respectively.

6.1.1.3.1 Cycle 2: Group 1- Whole Group's Screen Gaze During the Pre-Intervention Journal Article Presentations

In the example below, Figure 6.5, shows in blue, the screen gaze of the whole of Cycle 2's Group 1 during S9's presentation of his first (i.e., the pre-intervention) chosen journal article.

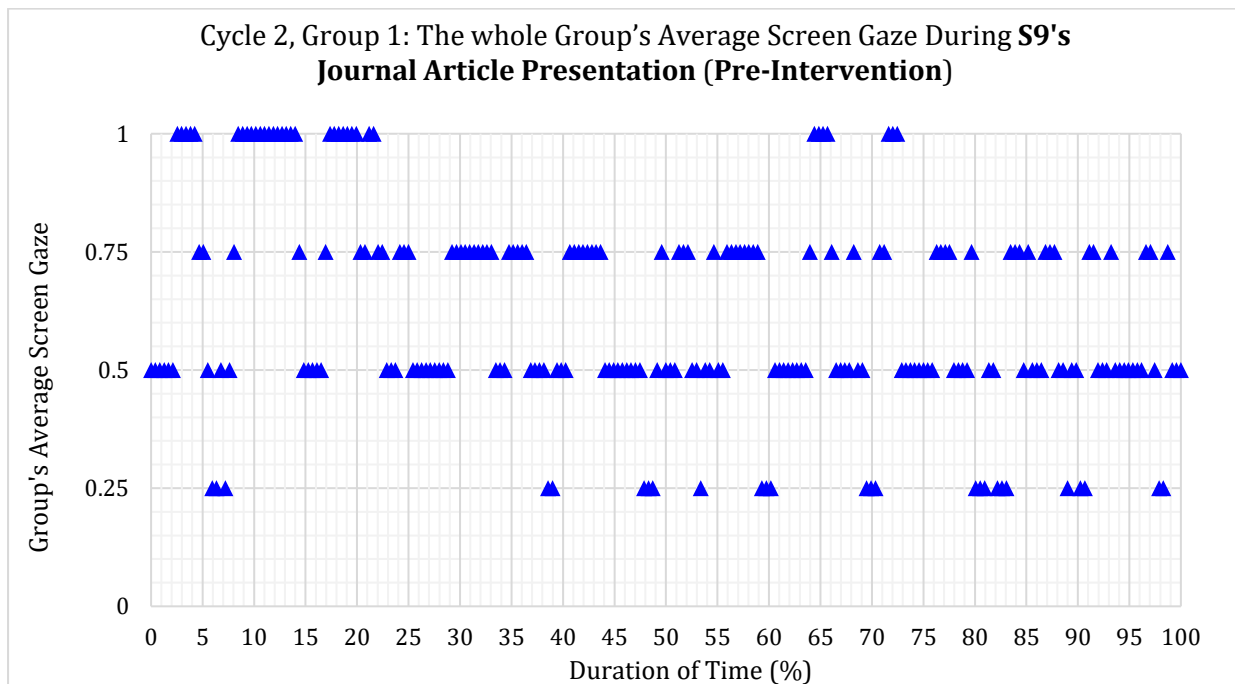


Figure 6.5: Whole Group's Screen Gaze During S9's Journal Article Presentation (Pre-Intervention).

In Figure 6.5, most of the blue triangles are on the 0.5 mark. This shows that only 2 group members sustained screen gaze during most of (46.75% of time duration) S9's presentation before the intervention. The blue triangles on the 0.75 mark indicate sustaining screen gaze of three group members for only 28.45% of S9's presentation time. As shown in Figure 6.5, all four members sustained screen gaze together (i.e., at the same time) only on a few occasions (14.22% of the time duration of the presentation).

This result is consistent with the other group members' pre-intervention journal article presentations in Cycle 2 (see [Appendix B.3](#), pp. 468, 474, 482) and very similar result is identified in Cycle 3 (see [Appendix C.3](#), pp. 549, 555, 563).

6.1.1.3.2 Cycle 2: Group 1- Whole Group's Screen Gaze During Post-Intervention Journal Article Presentations

Figure 6.6 shows, in red, the screen gaze of the whole of Cycle 2's Group 1 during S9's presentation of his first (i.e., the pre-intervention) chosen journal article, after the intervention.

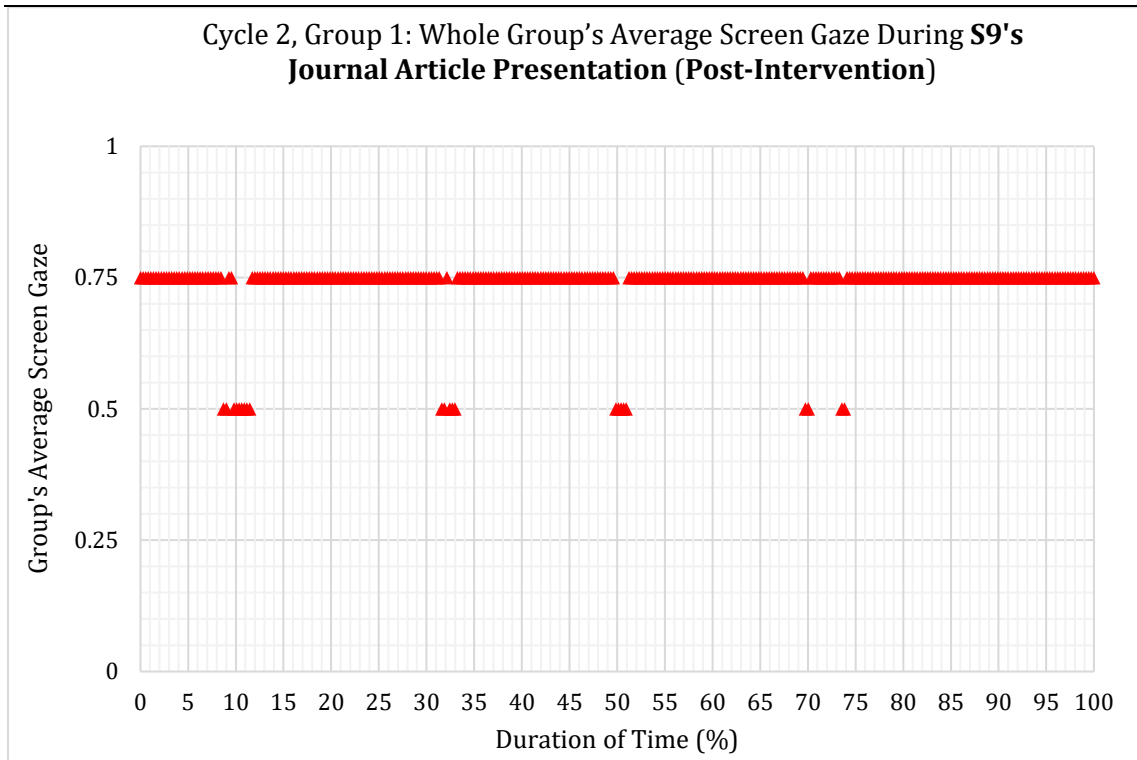


Figure 6.6: Whole Group's Screen Gaze During S9's Journal Article Presentation (Post-Intervention).

In Figure 6.6, most of the red triangles are at the 0.75 mark. This indicates that three out of 4 group members (i.e., 75% of the group) sustained screen gaze during most of (93.75% of the time duration) S9's presentation after the intervention. It should be noted that the absence of the fourth member was mainly due to the unstable internet connection (see footnote 55 on p. 212). As shown in Figure 5.4, sustaining screen gaze by less than three group members together (i.e., at the same time) can be observed only on a few occasions (6.25% of the time duration of S9's post-intervention presentation).

This result is consistent with the results in both Cycles 2 and 3 as shown in [Appendix B.3](#), (pp. 469, 476, 484) for Cycle 2 and [Appendix C.3](#), (pp. 550, 557, 565) for the remaining ($n = 11$) scatter charts per Cycle respectively.

The blue triangles in Figure 6.5 show that in the pre-intervention group work meeting, respondents looked much less at their screens to demonstrate their attention to their

fellow group members. The red triangles in Figure 6.6 indicate that during post-intervention group work meetings, group members shared the same screen gaze behaviour and were looking at their screens throughout S9's post-intervention journal article presentation.

As [Appendix B.3](#) shows, these pre-and post-intervention results were representative of what was found for Cycle 2's other groups, and [Appendix C.3](#) shows similar results in Cycle 3's three groups also.

6.1.1.3.3 Cycle 2: Group 1- Whole Group's Screen Gaze During the Pre-Intervention Group Discussions

Figure 6.7 shows the screen gaze of the whole of Group 1 during the follow-up *discussion* after S9's first (i.e., pre-intervention) journal article.

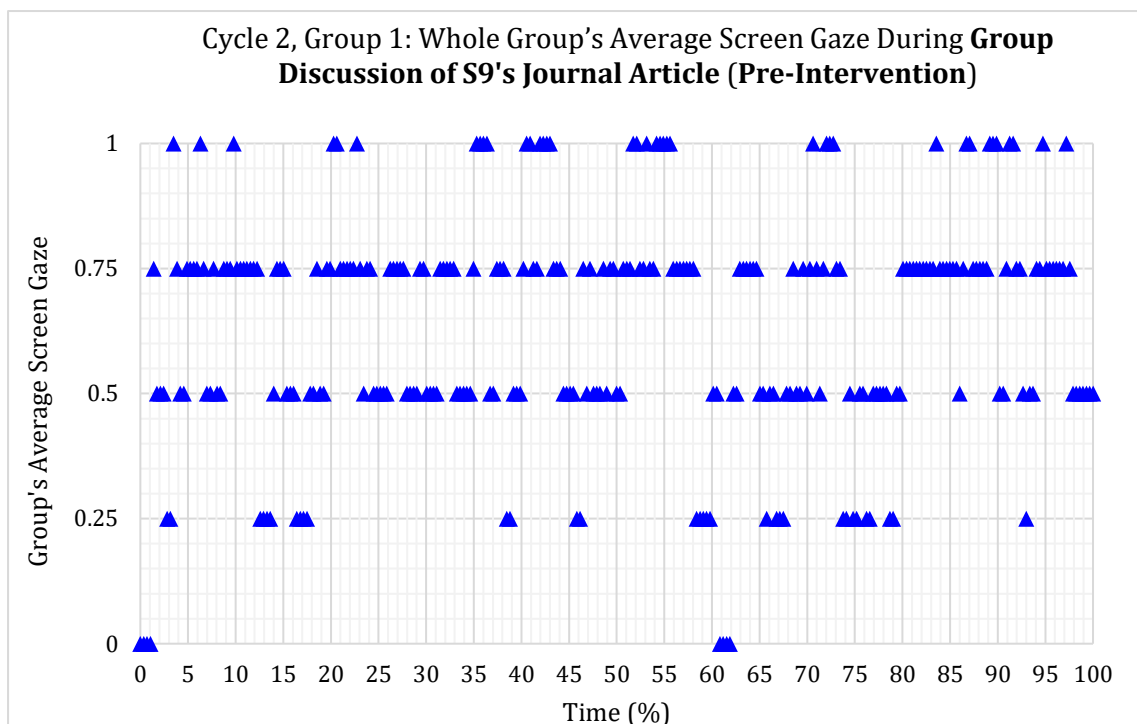


Figure 6.7: Whole Group's Screen Gaze During Group Discussion of S9's Journal Article (Pre-Intervention).

In Figure 6.7, most of the blue triangles are on the 0.5 and 0.75 mark. This shows that only 2 group members sustained screen gaze during together at any time most of (31.01% of time duration) the group discussion of S9's journal article before the intervention. The blue triangles on the 0.75 mark indicate sustaining screen gaze of three group members for only 41.81% of the whole discussion time. As shown in Figure 6.7, all four members sustained screen gaze together (i.e., at the same time) only on a few occasions (13.24% of the time duration of the discussion).

6.1.1.3.4 Cycle 2: Group 1- Whole Group's Screen Gaze During Post-Intervention Group Discussions

Figure 6.8 shows the screen gaze of the whole of Group 1 during the follow-up *discussion* of S9's second (i.e., post-intervention) journal article presentation.

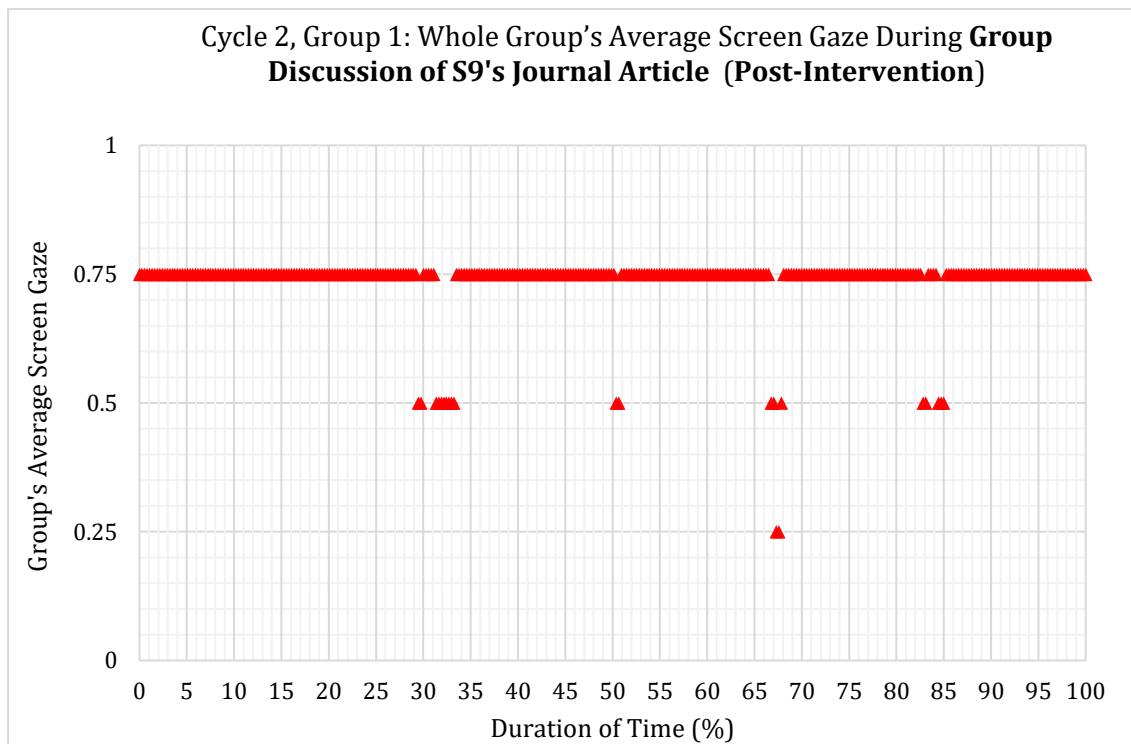


Figure 6.8: Whole Group's Screen Gaze During Group Discussion on S9's Journal Article (Post-Intervention).

From the number of red triangles that are at the 0.75 mark, it can be seen that three members of Group 1, including S9 (i.e., 75% of the group) (please see footnote 55 on p. 212 regarding S12's internet difficulty) sustained screen gaze during most (94.10%) of the discussion time of S9's second journal article after the CSCC intervention session.

When compared with the pre-intervention (blue triangles), respondents were found to sustain screen gaze at notably more time in the post-intervention group discussion. These results are representative of what was also found for Cycle 2's two other groups (see [Appendix B.3](#), pp. 472, 480, 488) and the three groups in Cycle 3 (see [Appendix C.3](#), pp. 553, 561, 569).

Overall, the Microsoft Excel analysis results of both Cycles 2 and 3 (6 groups) indicated a substantial increase in all groups' screen gaze after the CSCC intervention session. In terms of triangulation, these Microsoft Excel results offered a different comparative perspective on the students pre- and post-intervention screen gaze behaviour, but the results corroborated the Wilcoxon Signed-Rank Test results (see Section 6.1.1.1) as well as the results from the R plots (see Section 6.1.1.2).

It is important to note that all of the quantitative results so far do not guarantee the CSCC was the only cause of the changes seen in these tests. Perhaps the fact that the students were meeting again and becoming more familiar with each other was also part of the reasons for the change in respondents' screen gaze behaviour.

Therefore, next, to explore what might, or might not, have contributed to the changes in screen gaze behaviour identified above, the results of the qualitative data analysis are explored, which informed the above results.

6.1.2 Analysis of Qualitative Data Pertaining to Non-verbal Communications

To deepen understanding of the non-verbal communication of respondents, before and after the CSCC intervention session, this section presents the results from 12 qualitative analyses under three headings in line with Chapter 5:

Table 6.3: Qualitative Data Analyses Pertaining to the Non-verbal Communication.

No	Analysis	Cycle 1		Cycle 2	
		Pre- Intervention	Post- Intervention	Pre- Intervention	Post- Intervention
1	Template Analysis of field notes embedded into the Transcripts of the Group Meetings	√	√	√	√
2.	Template Analysis of transcripts of the Focus Groups	√	√	√	√
3	Micro-ethnographic Analysis	√	√	√	√
	Number of analyses	3	3	3	3
	Total number of analyses	12			

Results from each of these data sets were then compared against each other and then triangulated with the above quantitative findings.

6.1.2.1 *Template Analysis of the Field Notes Embedded into Transcripts of PreIGMs and PostIGMs (Cycles 2 and 3)*

As for Cycle 1, all evidence of *non-verbal communication* (e.g., screen gaze, nodding, long silences, smiling, giving a ‘thumbs up’) during the group work meetings were manually added to these transcripts at the seconds/points that they occurred. Then, all transcripts ($n = 24$ transcripts⁶²) from Cycles 2 and 3 were uploaded into NVivo (Pro 12). Template Analysis (TA) was conducted separately for pre-and post-intervention transcripts

⁶² $n=12$ PreIGMs (6 per each Cycle 2 and 3) transcripts and $n =12$ PostIGMs (6 per each Cycle 2 and 3) transcripts.

(embedded with field notes of the group work meetings) using NVivo (Pro 12). The following section presents the findings of the pre-intervention group work meetings in relation to non-verbal communication.

6.1.2.1.1 Analysis of the Field Notes Embedded into Transcripts of PreIGMs (Cycles 2 & 3)

Similar to Cycle 1, analytical results of both Cycles 2 and 3 revealed two sub-themes (avoidant/breaking screen gaze and long silences) and these sub-themes were then identified under one theme, 'Disruptors' in Cycles 2 and 3 (see Section 4.5.1.3 in Methodology Chapter for the procedure of NVivo analysis). This is how the qualitative data overall was seen to be offering '*non-verbal communication*' as a main, overarching theme (for a summary see Table 6.4 below)⁶³.

6.1.2.1.2 Analysis of the Field Notes Embedded into Transcripts of PostIGMs (Cycles 2 & 3)

Three emergent sub-themes from both analyses conducted for Cycles 2 and 3 were: avoiding/breaking screen gaze, long silences, and nodding, where breaking screen gaze and long silences has been grouped under the theme of 'Disruptors' and nodding under the theme of 'Facilitators'. With the emergent of these themes, '*non-verbal communication*' was confirmed to be an overarching emergent theme for both Cycles. Table 6.4 shows clear reductions in both Cycles in *disruptor* behaviours and increases (from zero pre-intervention) in nodding to *facilitate* observable attention and validation of others.

⁶³ The identified instances were assigned to one of the two codes defined as separate units of analysis within the software. Then the relative importance of each node was calculated by dividing the number of references assigned to the node by the total number of references.

Table 6.4: Field Note Observations of Non-verbal Communications: Emergent Themes from the Analyses of the Pre Vs the Post-Intervention Group Meetings Transcriptions.

Overarching Theme	Theme	Sub-theme	Cycle 2				Cycle 3			
			Pre		Post		Pre		Post	
			Frequency	%	Frequency	%	Frequency	%	Frequency	%
Non-verbal Communication	Disruptors	Breaking screen gaze	371	90.49	18	07.50	307	88.47	10	04.00
		Long silences ⁶⁴	39	09.51	06	02.80	40	11.53	03	01.20
	Facilitators	Nodding	--	--	190	89.70	--	--	239	94.80
Total			410	100	214	100	347	100	252	100

The next section describes the focus group findings of Cycles 2 and 3, i.e., students' verbal accounts of their changing experiences (from the pre- and post-intervention task-focused group work) of their own and each other's non-verbal communications.

6.1.2.2 Template Analysis of the Focus Group Transcripts (Cycles 2 and 3)

Analysis of the post-intervention focus group transcripts of both Cycles 2 and 3 also revealed the same three sub-themes: screen gaze, long silences and nodding under two themes, 'Disruptors' and 'Facilitators', as explored above in Section 6. The respondents showed a decrease in avoiding/breaking screen gaze, long silences, and increased occurrences of nodding during their PostIGMs. Example extracts from focus group transcripts are presented in Table 6.5 next. Note that under the table heading 'Frequency' means the number of times the particular theme was talked about by participants, overall, e.g., 14 times for screen gaze in Cycle 2, but Table 6.5 offers just three example statements per each theme. There appeared post-intervention to be no negative statements around these emergent themes.

⁶⁴ These were not reasonable silences in which the group appeared to pause to think but were overlong (10 Seconds or more) and this suggested breakdowns in the group's communicative ease with each other.

Table 6.5: Example Student Statements on the Three Key Emergent Themes – The Post-Intervention Focus Groups (Cycles 2 and 3).

Main Theme	Frequency	Cycle 2	Frequency	Cycle 3
		Pertinent Statements		Pertinent Statements
Screen Gaze	14	<p>S13: <i>...during the discussion we used eye contact and also really, I try to listen very well. (TR PostIFG, G2)</i></p> <p>S15: <i>In the previous one I had some issues with whether they are looking ... But today I got to know after that (CSCC intervention session) session they are looking at us. Because when we are looking at the screen, I...try to give the eye contact all the places. Really a good experience ... (TR PostIFG, G2)</i></p> <p>S20: <i>When we talk, when others talk, we observe others and also observe our facial reactions and in our face [facial] reactions we make comfortable, the group discussion we know how to attract or interact discussion with others. (TR PostIFG, G3)</i></p>	20	<p>S34: <i>Last week, it is difficult to focus on the presenter, but I think I have changed a bit because we are focusing [on] everyone's face while presenting and also when a person presents also, we are focusing [on] him, and I think that things changed. (TR PostIFG, G3)</i></p> <p>S35: <i>In the previous session everyone not focused [didn' t focus] on the camera and [didn' t] hear very carefully, but today, everyone focused on the camera ... more than that day. (TR PostIFG, G3)</i></p> <p>S36: <i>... while I'm [was] presenting, I noticed everyone' s faces. (TR PostIFG, G3)</i></p>
Long Silences (Reduction)	08	<p>S10: <i>Yeah, here everyone is responding very well. (TR PostIFG, G1)</i></p> <p>S15: <i>... we got the communication continuously because there is no awkward silences, yeah, we don' t have awkward silences. (TR PostIFG, G2)</i></p> <p>S19: <i>And the important thing is when someone is silent, we mention their name (invited them by their names) to</i></p>	15	<p>S24: <i>When our group discussion is ongoing, ...when we are silent, when S23' s performance is somewhat low, ... they encouraged S23. (TR PostIFG, G1)</i></p> <p>S23: <i>Yeah ... thank you S24, otherwise I may not speak [00:49:26 S23 laughs] because of his help I can continue it. (TR PostIFG, G1)</i></p>

		<i>tell something or add something to the discussion. (TR PostIFG, G3)</i>			<i>S32: Yeah, at the first session, ... That time it went with silence, but this time, there are different things, we said, 'thank you' and ... they did appreciate, those things are different than the first session. (TR PostIFG, G2)</i>
Nodding	10	<i>S15: ... And also, continuously to convey that we are listening, we shake [nod] our heads. (TR PostIFG, G2)</i>		26	<i>S21: When they are responding to my research, nodding heads ... I feel happy because they have listened to my research carefully. (TR PostIFG, G1)</i>
		<i>S17: I think it helps learning because, when we see that from their reactions, like nodding of the heads, we know that they understood what we are saying. (TR PostIFG, G3)</i>			<i>S35: As S36 said, in the previous Monday session we rarely used nodding the head. But today, most of them did that. ... today, everyone focused on the camera and also nodded their heads more than that day. (TR PostIFG, G3)</i>
		<i>S18: They were nodding [their] head and their active participation in my presentation, so I conducted my presentation and continued in a good way (TR PostIFG, G3)</i>			<i>S36: I noticed that everyone is nodding their faces. But in the previous session, they are [were] not ..., but today, they expressed that they are listening to my presentation. (TR PostIFG, G3)</i>

Note⁶⁵

⁶⁵ The acronyms in all tables indicate: S(n)= The unique code to identify each student, TR= Transcript, PostIFG=Post-Interventions Focus Group, G1= Group 1, G2= Group 2, G3= Group 3.

Overall, these themes were not evidenced in the talk of the pre-intervention focus groups. The post-intervention, students' attention was apparently on these three themes. That is to say, the CCSC appears to have channelled students' closer attention to their own and each other's non-verbal communications and the significance of these for communicative ease in the group. [Appendix B.4](#) (pp. 490-492) and [Appendix C.4](#) (pp. 571-576) show evidence of the theme-related statements that were made during the focus groups.

Next, the summary of the results found through micro-ethnographic analysis of the pre- and the post-intervention group work behaviour of the respondents related to both Cycles 2 and 3 are presented.

6.1.2.3 Micro-ethnographic Analysis (Cycles 2 and 3)

The number of avoidant/breaking screen gaze per student, before and then after the CSCC in their tasked-focused group meetings are shown in the micro ethnographic notes set out in [Appendix B.5](#) (pp. 493-508) for Cycle 2 and [Appendix C.5](#) (pp. 577-593) for Cycle 3 for all students. This was to support the triangulation process in which the qualitative data set outcomes were compared.

Micro-ethnographic field notes of students' group meetings before (pre-intervention) and after the CSCC session (post-intervention) were analysed, and the results were compared to explore for any differences/similarities in respondents' behaviour before and after the CSCC intervention session. Notably, the results on screen gaze behaviour of group members in Cycles 2 and 3, before the CSCC intervention were found to be similarly erratic and unpredictable across all group members, despite the close examination through the videos for disconfirming evidence of this by any participant. Overall, it was found that screen gaze was better sustained across the groups in Cycles 2 and 3 after the CSCC intervention session. These findings inform and appear to corroborate with the

results explored through the quantitative data analyses above in Sections 6.1.1 regarding screen gaze. These micro-ethnographic findings were found to be representative of all groups in Cycles 2 and 3.

Triangulation of the qualitative and quantitative data analyses is offered next in terms of non-verbal communications.

6.1.3 Screen Gaze – Sustaining vs Not-sustaining (Breaking)

The student participants were questioned on how they (as listeners) felt about screen gaze breaking by the presenters and how they (as presenters) felt when the listeners broke screen gaze. When noticing a listener broke screen gaze, majority of the presenters felt as though that listener was not interested or bored, as here:

S10: *(Listeners broke screen gaze) Maybe they are bored, boring feeling.* (PostIFG, G2, C2)

S29: *... when we are in a presentation and when others are not listening, it's really gives awkward feeling.* (PostIFG, G2, C3)

S34: *Same thing, I also will be irritated and demotivated if someone's, they aren't seeing [looking at the screen].* (PostIFG, G2, C2)

At the same time though, participants confirmed that pre-intervention, they have been more likely to break their own screen gaze when they noticed a speaker or (when they were presenting themselves) another listener was breaking screen gaze (looking away). This finding confirmed the results explored through the ethnographic analysis of the videos, i.e., that when the speaker or any other member of the group (a listener) broke screen gaze, the other members also tended to break their screen gaze as though students were mirroring this behaviour.

6.1.4 Triangulation of Quantitative and Qualitative Data - Non-verbal Communication.

Quantitative analyses conducted employing R and Microsoft Excel for the pre- vs post-screen gaze data revealed a statistically significant increase in the sustained screen gaze of the group members after the CSCC intervention session in both Cycles 2 and 3.

These findings were informed through the comparison of the results discovered through the PreIGMs vs PostIGMs transcripts analysis of both Cycles 2 and 3. Though there were two sub-themes (avoiding/breaking screen gaze and long silences) that emerged under 'Disruptors' in PreIGMs, a reduction of the number of occurrences of disruptors (i.e., avoiding/breaking screen gaze and silences) and an increase in emergent theme 'Facilitators' with two sub-themes: sustaining screen gaze and nodding were evidenced in PostIGMs.

Furthermore, the analysis of PreIFGs transcriptions of Cycles 2 and 3 showed emergent themes similar to the PreIGMs analysis as group members highlighted breaking screen gaze and long silences during their PreIGMs. Analysis of the PostIFGs highlighted sustaining screen gaze and nodding noticed by the group members during their PostIGMs. Consequently, the PreIGMs and the PostIGMs micro-ethnographic analysis of both Cycles 2 and 3 also revealed similar results confirming the findings of the above data analyses.

6.1.4.1 Theme 1: Screen Gaze

Screen gaze is one of the most important aspects of *non-verbal communication* in online group work meetings as eye contact is not possible. In this study both the qualitative and quantitative analyses conducted using diverse quantitative (R, Microsoft Excel) and qualitative (NVivo, Micro-ethnography) analytical tools during both Cycles, 2 and 3

demonstrated an increase of sustained screen gaze of all group members after the CSCC intervention session.

6.1.4.2 Theme 2: Long Silences

Mediating to end long silences was discussed with students during the CSCC (see [Appendix F](#), pp. 641-646). This was also demonstrated by the group members during their PostIGM compared to their PreIGMs. Evidence of how students mediated to reduce long silences is identified in Table 6.5.

In Cycle 2, there was a total of 39 occurrences⁶⁶ of long silences⁶⁷ witnessed during the PreIGMs. This represents 35.92% of the total group work time⁶⁸. Similarly, in Cycle 3, a total of 39 occurrences⁶⁹ of long silences were evidenced during the PreIGM. This represents 39.99% of the total group work time⁷⁰. This was noticed by group members too. i.e., during Cycle 3, Group 3 the PreIGM, S32 noticed a long silence when no one initiated the discussion after S29's presentation,

S32: *Everybody is silent.* (TR, PreIGM, G2, C3)

In contrast, there were six⁷¹ occurrences of long silences witnessed during the PostIGMs in Cycle 2. This represents 5.53% of the total time⁷² indicating a reduction of the occurrences of long silences from 30.39% after the CSCC intervention session. Similarly in Cycle 3, there were three⁷³ occurrences of long silences evidenced during the PostIGMs.

⁶⁶ 6 and 33 during presentations and discussions respectively.

⁶⁷ These silences are longer than 10 seconds or more.

⁶⁸ Total discussion time of three groups was 97 mins and 52 seconds. (28.58+37.51+42.07)

⁶⁹ 9 and 30 during presentations and discussions respectively.

⁷⁰ Total discussion time of three groups was 108 mins and 56 seconds. (24.38+44.32+28.42)

⁷¹ 0 and 6 during presentations and discussions respectively.

⁷² Total discussion time of three groups was 108 mins and 41 seconds. (35.21+44.27+28.53)

⁷³ 1 and 2 during presentations and discussions respectively.

This represents 2.85% of total time⁷⁴ implying a reduction of long silences from 37.14% after the CSCC intervention session.

6.1.4.3 Theme 3: Nodding

The communicative usefulness of nodding was explored with group members during the CSCC intervention session. Briefly, students agreed and acted on its usefulness to demonstrate active listening and/or understanding and/or agreeing and/or encouragement of a speaker to continue. Evidence of students' use of nodding is identified in Table 6.5. Nodding was rarely evidenced during the PreIGMs in both Cycles. However, during the PostIGMs nodding of the group members was evidenced for a total of 190 occasions⁷⁵ and 239 occasions⁷⁶ respectively in both Cycles 2 and 3.

Additionally, to these three main themes, group members' use of other validating gestures: waving a hand to signal an intention to speak (without disturbing verbally) and giving thumbs up, smiling to express interest, admire others' contributions were identified during the PostIGMs.

Overall, both quantitative and qualitative analyses show consistency in results for non-verbal communications before and after the CSCC intervention session.

Conclusion of findings above in relation to research questions 3, 4 and 5.

RQ 3.: The quantitative findings so far have indicated the feasibility of adapting the development of HE students in compassion-focused communications for use in online group meetings. This adaptation was possible in online group meetings

⁷⁴ Total discussion time of three groups was 105 mins and 19 seconds. (34.11+46.48+24.20).

⁷⁵ During presentations 107 occasions and during discussions 83 occasions could be observed.

⁷⁶ During presentations 125 occasions and during discussions 114 occasions could be observed.

with the mindful use of non-verbal signals and cues (i.e., screen gaze attentiveness, reduction of long silences and nodding).

RQ 4.: The results indicate a statistically significant increase in sustained screen gaze behaviour of the Sri Lankan based HE students after the CSCC intervention session especially when they listen to others' presentations and when they are involved in the follow-up discussions. Further, in relation to non-verbal communication, both groups reported increased use of nodding and reduction of long silences after the CSCC intervention session along with thumbs up and raise hand options.

RQ 5: When compared with the UK-based STEM students and SL-based STEM students, their responses were found to be similar in terms of non-verbal communication before and after the CSCC intervention session. However, in terms of students' emotionally stimulated team bonding appeared to be enhanced more among SL-based STEM student groups than the UK-based STEM student groups.

The results from all data sets on *Verbal Communication* were shown to be aligned with the above results and so suggest some consistency of effect of the intervention (CSCC intervention session). These results on verbal communication are presented and explained next.

The findings in the next section respond to research questions 3, 4 and 5 (see Section 4.1 for research questions).

6.2 Verbal Communication

Verbal communication of the respondents was investigated quantitatively and qualitatively using the transcripts of the pre-and the post-intervention group work meetings and focus groups. This was done using NVivo (Pro 12) software.

Overall, the main findings for the pre-and the post-intervention verbal communication were these. The intervention appeared to enhance group members' social experiences and learning experiences as seen in Table 6.6. But these findings are now examined separately and in more depth. Below, Table 6.7 and its related [Appendix B.6](#) (pp. 509-513) for Cycle 2 and [Appendix C.6](#) (pp. 594-599) for Cycle 3 explore evidence of enhanced social and learning experiences in all the PostIGMs when compared to the PreIGMs. Then Table 6.8 and its related [Appendix B.7](#) (pp. 514-528) and [Appendix C.7](#) (pp. 600-620) identify what the focus groups noticed of this if anything, and if they did, what they thought explained it. However, a discussion of the apparent *Social experience mediated learning experience* will also be integrated into the three following Sections 6.2.1 to 6.2.3.

6.2.1 Template Analysis of Group Work Meetings Transcripts (Pre- and Post-Intervention Comparisons)

Table 6.6 summarises the emergent themes under verbal communication during the pre-and the post-intervention group meetings. Similar to Cycle 1, the same three themes: *Social experience*, *Learning experience* and *Social experience mediated learning experience* emerged from the Template Analysis of pre-and post-intervention group meetings of both Cycles 2 and 3.

Set out next in Table 6.6 are the three main themes (first column) that emerged under *verbal communication* from both Cycles 2 and 3. Their sub-themes are in the 2nd column

(called focused codes) and evidence of them are in the 3rd column (called free codes).

These codes are explained in the Section 4.5.1.3 in Methodology Chapter.

Table 6.6: Themes that Emerged under Verbal Communication (PreIGMs Vs PostIGMs).

3 Themes	8 Sub-themes	Evidence	Cycle 2 Frequency		Cycle 3 Frequency	
			Pre- Intervention	Post- Intervention	Pre- Intervention	Post- Intervention
Social Experience	<i>Disruptions to Group Cohesion</i>	Interruptions; Simultaneous talk; Competitive individualism	18	01	15	01
	<i>Validation</i>	Expressing gratitude; Complimenting others' efforts; Inviting group members by their names.	08	63	08	108
	<i>Social Connectedness</i>	Apologizing; Creating opportunities for others to speak; Social risk-taking	05	42	03	26
		Sub Total	31	106	26	135
Learning Experience	<i>Productive Participation</i>	Knowledge dissemination; Critical perspectives	--	24	--	13
	<i>Purposeful Facilitation</i>	Seeking clarification; Keeping focus	01	23	03	18
		Sub Total	01	47	03	31
Social Experience Mediated Learning experience	<i>Psychological Safety</i>	Reduction of anxiety	--	06	--	03
	<i>Notion of Equal Agency</i>	Negative	12	--	05	--
		Positive		07		08
	<i>Circumlocution</i>		--	--	--	12
	Sub Total	12	13	05	23	
		Grand Total	44	166	34	189

Next, examples of the evidence referred to by Table 6.7 are provided below. [Appendix B.6](#) (pp. 509-513) for Cycle 2 and [Appendix C.6](#) (pp. 594-599) for Cycle 3 show further example extracts of the PreIGMs and PostIGMs transcripts.

Table 6.7: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycles 2 & 3).

Theme	Evidence	Student Statements	
		Pre-Intervention	Post-Intervention
1. Social Experience			
Disruptions to Group Cohesion	Interruptions	<i>[At 00:17:33 S10 interrupts S9]</i> (TR, PreIGM, G1, C2) <i>[At 00:11:12 S30 interrupts S29]</i> (TR, PreIGM, G2, C3)	-- [Zero interruptions]
	Simultaneous talk	<i>[At 00:01:02 S9 and S11 talk simultaneously after that there is a pause of seven seconds]</i> (TR, PreIGM, G1, C2) <i>[At 00:02:27 S24 and S23 talk simultaneously]</i> (TR, PreIGM, G1, C3)	<i>[00:10:32 S15 and S16 talk simultaneously, then both of them stops talking and S15 gives the chance to S16].</i> S15: <i>Yeah, you go on.</i> (TR, PostIGM, G2, C2)
	Competitive individualism	S36: <i>So, I think I can present first, I'm going to present first.</i> (TR, PreIGM, G3, C3)	--
Validation	Validating others' expressions	--	S18: <i>Yes Matheer, I agree with you.</i> (TR, PostIGM, G3, C2) S36: <i>...so the last thing that you have said, it's really a good one. We have to study hard, but on the other hand, we also want to look after our nutrition also know?</i> (TR, PostIGM, G3, C3)

	Expressing gratitude	<p>S10: ...thank you. (TR, PreIGM, G1, C2)</p> <p>S30: Thank you. (TR, PreIGM, G3, C2)</p>	<p>S17: Hi Palavi, I would also like thank Palavi for presenting the article amidst all the difficulties she is experiencing right now. (TR, PostIGM, G3, C2)</p> <p>S33: Thank you for choosing that article today. (TR, PostIGM, G3, C3)</p>
	Complimenting	<p>S16: Yes, it ' s understandable and it was really interesting. (TR, PreIGM, G2, C2)</p> <p>S36: It's nice one. (TR, PreIGM, G3, C3)</p>	<p>S16: So, it ' s a good explanation. (TR, PostIGM, G2, C2)</p> <p>S29: Yeah, it ' s really nice, you really nicely presented it. (TR, PostIGM, G2, C3)</p>
	Inviting by their names	<p>S34: Dedunu, can you share your article? (TR, PreIGM, G3, C3)</p>	<p>S10: Thank you Chamath, now could you start your article? (TR, PostIGM, G1, C2)</p> <p>S24: Okay, this is time to Dehemi. It ' s your time. (TR, PostIGM, G1, C3)</p>
Social Connectedness	Apologizing	<p>S10: Sorry. I couldn ' t hear well. (TR, PreIGM, G1, C2)</p> <p>S34: Sorry, I didn ' t hear you. (TR, PreIGM, G3, C3)</p>	<p>S18: Matheer, sorry I can ' t hear you now. Can you repeat your question? (TR, PostIGM, G3, C2)</p> <p>S30: Sorry if my question was not really clear. (TR, PostIGM, G2, C3)</p>
	Creating opportunities for others to speak	<p>S15: Dhanjan, do you have anything to ask from Shenab ' s one? (TR, PreIGM, G2)</p>	<p>S17: ... anything else to add Nadun and Palavi? (TR, PostIGM, G3, C2)</p> <p>S32: Rizmi, do you agree with this? (TR, PostIGM, G2, C3)</p>

2. Learning Experience

Purposeful Facilitation	Keeping focus	<p>S9: ... So, any thoughts?</p> <p>[00:07:31-00:07:40 S11 looks at down]. [00:07:38-00:07:49 long pause]</p> <p>S9: I hope uh, you can hear me. (TR, PreIGM, G1, C2)</p> <p>S36: Okay, did you got the point that I came to say? [00:04:59-00:05:12 pause] (TR, PreIGM, G3, C3)</p>	<p>S12: ... Did everyone get the point?</p> <p>S9: Yeah, some parts, I couldn' t hear. (TR, PostIGM, G1, C2)</p> <p>S24: Can you get something from this article or not?</p> <p>S21: I have a question. (TR, PostIGM, G1)</p>
	Seeking clarification	--	<p>S9: Well, it' s the area, ... I think I didn't get it, ... Can you explain it very shortly? (TR, PostIGM, G1, C2)</p> <p>S24: Could you please recall once ... the main purpose of that article? (TR, PostIGM, G1, C3)</p>
Productive Participation	Knowledge dissemination and critical thinking	--	<p>S18: I'll add some idea regarding your presented research article and I believe and experience that the risk of cell phone addition is a social and physiological problem. ... and mental health of university students. (TR, PostIGM, G2, C2)</p> <p>S36: Asim, while you're telling the article I heard a new word like, physical cyber sensing or something. Can you read that word. (TR, PostIGM, G3, C3)</p>

3. Social Experience Mediated Learning Experience

Psychological Safety	Reported Reduction of Anxiety	--	<p>S14: <i>Because I don't know what the T Level is... . (TR, PostIGM, G2, C2)</i></p> <p>S31: <i>Hadunagannava, Demelen thibune 'angiharam' kiyala, 'i nisa 'mamə chuttak kən'fjuz 'unə. (It is known as 'angiharam' in Tamil, so I got confused). (TR, PostIGM, G2, C3)</i></p>
Notion of Equal Agency	Negative	S18: <i>Ask if you get any questions. (TR, PreIGM, G3, C2)</i>	--
	Positive	--	<p>S17: <i>So, now I would like to hear your opinions on this study. (TR, PostIGM, G3, C2)</i></p> <p>S29: <i>So, that's all, then shall we discuss about this? (TR, PostIGM, G2, C3)</i></p>
Circumlocution (Usage of Mother Tongue)		--	S24: <i>Intestinal microbiota means uh uh, I don't know how can I say that. The micro-organism which are leaving in our intestine, Intestinal means, Jailash, can you explain the intestinal, we call in Tamil, kōdal you know? [00:21:50 S24 directly asks hep from S22 on explaining intestinal microbiota to the group] (TR, PostIGM, G1, C3)</i>

Note: All these examples were extracted from the transcripts of pre- (under pre-intervention column) and post-intervention (under post-intervention column) group meetings for identification, the Group and the Cycle were included within brackets after each extract.

Overall, drawing together the evidence for social and learning experiences and how the first seemed to mediate the other, it appears that the CSCC intervention session did increase students' sensitivity to the quality of others' social and learning experiences during the post-intervention group meetings. Hence, the two components of compassion, noticing distress and/or disadvantaging and then taking (wise) action to reduce or prevent them were both evident from students after the CSCC intervention session. This raises questions about how these post-CSCC behaviours may have been internalised and so this result is offered cautiously and needs to be explored further. This is done next exploring the findings of Template Analyses of the pre- and post-intervention focus group transcripts.

6.2.2 Template Analysis of Focus Groups (Pre- and Post-Intervention Comparisons)

The focus groups were conducted twice (after the PreIGM and after the PostIGM) with each group exploring group members' reflections on their group work before and after undergoing the CSCC intervention session. Since the emergent themes during the pre- vs the post-interventions focus groups covered a wider range, the related findings are presented next for the pre- and the post-interventions.

Similar to the Cycle 1, the analysis of the pre- and post-intervention focus groups' transcriptions of Cycles 2 and 3 also revealed same five main themes: *Social experience*, *Learning experience*, *Social experience mediated learning experience*, *Group management strategies* and *Student views on the task designed for attention to compassion*. These themes were related to their online group work experiences in the university (before participating in this study) and then during the pre-and post-intervention group

meetings (during this study). Moreover, in Cycles 2 and 3, shared virtual background was also identified as the sixth main theme from the PostIGFs transcripts. Table 6.8 below summarises the coding frame for both Cycles 2 and 3 followed example extracts of the pre-and post-intervention focus group transcripts presented in Table 6.9.

Table 6.8: Emergent Themes from Template Analysis of the Pre- and Post-Intervention Focus Groups.

Overarching Theme	Focused Code/ Sub-theme	Free Code/ Evidence	Cycle 2 Frequency		Cycle 3 Frequency	
			PreIFGs	PostIFGs	PreIFGs	PostIFGs
Social Experience						
	Disruption to Group Cohesion [Previous Group Work Experiences (Outside Study)]	Inequality of sharing time/dominating/non-contribution; The feeling of being left out; Cliques	41	--	54	--
	Social Connectedness	Enhancing interactivity; Increasing social comfort; Improving listening; Building confidence; Creating opportunities for others to speak; Enhancing team spirit	--	56	--	61
		Sub Total	41	56	54	61
Learning Experience						
	Productive Participation	Knowledge dissemination & Critical perspectives	--	09	--	08
	Purposeful Facilitation	Keeping focus; Seeking clarification	--	14	--	27
		Sub Total	--	23	--	35
Social Experience Mediated Learning Experience						
	Challenges to Psychological Safety	Social anxiety: Difficulty of communicating in English as second language; Confusion of understanding; Reluctance to switch on cameras	46	--	59	--
	Psychological Safety	Reported reduction of anxiety; Improving communicating in	--	38	--	59

		English; Willingness to switching cameras on				
	Notion of Equal Agency	Negative	--	--	--	--
		Positive	--	17	--	30
	Community Building		--	19	--	24
	Circumlocution		--	--	--	02
		Sub Total	46	74	59	115
Group Management Strategies						
	Strategies Used to Enhance Group Engagement (Pre-study)	Assigning task-specific roles; Communicating indirectly; Questioning; Appointing a leader; Allocating time slots; Inadequacy of group engagement strategies	12	--	16	--
	Strategies Used to Manage PostIGMs	CSCC: Expressing gratitude; Inviting group members by their names; Complimenting others' efforts; Warm tone; Sustaining screen gaze; Nodding; Smiling	--	46	--	87
		Student Developed: Complimenting Concerning about the group when selecting journal article; Observing all four faces	--	16	--	17
		Sub Total	12	62	16	104
Student views on the Task designed for attention to Compassion						
	Positive		13	20	11	08
	Negative		--	--	--	
Shared Virtual Background						
			--	22	--	22
		Sub Total	13	42	11	30
		Grand Total	112	257	140	345

Next, examples of the evidence referred to by this table from pre- and post-intervention focus group transcripts are provided in Table 6.9 below.

Table 6.9: Template Analysis of PreIFGs and PostIFGs – Example Transcription Extracts on Verbal Communication (Cycles 2 & 3).

Main Theme	Sub-theme	Students' Statements	
		Pre-Intervention	Post-Intervention
1. Social Experience			
Disruption to Group Cohesion [Common Group Work Behaviours (Pre-Study)]	Inequality of sharing time	<p>S10: <i>Definitely not. Some people are speaking a lot of time. Some guys speak less. Sometimes, some guys are not speaking.</i> (TR, PreIFG, G1, C2)</p> <p>S18: <i>We always hearing hearing hearing. But in this time [during the study], we are talking.</i> (TR, PreIFG, G3, C2)</p> <p>S35: <i>And other reason is, they don't know how to stop the elaboration and talking. So, that they [are] talking, taking too much time.</i> (TR, PreIFG, G3, C3)</p>	--
	Non-contribution	<p>S12: <i>... they don't like to share anything.</i> (TR, PreIFG, G1, C2)</p> <p>S15: <i>Normally in the physical meeting or online also sometimes they tend to mute themselves and go away.</i> (TR, PreIFG, G2, C2)</p> <p>S19: <i>Yes, if there are five members in the group, two or three members only work for the group, others [do] not participate for the discussions and they are not giving even one idea for our group discussions.</i> (TR, PreIFG, G3, C2)</p> <p>S34: <i>Last semester we had a project with four members. In my group, there were two Sinhalese and two Tamils. ... one guy, he is [was] not interacting with</i></p>	--

			<i>those two Sinhala guys. so, it was difficult. ... we have to make a robot. ... it is difficult, without interacting and talking with them. (TR, PreIFG, G3, C3)</i>	
	Feeling of being left out		<p>S13: <i>I had some ideas that is totally different from others. So, in some occasions, I have been left (out) from some discussion due to those ideas. (TR, PreIFG, G2, C2)</i></p> <p>S15: <i>I felt that (I'm left out) because most of the times, students think that I felt that I am away from these groups. (TR, PreIFG, G2, C2)</i></p> <p>S21: <i>Usually it [leaving people out] happens, (TR, PreIFG, G1, C3)</i></p>	--
	Cliques		<p>S9: <i>They are forming small groups and I don ' t know what they are talking about. They talk about something different. (TR, PreIFG, G1, C2)</i></p> <p>S15: <i>But the most irritating thing to me ..., which I had is during the discussion, sometimes they neglect and they talk some other things ... it's irritating (TR, PreIFG, G2, C2)</i></p> <p>S32: <i>Yes, ... normally for group work, if they let to do the group works, at the first, they're trying to do the group work. If some little bit missing, then started to gossip. (TR, PreIFG, G2, C3)</i></p>	--
Social Connectedness	Enhancing interactivity	--		S9: <i>I think most of us interact with each other than previous day, we didn ' t use that skills but today we have used some. I think that brought up, that helped us to interact more than</i>

		<i>Monday for today's discussion. (TR, PostIFG, G1, C2)</i>
		S16: <i>... by calling their names with a warm tone, they speak with us and make discussion with us. So, it will be very useful rather than not talking and not asking any questions. (TR, PostIFG, G2, C2)</i>
		S22: <i>... in the previous discussion we had expanded we had read briefly, gave an explanation for our research article and we didn't give any time for the questions or doubts they had gone through. But here in this session, ... we had a time for them to discuss about it (TR, PostIFG, G1, C3)</i>
Building confidence	--	S9: <i>I feel pretty confident too to discuss. (TR, PostIFG, G1, C2)</i>
		S19: <i>We feel more and more confident after knowing about them (CSCC). (TR, PostIFG, G3, C2)</i>
		S30: <i>We are confident, when we are speaking in English, we are confident as we know that, we have help here. If we don't understand something, there's help for us. I think it increased confidence in team members. (TR, PostIFG, G2, C3)</i>
Increasing social comfort	--	S17: <i>Due to these compassionate strategies we feel comfortable when we are with the group members. (TR, PostIFG, G3, C2)</i>

	<p>S20: <i>When I present with some problems (network issues), they encouraged me so I feel better and comfortable. (TR, PostIFG, G3, C2)</i></p> <p>S21: <i>I saw that change in everyone more friendly and others seem socially comfort, so I think it affects that much to me. I think it affects them too. (TR, PostIFG, G1, C3)</i></p>
<p>Enhancing team Spirit</p>	<p>S15: <i>Really ... it enhances team spirit also that I experienced today. (TR, PostIFG, G2, C2)</i></p> <p>S18: <i>..., in the first day session, I presented my presentation as an individual, I am, but today we work as a group. It's very helpful to present my presentation in a good way ... First day I act as one person, I'm doing my presentation, it's enough. But today, we four, four of us are combined and host one, it's a good way for my practice. (TR, PostIFG, G3, C2)</i></p> <p>S35: <i>... everyone is at different different places, but when we're saying others' names, we are feeling like we are nearby. And so that our bonding is relatively higher than normal group activity. (TR PostIFG G3, C3)</i></p>
<p>Improving listening --</p>	<p>S12: <i>By doing this [applying CSCC] ... it helps to keenly listen to others topics. (TR, PostIFG, G1, C2)</i></p> <p>S13: <i>... during the discussion we used eye contact and also really I try to listen very well. (TR, PostIFG, G2, C2)</i></p>

Creating opportunities for others to speak	--	<p>S21: <i>Using compassionate strategies, I think this discussion was more attractive than before, ..., more interesting and like to listen well. (TR, PostIFG, G1, C3)</i></p> <p>S9: <i>Well, inviting to talk would be good, so that everyone get involved every time. (TR, PostIFG, G1, C2)</i></p> <p>S12: <i>I have learnt ... to encourage others to tell their points. (TR, PostIFG, G1, C2)</i></p> <p>S24: <i>... when Kavith ' s performance is somewhat low, ..., so I involved some way, I don't know how can I say, $\mu\alpha\tau\alpha$ $\rho\acute{o}\lambda\omicron\nu\alpha\nu$ $\rho\acute{o}\nu\tau/\iota$ $\sigma\delta\nu\omicron\nu\alpha\kappa$ $\kappa\alpha$ $\nu\iota\delta\omicron\tau\alpha$ $\kappa\alpha\lambda\epsilon$: me: $inv\omicron\nu$ $venn\alpha$ [I did a little help that I could do to Kavith to get involved in the discussion]. (TR, PostIFG, G1, C3)</i></p> <p>S23: <i>Yeah, thank you Saheed, otherwise I may not speak, because of his help I can [could] continue it. (TR PostIFG G1, C3)</i></p>	
2. Learning Experience			
Productive Participation	Knowledge dissemination and critical perspectives	--	<p>S16: <i>I also want to say something about this learning experience. Rather than the research document, I have searched some more from the internet, more details because if somebody asked questions we have to explain, we have to discuss them, so it improve my knowledge. (TR, PostIFG, G2, C2)</i></p> <p>S18: <i>... in online discussion with those strategies, collaboration, higher order thinking skills are</i></p>

			<p><i>developed and better prepare students in these [group discussions]. (TR, PostIFG, G3, C2)</i></p> <p>S29: <i>I have noticed that all the guys learned new things and got new things from the sessions, ... and I also learned new things and we we all are very, very very learned... . So, it's really a good thing, (TR, PostIFG, G2, C3, C3)</i></p>
Purposeful Facilitations	Keeping focus	--	<p>S15: <i>... when someone is presenting, we can check whether only I ' m getting doubts or others understood. (TR, PostIFG, G2, C2)</i></p> <p>S17: <i>Changes in myself ... To be more concerned about making the group understand thing rather than being a good presenter, rather than being good at presenting. We have to be more attentive whether the group understand what you present rather than focusing on how you present or how better you do it. (TR, PostIFG, G3, C2)</i></p> <p>S34: <i>Yeah. I was able to see whether they understood, by nodding the head they are trying to say they understood and we can understand what by the reaction of others, whether they understood or not. (TR, PostIFG, G3, C3)</i></p>
	Seeking clarification	--	<p>S12: <i>... here the special thing today is we all invite others to speak and we clear our doubts by asking questions. It ' s comfortable to us now. (TR, PostIFG, G1, C2)</i></p>

- S14:** *In group discussions if they talk about something I don't know, I ask the questions. Then, I learn (TR, PostIFG, G2, C2)*
- S29:** *If we don't know something like I said we raised our hands and we asked, we clarify our doubts then and there. (TR, PostIFG, G2, C3)*

3. Social Experience Mediated Learning Experience

Psychological Safety	Social anxiety	S12: <i>Somewhat nervous here than practical speech or group activity. (TR, PreIFG, G1, C2)</i>	--
		S14: <i>We mostly talked in Tamil. So, I don't have so many problems to talk with each other (in previous group meetings), but here due to the other language friends, uh so it makes me uh, it makes me uh, it is very nervous to ... I forgot what to talk because I mostly usually not using the English. So, when I am listening I can understand but when come to talk, I forget the words. (TR, PreIFG, G2, C2)</i>	
		S36: <i>Actually, I wanted to say that ... I also felt little nervous. (TR, PreIFG, G3, C3)</i>	
	Difficulty of communicating in English	S9: <i>Sometimes they can feel fear like, what if I can't talk that much. (TR, PreIFG, G1, C2)</i>	--
		S15: <i>... because I am not that much good in English. I'm really afraid about grammar and all those things. So, I won't talk in English. (TR, PreIFG, G2, C2)</i>	
		S20: <i>... that [English] affects because they can't understand that about that discussion, so they feel bored and escape but if we translate into Tamil, they</i>	

		<i>can get some ideas, but English language problem makes them feel bored. (TR, PreIFG, G3, C2)</i>	
		S35: <i>If someone [is] fluent in English, he can talk and make the presentation very well. So, as I observe if we have less knowledge, vocabulary in English, we feel very shy and shame and demotivated because, if we go front and when we present, some words, we did not remember, ..., and sometimes our pronunciation also very bad, bad or worst, that [is] demotivating us. (TR, PreIFG, G3, C3)</i>	
Reluctance to switch the cameras on		S10: <i>Because, sometimes friends watching me that is very excited to me, very nervous because everyone is watching me. (TR, PreIFG, G1, C2)</i>	--
		S15: <i>... really [we] don't like to switch on the cameras because we are from a different place, sometimes in the boarding and house and sometimes, the backgrounds, they are not much good. (TR, PreIFG, G2, C2)</i>	
		S17: <i>I don't I feel a bit more at ease when the camera is switched on. (TR, PreIFG, G3, C2)</i>	
		S36: <i>I also felt, very, very nervous to switch on the camera like I am feeling like everyone is seeing me. (TR, PreIFG, G3, C3)</i>	
Reported reduction of anxiety	--		S9: <i>They felt safe with the group and they ask questions and interact with others. (TR, PostIFG, G1, C2)</i>
			S16: <i>Normally, I don't ask any questions from anyone, I used to stay quiet when they ask, 'do you have any questions?' So, this [CSCC] helps</i>

me to ask some questions and improve my knowledge. (TR, PostIFG, G2, C2)

S23: *It [CSCC training] helped, ... in the previous session, when I talked in the last part, I [got] stuck because of the stress. But when we use these team things [CSCC] we didn't have any stress, it's very free flow, yeah. (TR, PostIFG, G1, C3)*

Improving
communicating
in English as a
second
language (ESL)

S14: *..., so it [CSCC strategies] helped me to improve English. It improves my speaking skills. (TR, PostIFG, G2, C2)*

S20: *... in this group discussion, ... we must speak in English in this group, we try to learn English, talk in English. ... and we try to learn English. So, we use English more and this is very helpful to learn English. (TR, PostIFG, G3, C2)*

S30: *I think, they definitely have a positive impact. I will take an example and explain it, let's say I' m in a group may be doing a presentation in English. I get stuck and if everyone stays silent, for like five or ten minutes I probably feel awkward and I'm pretty sure that I will not speak up in a middle again in English, but now as we saw like using these strategies, like you know ask something, inviting like someone else to speak, then I think it can increase the confidence one has about themselves in speaking in English. So, I think*

	<p><i>it definitely improve the learning curve in learning English. (TR, PostIFG, G2, C3)</i></p>
<p>Enhancing group communication</p>	<p>S15: <i>... today I didn't have an idea that I should start the presentation, but then quickly Shenab invited that now I need to start the presentation, likewise the communication is improved. (TR, PostIFG, G2, C2)</i></p> <p>S20: <i>We can ask them how about their ideas, during the discussion And [if there are observable silences] we change the hot potato [passing the hot potato]. (TR, PostIFG, G2, C2)</i></p> <p>S36: <i>... in the middle of that presentation, I think Asim's network was dropped out so after coming I think he felt like where I dropped, So, I remembered the last point he said, and I tried to get him back to the presentation. So, I tell [said] that and he felt like, Okay, they are listening to me, so they remember the last point I told, he tried to continue from that. (TR PostIFG G3, C3)</i></p>
<p>Willingness to switch on camera</p>	<p>S10: <i>... definitely it was changed, before I usually speak without camera but now I am comfortable with camera. (TR, PostIFG, G1, C2)</i></p> <p>S12: <i>By interacting with them firmly and giving our confidence to them. Then getting their ideas on what they feel, by turning on the video, so we can get ideas and share. (TR, PostIFG, G1, C2)</i></p>

**The Notion of
Equal Agency**

--

S15: ... we need to ... get their attention and need to do the group work. That one I changed myself and made my mindset, hereafter I shouldn't do the group work as an individual work. (TR, PostIFG, G2, C2)

S16: In other groups, we normally ... just tell, 'do you have any questions?' 'If you want any further details, you can ask' like that only we used to ask. But in this group, we just mention their names, 'if they have any questions' or 'shall we discuss?'. So, it is very useful. (TR, PostIFG, G2, C2)

S30: I think ... It made a huge difference in our attitudes, because when we say 'any questions? we feel, people feel as it's like a Q and A session. But when we say, 'Shall we discuss about this?', we feel much more like a group discussion and we are discussing in the session, we are sharing our ideas. So, I think I never used that before and we used it today The discussion was really good after using that. (TR, PostIFG, G2, C3)

**Community
Building**

S12: As Madri and Chamath said that, if we know about each other we can understand what is happening around our surrounding. So, in that way we can reduce some problems and it helps community building. (TR PostIFG, G1, C2)

S24: *We are the group members, so I think I, I have a suggestion why don't we create a WhatsApp group?*

S22: *Yeah.*

S23: *I also thought that.*

S21: *Year, I thought that too. (TR PostIFG, G1, C3)*

S30: *Yeah, what Anuhas said is true and considering the things that happen like if it is that everything not only as an undergraduates but as Sri Lankan citizens, it is really beneficial for us to know these things. It can reduce the issues in between all the races and everyone not just the tension between people. It helps us bond as human beings, so this is really important knowing these strategies. (TR PostIFG, G2, C3)*

**Circumlocution
(Using Mother
Tongue)**

S22: *I don't know whether I had used so many strategies but I've seen from Saheed on, like for the difficult words that we can understand clearly, he gave a brief explanation for that words [using Sinhala and Tamil languages] which is great. (TR PostIFG, G1, C3)*

4. Group Management Strategies

**Strategies used
to Enhance
Engagement
(Pre-Study)**

Assigning task-specific roles

S9: *In my case, we can divide, if it is a project, we can divide it into parts and assign it to each member of the team. (TR, PreIFG, G1, C2)*

--

S16: *We divided (the work) into those who know paintings and those who are writing cursive*

			<i>writing and divided (the work). (TR, PreIFG, G2, C2)</i>	
			S18: <i>Time limit is fixed in our most discussions. (TR, PreIFG, G2, C2)</i>	
Communicating indirectly			S15: <i>I told him to just to type it in the chat and at least he can express his ideas on that way because everyone won't wait until he tells. (TR, PreIFG, G2, C2)</i>	--
			S17: <i>I can't speak in Tamil, so what I do is I tell somebody else, what I want to tell to that person. So, he translates it into Tamil and tell that person. (TR, PreIFG, G3, C2)</i>	
Questioning			S16: <i>... sometimes we cannot show [see] they are listening to us or that one we don't know. For that one, while during the group discussions normally I ask some questions or, 'isn't it?', likewise. (TR, PreIFG, G2, C2)</i>	--
			S20: <i>... in a discussion if I observed one person silent and not interested in that group work, if I observe I will ask, 'what about your idea?' (TR, PreIFG, G3, C2)</i>	
Strategies Used to Manage PostIGMs	CSCC			
	Inviting others by their names	--		S12: <i>... here the special thing today is we all invite others to speak. (TR PostIFG, G1, C2)</i>
				S13: <i>And when we ask questions, we used the name of the person and ask the question. (TR PostIFG, G1, C2)</i>
				S31: <i>We did this presentation online. There we invited others by their names. This kind of a</i>

		<i>training is helpful for those presentations online. (TR, PostIFG, G2, C3)</i>
Expressing gratitude	--	<p>S10: <i>After the presentation, they thanked, this is also a response. (TR PostIFG, G1, C2)</i></p> <p>S17: <i>Yeah, thanking. (TR PostIFG, G3, C2)</i></p> <p>S33: <i>... after the previous session I also felt that all are ...and thanking to all (TR, PostIFG, G3, C3)</i></p>
Warm tone	--	<p>S15: <i>... really I changed these things. One thing is the way of warm language. (TR PostIFG, G2, C2)</i></p> <p>S16: <i>Warm tone they are using, a warm tone and speed. (TR PostIFG, G2, C2)</i></p> <p>S36: <i>I think it can be helpful, ... after someone is presenting if we ask questions like in a compassionate manner with warm tone, so he he will try to explain it, where if we like asking not in not in the not in the compassionate manner, he will not feel motivated to answer me, but if we use it in a compassionate manner, he will try to communicate with me, he will try to explain it to me, he or she feels like, 'Okay, he is asking me, so he want to clarify that point. (TR PostIFG, G2, C2)</i></p>
Sustained screen gaze	--	S10: <i>Yeah, definitely it was changed, before, I usually speak without camera but now I am comfortable with camera. (TR PostIFG, G1, C2)</i>

			<p>S11: <i>Before this meeting I felt, switch off the camera and speak and now I am Okay, I got confident from this. (TR PostIFG, G1, C2)</i></p> <p>S35: <i>In the previous session everyone not focused on the camera and hear very carefully, but today, everyone focused on the camera and ... more than that day. (TR PostIFG, G3, C3)</i></p>
Nodding	--		<p>S15: <i>And also, continuously to convey that we are listening, we shake [nod] our heads. (TR PostIFG, G1, C2)</i></p> <p>S17: <i>And if they can understand, we can figure that out too by their nodding of the head or tipping the heads. (TR PostIFG, G3, C2)</i></p> <p>S36: <i>Definitely ..., like Kala and Dedunu said, while, if someone is presenting we nod the head ..., they feel more more confident to present. (TR PostIFG, G3, C3)</i></p>
Smiling	--		
Using Chat box			<p>S36: <i>... after Asim's network was dropped out, so I tried to put a message on the chat box like, 'Asim can you hear me, can you hear us?' (TR PostIFG, G3, C3)</i></p>
Student Developed	Complimenting	--	<p>S11: <i>By appreciating others, encourage them. (TR PostIFG, G1, C2)</i></p> <p>S19: <i>And normally in discussions, thanking, appreciation, they were not there [previously] ... but today, I used them. (TR PostIFG, G3, C2)</i></p>

Sharing equal agency	--	<p>S16: <i>I do agree with Shivani, ... not asking 'Is there any questions?' like not pointing out others. It's like 'Shall we discuss?' using those phrases, it become most helpful and it's like building relationship with others, I used those strategies. (TR PostIFG, G2, C2)</i></p>
Observing others' faces	-- --	<p>S13: <i>... when I was presenting my research article, I saw facial expressions of the others. I saw that Shivani, she listened well. I think Shenab listened well ... from their facial expressions. (TR PostIFG, G2, C2)</i></p> <p>S20: <i>When we talk, or when others talk, we observe others and also observe our facial reactions and, our face, reactions. (TR PostIFG, G3, C2)</i></p> <p>S34: <i>But today I noticed everyone's face because before I've noticed only that mostly the presenter's face, but here I noticed everyone's face. (TR PostIFG, G3, C3)</i></p>
Raising/waving hand to signal interest in speaking (without interrupting)	--	<p>S15: <i>... during the discussions also since we wave hands and ask questions, when we wave hands we are not interrupting when they are talking. Because when others are talking if we interrupt and talk, it won't be nice. If we wave hands, it won't be a disturbance, but they will identify that they will have something [to talk about]. So, that thing really improves a better way of learning because we can ask questions and get the answers. (TR PostIFG, G2, C2)</i></p>

S17: ... earlier we used to talk at the same time but now [PostIGMs] due to raising the hand, we can avoid those situations. (TR PostIFG, G3, C2)

S29: And also, today [00:05:35 S29 laughs] is the day I found out where the raise hand function is, I never used that raising hand [before]. (TR PostIFG, G2, C3)

5. Student views on the task designed for attention to compassion

Negative	--	--
Positive	<p>S9: It is much easier than in university as less participants. (TR, PreIFG, G1, C2)</p> <p>S12: We can gain more knowledge from this because everyone's topic is different from others, so it is very useful. (TR, PreIFG, G1, C2)</p> <p>S24: So, I think this is better. (TR, PreIFG, G1, C3)</p>	<p>S13: I think we got very good experience. I would like to share this knowledge with my friends also. Actually, I think this kind of video conferencing can change lot of our attitudes. (TR PostIFG, G2, C2)</p> <p>S17: It was valuable to learn about the compassionate communication strategies because we saw a clear difference before we use compassionate skills and after we used compassionate strategies. It has a positive impact on group works so it was very valuable to learn about them. (TR PostIFG, G3, C2)</p> <p>S30: I think the same, I think, definitely absolutely teach these these strategies, because as Anuhas said, the current situation is different and people are making physically, because sometimes we unconsciously use these tasks.</p>

But in this virtual world, it's different, we can see each other physically. I think clearly, it's really important that we consciously use these strategies in group work to make it more successful. I think it's really really important that we did this in the in the online discussions. (TR PostIFG, G2, C3)

6. Shared Virtual Background

--

S19: *... with this common background we all [are] in a same level in a group or in a discussion, we are not like one or two persons in up or others in lower. Using this common background, we are in the same level. (TR PostIFG, G3, C2)*

S20: *... this common background makes us feel good because when we use different backgrounds, we observe others' backgrounds and think about and notice things. But in this common background we notice only the faces. (TR PostIFG, G3, C2)*

S30: *Yeah, I also feel the same. In a group discussion, when we are having the same background, I actually feel that we are in the same place yeah, like a team together. Yeah, it gives that feeling when we have the common background. (TR PostIFG, G2, C3)*

For more similar examples for Cycles 2 and 3 students' PreIFGs and PostIFGs statements related to the themes seen here Table 6.8 and Table 6.9, please see [Appendix B.7](#) (pp. 514-528) and [Appendix C.7](#) (pp. 600-520) respectively.

6.2.3 Emergent Themes from Template Analysis of Pre- and Post-Intervention Group Meetings and Focus Groups Transcripts - Data Triangulation Method

As shown in Table 6.6 and Table 6.7, the Template Analysis conducted using the PreIGMs and PostIGMs transcripts revealed three different themes: *Social experience*; *Learning experience*; and *Social experience mediated Learning experience*. These themes were related to how students behaved and communicated during their pre- and post-intervention group work meetings. As shown in Table 6.8 and Table 6.9, the Template Analysis of the PreIFGs and PostIFGs transcripts indicated the emergence of six themes: *Social experience*, *Learning experience*, *Social experience mediated learning experience*, *Group management strategies*, *Student views on the task designed for attention to compassion* and *Shared virtual background*. These themes were related to respondents' previous group work experiences (outside this study), and then, their group work experiences during both the pre- and post-intervention group meetings. The first three themes that emerged from both the analyses were found to be common. All themes are discussed next.

6.2.3.1 Theme 1: Social Experience

In relation to the intervention's impacts, emergence of three common sub-themes: disruption of group cohesion, validation, and social connectedness were identified from the pre-and post-intervention group meetings transcripts (as seen in Table 6.6 and Table 6.7) and pre-and post-intervention focus groups transcripts (as seen in Table 6.8 and Table 6.9).

6.2.3.1.1 Sub-theme 1: Disruptions to Group Cohesion

Similar to Cycle 1, the evidence identified under this negative aspect of social experience were: Interruptions, Simultaneous talk (talking over each other) and Competitive individualism from the analysis of pre-and post-intervention group meetings transcripts. Moreover, during the focus groups, students revealed evidence on negative group behaviours that they had experienced during their previous group meetings. These included: inequality of sharing time/dominating, non-contributing, feeling of being left out, and cliques, confusion about sharing the flow and long silences.

These negative aspects or the disruptors to group cohesion in online group behaviours confirmed the findings of previous research (T. Gilbert, 2016) and also through the findings of Cycle 1. What is interesting is that students had strategies for dealing with some of these issues before this study, but their strategies changed post CSCC, as explained under Section 5.

6.2.3.1.2 Sub-theme 2: Validation

As evidenced in Table 6.6 and Table 6.7 as well [Appendix B.6](#) (pp. 509-513) for Cycle 2 and [Appendix C.6](#) (pp. 594-599), it was seen in both Cycles 2 and 3 that, in contrast to the PreIGMS, participants validated each other in the PostIGMs. This was done by, for example, expressing gratitude, inviting others by name to speak, complimenting other group members' efforts and/or assuring other team members that their questions, worries or experiences as shared. For example, a female Muslim (S31) who could speak both Tamil and Sinhala was worried about presenting in English. After she had done so, group member, S30 expressed her gratitude while complimenting S31's effort on presenting the journal article.

S30: *Rizmi, thank you so much. It's a very interesting article* (TR, PostIGMs, G2, C3).

And then, another group member, S29 also appreciated her presentation,

S29: *Rizmi, it's really interesting, h'a:ɔ̃ɔmə l,æsen'a:rə 'ɔ̃ɔ k'ɔ̃ju:və* (you presented it very beautifully) (TR, PostIGMs, G2, C3).

The presenter showed her appreciation by expressing gratitude with smiling face and she responded to S29 and S30 on their concerns raised related to her presentation. Then, S30 again appreciated her effort on answering questions,

S30: *Thank you so much. 'ekə læs'a:nə 'ænsə 'ekæk, h'a:ɔ̃ɔmə læs'a:nə 'ænsə 'ekæk.* (It's a very beautiful answer, very nice answer) (TR, PostIGMs, G2, C3).

Then, S31, stopped to explain in Tamil to the Tamil student (S32) what she had stated in Sinhala. He was now included and joined the laughter in the group. Interaction like this showed how an act of validation in the group of one person can lead to an effect on the whole group's social and learning experiences. Validating behaviour in group meetings had been discussed (for example, in relation to Leahy, 2005) as part of the CSCC intervention session.

6.2.3.1.3 Sub-theme 3: Social Connectedness

Similar to Cycle 1, in both Cycles 2 and 3 also social connectedness was evidenced by students' apologies to each other and creating opportunities for others to speak (including giving way to others when more than one student spoke simultaneously) as revealed from the pre-and post-intervention group meetings. The purpose of apologising e.g., for talking over others, was to reduce the chance that others might feel overruled or marginalised by other group members. This willingness to apologize and why it is important, had been discussed during the CSCC intervention session (see [Appendix F](#), pp. 641-646). Further, explicitly creating opportunities for others to speak (including giving

way for others to speak) by the group members was not evidenced during the PreIGMs but was demonstrated by the members during their PostIGMs of both Cycles 2 and 3 (see Table 6.6 and Table 6.7, [Appendix B.6](#) (pp. 509-513) for Cycle 2 and [Appendix C.6](#) (pp. 594-599)).

Social connectedness was also evidenced from the analysis of PostIFGs transcripts of both Cycles 2 and 3 where students distinguished their experiences in PreIGMs in contrast to the PostIGMs. These student experiences were reported in relation to: enhancing interactivity, improving listening, increasing social comfort, building confidence, and creating opportunities for others to speak as seen in Table 6.8 and Table 6.9 [Appendix B.7](#) (pp. 514-528) and [Appendix C.7](#) (pp. 600-620).

6.2.3.2 Theme 2: Learning Experience

Two sub-themes emerged under learning experience: Purposeful Facilitation and Productive Participation.

6.2.3.2.1 Sub-theme 1: Purposeful Facilitation

This includes the group members' purposeful facilitation of each other to enhance the whole group's learning experience through keeping focus and seeking clarifications. Though the group members seldom demonstrated keeping their focus on their group task and asked for clarification to support the whole group's understanding through verbal expressions during the PreIGMs in both Cycles 2 and 3, these efforts in focusing attention and seeking clarifications from their peers was evidenced during the PostIGM.

Similarly, *productive participation* emerged as a sub-theme from the student reported evidence in post-intervention focus groups. This evidence was related to enhancement of

their knowledge and how they felt they had been able to help each other to enhance critical perspectives with the application of CSCC in their PostIGMs.

6.2.3.2.2 Sub-theme 4: Productive Participation

Productive participation of the group members was shown through their critical perspective⁷⁷ and knowledge dissemination⁷⁸ during the PostIGMs though such intervening interactions were not obvious during the PreIGMs in both Cycles 2 and 3. These questions/arguments/expressing ideas by the group members were not used to interrupt any presentation or discussion but to support the group's focus on discussion while enhancing knowledge and critical perspectives.

Purposeful facilitation was informed through the analysis of the PostIFGs transcripts. There students explained their purposeful facilitations of each other were to enhance the whole group's focus and learning (see Table 6.8 and Table 6.9 and [Appendix B.7](#), pp. 514-528 and [Appendix C.7](#), pp. 600-620 for examples).

6.2.3.3 Theme 3: Social Experience Mediated Learning Experience

The three emergent sub-themes under this aspect are explained next.

6.2.3.3.1 Sub-theme 1: Psychological Safety

Similar to Cycle 1, in Cycles 2 and 3 also, group members appeared to overcome their pre-CSCC anxiety in the PostIGMs (see Table 6.6 and Table 6.7, [Appendix B.6](#), pp. 509-513 for Cycle 2 and [Appendix C.6](#), pp. 594-599 for Cycle 3 for example transcription extracts) and

⁷⁷ E.g., Asking questions appropriately without being silent, offering reasonable arguments/evaluative ideas or perceptions into the presented journal articles by oneself or others.

⁷⁸ E.g., Displaying knowledge/understanding through questions/expressing ideas/offering practical/theoretical examples/ adding own experiences.

confirmed through the findings of PostIFGs (see Table 6.8 and Table 6.9 and [Appendix B.7](#), pp. 514-528 and [Appendix C.7](#), pp. 600-620).

In relation to communicating in English as a Second Language (ESL), students talked about experiences of being demotivated to communicate in English in their previous group meetings due to perceived social anxiety (thinking that others might laugh at them if they made mistakes, or they might not be able to communicate competently compared to others), e.g.:

S17: *... but then if he makes a mistake ... if you make a face at him and then from that point onwards, even though he wants to express this idea, he wouldn't be doing it. (TR, PreIFG, G3, C2).*

S34: *Sometimes they will feel shy to talk, because they ... can't [speak in English] continuously, they feel shy to involve in that activity. (TR, PreIFG, G3, C3).*

However, students' statements in the PostIFGs indicated a change in this thinking:

S12: *So, in my view, if we use these strategies in our group activity, so we can encourage them to speak and yeah ... and we invite them to speak in English. (TR, PreIFG, G1, C2).*

S30: *I think, they [CSCC] definitely have a positive impact. I will take an example and explain it, let's say I'm in a group may be doing a presentation in English. I get stuck and if everyone stays silent, for like five or ten minutes I probably feel awkward and I'm pretty sure that I will not speak up in a middle again in English, but now as we saw like using these strategies, like you know ask something, inviting like someone else to speak, then I think it can increase the confidence one has about themselves in speaking in English. So, I think it definitely improve the learning curve in learning English. (TR, PostIFG, G2, C3).*

Further, as revealed in the PreIFGs, there was reluctance by some students to switch their cameras on, even if they could, during their previous group meetings and PreIGMs as well.

Again, social anxiety appeared to be the main reason which includes: feeling unease of their personal appearance and/or the appearance of their personal physical backgrounds

(e.g., of their rented rooms), to see that people including strangers are watching them, the belief that they could talk more confidently with the camera switched off and engaging in other work at the same time as the group meeting is taking place. Here is an example of what was said about this.

S10: *If we switch off the camera we can talk confidently more than switch on the camera. ... Because sometimes friends [were] watching me. That is very excited to me [sic], very nervous because everyone is watching me. (TR, PreIFG, G1 C2).*

S22: *... usually don't like switch on the camera and switch on the microphone as well ... if we have anything to ask, on that time only we unmute and ask, and the other times we usually don't do. (TR, PreIFG, G3, C2).*

S34: *I also felt, very, very nervous to switch on the camera like I am feeling like everyone is seeing me. (TR, PreIFGs, G3, C3).*

In contrast, the general reluctance (across the six groups of Cycles 2 and 3) to switch cameras was found to be reduced after the CSCC intervention as students stated that they preferred to speak with their cameras on during the PostIFGs, as here:

S10: *definitely it was changed, before I usually speak without camera but now I am comfortable with camera [switched on]. (TR, PreIFG, G1, C2).*

S11: *Before this meeting I felt, switch off the camera and speak. And now I am okay, I got confident from this. (TR, PostIFG, G1, C2).*

S30: *Previously, I wasn't really okay with it. I was like 'we should switch off the camera and talk.' But now I really like it, it motivates me when I see others interacting. When I can see others. (TR, PostIFG, G2, C3).*

The (student-reported) motivation to switch their cameras on appeared to have not only arisen because cameras facilitated group members' observations (noticing) of their own and others' non-verbal communications. In addition to that, if someone needed help in understanding, others could then see this requirement if they paid

attention (i.e., ‘noticed’ c.f. the definition of compassion). Hence, this ability of ‘noticing’ facilitated developing their own strategies to reduce or prevent this kind of distress or disadvantaging of others (as seen in Table 6.9: Template Analysis of PreIFGs and PostIFGs – Example Transcription Extracts on Verbal Communication (Cycles 2 & 3)).

S19: *When presenting, giving our facial expressions, the facial expressions motivate them. (TR, PostIFG, G2, C2).*

S34: *Switching on the camera and talking [is better], because we can see their reactions, whether they understood or not. (TR, PostIFG, G3, C3).*

Overall, analysis of the PreIFGs transcripts in both Cycles 2 and 3 revealed that levels of psychological safety were not optimal due to social anxieties which the students explained as above. In contrast, in the PostIFGs transcripts, students reported reductions of their anxiety. This may also have explained how the groups achieved a more equalised level of agency, or participation, during their PostIFGs. This means that social efforts to help others contribute led to better group learning, showing that social experiences did mediate learning (positively here). But the notion of equal agency can also be discussed from another point of view in line with Cycle 1, as follows.

6.2.3.3.2 Sub-theme 2: Notion of Equal Agency

Similar to Cycle 1, during the PreIFGs in Cycles 2 and 3 also i.e., when a student finished their presentation, they often used the problematic prompt for discussion: ‘Any questions?’ as though they were inviting a panel interview, not a critical whole group discussion of the content of the presentation. Thus, it was found affected negatively for equal participation of the group. However, this expression was substituted with more

inclusive expressions (e.g., ‘Shall we discuss this?’⁷⁹, ‘I would like to hear your opinions on this study’⁸⁰ etc) during the PostIGM in both Cycles 2 and 3. (see Table 6.6, Table 6.7 and Appendix B.6, pp. 509-513 for Cycle 2 and Appendix C.6, pp. 594-599 and Table 6.8, Table 6.9 and Appendix B.7, pp. 514-528 and Appendix C.7, pp. 600-620), for example transcription extracts of the pre-and post-intervention group meetings and focus groups in Cycles 2 and 3 respectively).

6.2.3.3.3 Sub-theme 3: Circumlocution (Using Mother Tongue)

This was a newly emergent theme in Cycle 3 where group members’ application of their Mother Tongue (MT) to facilitate group understanding was evidenced during the PostIGMs for two purposes. First, respondents used MT in the phase of trans-language when they found the difficulty of continuing their talk in English⁸¹ during presentations and discussions. This effort to fill the gaps in the communication flow⁸² was observed to enhance the whole group’s understanding as they attempted to explain in Sinhala or Tamil ensuring that everyone was clear about the points/ideas they present or discuss. Hence, their usage of their mother tongue acted not as an obstructor but as a facilitator to the flow of communication. E.g., when S24⁸³ (a male Muslim student) was presenting his journal article, he used ‘mobilizing to explain a term in his article, while observing whole screen (appeared that he observed all three other faces), he again explained the term ‘mobilizing’ in Sinhala to facilitate whole group to understand the term.

⁷⁹ S22’s expression after her PostIJAP in Transcription TR M1 SGD2 line no. 81, p.3 (Cycle 3).

⁸⁰ S17’s expression after her PostIJAP in Transcription TR M3 SGD2 line no. 131 & 132, p.4 (Cycle 2).

⁸¹ Please note that all group work meetings were conducted in English which was not the first language for all participants.

⁸² S31 used her MT to express ideas whenever she stuck with using English.

⁸³ S24’s Mother Tongue is Tamil, and he can speak in Sinhala too.

S24: *Mobilizing mean I tell in Sinhala εκλθυκίρι:μα [make available]. (TR, PostIGM, G1, C3).*

Second, respondents used MT to request peer support⁸⁴ to explain difficult English term/s (found in their journal article/s) when it was difficult for them to explain those terms using their own vocabulary in English. This was evidenced thrice during the PostIGM. E.g., During the follow-up discussion of the S24's journal article, S24 while responding to S21's question, encountered a difficulty of explaining a point to the group in English or in Sinhala, thus he requested S22 (a female Tamil student) (providing her with the Tamil term of it) whether she can explain that to the group.

S24: *Intestinal microbiota means uh uh, I don't know how can I say that? The micro-organism which are leaving in our intestine, Intestinal means, Jessica, can you explain the intestinal? we call in Tamil, kudal you know? (TR, PostIGM, G1, C3).*

As a respond S22 explained it in Sinhala and English too to the whole group.

Further, during their post-intervention focus groups in Cycle 3, students also talked about their usage of MT to facilitate their group meetings e.g.,

S22: *It just good because in the middle of the discussion, you might have seen like we had discussed it in Sinhala and Tamil also. ... all we had to discuss it in all three languages. (TR, PostIFG, G1, C3).*

Please refer to Table 6.8, Table 6.9 [Appendix B.6](#) (pp. 509-513) for Cycle 2 and [Appendix C.6](#) (pp. 594-599) for example transcripts extracts from post-intervention group meetings and focus groups.

⁸⁴ E.g., S24 requested S22 (in his MT) to explain 'intestinal' in English to the group providing the Tamil word 'kudal'. S22 understanding both English and Tamil terms, explained it in English to the group.

6.2.3.4 Theme 4: Group Management Strategies

The analysis of the PreIFGs revealed students' usage of strategies to manage their previous group work and their inadequacy. Then, as analysis of the PostIFGs indicated the alterations to those previously used strategies by the students after the CSCC intervention session.

6.2.3.4.1 Sub-theme 1: Strategies Used to Enhance Group Engagement (Pre-study)

Students described the following five strategies that they had used in their previous group meetings (before this study): assigning task-specific roles, questioning, appointing a leader, allocating time slots (to each group member), and communicating with non-engaging members personally. However, as shown in Table 6.9, [Appendix B.7](#), (pp. 514-528) and [Appendix C.7](#), (pp. 600-620), in their PostIFGs, students revealed more about their amendments to these strategies to manage their PostIGMs differently, as discussed next.

6.2.3.4.2 Sub-theme 2: Strategies Used to Manage the PostIGMs

In both Cycles 2 and 3, application of the compassionate communications strategies (offered and explained during the CSCC intervention session) PostIGMs was noticed by the students, and they discussed what they had seen and done during their post-intervention focus groups. Interestingly though, in addition to the compassionate communications strategies that had been offered (e.g., expressing gratitude, inviting group members by their names, complimenting others' efforts, questioning with compassion, providing more explanations using simple language, smiling, sustaining screen gaze, nodding), students' were clearly already developing their own

compassionate communication strategies and (observing all four faces during group meetings and circumlocution) to manage their PostIGMs was evidenced.

6.2.3.5 Theme 5: Student Views on the Task Designed for Attention to Compassion

Analyses of the PreIFGs transcripts highlighted the social anxiety of students thinking that they would not have sufficient understanding of sharing the flow and feeling anxiety of being present to everyone through switching on their cameras during PreIGMs (as seen in the Table 6.7). (Thus, the need for students to feel psychologically safe enough to interact with each other to share the flow so that they could fully participate in the discussions.)

Yet at the same time, even in the PreIGMs, students liked having self-chosen journal articles brought by each group member (c.f. Sugata Mitra and the self-organised learning environment, see Section 3.4.4 in Chapter 3) and they liked having four members in a group to present and critique them (as evidenced in Table 6.7 above). But this feedback was due to two factors in the compassion-focused task design (to share knowledge and the task of criticality) not on the management of the group's communicative interactions – the third required factor of the task design.

In their previous academic group work, none of the students had experienced the task design used in this study (individual presentations and then group discussion of the content). This was new to them all. Instead, students had previous experience of the whole class being given a specific article(s) by the tutor that everyone should read.

Table 6.8 and Table 6.9 and [Appendix B.7](#) (pp. 514-528) and [Appendix C.7](#) (pp. 600-620) present example transcription extracts for each of the above emergent themes from analysis of the PreIFGs in both Cycles 2 and 3 respectively.

Overall, the task design of this study increased students' willingness to take part in group meetings designed as such. This insight was supported by their understanding on the facilitation of such group designs/formats on enhancing their knowledge, interactivity, and equal participation. Further, this task design allowed students to notice one another's non-verbal signals.

6.2.3.6 Applying Shared Virtual Background

As an amendment to the initial methodology (see Section 5.5.1.1 in Chapter 5), the usage of a shared virtual background has been experimented with the study participants during the main study (Cycles 2 and 3).

Proceeding with the developmental training of compassionate communications, students' ideas were enquired and since they agreed with having a soothing background, the researcher invited them to select any background that they as a group preferred to apply. Further, depending on their requests, the researcher selected 10 backgrounds including natural, authentic, and unique themes reflecting Sri Lankan scenic beauty, a book rack with a chair, opened window to greenery environment, an office room, with the participants and invited them to select one for their group meetings to be used as their virtual background.

Table 6.10: The Virtual Backgrounds Selected by Each Group.

Main Study		Selected Virtual Background
Cycle 2	Group 1	The Caribbean Sea with moving waves and waving leaves of a palm tree – Available in Zoom backgrounds
	Group 2	Sri Lankan greenery hillside with St. Clair fall
	Group 3	Opened window to greenery environment
Cycle 3	Group 1	Sri Lankan greenery hillside with St. Clair fall
	Group 2	Sri Lankan greenery hillside with St. Clair fall
	Group 3	Opened window to greenery environment

The images of the backgrounds chosen by the participants are shown here.



Figure 6.9: Virtual Background⁸⁵: The Caribbean Sea with Moving Waves and Waving Leaves of a Palm Tree.

⁸⁵ This virtual background was obtained from the Zoom video conferencing platform.



Figure 6.10: Virtual Background⁸⁶: Sri Lankan Greenery Hillside with St. Clair Fall.

⁸⁶ This image was obtained from: <https://www.srilankatailormade.com/rainbow-tour-in-sri-lanka/>.



Figure 6.11: Virtual Background⁸⁷: Opened Window to Greenery Environment.

The analysis discovered positive insights from the group members on applying common virtual background as seen in

Table 6.11. Example transcriptions for the six main themes that emerged under the application of shared virtual background were presented in Table 6.12.

⁸⁷ This virtual background was obtained from <https://www.mydomaine.com/interior-design-zoom-backgrounds-4842797>

Table 6.11: Emergent Themes of Template Analysis of the Post-intervention Focus Groups.

Overarching Theme	Theme	Sub-Theme	Cycle 2		Cycle 3	
			Freq.	%	Freq.	%
Application of Shared virtual background	Positive		20	100	20	100
		Helps to avoid background distractions	5	25	6	30
		Equality	4	20	8	40
		Soothing/Calm	4	20	2	10
		Social comfort	4	20	--	--
		Attractiveness	2	10	2	10
		Sense of Belongness	1	5	2	10

Table 6.12: Emergent Themes in Relation to Applying a Shared Virtual Background – Post-Intervention Focus Groups.

Theme	Cycle 2 Pertinent Statements	Cycle 3 Pertinent Statements
Background Distractions	<p>S13: <i>It [shared background] motivates me to present in the group [the] whole time without distracting. (TR, PostIFG, G2).</i></p> <p>S20: <i>Yes, this common background makes us feel good because when we use different backgrounds, we observe others' backgrounds and think about and notice things. But in this common background, we notice only the faces. (TR, PostIFG, G3).</i></p>	<p>S21: <i>... pleasant environment and background; interruptions are not here, I think. Concentration is high. (TR, PostIFG, G1)</i></p> <p>S29: <i>A big focus for what we are doing here in the group work. It really helps us to concentrate [on] what we are doing right now, at the moment. I'm not getting any distractions from our environment [home background] problems. So, as an example, if there's no background, I'm really sure that you also can see the cockroach that was attacking me. So, it distracts others too, so that it's a really good thing to have a background in future. (TR, PostIFG, G2)</i></p>
Equality	<p>S16: <i>It [Shared background] helped us to feel that all the members are [the] same. (TR, PostIFG, G2)</i></p> <p>S19: <i>... like S20 said, that's also true: we are focusing on others' faces, body with this common background and also ... we all [are] in a [the] same level in a group or in a discussion, we are not like one or two persons in up or others in lower. Using this common background, we are in [on] the same level. (TR, PostIFG, G3)</i></p>	<p>S22: <i>We are given the feeling that we are in the same environment and not like [at] a distance like we are virtually connected, but that, like using the same background for all the people, it will give something like we're in same, the same environment. (TR, PostIFG, G2)</i></p> <p>S35: <i>By sharing this same background I can feel everyone is at [in] the same place. We are somehow- we are at different places, but the</i></p>

background makes all our thoughts into one place. (TR, PostIFG, G3)

Social comfort

S9: *I feel comfortable. (TR, PostIFG, G1)*

--

S12: *Yes, it [Shared background] is very comfortable. (TR, PostIFG, G1)*

Sense of Belonging

S17: *And you also get a feeling of sense of the belongingness because you have that same background. (TRM3 FG2)*

S33: *In the background that we are at night, we have night now. But sometimes we forgot it's [the] night because this picture [shared virtual background] is like morning now. We feel it. I feel it. (TR, PostIFG, G3)*

S36: *We can feel like we are in the same environment, so it will help us to increase the bonding. (TR, PostIFG, G3)*

Soothing/ Realistic & Calm

S12: *It [Shared background] is being realistic and calm. (TR, PostIFG, G1)*

S13: *In online meetings, we can make a peaceful mind by sharing same background. (TR, PostIFG, G2)*

S24: *Yeah, I was thinking to say that because it was relaxing and soothing our mind, because we don't have any other distractions. So we can focus on people, and we can concentrate. It's relaxing. (TR, PostIFG, G1)*

S30: *... the picture view is very soothing. It keeps us calm. (TR, PostIFG, G2)*

Attractive

S13: *Shared background is [a] somewhat pleasant movement to our eyes. (TR, PostIFG, G2)*

S16: *It [Shared Background] is very attractive. (TR, PostIFG, G2)*

S24: *I am watching your background because... I attracted [to] that nature. Because I always would like to be with the nature, I don't want to, I don't need to live in the towns, and I would like to live in this natural environment. (TR, PostIFG, G1)*

Overall, the above findings shed light on advantages of application of shared virtual background in terms of avoiding the background distractions as it facilitates students to focus on what they communicate as a group. Further, this shared virtual background affect undermining the disadvantage of socio-economic differences that are exposed to others in the group (e.g., if a student joins from their bedroom and other joins from a luxurious study room, this may affect the quality and the quantity of the group communication).

Conclusion of findings above in relation to research questions.

RQ 1.: The qualitative findings so far indicate the possibility of adapting the development of HE students in compassion-focused communications for use in online group meetings. This adaptation was possible in online group meetings with the mindful use of warm tone and voice to invite group members to present their journal articles/to contribute to the discussion, to compliment, to express gratitude, to ask for clarification, understanding the notion of equal agency, reported reduction anxiety, circumlocution.

RQ 2: As to qualitative findings, students revealed enhancement of their sustained screen gaze behaviour after the CSCC intervention session. Furthermore, in terms of their other behaviours especially related to verbal communication, reduction of disruptive behaviours (simultaneous talk, interruptions, competitive individualism) and improvement of validation (inviting by their names, complementing, expressing gratitude), using warm tone, apologizing where necessary, seeking for clarifications, scaffolding, notion of equal agency have been identified.

6.3 Analyses of the Two Questionnaires

As quantitative data collection tools – two questionnaires were completed by all students. First questionnaire was employed to explore participants’ previous experiences related to their own and others’ group work behaviours. Second one was Compassionate Engagement and Action Scale developed by the Compassionate Mind Foundation’s (see Section 4.5.3.4.2 in Methodology Chapter and [Appendix D](#), p. 623).

Both these questionnaires were employed twice per each group: after the pre-intervention group work and then again after the post-intervention group work (so four interactions in all per group). The analytical software, SPSS (version 27) was used to analyse the four data sets per each group (Cycles 2 and 3) provided by these two questionnaires. Findings of each analysis are briefly explained next.⁸⁸

6.3.1 Statistical Analysis of Questionnaire 1 — Group Work Behaviours

This Likert scale questionnaire consisted of four main aspects: negative group behaviours⁸⁹ (adapted from T. Gilbert, 2012), confidence to engage in group work⁹⁰ (UH, 2020), demographic information and level of English language proficiency. The findings from the Wilcoxon Signed-Rank Test in both Cycle 2 (shown in Table 6.13 below) and Cycle 3 (shown in Table 6.14) below show those changes from pre-intervention negative group behaviours (itemized in the questionnaire) to more positive post-intervention

⁸⁸ In all tables below, 6.20, 6.21, 6.22 and 6.23 all data points starting with ‘B’ (Before the CSCC intervention session) indicate the pre-intervention data and all data points starting with ‘A’ (After the CSCC intervention session) indicate the post-intervention data.

⁸⁹ provided by staff and students of what kinds of behaviour, in their experience, most undermined the effectiveness of team meetings was used to survey hundreds of students regarding their *offline* team meeting experience before and after an in-class delivered session on compassionate small group communications in the classroom (T. Gilbert, 2016)

⁹⁰ The University of Hertfordshire’s CfP group work reflection questions, 2020 by Learning and Teaching Innovation Centre.

group behaviours, that were statistically significant. It could be seen that the changes related, respectively to: what the students observed of their own group work behaviours; what they observed of others' group work behaviours; what they reported of their confidence to engage in group discussion; and their views on the influence (if any) of group discussion behaviours on learning.

Table 6.13: Wilcoxon Signed-Rank Test Results – Questionnaire 1: Group Work Behaviours (Pre- Vs Post-Intervention) Cycle 2.

Item No.	The negative group behaviours that decreased from PreIGMS to PostIGMs with statistical significance	$p < 0.05$
	Self-observation of group work behaviours	
4.1	<i>Talking a lot so that others do not get many chances to speak.</i>	0.039
4.2	<i>Talking in silences when other group members are talking.</i>	0.028
4.7	<i>Talking over others.</i>	0.026
	Observed behaviours of other group members	
5.1	<i>Talking a lot so that others do not get many chances to speak.</i>	0.003
5.2	<i>Talking in silence when other group members are talking.</i>	0.017
5.4	<i>Using difficult language terms+ or expressions without explaining so that other people in the group may not understand.</i>	0.010
5.5	<i>Not listening carefully to other peoples' ideas.</i>	0.009
5.6	<i>Not helping other people when they are getting into difficulty while they are speaking.</i>	0.003
5.7	<i>Talking over others.</i>	0.003
5.8	<i>Not inviting others to speak.</i>	0.010
5.9	<i>Not thanking others for their contribution.</i>	0.058
5.10	<i>Speaking very little or not at all in the group.</i>	0.011
5.11	<i>Not even reading a little bit to bring something to the discussion.</i>	0.020
5.12	<i>Letting other people talk and talk without interrupting them.</i>	0.030
	Confidence of in drawing others into the discussion	
6. 2	<i>How confident are you to draw others into group discussion?</i>	0.011

These results may suggest an increase in students' 'noticing' their own less helpful behaviours in group discussions. 'Noticing' behaviours that may cause distress or

disadvantaging of self or others is a core component of the definition of compassion on which the intervention pedagogy is based (as explained in Chapters 1 and 2).

Similarly, statistically significant results (changes from pre-intervention negative group behaviours [itemized in the questionnaire] into post-intervention positive group behaviours) were found regarding what they observed in *others'* group work behaviours and group members' confidence in drawing others into the discussion.

These statistically significant ($p < 0.05$) results were related to all three groups of Cycle 2 (see [Appendix B.8](#), p. 529). Similar results were also explored in Cycle 3 as shown in Table 6.14 below.

Table 6.14 below shows those changes from pre-intervention negative group behaviours (itemized in the questionnaire) into more positive post-intervention group behaviours, that were statistically significant at $p < 0.05$. It is seen that that the changes related respectively to: what the students observed of their own group work behaviours; what they observed of others' group work behaviours; what they reported of their confidence to engage in group discussion; and their views on the influence (if any) of group discussion behaviours on learning.

These results may suggest an increase in students 'noticing' their own less helpful behaviours in group discussions. 'Noticing' behaviours that may cause distress or disadvantaging of self or others is a core component of the definition of compassion on which the intervention pedagogy is based (as explained in Chapters 1 and 2).

Table 6.14: Wilcoxon Signed-Rank Test Results – Questionnaire 1: Group Work Behaviours (Pre Vs Post- Intervention) Cycle 3.

Questionnaire Item No.	The negative group behaviours that decreased from PreIGMS to PostIGMs with statistical significance	$p < 0.05$
	Self-observation of group work behaviours	
4.14	<i>Not asking for more explanations when understanding becomes too difficult.</i>	0.010
	Observed behaviours in other group members	0.048
5.2	<i>Talking in silence when other group members are talking,</i>	0.016
5.5	<i>Not listening carefully to other peoples' ideas</i>	0.046
5.6	<i>Not helping other people when they are getting into difficulty while they are speaking,</i>	0.046
5.10	<i>Speaking very little or not at all in the group,</i>	0.010
5.11	<i>Not even reading a little bit to bring something to the discussion.</i>	0.016
	Confidence of drawing others into the discussion	
6.3	<i>How confident are you to address the behaviour of someone who is dominating the discussion during group work?</i>	0.008
	Understanding of the quality of the group discussion	
7.2	<i>The quality of the discussion is determined by the way the group members interact.</i>	0.020
7.3	<i>The quality of the discussion is determined by the knowledge of the group members.</i>	0.047

Overall, the SPSS analysis of the questionnaire 1 data revealed a statistically significant difference in students' responses of group work behaviours (that they observed in their own and in other group members) after the CSCC intervention session intervention of $p < 0.05$ in both Cycles 2 (Appendix B.8, p. 529) and 3 (Appendix C.8, p. 621).

6.3.2 Statistical Analysis of Questionnaire 2 — Compassionate Engagement and Action Scale

The Compassionate Engagement and Action scale was employed to identify levels of self-compassion; compassion given for others and sensitivity (recognition) of compassion

received from others. All these three types of compassion are known to mediate each other (The Compassionate Mind Foundation).

The results of Wilcoxon Signed-Rank Test (comparing pre- vs post-intervention questionnaire data) indicated a statistically significant difference of $p = 0.05$ in students' responses related to Compassionate Engagement and Action (Please see Table 6.15 below and [Appendix B.9](#) (p. 530). This comprised stronger evidence in post-CSCC group meetings than pre-CSCC of group members' compassion towards themselves (self-compassion), Compassion to others and of their noticing compassion from others as in their responses to the following Likert scale statements:

Table 6.15: Wilcoxon Singed-Rank Test Results – Questionnaire 2: Compassionate Engagement & Action Scale (Pre Vs Post-Intervention) Cycle 2.

Item No.	Items of CEAS where that is statistically significant positive change	$p < 0.05$
	Self-compassion	
1.	<i>I am motivated to engage and work with my distress when it arises.</i>	0.007
10.	<i>I think about and come up with helpful ways to cope with my distress.</i>	0.007
	Compassion to others.	
14.	<i>I am motivated to engage and work with other peoples' distress when it arises.</i>	0.038
	Compassion from others	
36.	<i>Others think about and come up with helpful ways for me to cope with my distress.</i>	0.050

Somewhat similar results were found in Cycle 3 (see Table 6.16 and [Appendix C.9](#) (p. 622) Table 6.16 below demonstrates statistically significant ($p = 0.05$) stronger evidence than before the CSCC intervention session of participants' compassion towards themselves (self-compassion), compassion to others and their noticing of compassion from others as in their responses to the following Likert scale statements.

Table 6.16: Wilcoxon Signed-Rank Test Results – Questionnaire 2: Compassionate Engagement & Action Scale (Pre Vs Post-Intervention) Cycle 3.

Item No.	Items of CEAS where that is statistically significant positive change	p < 0.05
	Self-compassion	
4.	<i>I am emotionally moved by my distressed feelings or situations.</i>	0.007
	Compassion to others.	
14.	<i>I am motivated to engage and work with other peoples' distress when it arises.</i>	0.015
17.	<i>I am emotionally moved by expressions of distress in others.</i>	0.048
	Compassion from others	
29.	<i>Others avoid thinking about my distress, try to distract themselves and put it out of their mind.</i>	0.015
38.	<i>Others take the actions and do the things that will be helpful to me.</i>	0.039

Overall, both the questionnaires provided further opportunities to better identify and explore changes in the participants' experiences of oneself and others that might be attributable to the intervention session on CSCC for online group work. This indicates the enhancement group members' noticing of their own behaviours own self and others. 'Noticing' problematic behaviours is an important component of the definition of compassion on which the intervention pedagogy is based.

6.4 Chapter Summary

This chapter presented the overall image of findings through quantitative and qualitative data analyses in both Cycles 2 and 3 before and after the intervention. Five main quantitative analyses (Non-verbal communication, Wilcoxon Signed-Rank Test, R plots, Scatter charts, Likert scale questionnaires) were conducted using four analytical tools: NVivo (Pro 12) software, R, SPSS (version 27) and Microsoft Excel. Visual illustrations were created using Microsoft Excel and the R programming language. Five qualitative

analyses (the PreIGMs, the PostIGMs, the PreIFGs, the PostIFGs, and Micro-ethnography) were conducted using TA implementing the analytical tool NVivo (Pro 12) software. The findings were demonstrated under two major headings: *Verbal* and *Non-verbal communications*. Data triangulation demonstrated the emergence of three sub-themes under *Non-verbal communication*: screen gaze, treatment of long silences and nodding highlighting the reduction of avoiding screen gaze, long silences, and increased occurrences of nodding by the group members after the CSCC intervention session. Further analyses of screen gaze revealed a statistically significant improvement of the group members when they fulfilled their roles as listeners and discussants during their group work meetings.

Three main themes that emerged under *Verbal communication* were: *Social experience*, *Learning experience*, and *Social experience mediated learning experience*. The data triangulation demonstrated enhancement of group members' experiences related to all these three aspects after the CSCC intervention session. Further, the findings highlighted the development of positive group work behaviours with the application of CSCC. Moreover, the current study revealed emergence of novel group management strategies within student groups to facilitate group cohesion. Subsequently, the findings indicated enhancement of group members' motivation to switch their cameras on during online meetings, having identified the possibility of helping others if in difficulty. Furthermore, the results of the study highlighted the advantages of applying common virtual background to reduce background distractions while adding the feeling of being equal, being in the same place and a soothing effect that facilitates better performing the group task. The findings underlined the applicability of CSCC especially in HE online group work

meetings while emphasizing the significance of compassionate task design for better fulfilment of group tasks.

Interestingly, the comparison of the pre- vs the post-intervention findings demonstrated a positive increase in both social and learning experiences of the group members after the CSCC intervention session.

6.5 Conclusion

In conclusion, the findings through individual analysis as well as data triangulation demonstrated an overall enhancement in group members' learning and social experiences by the CSCC intervention session, highlighting the linear relationship of themes that emerged under each analysis in both Cycles 2 and 3.

The purpose of this chapter was to respond to the core research question and sub-questions stated in the beginning of the chapter and also are shown here in Table 6.15 together with the tools used to address them and a summary of the results that emerged from both Cycles 2 and 3.

Table 6.17: Research Questions, Tools for Addressing Them, and Results (Cycles 2 and 3).

	Research Questions	Tools Used	Results/Responses to the Questions
	Core Research Question		
1.	Can developing HE students in CSCC be adapted for online group meetings amongst Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?	<p>1. Video recordings and transcripts of (pre-Vs post-CSCC) GMs.</p> <p>2. Video recordings and transcripts of focus groups</p> <p>3. Ethnographic field notes.</p> <p><i>Tool:</i> NVivo (Pro 12)</p>	<p>For Cycles 1 and 2, the CSCC used offline can be adapted for online in that:</p> <ul style="list-style-type: none"> i. The reasons for sustaining online screen gaze were highlighted in the online CSCC intervention session. Students responded well to this invitation providing evidence for possibility of adapting CSCC in online group sessions. ii. Use of non-verbal signals and cues (nodding, reduction of long silences). iii. Use of verbal communication <p><i>Effects:</i></p> <p>Almost all students who participated in GMs, focus groups/interviews, demonstrated and/or reported and substantiated positive effects for their social experience mediated learning experience of the GMs through the use of the CSCC compared to when they did not use it (i.e., psychological safety, the notion of equal agency, circumlocution).</p>

2.	<p>Sub Research Questions</p> <p>In what ways, if any, do respondents' group work behaviours differ after their development in CSCC compared to before that intervention?</p>	<ol style="list-style-type: none"> 1. Ethnographic field notes 2. Video recorded screen gaze behaviours (Pre Vs Post-CSCC) <p><i>Tools:</i></p> <p>Wilcoxon Signed-Rank Test using R, R Plots, Microsoft Excel.</p>	<p><i>Changes in Non-verbal Communication behaviours:</i></p> <p>Increased camera use and evidence of sustained screen gaze were found. The results show a statistically significant increase in students' sustained screen gaze after the CSCC intervention session especially, when they perform their roles as listeners and discussants. Students' use of their non-verbal signals with positive impact (nodding and looking at the screen) were enhanced. It was evidenced their reduced use of non-verbal signals with negative impact.</p>
		<ol style="list-style-type: none"> 1. Video recordings and transcripts of GMs (Pre Vs Post) 2. Video recordings and Transcripts of Focus Groups 3. Ethnographic field notes <p><i>Tool:</i></p> <p>NVivo (Pro 12)</p>	<p><i>Changes in Verbal Communication behaviours:</i></p> <p>Reduction of disruptive behaviours: Disruption to group cohesion.</p> <p>Increased prosocial behaviours: Validation (expressing gratitude, complementing others' efforts, inviting group members by their names); Social connectedness (creating opportunities for others to speak, social risks taking, interactivity, social comfort, listening, confidence, team spirit etc.).</p> <p>Increased learning behaviours: Productive participation (knowledge dissemination, critical perspective); Purposeful facilitation (seeking clarification, keeping focus).</p> <p>Social experience mediated learning experience were found post CSCC intervention sessions compared to the pre-intervention sessions.</p>
3.	<p>If adaptation of the CSCC to the online format is possible, in what ways, if any, and with what results (for their social</p>	<ol style="list-style-type: none"> 1. Video recordings and transcripts of GMs (Pre Vs Post) 	<p>According to the results, both groups reported enhancement of both social and learning experiences as well as the social experience mediated learning experience. However, the Sri Lankan-based</p>

	<p>and learning experiences of online group work) might STEM students who are based in Sri Lankan universities respond to this developmental training that is similar, or different from the responses of SL STEM students who are based in UK universities?</p>	<p>2. Video recordings and transcripts of focus groups.</p> <p><i>Tool:</i></p> <p>NVivo (Pro 12)</p>	<p>students appeared to be affected slightly differently by the lived/experienced results of the intervention, compared to the UK-based Sri Lankan students.</p>
--	--	---	--

CHAPTER 7

Discussion

7.0 Introduction

The study first identified possible communicative barriers between, Tamil, Sinhalese, and Muslim Sri Lankan HE students in their online group meetings (either in the UK or Sri Lanka). The barriers that were identified are summarised and discussed in Section 7.1. The study then determined whether or not students' use of their development in the application of team-based Cognitive Skills of Compassionate Communications helped reduce any such barriers in their online meetings. For this, Section 7.2 explores the implications of the study's key findings that were summarised above in Table 6.17 (Chapter 6). Next, key aspects of the findings that are very specific to the transfer from the face-to-face classroom to the online context are discussed in more depth than was possible with the findings in Chapters, 5 and 6. Thus, Section 7.3 discusses findings related to whether students had their cameras turned on or not⁹¹. In Section 7.4, the

⁹¹ Cycle 1's limitations are addressed in Cycle 2. Cycle 2's limitations are addressed in Cycle 3.

results related to screen gaze are discussed in greater depth as this was found to be an important mediating factor overall for the online group communications studied in this research project. Then, Section 7.5 discusses the participants' experience of the embedded CSCC intervention session in terms of what that session did and did not explicitly address. Section 7.6 explores deeply another aspect of the overarching theme of visual experiences. It reflects on the Action Research progression from Cycle 1, where students' individual actual or chosen backgrounds were seen during their meetings, to the introduction in Cycle 2 of, instead, the use of a *shared* virtual background, during their task-focused online group meetings. Section 7.7 compares the differences and similarities between the UK-based students' responses to the CSCC intervention session and the responses to it of the Sri Lankan-based students. Finally, Section 7.8 provides a summary of this chapter.

7.1 Communicative Barriers Among Students in Online Group Meetings

Communicative barriers were found to be obvious during the students' online group meetings as shown by the analysis of the PreIGMs, focus groups, and ethnographic field notes. Three key barriers were: reluctance by some participants to switch on their cameras even if their internet connections were not a problem, external communication with non-group members by listeners in their PreIGMs, and/or, at times, limited attention to the group or their responses by the person presenting the articles because of the speaker's over-reliance on reading from notes. The next section explores the effectiveness, or not, of the CSCC intervention session to help address these barriers that appeared to dissociate these students from each other during their group meetings.

7.2 Key Findings of the Study

The core research question was:

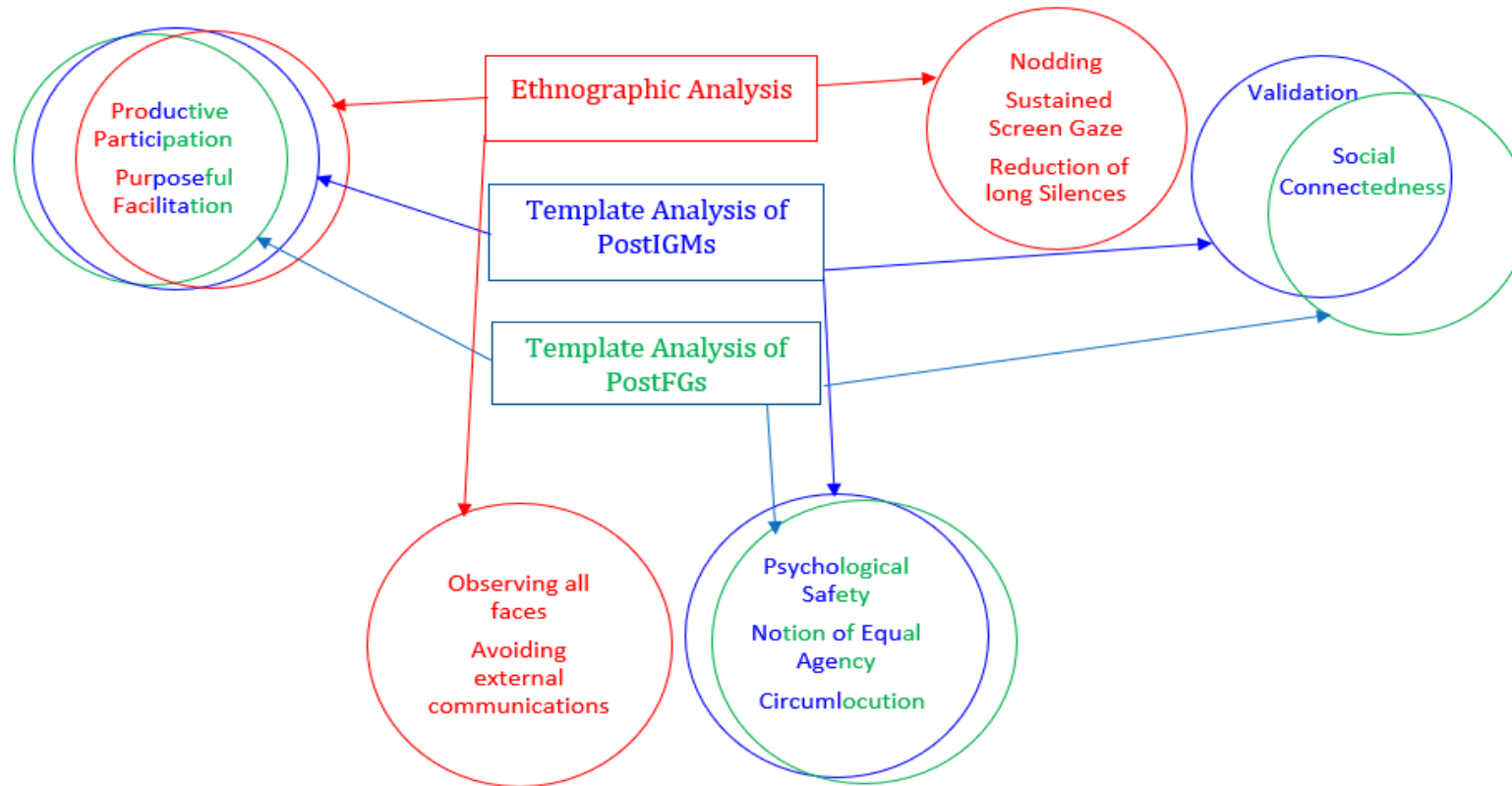
Can developing HE students in CSCC be adapted for online group meetings amongst Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

As to the findings, evidence of attention to the two key components of compassion (noticing distress or disadvantage and taking *wise* action to reduce or prevent them) was confirmed consistently by the group members after the CSCC intervention session, as Chapters 5 and 6 have shown. This was seen in students' shifts in the nature of their verbal and non-verbal communication (sustained screen gaze, nodding, and reduction of long silences). Moreover, findings informed the change of students' previous negative group behaviours (inequality of sharing time/dominating, interruptions, competitive individualism, non-contributing) with more inclusive and collaborative interactions. These negative group behaviours were also identified in class (T. Gilbert, 2016; Harvey et al., 2020). In addition, the results indicate the significance of applying shared virtual backgrounds to enhance group cohesion, inclusivity, and the notion of equal agency and group interactivity. As a consequence, after applying the shared virtual background communication was less vulnerable to disruptions from outside factors.

Next, the triangulation of the study findings explores how developing students in CSCC enhanced the social and learning experiences of the group members.

Learning

Social



Social mediated Learning

Figure 7.1 Triangulation of Results from Template Analyses of Transcription of Group Meetings, Focus Groups and Micro-ethnography - Common Themes that Emerged from All Three Cycles of the Study (Post-intervention).

7.2.1 Enhancement of Social Experience

The findings from the study data highlight the ways students developed their lived social experiences of the teamwork post-CSCC in that the students were more pro-socially active (validating the efforts of one another through expressing gratitude, complimenting, and inviting members by their names; social connectedness through expressing apology where necessary; creating opportunities for others to speak) after the CSCC intervention (as visually shown in Figure 7.1). Moreover, study participants' positive (non-verbal) behavioural changes (e.g., increased sustained screen gaze and nodding, a reduction in long silences) were evidenced after the use of CSCC. Thus, these findings on the enhancement of social experience through the use of CSCC align with previous research on team/group presentations and discussions of their content in face-to-face classrooms (T. Gilbert, 2017, 2018, 2019; Harvey et al., 2020). Furthermore, in the current study, there were observable demonstrations of enhancements in inclusivity, social comfort, confidence, and interactivity of the participants after the CSCC intervention session. These are important for building group cohesion.

This in turn creates links with previous research (Crocker and Canevello, 2008) on the help of compassion in perceiving and benefiting from societal support, which leads towards a reduction in negative emotions associated with goal conflict while working on group tasks as well as an increase in interpersonal trust. Perceiving more similarities between oneself and others has been associated with a higher commitment level to a group project's joint endeavours.

7.2.2 Enhancement of Learning Experience

The emergent themes in relation to the learning experience session as visually shown in Figure 7.1 (productive participation: knowledge dissemination, and critical perspectives; purposeful facilitation: seeking clarification, and keeping focus) provided evidence that the learning of the students was enhanced through CSCC.

Further, participants' use of these compassionate communications strategies shown through their mindful yet natural (i.e., not contrived) behavioural signals during their PostIGMs facilitated the smooth flow of information sharing, understanding, and group cohesion.

On the other hand, this can be understood through the findings of Neff et al. (2007, 2005) on the positive link of self-compassion to learning achievements in the academic domain. See Section 7.2.4 below on changes in levels of self-compassion, sensitivity to compassion received from others and compassion given to others amongst the students in this study as identified through the Compassionate Engagement and Action Scale (The Compassionate Mind Foundation).

7.2.3 Social Experience Mediated Learning Experience

Current findings highlight observable changes in students' behaviours before and after the CSCC intervention session. These changes include a reduction of negative group behaviours and an increase in more inclusive positive group behaviours. Quantitative and qualitative data analyses consistently demonstrated an increase in almost all respondents' positive behaviours after the CSCC intervention session which benefitted their own as well as others' social and learning experiences of the online group meeting.

The themes that emerged under the overarching theme of *Social experience mediated learning experience* are shown in Figure 7.1 (psychological safety through the reduction of anxiety; the notion of equal agency; circumlocution; community building) highlight the interrelationship between social and learning experiences.

7.2.4 Changing Levels of Self-compassion, Compassion to Others and Compassion from Others

Statistical analysis of the Compassionate Engagement and Action Scale revealed a significant increase in levels of self-compassion, compassion from others and compassion to others among the students.

Students with higher levels of self-compassion appeared to demonstrate a decreased fear of failure and more favourable views of their competence, which moderated these connections. Because self-compassion fosters positive appraisals of self-value that are not based on comparing self with other individuals or external accomplishments, self-compassionate people are more willing to pursue educational goals and are less likely to be afraid of making mistakes (Neff et al., 2005). Even if they are unsuccessful, they are most likely to attempt again while managing their negative emotions positively when they encounter disappointments (Neely et al., 2009). Along similar lines, research suggests, self-compassion is linked to prosocial feelings and actions such as agreeableness (Barnard and Curry, 2011), social connectedness (Neff, 2003, 2007), and a willingness to correct relationship issues (Baker et al., 2012). These outcomes were evidenced through the current findings. According to Leary et al. (2007), self-compassion scores of undergraduate students predict their self-evaluations and how they react to situations in real-life. As theorized by P. Gilbert (2005), the self-soothing qualities of self-

compassionate thoughts help to create calm through deactivating the neurologically defensive threat system (see Section 2.2 in Chapter 2).

The above evidence on the enhancement of students' *Social, Learning and Social experience mediated learning experience* demonstrates the importance of developing students in CSCC to make positive changes, which is possible with student-led strategies. Through the implementation of CSCC, negative group behaviours (monopolising, and non-contributing as the two most damaging types of behaviour to inclusivity and team critical thinking in team meetings) identified by T. Gilbert (2016) and Harvey et al. (2020) could be mitigated with a more inclusive, interactive, safe, and comfortable learning setting. This is possible with the whole group taking care of one another as one single organism instead of focusing on individual achievements. Thus, the feeling that psychological safety has priority within the group help to increase inclusivity and equal participation leading to outstanding performance (Duhigg, 2016).

Furthermore, the study's findings highlight the adaptability of the CSCC by the students in some novel ways to support one another's understanding while securing inclusivity for more equal participation (see Section 6.2.3.3.3 in Chapter 6). This notion of a student-developed use of compassionate communications strategies provides examples of a student-organized learning environment (Mitra, 2018). Moreover, as outlined in attachment theory (Bowlby, 1975), explaining difficult points to peers enhances motivation and inspires respect while helping to reduce anxiety. The current study's findings also align with Social Cognitive Theory (SCT) (Bandura, 1993) regarding psychological influences on the learning attitude and group behaviours of students. Thus, this study's findings further highlight the applicability of CSCC for making students feel

safe while enhancing inclusivity, the notion of equal agency, and confidence building in students.

The findings align with and support previous studies on compassion as linked to feelings of being supported by and connected to others and the effects of these on reduced anxiety, stress, and suffering (Zessin et al., 2015). Similarly, my results confirm that finding similarities between oneself and others (Neff, 2003), and increased levels of compassion, whether directed towards oneself or others, aids those working on collaborative academic tasks (Park et al., 2018).

7.3 Switching the Cameras on During the Group Meetings

Overall, in online context, as in face-to-face, strategies for group members to co-manage their group work compassionately necessitate them to be comfortable expressing and observing their own and other group members' non-verbal communication (especially looking at the screen and using facial expressions), which can only be accomplished if all group members fully present visually and actively sustain their screen gaze. In other words, the visual access is required for group members to respond appropriately and interact effectively during the entire online group meeting.

The fact that humans are a highly sociable species who have evolved to work, learn, and thrive in teams might be one reason for this. Human's prehistory demonstrates the evolutionary significance of the development of gestures and facial expressions in hunter-gatherer human communication and understanding of behaviours of others (Barrett et al, 2013; Rizzolatti et al 2016; Spikins, 2015, 2018; Spunt et al, 2010). In other words, much of human face-to-face communicative competence is informed by the evolutionary history of human's non-verbal communication which employs a range of

complex facial muscles that are unique to human beings (Spikins, 2015, 2018). However, if learners keep their cameras off during group meetings online, their capability to simulate and 'comprehend' (read) others' non-verbal signals of communications is strictly encumbered or impossible. Hence, in online group meetings, the emergence of social bonds (which non-verbal exchanges can richly sustain) can be delayed or abandoned (Bedenlier et al, 2020; Gherhes et al, 2021). As Colonnello et al. (2017) refer, a compassion-related release of oxytocin plays a vital role in empowering members in groups to synchronise or tune with others. This process is facilitated when students are fully present in online contexts to see one another and use compassion-focused non-verbal cues and signals to encourage equal participation in group meetings (e.g., showing their attention through sustaining screen gaze, nodding, leaning in to listen more attentively, showing understanding, lack of understanding, confusion or disagreement as group members speak). Moreover, Jensen et al. (2013) too state that the oxytocin's function as a component of the brain's reward system may be connected to how members of a group sync to offer support to a single member. In other words, Neff et al. (2007) confirm, ability of oxytocin to promote a more *interdependent* self-concept which is facilitated by compassion and its mediation of individuals' neurobiological affiliation processes (Depue and Morrone-Strupinsky, 2005). This includes the release of oxytocin that acts to de-activate the human brain's social threat alert system (the first mood regulatory system) (P. Gilbert, 2005; Uvnäs-Moberg et al., 2015).

Therefore, it can be concluded that if cameras are kept switched-off during online group work meetings, potential chances for the non-verbal compassion-related communication that aids syncing group members to support each other are lost; hence, it becomes more difficult to offer support to each other, even if group members are motivated to do so.

Furthermore, when group members kept their cameras turned off in online sessions, lecturers could not be able to recognize the students, who is speaking or contributing, who is supporting the speaker or prompting others to contribute/share ideas, unseen in their physical location. Moreover, it is also not possible to identify sometimes whether a student is script-reading while communicating verbally with the group if their cameras are not turned on. In summary, to acquire the maximum communicative efficiency in the process of authentic teaching and learning especially in online group meetings, it is vital for learners as well as lecturers and examiners to be able observe all learners during their online group sessions. Finally, the findings of this study also contribute to addressing the significant dearth of current research on the use of video-conferencing in contemporary higher education (Al-Samarraie, 2019, p. 122) to effectively *address* the known, fundamental challenges: disconnection amongst and between students (Wang et al., 2018; Bauer et al, 2020; Stanford University, 2020), feelings of isolation/loneliness, and negative psychological consequences that were highlighted in previous research.

7.4 Screen Gaze in Online Group Meetings

The purpose of sustaining screen gaze was for group members to observe their own and others' body language to support other group members where needed, e.g., if a group member appeared not to be paying attention to the group work, those who sustained screen gaze could notice this and then verbally or non-verbally communicate to include them in the group task. This was explained during the CSCC (see [Appendix F](#), p. 641). Across all three cycles, students' screen gaze was found to sustain noticeably higher in all groups during the PostIGMs than in the PreIGMs.

Both qualitative and quantitative data analyses have demonstrated that screen gaze is key to the non-verbal communicative signals of social connectedness that are likely to mediate the whole group's academic outcomes, i.e., that switching the cameras on is essential to understand and offer support during group/teamwork meetings.

7.4.1 Sustained Scree Gaze in Online Group Meetings

Group members' lack of screen gaze attentiveness was evidenced during the pre-intervention group meetings, when they perform the roles as presenters, listeners, and discussants. This contrasted with the first component of compassion, 'notice the distress or disadvantaging of self and others.' In group meetings, this 'noticing' is not possible without having full attention of group members to one another. This current study's findings are consistent with the findings of Vertegaal et al.'s (2002, 2003) eye-tracking study on exploring the role of eye gaze in group work through video conferencing. They found equalised participation, improved quality of problem-solving and decision-making skills of the group members due to the spread of members' eye gaze around the group (Vertegaal et al., 2002, 2003). Of particular interest in the current study was that (even though) inclusive eye contact had a mediating effect across group when they met in physical class face-to-face (T. Gilbert, 2019, 2018) which was not possible online. However, in an online settings, increased camera use along with sustained screen gaze of students during the entire group meetings in post-intervention appeared to compensate for this eye contacting in offline. Hence, it is important to note that turning on the cameras during discussion group meetings substantially increase screen gaze attentiveness of the group members and facilitated equalised participation of every group member. This finding was pertinent to both a. Social and b. Learning experiences across the groups.

a. Social experience across the group

- i. If the speaker fails to sustain screen gaze with the other group members, this may cause the listeners to dissociate from their compassionate role of supporting the speaker. This is true for the screen gaze of all group members, in particular for the speaker. When evidence of listeners' attention to a speaker is not noticed by that speaker, it may lead listeners to feel that their supportive behaviours are pointless thus, perceiving there is no necessity of sustaining their screen gaze. Listeners in online groups, in particular, may become more susceptible to distractions in their actual environment.
- ii. If the speaker does not sustain screen gaze with other group members, he or she is more likely to also miss highly communicative non-verbal cues or signals of engagement from the listeners. Sustaining attentive screen gaze, nodding, smiling, and showing thumbs-up are useful non-verbal signals for showing group members' understanding and/or encouragement to the speaker to continue. Expressions of blank looks or puzzlement, moving /turning heads from side to side, frowning or breaking screen gaze may be useful signals to the speaker that he/she is not successfully communicating at this moment, and should repeat, and/or rephrase, and/or reduce speed or simply stop and check understanding of the group members.
- iii. If the listeners fail to sustain screen gaze with the presenter/speaker and other group members, they will fail to notice if the presenter/speaker needs any encouragement or support to continue or if any group member/s needs further explanations, or repetition to understand. This failure to notice one another's behaviours might affect achieving group tasks.

b. Learning experience across the group

- i. If a speaker does not look at the screen, they might fail to observe the non-verbal communicative behaviours of the other group members. Those who are listening to the speaker might signal, even unconsciously, that their lack of understanding or if they do not understand parts or the whole of what the speaker is presenting. This difficulty might be pertinent to conceptual understanding, or because of errors or accent of spoken English language or comprehension difficulties due to the rapid speed of their speech. Even a turning or moving of the head, small frown or blank look by other group members may signal to the speaker that they should repeat or/and rephrase a point. Observing these non-verbal cues/signals is especially useful if listeners do not wish to interrupt the speaker verbally.
- ii. If listeners fail to comprehend and are unable to convey potential difficulties to a speaker non-verbally due to their lack of screen gaze attentiveness, the follow-up discussion might prove difficult.
- iii. Failure to pay attention to non-verbal signals therefore not only affect the listeners attempting to communicate their difficulties in following what is presented but the entire group's learning experience in terms of the quality of criticality of the follows-up discussion due to participants' lack of understanding.

Encountering of such issues by the groups were evidenced during the pre-intervention group meetings.

In summary, enacting the first component of compassion (*noticing*) is important for the group or teamwork setting in order to accomplish the second component (*taking wise actions to reduce or prevent the distress or disadvantaging of self and others*).

Understanding this phenomenon and practically applying the CSCC during their post-

intervention task-focused group meetings support participants to recognise the advantages of turning on their cameras in such online sessions. This was found particularly increased by students' realisation about their capability of offering a wide spectrum of support to their peers through the implementation of their knowledge on CSCC gained during the intervention session. Hence, the current approach appears to aid addressing the multi-faceted issue of delayed or abandoned development of social connectedness in online group meetings that could be remedied through even non-verbal interactions (Bedenlier et al., 2021; Khalil et al., 2020, Butz et al., 2015). Furthermore, the findings of the current study are imperative to address negative emotions of students, including feelings of loneliness, isolation and/or helplessness, as a result of having to shift to online platforms (Butz et al., 2015).

7.4.2 New Avenues from Changes of Spatial Dimensions in Small Group Meetings Online

This study on compassion as a psychobiological motivation (not an emotion; the Compassionate Mind Foundation) proposes novel avenues to improve the productivity and inclusivity of online group meetings. For example, in a group consisting of four members keeping their cameras on, each group member has the ability to observe (read) the expressions of all group members on one screen at the same time. In comparison to a group sits around the table in face-to-face setting, this is a change of spatial dimensions for 'reading' faces and non-verbal signals and cues of other group members (e.g., interest, encouragement, approval, understanding or lack of understanding, confusion, disagreement) during their group meeting. In face-to-face group discussions offline, students usually pay attention only to the person who is speaking, so it is less likely that

they can sustain close observation of every other team member's non-verbal response to the speaker all the time. However, this disadvantage in the face-to-face classroom can be addressed through developing students in CSCC in online sessions.

However, a close ethnographic analysis of all three cycles of pre-intervention group meetings showed very little evidence of using and noticing non-verbal signals of group members by one another. This result can be attributed partly to limited periods of sustained screen gaze of participants even when their cameras were turned on which contrasts with post-intervention findings where there was a significant increase in students' sustained screen gaze (please see Section 5.1.1 in Chapter 5, and Section 6.1.1 in Chapter 6).



Figure 7. 9: Application of Cognitive Skills of Compassionate Communications in Online Group Work.

Here, Gardner's (2008) notion of digitally enhanced capacity for multitasking (or, as here, the multiplicity of the same digital task) is pertinent to the comparison of camera use and screen gaze behaviours before and after the intervention for both groups. The multiple-

face views, as explained above, possible in the online format seemed to be associated by students with 'confidence' in their accounts post-intervention. Further, group members can take that opportunity to help each other, even if they say nothing, e.g., by nodding, and smiling to help keep other people continuing.

The findings are in line with Neff et al.'s (2007) discussion of the extensive benefits to the student of having a more interdependent self-concept. Hence, changes in the neurobiological affiliation processing of the individuals in this study where it appears that the stimulation of the capacity for self-compassion, may help to down-regulate the brain's threat alert system (P. Gilbert, 2005). This happens through the release of oxytocin in the brain (Uvnäs-Moberg et al., 2015; Depue and Morrone-Strupinsky, 2005) enabling self-soothing. Again, to express one's own non-verbal communication (especially facial expressions) while monitoring the responses and interactions of other group members, online camera use is vital.

This is significant because of research such as that of Greenfield (2010) on identifying how the current, widespread requirement for daily digital multi-tasking is changing the architecture of students' brains in digital societies. Greenfield (2010) asserts,

if you only focused on the behaviour of one player (in a game of football, for example) you could not extrapolate the nature and context of the game [00:16:56].

Similarly, in group work meetings, if group members focus on the speaker only (that occurs in offline group meetings often) they may fail to focus closer attention to whole group's immediate non-verbal responses too. Thus, the team members may not be able to monitor for overall team-wide understanding. Again, this is why it was important that a focus on compassion in this study was able to make changes to how students viewed and used their camera use and that of others.

Pertinently, Dal Monte et al. (2022) have found that eye contact between people has sophisticated neurological correlates in the human brain that have evolved in our social brains for deriving significance from other people's gazes. They have identified that extracting meaning from social gaze contact involves neurons in four brain regions and highlighted the significant influence of social gaze interaction in shaping interpersonal communications.

7.5 Embedding CSCC for Group/Team Meetings Online

The current study indicates the possibility of embedding Cognitive Skills of Compassionate Communication into online teaching for task-focused group work meetings. This is in line with the findings of T. Gilbert (2015, p. iii) on explicit work with the concept of compassion in face-to-face classrooms, “including overt formal assessment of its use, which can be unintrusive on subject material (a tutor concern), ethically appropriate, and beneficial to enhancing social and learning interconnectivity between students”. The current study informs the strong rationale⁹² of integrating the CSCC into HE online group meetings confirming its achievability⁹³ according to the theory, and research methods used in this study to test an adaptation of CSCC for use. In other words, findings from the use of five data collection techniques, and seven analyses conducted using five analytical tools under various combinations consistently revealed that the vast majority of students reacted in ways that benefited their own and their peers’ social and academic experiences. On the whole, all students showed their willingness to apply CSCC in their group work meetings. The study shows how these compassionate

⁹² Please see Chapter 3 for details.

⁹³ Please see Chapters 5 and 6.

communications strategies were modified and developed by students in subtle ways after the CSCC intervention session.

Influence of developing students in CSCC on increasing their confidence was evident through the analyses of post-intervention presentations, the follow-up discussions of the articles and the focus groups transcripts. As revealed through the results, students' conscious noticing of non-verbal support received from their group members and given to others when they perform the roles as presenters or/and as discussant participants facilitated them in enhancing their motivation. First, CSCC supports the confidence building of the student speaking as group members offer support to one another. Second, students appeared to assess levels of understanding, *responses*, and overall reactions of the whole group to presentations or discussions more easily through their sustained, conscious efforts to monitor the other three faces at once and throughout. (The verbal responses for enhanced inter-student support were similarly consistent with the non-verbal compassionate communications principles). In the PostIGMS, it was evident that students were able to initiate and maintain ongoing compassionate communicative flows in response to unanticipated moments and incidents as they arose during group communications (e.g., see Section 6.2.3.3.3 in Chapter 6 for Circumlocution). Students, on the whole, welcomed the chance to move towards a more compassionate, collaborative, and group cohesive HE paradigm of academic performance from a more competitive one. It was confirmed that, as for CSCC in live physical meetings, students used the CSCC to legitimise their deliberate attention to their own and others' enactments of more compassionate communications between them, despite most having arrived in their groups as strangers. By the end of the study, they had each met on average for 6 hours.

The CSCC was used by the students as a practical means of promoting and aiding, team-based abilities of self and others that are often disregarded in conventional academic frameworks.

Interestingly, the results also show that some students were using the CSCC in some other contexts, such as viva examinations, their workplace, and informal day-to-day interactions with friends and family, too. Students identified and experienced and communicated particular advantages of using CSCC outside of the research.

Sense of Belonging

The students realized that they had positive emotions towards each other after they have sufficient time to practise CSCC and had formed positive emotional bonds. In other words, witnessing consistent team meetings with compassion for each other may arouse emotive responses – students spoke in emotional terms of their new connections with students they had never spoken to before in their shared seminars/tutorials, sometimes for two semesters. Positive regard may be the result of CSCC intervention, due to effects on changes to neural pathways in the brain (Klimecki and Singer, 2017). As Klimecki and Singer (2017), indicate developing individuals in compassion changes neural functions, and the neural substrates associated with empathy for suffering differ neuronally and experientially. This is consistent with the observation of distinct patterns of behaviours associated with feelings of empathetic distress and compassion.

Similarly, Maginess and MacKenzie (2018, p. 42) assert that:

Many universities still proclaim a three-stranded mission: to educate for personal development, to create public/societal benefit, and to prepare students for the labour market. There is an emerging set of voices critically questioning what they see as an overly dominant obsession with training students to serve the economy, and that universities are increasingly focused on the private, rather than the public good.

When students experience unpleasant feelings of fear, worry, stress and anxiety, and even feelings of embarrassment from not initially understanding certain concepts, small acts of kindness such as being approachable, friendly, making eye contact and taking an interest in their experiences can make a big difference (Gill and Ursuleanu, 2017 p. 227).

Also important is that participants' online adaptations of the compassionate communications strategies complied with the fundamental concept of compassion: to *notice* (not normalize) the distress or disadvantage of self and others and take *wise* action to reduce it.

Current findings are supported by previous research on a strong and clear link between better academic performance (Egan et al., 2022) and academic outcomes, positive student well-being and student satisfaction (Mantzios et al., 2020) with mindfulness, self-compassion, contemplation of future implications. Further, Hope et al. (2014) reveal a significant improvement in students' overall well-being after placing them in programme of a self-compassion in their first year of university.

The significance of current findings is also supported by the research on the role of compassion and engagement in the academic performance and sustainable educational development (Estrada et al., 2021; Pfattheicher et al., 2016).

7.6 Application of a Shared Virtual Background

In this Action Research, after understanding the possible negative impacts of background distractions in Cycle 1, shared virtual backgrounds were considered in Cycles 2 and 3 as an amendment to the initial research design (see Section 5.5.1.1 in Chapter 5 for more details on this).

7.6.1 Psychological Impact of the Shared Virtual Background

To facilitate the activation of the soothing systems in the students' brains, peaceful, soothing backgrounds were considered depending on the preference of study's participants.

Study findings highlighted the participants' selections of soothing virtual backgrounds with their indications of feeling such as relaxed, peaceful, and comfortable as the whole group shared the same virtual background. Consequently, the findings underlined participants' willingness to use such shared virtual backgrounds in their online group meetings rather than using their real background/different backgrounds by group members. It may be the authenticity of the background in students' minds that this virtual background enhances that authenticity as it is psychologically relaxing. The current findings are aligned with the shared choice environments outlined by Robinson and Lee (2011).

This shared virtual background helps participants overcome their avoidant screen gaze as with the shared background, the distractions (someone coming to their rooms, others cannot see that person) are minimized or reduced through the shared/common background.

Further, if a group member moves their body, the whole body of them disappears, hence a shared virtual background appeared to help students to be in group meetings without being absent visually or psychologically.

The virtual background was used wherever possible during the post-intervention session. However, with the issues of network connection, and supportiveness of devices (laptops, mobile phones), some students could not apply the common virtual background (i.e., some students have to connect to the discussion through their phones with poor

network connection issues and they could not apply the virtual background. On such occasions, other two/three students who could apply the virtual background have the responsibility of keeping inclusivity as they need to pay attention to others who could not apply the virtual background. Hence attention to inclusivity was found to be stimulated. This opens up the possibility of changing the paradigm of the current education 'a factory system' as indicated by Robinson and Lee (2011).

Moreover, the findings on shared virtual background have created a novel avenue to effectively address the main reasons (desire to ensure personal space or the privacy of the home, fear or anxiety of being exposed, shyness, and background interruption) of students reluctance to switch on their webcams in online sessions (Gherheş et al., 2021; Zhao, 2022) and disconnection amongst and between students (Wang et al., 2018; Bauer et al., 2020; Stanford University, 2020), feeling isolation/loneliness, negative psychological consequences resulted through turning off of webcams as highlighted in the previous research.

7.6.2 The Issues Associated with Using a Shared Virtual Background

Students expressed their willingness to experiment by sharing the same background during their post-intervention session and all groups collectively selected and agreed on natural and authentic backgrounds especially related to Sri Lankan nature.

However, there were a few issues when using the shared background by the students. For example, S10 participated in the Zoom meetings via his phone which did not support the use of custom virtual backgrounds and therefore could not apply the background even though he wanted to. In the second case, S12 was not interested in creating an individual Zoom account she connected to online group work through Zoom without one and hence,

the custom virtual background option was not available to her. However, she managed to apply a similar background after updating her Zoom settings.

Interestingly, the shared background has the effect of removing people from the separate boxed spaces that they are seen in. It has been found so far that a shared background encloses the group in one single (online) space and beyond that space people entering the room cannot be seen by anyone at all in the group. Consequently, if a member of a group does turn away from the screen, that person disappears immediately and completely from the shared space. In other words, the shared background amplifies the absence of a group member through their lack of attention to the group. Finally, when students decided together on the backgrounds that they wanted, they chose an outside space in nature, not a classroom. This compares to the work of researchers who explain that schools were built on the factory system after the industrial revolution (Robinson and Lee, 2011).

Current findings on shared virtual background support addressing the concern of creative idea generation are hampered by virtual interactions (Bruck and Levav, 2022; Horvát and Uzzi, 2022). The current findings further inform the validity of Gelles et al. (2020) on how compassion helped engineering students to adapt to the challenges of remote learning.

7.7 Development of CSCC in Sri Lankan STEM Students in UK-based Universities and Sri Lankan-based Universities

1. If adaptation to the online format of the compassionate communications development is possible, in what ways, if any, and with what results (for their social and learning experiences of online group work) might Sri Lankan STEM students who are based in Sri Lankan universities respond to this developmental training that is similar, or different from the response of UK based Sri Lankan STEM students?

Both groups showed the development of their social as well as learning experiences along with sustained screen gaze, nodding, and reduction of long silences after the CSCC intervention session (Chapters 5 and 6).

However, considering the ways students responded to the CSCC intervention session, Sri Lankan-based university students appeared to be more emotionally stimulated than the students in UK-based universities. This may be due to their feeling of being more connected, bonded, and inclusive with one another through their use of CSCC in PostIGMs which help repair the fractured student communities and the tensions (when the campuses were closed after the Easter attack by Muslim extremists) experienced by the SL-based STEM students.

However, such tensions (as experienced by SL-based students) have not been experienced by UK-based Sri Lankan students. UK-based SL students were in a completely different environment, and they were away from the site, the space, and the legacy of these tensions. There are no requirements or concerns on dealing with diverse ethnic, cultural, social, religious, or any other backgrounds as there are no such deviations or tensions amongst and between the students in the UK, HE as in SL HE.

Everything was different for the SL-based students who were surrounded by tensions. They fast realized what big divisions are there between Tamil, Muslim, and Sinhalese students. One male Muslim student (S24) was tearful to leave the group after the final group meeting. With the Easter attack, the universities were shut down, and the student communities were polarized. However, with the CSCC intervention session, S24 felt a real connection he did not want to lose. So, it was more emotional for them to feel the bonding

after the intervention⁹⁴, as these fractured communities can be repaired. This was why the intervention may have meant more for SL-based students than UK-based students.

On the other hand, the extended developmental training with an interactive group session during the intervention might be another reason why students were emotionally more stimulated. This kind of pedagogy can have a noticeably effective emotional impact on students, Compassion is the psychobiological motivation that may not generate emotions, the actions may generate emotions in others of connection, inclusivity, and safety. Compassionate pedagogy has an important role when students have been traumatized. The developmental training creates space for students to help each other in practical ways and to bring students back together across ethnic diversities facilitating community building.

In summary, when comparing the UK-based STEM students with SL-based STEM students, their responses were found to be similar in terms of verbal communication before and after the CSCC intervention session. In summary, in relation to verbal communication, both groups reported enhancement of both *Social* and *Learning experiences* as well as *Social experience mediated learning experience*. However, in terms of students' emotionally stimulated team bonding appeared to be more enhanced among SL-based STEM student groups than the UK-based STEM student groups.

7.8 Addressing the Theoretical Concerns Pertinent to the Study

Overall, the study findings suggest positive effects of developing CSCC among students including their motivation to use practical strategies of compassionate communications

⁹⁴ This was evidenced with the majority of the participants suggested and agreed forming a WhatsApp group as they can keep continue their bonding which they did not want to lose.

to manage group interactions regardless of their differences related to mother tongue, ethnicity, or religion. This effect may be caused by the result of compassion being a valued concept cross-culturally (Davidson and Harrington, 2012, Goetz et al., 2010, Immordino-Yang and Damasio, 2007; Schwartz and Bardi, 2001; Van der Cingel, 2014). Thus, the current findings are applicable for addressing social polarization in student communities associated with the ethnic and religious differences (Butt, 2016; Haigh, 2002; Harrison and Peacock, 2010; Leask, 2005: NUS, 2010; Subramanian, 2015; Turner, 2009).

Moreover, the current findings respond to constructivists' consideration on producing tangible outcomes to demonstrate students' learning (Alanazi, 2016). By sharing the current empirical evidenced-based understanding of compassion (as it relates to interactional group dynamics), students were able to demonstrate their learning through a task design that enabled the observable use, online, of their understanding of compassion. With this their learning was demonstrated in the video-recorded group meetings by shared (co-produced) criticality.

Finally, the findings demonstrated positive effects of the development of CSCC to facilitate students' online group work management. The results also aid the concept introduced by Mitra and colleagues on Self-Organized Learning Environments (Mitra and Dangwal, 2017; Mitra, 2018). In this study's context, 'self-organized' is inferred from the students' self-selection of the journal articles to present and discuss without a lecturer's mediation or taking part. The primary aim of the discussion was to develop critical viewpoints through enhanced social interaction (in this scenario, based on an empirical understanding of compassion), which constructivists believe is required for student learning. Hence, in terms of achieving better outcomes by addressing the existing issues in group work meetings online, CSCC could be a way forward.

7.9 Returning to My Motivation for Conducting the Study

According to the findings, students appeared to be positively motivated to experiment with CSCC for managing their group tasks regardless of their ethnicity, religious or mother tongue differences (a vital component of integrated, fair progress). This may be in part because compassion is a value recognised across many cultures. (Davidson and Harrington 2012; Goetz et al, 2010; Immordino-Yang and Damasio, 2007; Schwartz and Bardi, 2001; Van der Cingel, 2014). Thus, findings of this study are pertinent to address the current tendency toward ethnoreligious social polarization among student communities (Butt, 2016; Haigh, 2002; Harrison and Peacock, 2010; Leask, 2005; NUS 2010; Subramanian 2015; Turner, 2009). This is important in relation to my research question (5) and to Chapters 1 and 2 in relation to how this study was first conceived. The researcher paid attention to address the tensions and conflicts between Sinhalese, Tamil, and Muslim students in Sri Lanka caused by imperialism, the 26-year civil war, and the Easter attack that led to the shutting down of all state university campuses in 2019. Moreover, this tension and student isolation were further reignited by the COVID-19 pandemic. The researcher wondered how such damaged communities might be repaired from inside the curriculum if possible so that compassionate teamwork communications might be sustained if it worked. That was why it was important to bring together as strangers Sinhalese, Tamil, and Muslim Sri Lankan students, for this study and not just from across 5 UK universities, but very importantly, five Sri Lankan universities too. Since findings demonstrated evidence of the possibility of building damaged/polarized communities with the CSCC intervention session, there remains the hope that this CSCC developmental training could be applied for re-building such polarized communities.

One of the limitations of the study is that the study participants were not on a module so got only one post-intervention meeting in which to practise what they had learned. This raised questions about whether the participants went on to use what they had learned, in the longer term. At the time of writing this discussion Chapter, researcher was able to meet with the original participants online, i.e., for the first time since they had participated in the study one year earlier. The participants revealed their post-study group work experiences, with the application of the CSCC they could get non-contributors to contribute to the group work, increase students' engagement, make group members feel psychologically safe, increase self-compassion, and manage negative emotions (e.g., anger⁹⁵). The following quotes⁹⁶ provide evidence for them.

S15: *These skills help me a lot and our group to take the non-contributors' contribution to our group work. (PC).*

S31: *In our university group work, we could get the active participation of those who normally do not contribute to the group tasks. (PC).*

S20: *We could increase our group members' engagement in group work after applying compassionate skills, especially during our group presentations. (PC).*

S9: *We could use compassionate strategies during a critical incident that we faced in our faculty. One boy from our batch disappeared for around 10 days and all media reported this incident. However, after he came back to the uni. We could use those techniques to make him feel comfortable and safe and we were more careful not to make him isolated. (PC).*

Further, S33 indicated the successful application of the CSCC while facing the interviews to obtain internships.

⁹⁵ Some of the study participants indicated that they could manage emotions such as anger which they used to practice when members do not contribute to the group work. Instead, they now try to find the reasons why some do not contribute to applying CSCC in their academic settings.

⁹⁶ These quotations were extracted from the Personal Communication (PC) I had with the participants (consisting of both males, and females from all three ethnicities, Sinhalese, Tamils, and Muslims) on Nov. 25, 2022; 16.00-17.00 time via zoom meeting.

S33: *I could apply compassionate strategies when I faced the internship interview, and I was so happy that I could gain that opportunity. (PC).*

As indicated above a few examples from what they told me when I asked if the strategies had been of any use to them since then, do suggest that further research in compassionate group work in Sri Lankan may be valuable.

The single facilitator (teacher/trainer) to conduct CSCC intervention session for this study was a positive variable in this study findings. This variable, which is important to consider, cannot be eliminated easily from various teaching and learning contexts unless conducted through human learning-machine instruction interactions. However, in the current study's approach, this argument becomes considerably weaker because there was no supervision or mediation by the lecturer during either the group presentations or discussions once the group task commenced.

7.10 Chapter Summary

Overall, the findings indicate the possibility of adapting Cognitive Skills of Compassionate Communications in online group settings. Further, the current results highlight the enhancement of students' observing, understanding, and interpreting of other group members' verbal and non-verbal meta-language communication in online group meetings with the application of CSCC. Hence, their social as well as learning experiences. Further, the findings suggest that development of CSCC among students motivated them to apply practical strategies of compassionate communications to manage their group interactions regardless of their diversity in relation to ethnic, religious, or mother tongue differences.

Finally, the study's findings revealed the successful adaption of the CSCC to online group meeting scenarios through collaboration with students.

CHAPTER 8

Conclusions

8.0 Introduction

The main finding of this study was that development of CSCC in HE students enhanced social, learning, and relationship of both experiences of online groups while significantly increasing screen gaze behaviours of group members. Moreover, the study explored the application of shared virtual background to support unity and shared identity. These findings have several implications for researchers and practitioners. This chapter presents a concise account of the study's contribution to theory, practice, and policy after testing robustly the appropriacy, theory, and (online) application of the CSCC pedagogy via these research questions:

Core Research Question

1. Can developing HE students in CSCC be adapted for online group meetings amongst UK-based and Sri Lanka-based Sri Lankan HE STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?

Sub Research Questions

2. **In UK HEIs**, can developing students in CSCC be adapted for online group meetings amongst Sri Lankan STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings ?
3. **In Sri Lankan HEIs**, can developing students in CSCC be adapted for online group meetings amongst STEM students, and if so, in what ways and with what effects, if any, on their social and learning experiences in these online meetings?
4. In relation to questions 2 and 3, are there any observable differences in students' behaviours in their pre- vs post-intervention online group meetings (before and after the CSCC intervention session intervention)?
5. If an adaptation of CSCC to the online format is possible, in what ways, if any, and with what results (for their social and learning experiences of online group work) might Sri Lankan STEM students who are based in Sri Lankan universities respond to this developmental training.
 - 5.a. In what ways might the responses of Sri Lankan-based students be similar, or different from the responses of UK-based Sri Lankan students?

Section 8.1 below sets out the contribution of the current study toward theory, practice, and policy in HE. Then Section 8.2 presents recommendations from the current study and Section 8.3 outlines the limitations of the study providing suggestions for future research. Section 8.4 focuses on the sustainability. Finally, Section 8.5 draws together the study's summary of its attempt to transfer the classroom development of students' compassionate communications learning and skills in their group/teamwork meetings into an online format.

8.1 Study Contribution

The study applied compassionate pedagogy to the online context which had not been done before. The results showed that familiarising students with CSCC positively affects their social and learning experiences. It appears that the testing notion of Sri Lankan students working together when they were not used to that has made this a helpful study for learners, teachers, and policymakers to address the existing communicative difficulties of the students and facilitate community building. The study findings contributed to the use of compassionate communications strategies in the development of knowledge, theory, practice, and policy.

8.1.1 Contribution to Theory

The contribution of this study is to address the existing gap in literature since online contexts in conjunction with CSCC have not been studied before. Thus, this study contributes to identifying how groups/teams work online with CSCC, which facilitates the management of the dynamics of diversity in HE online group meetings while ensuring the notion of equal agency within those groups/teams. The successful adaptation of CSCC from in-class to an online context has been enabled by the development of theory and practice with students.

8.1.1.1 Motivating Students to Switch on Their Cameras and Sustain Screen Gaze in Online Group Meetings

The findings have confirmed the importance of visual connections between students and highlighted the increase in students' willingness to switch on their cameras after knowing the ways that they can help one another in online group meetings through their non-

verbal communication⁹⁷. In that sense, the study has been successful, since the study participants were motivated to switch on their cameras and maintain screen gaze in the online format. Hence, the current study contributes towards enhancing knowledge regarding the effects of screen gaze and students' motivation to take particular actions whenever needed to support group understanding and cohesion as a result of it. In line with what compassion is, students were more motivated by understanding that switching their cameras on was of considerable help to others in online group/teamwork meetings.

8.1.1.2 Managing Online Group Meetings with Shared Virtual Background

This study shows that introducing shared virtual backgrounds especially outside of the institution to facilitate students to overcome the negative influences of the factory system (Robinson and Lee, 2011) and into Sri Lankan nature which creates a unifying impact. This is an addition to compassion teamwork pedagogy for the online format. By eliminating background distractions and creating social comfort between students while adding a soothing effect, this shared virtual background led to a degree of uniformity in online groups which is beneficial.

8.1.1.3 Managing the Notion of Equal Agency in Online Group Meetings

The lack of sharing equal agency in group work has long been stated in the literature (Summers, and Volet, 2010; Kiesler et al., 1984). This was supported by the participants' experiences of their online academic group meetings prior to this study (see Chapters 5 and 6). The current findings shed light on this issue, especially through the application of both verbal and non-verbal strategies of compassionate communication. These findings

⁹⁷ E.g., if a group member encounters difficulty in understanding (which is shown through a blank look) the speaker can stop and clarify the points.

in turn advance the theory of CSCC in as much that they show that equal agency can be applied to and facilitated in online group meetings through the use of compassionate communication.

8.1.1.4 Managing the Dynamics of Diversity in Fractured Communities Focusing on HE Online Group Meetings

The study findings strengthen the compassionate pedagogies' theoretical base as one means in HE to address the nationwide structural inequalities that are replicated in formal education and are perceived to perpetuate ethnoreligious conflict between diverse communities (Duncan et al., 2017). Development of CSCC among students facilitates practicing of cross-community reconciliation among Sinhalese Tamil and Muslims through individual (students and teachers) and community (Sinhalese, Tamil, and Muslim community-based) agencies.

Moreover, the virtual background supported the notion of shared identity rather than separate competing identities. The use of shared virtual background not only removes individuals from being exposed to others regarding their physical surroundings but helps address conflicts in Sri Lanka around painful violent history over resources being shared unequally as this shared virtual background made students feel like one country and one nation. This was possible through the selection of the scenic beauty of Sri Lanka as a shared virtual background which became a unifying force acted as a uniting factor that contributes to a shared identity. In other words, shared virtual background supports the underlying aims of compassionate pedagogy, and technology (i.e., shared virtual background) can be used here to support it.

Furthermore, the current study suggests a new avenue to address the view of constructivists that students' learning should lead producing tangible outcomes: current,

empirical evidenced-based understanding of compassion as it relates to interactional group dynamics, students learning is not only demonstrated through their online audio/visual recorded group presentations and discussions as outcomes but also by the enhanced group cohesion and shared criticality of students in relation to the content of group meetings. The results of this study also support the notion of Self Organized Learning Environments (SOLE) (Mitra, 2018). This was for example demonstrated by group members' noticing and supporting their group members' communication through non-verbal signals after CSCC intervention session. Furthermore, this study highlights the importance of discussion for developing critical perspective taking which is in line with constructivists' emphasis on social interaction (in this case based on an understanding of compassion) as a prerequisite for students' learning.

8.1.2 Contribution to Practice

Following the implications of the theory outlined in Section 8.1.1.1, this study found that screen gaze is key to non-verbal social cues of connection between and among students. These non-verbal cues affected learning outcomes in the post-intervention group meetings. This is consistent with previous research for offline face-to-face classroom discussions on identifying inclusive eye contact as a fundamental component of communication compassionate pedagogy (T. Gilbert, 2016; Harvey et al., 2020; Harvey et al., 2009).

In the online format, CSCC was also found to license group members to practice purposeful applications of compassionate verbal and non-verbal communication throughout their group/teamwork meetings. Further, all participants reported being

motivated to turn on their cameras after the CSCC intervention in contrast to their reluctance to do so during their previous group meetings online.

Moreover, the current study findings are important in managing and modifying participants' social behaviours in online group meetings. According to Dal Monte et al. (2022), eye gaze between individuals has sophisticated neurological correlates in the human brain that have evolved in our social brains to help us extract the meaning from other people's gaze. They discovered that social gaze significantly influences interpersonal communication. This is consistent with compassionate pedagogy in general as it highlights interpersonal communication is significantly shaped by social gaze interaction⁹⁸. This is also consistent with the current study's findings on paying more attention towards the social behaviour of the members during the group tasks in online contexts.

The results of this study could assist HEI lecturers educate university students in the academic and practical skills that are required to effectively complete their degrees and transfer into graduate programmes successfully.

8.1.3 Contribution to Policy

The current study indicates a novel approach to rethinking and redesigning the online group work meetings to address the challenges of building student communities in ethnically and culturally polarized contexts which is yet to be addressed in HE policy.

This shift as explained in Section 8.1.2, which all the participants attributed to a new understanding of compassion in group/teamwork context, pointed to an accelerated

⁹⁸ For visually impaired students, this raises the importance in the compassionate communications strategies of warm, collegial voice tone, name use and mindful timing of invitations to speak and space to do it.

growth of shared and interdependent identity within each group. Thus, the approach implemented in current research appears to assist addressing concerns related to abandoned development of social relationships which could be remedied even through non-verbal communication in online group sessions (Bedenlier et al., 2021; Khalil et al., 2020; Gherhes et al., 2022). Consequently, the current findings are significant for addressing negative emotions (feelings of loneliness, isolation and/or helplessness), by students having had to shift to synchronous (online) learning (Butz et al., 2015). This is viable through the students' mindful use of CSCC through their verbal and non-verbal communication during online group meetings.

Further, the findings of this study are relevant to the current emphasis on the requirement for authentic assessment in higher education and developing students for the workplace teams. This includes both formative and summative assessments to promote the practical application of compassionate communications strategies thus facilitating students enhancing required skill sets (i.e., group/team building capacities with socio-emotional skills) for them to be successful in their future careers. Hence, the findings from the current study have implications for policy around teaching and learning assessments through online group work/teamwork. This is possible with practice of the online group work activities, and assessments to be authentic with the inclusion of CSCC as one of the criteria to assess students' online group work management skills. This is important should there be another pandemic or such a circumstance in the future, or just if future learning contexts are hybrid or fully online for other reasons.

8.2 Recommendations

8.2.1 Viable Group Size

As revealed through the findings of students' perspectives in this study, the intimacy of a group of four members felt more psychologically safe, increased the chances of participation (since it was not easy for group members to hide behind the camera), and made students feel more comfortable than they had in larger groups. This is aligned with findings in the previous literature on forming small groups (e.g., four members) which is advised as larger groups reduced the visibility of individuals and their contributions in face-to-face contexts as well (Johnson and Johnson, 2009). This less visibility in larger groups increases the risk that individuals devote less effort to collaboration (Albanese and Van Fleet, 1985; Csernica et al., 2002; Davis, 1993; Johnson and Johnson, 2009). Therefore, a relatively low number of students per group (e.g., four) is recommended since this facilitates better performance in the group tasks, as it allows them to observe one another's non-verbal signals thus responding to them appropriately. This also aligns with applying the two components of compassion, noticing distress, or disadvantaging, and taking wise actions to reduce or prevent them.

8.2.2 Application of Shared Virtual Background

In online group meetings, each student's backgrounds in their respective learning environments may well have been more distracting across the group than might be expected in a face-to-face learning at a shared physical space. As investigated during Cycles 2 and 3, the application of shared virtual backgrounds would be an ideal solution to address this issue while enhancing equal participation and group cohesion.

8.3 Limitations and Future Research

8.3.1 Limitations and Obstacles to Implementing CSCC and Potential Solutions

Although the findings so far indicated possible advancement of students' social and learning experiences through the implementation of Cognitive Skills of Compassionate Communication (CSCC), there might be some difficulties in using them in the online setting.

1. Technological obstacles in the form of unstable network connections hinder using CSCC in groups.

Solution: On such occasions, the mindful use of the chat box would support the whole group in continuing their online group work. Further, the other group members (whose internet connections are free of technical difficulties) can use CSCC including a warm tone/voice to ensure social interaction and inclusivity to achieve the group task successfully.

2. Technical difficulties in switching on the cameras of the devices (e.g., phones) they use also impede the possible outcomes to be gained through the development of CSCC in online group meetings. If participants are unable to switch on their cameras due to one or a few of the above reasons, that will also hinder obtaining positive outcomes of the CSCC techniques. Further, this has implications for students who are non-sighted or partially sighted.

Solution: However, the use of a warm tone/voice by the group might facilitate addressing such circumstances.

-
3. The difficulty of demonstrating/receiving the responses without proper lighting to the faces of the participants also hampers the positive outcomes of CSCC when engaging in online groups.

Solution: This can be addressed by providing proper instructions to the students on placing their screens to better light their faces (e.g., placing them to let the light (whether natural or artificial) comes from their front (not from behind)).

4. Background distractions - visual (presence of roommates/ family members behind the group members, domestic appearance/appearance of the background).

Alternative solution: This can be altered through the application of virtual background as investigated in Cycles 2 and 3).

5. Distractions from background noises (noise occurring from family members, children, and street vehicles might cause disturbances).

Alternative solution: This can also be addressed by muting the mics of students when they are not speaking. Instead, they can use non-verbal signals (hand gestures: raising hand the physical hand or using the raised hand option to signal if one is ready/interested in contributing to the discussion, using thumbs up to appreciate others, or answering yes/no question without unmuting their mics) if they have background noises.

8.3.2 Future Research

The cycles are necessarily exploratory snapshots of the adaptability of CSCC to group work, specifically as taught and tried online in the study, which could help students managing their group tasks effectively, in particular Sri Lankan context. Hence, future research will explore the long-term impact on students' social and academic experiences through practicing CSCC in task-focused group meetings of a particular course/module or degree programme in current HEIs.

In this study, the amount of virtual learning undergone by the students before the pre-intervention was not assessed. Hence, this could be taken as another variable in future research to investigate whether there is any relationship between the development of compassionate communications with the amount of online learning (sessions/time durations) of the students.

In a follow-up study it would be interesting to see clear demarcations of screen gaze behaviours of group members from diverse groups as well as the different roles they perform. This could be addressed by analysing data obtained from a larger sample.

Further, the data analysis revealed that enhanced developmental training would support students' group communication to decrease or even eliminate their fear of failure by using their mother tongue to a) express their ideas without being stuck in the middle of the speech if they found it difficult to continue in English, b) ask for help from their peers to explain some difficult words/points in English. However, future research will be required to explore deeply what role the mother tongue would play in such group discussions and whether this would indeed alleviate the fear of failure.

This study focused on working in an area of conflict with the long-term impact of imperialism, civil war, and the Easter bombings in 2019 which caused the closing down of the campuses. Therefore, further research would be needed to investigate whether compassionate pedagogy would have the same impact on other groups of students in other areas of conflict in higher education around the world (e.g., Russian, and Ukrainian students)

Furthermore, the investigation of the current study was limited to university students in the HE. In a future study, it would be interesting in to explore the impact of using CSCC in group meetings in a wider community including public and private sector workplaces.

8.4 Sustainability

If the development of the Cognitive Skills of Compassionate Communication (CSCC) was successful in initial experiments with the students, this would be advantageous to introduce it among all Sri Lankan universities. If the benefits were positive for a longer time period in comparison with the cost, this could be a sustainable project. In this research, competitiveness, the prime negative force in sustainable development was discouraged while improving the compassionate relationship with each other in the group learning setting. Hence, students in the higher education sector could be directed more towards achieving their goals in groups as one single organism enriched with compassion without focusing only on competitive individualism. Thirdly, financial sustainability was secured as the financial requirement occurs only on developing students on CSCC if there was no opportunity to introduce them within universities combined with the existing curriculum. However, this could be overcome

through the researcher's involvement to conduct these CSCC intervention sessions to Sri Lankan universities. It is unlikely that there will be more costs associated with the development of CSCC in student group meetings.

8.5 Summary

In this study, the focus was on investigating the adaptability of CSCC among ethnically diverse HE students in socially polarized communities due to the negative impacts of imperialism, the 30-year civil war, which was further reignited by the Easter bombings in 2019, and the COVID-19 pandemic. Mainly three kinds of developmental training options have been experimented with during three cycles of this study:

1. Cycle 1: Only CSCC intervention session (Minimal)
2. Cycle 2: CSCC intervention session + Interactive practical training (Optimal)
3. Cycle 3: CSCC intervention session + Interactive practical training + Enhanced developmental training with the intervention of teaching staff (Optimal Plus)

As confirmed through both the quantitative and the qualitative data analyses of this study, providing only CSCC intervention session (as in Cycle 1) has enhanced students' prosocial behaviours, and educational experiences as well as *Social experience mediated learning experience* in online group meetings.

However, it would be more effective if the CSCC intervention session is followed by an interactive practical training session (as in Cycle 2) conducted with the participants before implementing this in the academic environment, because through the additional interactive developmental training session, students benefitted more from enhancing their social as well as learning experiences significantly as a group as well as individuals while enhancing their group cohesion.

Moreover, if the resources, staff, and time are available, it would be much better to implement the CSCC intervention session plus interactive practical session with teacher/staff intervened enhanced developmental training (as in Cycle 3) for further development of prosocial, educational and social experience mediated learning experience of the group members while directing their orientation more towards self-organized learning (SOLE) with enhanced creative and critical thinking.

The option 2 (Optimal) condition could be considered the most rewarding, time and cost-effective option than the other two options providing a significant improvement of students' verbal plus non-verbal communication with prosocial, educational, and social experience mediated learning experience in group meetings online. However, if there are adequate staff, time, and resources available, it would be better to implement option 3 (Optimal Plus) for a further enhanced outcome.

The outcomes of the current study provide a foundation for further exploration due to the novelty of the research focus. The development of CSCC among students creates a new avenue for them to engage and interact in group work communications. The overall development is about the desire and readiness of the group to support one another in accomplishing their group tasks.

Further, this study addresses the aspects of inclusivity and diversity. Participants reported evidence of enhanced inclusivity among ethnically, religiously, and culturally diverse student communities through the application of CSCC. Vandeyar and Swart (2019) stated, to change mindsets, educational institutions must make a proactive commitment to compassionately interacting with diversity. Moreover, they conclude that improving these characteristics through appropriate treatments that are inexpensive, user-friendly, and can be integrated into students' current learning. Furthermore,

assisting students to reinforce life skills including adaptive coping can result in a significant improvement in academic performance. Current CSCC meet these requirements (Vandeyar and Swart, 2019).

Further, assessing students' personality and attitudinal constructs discussed in this study at the commencement of their academic journeys in higher education can lead opening up an ongoing discussion between students and lecturers on how these constructs may be protective (or not) on psychological health and well-being and also their influence on social relationship building and academic performance. Such interventions may possibly be delivered by using and/or adapting prevailing support mechanisms to online environments in order to enhance students' social and learning experiences which could form an effective foundation for evaluating potential future interventions in scholarly research.

In conclusion, this study explored the possibility of developing of CSCC among socially polarized student communities. It identified the potential contribution of the CSCC as part of group work pedagogy for repairing historic and still current divisions among HE student communities in Sri Lanka.

REFERENCES

- Abayasekara, A. (2020). Girls in STEM: How is Sri Lanka Faring? Retrieved on January 07, 2021 from: <https://www.ips.lk/talkingeconomics/2020/02/11/girls-in-stem-how-is-sri-lanka-faring/>.
- Aberson, C. L., Healy, M., and Romero, V. (2000). Ingroup bias and self-esteem: A meta-analysis. *Personality and social psychology review*, 4(2), pp. 157-173. Retrieved on February 28, 2021 from: https://journals.sagepub.com/doi/pdf/10.1207/S15327957PSPR0402_04.
- AdaDerana, (April 26, 2019a). Schools and Universities to reopen on May 06. Retrieved on January 07, 2020 from: <http://www.adaderana.lk/news/54686/schools-and-universities-to-reopen-on-may-6>.
- AdaDerana, (May 3, 2019b). Two Jaffna Uni students arrested during special security check remanded. Retrieved on June 21, 2019 from: <http://www.adaderana.lk/news/54873/two-jaffna-uni-students-arrested-during-special-security-check-remanded>.
- Adnan, M. and Anwar, K. (2020). Online Learning amid the COVID-19 Pandemic: Students' Perspectives. *Journal of Pedagogical Sociology and Psychology*. 2(1), 45-51. Retrieved on March 05, 2021 from: <https://files.eric.ed.gov/fulltext/ED606496.pdf>.
- Afrouz, R., and Crisp, B. R. (2021). Online Education in Social Work, Effectiveness, Benefits, and Challenges: A Scoping Review, *Australian Social Work*, 74(1), 55-67, DOI: 10.1080/0312407X.2020.180803. Retrieved September 30, 2022 from: <https://doi.org/10.1080/0312407X.2020.1808030>.
- AHEAD (Accelerating Higher Education Expansion and Development), 2019. Increasing Enrollment in Higher Education in Priority Disciplines for Economic Development. Retrieved on January 10, 2019 from: <https://ahead.lk/result-area-1/>.
- Akyol, Z. and Garrison, D.R., (2013). *Educational communities of inquiry: theoretical framework, research, and practice*. Hershey, PA, IGI Global.
- Alanazi, A. (2016). A Critical Review of Constructivist Theory and the Emergence of Constructionism. *American Research Journal of Humanities & Social Science*, 2, 1–8. Retrieved on January 15, 2021 from: <https://www.arjonline.org/papers/arjhss/v2-i1/18.pdf>.
- Albanese, R., & Van Fleet, D. D., (1985). Rational behaviour in groups: The free-riding tendency. *Academy of Management Review*, 10, 244-255.

- Aleman, A. and Sommer, I. (2022). The Silent Danger of Social Distancing. *Psychological Medicine*, 52(4), 789–790. Retrieved on September 8, 2022 from: <https://www.cambridge.org/core/journals/psychological-medicine/article/silent-danger-of-social-distancing/9CFFBF2802D6A6042A0707CD6D8E1052>.
- Alesandrini, K. and Larson, L. (2002). Teachers bridge to constructivism. *The Clearing House*, 119–121.
- Allan, S., and Gilbert, P. (1995). A social comparison scale: Psychometric properties and relationship to psychopathology. *Personality and individual differences*, 19(3), 293-299.
- Allen, A. B. and Leary, M. R. (2010). Self-Compassion, Stress, and Coping. *Social and Personality Psychology Compass*, 4, 107-118.
- Almendingen, K., Morseth, M. S., Gjølstad, E., Brevik, A., and Tørris, C. (2021). Student's experiences with online teaching following COVID-19 lockdown: A mixed methods explorative study. *PloS one*, 16(8), e0250378. Retrieved on May 10, 2022 from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0250378>.
- Aloysius, M. (2015). Problems of English teaching in Sri Lanka: how they affect teaching efficacy. PhD thesis. University of Bedfordshire. Retrieved on May 10, 2019 from: <https://uobrep.openrepository.com/handle/10547/622477>.
- Al-Samarraie, H. (2019). A scoping review of videoconferencing systems in higher education. *The International Review of Research in Open and Distributed Learning*, 20(3). Retrieved on June 14, 2022, from: <https://doi.org/10.19173/irrodl.v20i4.4037>.
- Alvesson, M. and Sköldberg, K. (2009). *Reflexive methodology: New vistas for qualitative research*. (2nd ed.) London: Sage.
- Alwis, D. D. (April 23, 2019). All universities, schools closed after suicide bombings. *University World News*; The global window on higher education. Retrieved on October 23, 2019 from: <https://www.universityworldnews.com/post.php?story=20190423165020811>.
- Alwis D. D. (May 31, 2019). Fear of campus Islamophobia after Easter bombings. *University world News*; The Global Window on Higher Education. Retrieved on July 10, 2019 from: <https://www.universityworldnews.com/post.php?story=20190531074954315>.
- Amarasuriya, H. (2015, August 31). Current Issues in University Education. *COLOMBO TELEGRAPH*. Retrieved on May 18, 2019 from: <https://www.colombotelegraph.com/index.php/current-issues-in-university-education/>.

- Amarasuriya, S. D., Jorm, A. F., Reavley, N. J. (2015). Prevalence of depression and its correlates among undergraduates in Sri Lanka. *Asian Journal of Psychiatry*, 5, 32-37. Retrieved October 23, 2019 from: <https://www.sciencedirect.com/science/article/pii/S1876201815000738>.
- Apedoe, X. S., Ellefson, M. R., and Schunn, C. D. (2012). Learning together while designing: Does group size make a difference? *Journal of Science Education and Technology*, 21, 83-94. Retrieved September 21, 2019 from: <https://link.springer.com/article/10.1007/s10956-011-9284-5>.
- Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., and Lawless, M. (2019). Using zoom videoconferencing for qualitative data collection: perceptions and experiences of researchers and participants. *International journal of qualitative methods*, 18, 1-8. Retrieved September 20, 2020 from: <https://journals.sagepub.com/doi/pdf/10.1177/1609406919874596>.
- Aturupane, H., Sankar, D., Saeki, H., Shojo, M., Glewwe, P., and Deolalikar, A. (2011). Transforming school education in Sri Lanka: From cut stones to polished jewels. Washington, DC, The World Bank.
- Aturupane, H., and Wikramanayake, D. (2011). The promotion of social cohesion through education in Sri Lanka (Discussion Papers No 46). South Asian Human Development Sector, World Bank. Retrieved on May 12, 2019 from: <https://openknowledge.worldbank.org/handle/10986/18013>.
- Attanayake, A. U. (2017). Undergraduate ELT in Sri Lanka: Policy, Practice and Perspectives for South Asia. Tyne, Cambridge Scholars Publishing. Retrieved on June 24, 2019 from: <https://www.cambridgescholars.com/download/sample/64195>.
- Author:inner group AEDiL ; Steinhardt, I., Eichhorn, M., Lohner, D., Roewert, R. Thielsch, A., Bergert, A., Bernhard, N., ... Ternes, D. (2021). Corona-Semester reflektiert. Einblicke einer kollaborativen Autoethnographie [Corona semester reflected. Insights of a collaborative autoethnography]. wbv Media. Retrieved on June 14, 2022, from: <https://publikationen-bibliothek-kit.edu.translate.goog/1000131496? x tr sl=de& x tr tl=en& x tr hl=en& x tr pto =sc>.
- Bacon D. R., Stewart K. A., Silver W. S. (1999). Lessons from the best and worst student team experiences: How a teacher can make the difference. *Journal of Management Education*, 23(5), 467-488. Retrieved on June 24, 2019 from: <https://www.proquest.com/docview/195747674?accountid=14660&parentSessionId=Xr7KF4wgFLwHNizDpyjC4zR1k3yWUxOBsvURJzwZ8T4%3D&pq-origsite=360link>.

-
- Baker, L., McNulty, J. K., and Marx, K. (2012). Self-compassion and relationship maintenance: The moderating roles of conscientiousness and gender. *Journal of Personality and Social Psychology*, 100(5), 853–873.
- Barnard, L. K., and Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, & interventions. *Review of General Psychology*, 15(4), 289–303. [Self-Compassion: Conceptualizations, Correlates, & Interventions - Laura K. Barnard, John F. Curry, 2011 \(sagepub.com\) https://journals.sagepub.com/doi/10.1037/a0025754.](https://journals.sagepub.com/doi/10.1037/a0025754)
- Barrett, L. F., and Ajay Satpute, A. B., (2013). Large-scale brain networks in affective and social neuroscience: towards an integrative functional architecture of the brain. *Current Opinion in Neurobiology*, 23(3), 361-372. Retrieved on October 15, 2021 from: <https://www.sciencedirect.com/science/article/pii/S0959438813000172?via%3Dihub>.
- Barrot, J.S., Llenares, I.I. and del Rosario, L.S. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Education and Information Technologies*, 26, 7321–7338. Retrieved on June 24, 2022 from: <https://doi.org/10.1007/s10639-021-10589-x>.
- Bates, T. (2005). The expression of compassion in group cognitive therapy. In Gilbert, p. (1st Ed.). *Compassion: Conceptualisations, Research and Use in Psychotherapy*. (pp. 369-386). Routledge. Retrieved on June 24, 2019 from: <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203003459-14/expression-compassion-group-cognitive-therapy-tony-bates>.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, Freeman.
- Bauer, C., Dicks, M., Holbrook, K., Sarnell, C. (2020, Oct 15). All of My Students Turn Their Cameras Off. It's Making Class Miserable. Retrieved on December 20, 2020 from: <https://slate.com/human-interest/2020/10/distance-learning-students-keep-cameras-on.html>.
- Beaumont, E., Rayner, G., Durkin, M., Bowling G. (2017). The effects of Compassionate Mind Training on student psychotherapists. *Journal of Mental Health Training, Education and Practice*, 12 (5), pp. 300-312. doi:10.1108/JMHTEP-06-2016-0030. Retrieved on November 25, 2019 from: <http://usir.salford.ac.uk/id/eprint/41234/>.
- Bedenlier, S., Wunder, I., Gläser-Zikuda, M., Kammerl, R., Kopp, B., Ziegler, A., and Händel, M. (2022). Generation Invisible: Higher Education Students' (Non)Use of Webcams in Synchronous Online Learning. *International Journal of Educational Research Open*, 2, 1-8. Retrieved on January 06, 2022 from: <https://www.sciencedirect.com/science/article/pii/S2666374021000388>.

-
- Bennett, N., and Dunne, E. (1992). *Managing classroom groups*. Simon and Schuster Education.
- Bentley, K. J., Secret, M. C., and Cummings, C. R. (2015). The centrality of social presence in online teaching and learning in social work. *Journal of Social Work Education*, 51(3), 494–504. Retrieved on January 06, 2021 from: <https://doi.org/10.1080/10437797.2015.1043199>.
- Billias, N., (2017). On Becoming a Campus of Compassion. In Gibbs, P., (Ed.), *The Pedagogy of Compassion at the Heart of Higher Education* (pp. 141-153). Cham, Switzerland, Springer nature.
- Bion, W. R. (2003). *Experiences in groups: And other papers*. Routledge.
- Boas, F. (1938). Language. In F. Boas (Ed.), *General Anthropology*. Boston, D.C. Heath, and Company.
- Bowlby, J. (1975). *Attachment and Loss: Separation, Anxiety and Anger*. Penguin.
- Bolman, L. G., and Gallos, J. V. (2011). *Reframing academic leadership*. San Francisco, Jossey-Bass.
- Bowen, G. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40.
- Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Brito G., Campos D., and Cebolla A. (2018). Implicit or explicit compassion? efficacy of a compassion-based intervention and comparison with mindfulness-based stress reduction intervention on empathy and compassion. *Mindfulness*, 9, 1494–1508. Retrieved on January 06, 2020 from: <https://doi.org/10.1007/s12671-018-0898-z>.
- Brittian, A. S., and Humphries, M. L. (2015). Prosocial behavior during adolescence. *International Encyclopedia of the Social & Behavioral Sciences*, 19, 221-227. Retrieved on January 06, 2020 from: <https://www.sciencedirect.com/science/article/pii/B9780080970868231905>.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513–531. Retrieved on January 06, 2020 from: <https://doi.org/10.1037/0003-066X.32.7.513>.
- Brooks J, McCluskey S, Turley E, King N. (2015). The Utility of Template Analysis in Qualitative Psychology Research. *Qualitative Research in Psychology*. 12(2), 202-222. doi: 10.1080/14780887.2014.955224.

-
- Brown, A., Campione, J. (1994). *Guided Discovery in a Community of Learners*. MIT Press, Cambridge, MA, USA.
- Brown, (2020). Qualitative methodologies: ethnography, phenomenology, grounded theory and more. Retrieved on January 06, 2020 from: <http://www.brown.uk.com>.
- Brucks, M.S., Levav, J. (2022). Virtual communication curbs creative idea generation. *Nature*, 605, 108–112. Retrieved on June 14, 2022, from: <https://doi.org/10.1038/s41586-022-04643-y>.
- Bruffaerts, R., Mortier, P., Kiekens, G., Auerbach, R. P., Cuijpers, P., Demyttenaere, K., ... and Kessler, R. C. (2018). Mental health problems in college freshmen: Prevalence and academic functioning. *Journal of affective disorders*, 225, 97-103. Retrieved on January 06, 2020 from: <https://www.sciencedirect.com/science/article/abs/pii/S0165032716324545?via%3Dihub>.
- Brunet, P.M., Schmidt, L.A. (2007). Is shyness context specific? Relation between shyness and online self-disclosure with and without a live webcam in young adults. *Journal of Research Personality*, 41(4), 938–945. Retrieved on September 26, 2022 from: <https://www.sciencedirect.com/science/article/pii/S0092656606001103?via%3Dihub>.
- Bui, T. H., Luong, D. H., Nguyen, X. A., Nguyen, H. L., and Ngo, T. T. (2020). Impact of female students perceptions on behavioural intention to use video conferencing tools in COVID-19: Data of Viet-nam. *Data in Brief*, 32, 106142. Retrieved on June 14 2022 from: <https://doi.org/10.1016/j.dib.2020.106142>.
- Bui, T. X. T., Ha, Y. N., Nguyen, T. B. U., Nguyen, V. U. T., and Ngo, T. C. T. (2021). A study on collaborative online learning among EFL students in Van Lang University (VLU). *AsiaCALL Online Journal*, 12(3), 9-21. Retrieved on June 14 2022 from: <https://asiacall.info/acoj/index.php/journal/article/view/32>.
- Bushman, B. J., and Baumeister, R. F. (1998). Threatened egotism, narcissism, self-esteem, and direct and displaced aggression: Does self-love or self-hate lead to violence? *Journal of personality and social psychology*, 75(1), 219. Retrieved on February 28, 2021 from: <https://psycnet.apa.org/fulltext/1998-04530-016.html>.
- Butt, A. (2016). PEACEBRIEF210: Nationalistic narratives in Pakistani textbooks. Retrieved January 18, 2022, from: <http://www.usip.org/sites/default/files/PB210-Nationalistic-Narratives-inPakistani-Textbooks.pdf>.

- Butz, N. T., Stupnisky, R. H., Pekrun, R., (2015). Students' emotions for achievement and technology use in synchronous hybrid graduate programmes: A control-value approach. *Research in Learning Technology*, 23, 1–16. Retrieved on February 28, 2021 from: <https://journal.alt.ac.uk/index.php/rlt/article/view/1626>.
- Cacioppo, J. T., Hawkley, L. C. (2009). Perceived Social Isolation and Cognition. *Trends Cognitive Science*, 13(10), 447–454. Retrieved on August 10, 2021, from: <https://www.sciencedirect.com/science/article/pii/S1364661309001478?via%3Dihub>.
- Cambridge English Dictionary (2023). Meanings and Definitions. Retrieved on February 06, 2023 from: <https://dictionary.cambridge.org/dictionary/english/>.
- Canagarajah, A. (1999). Resisting linguistic imperialism in English language teaching. Oxford, Oxford University Press. Retrieved on May 12, 2019 from: <https://www.scirp.org/reference/ReferencesPapers.aspx?ReferenceID=913962>.
- CAPE Sri Lanka, (2016) Linked Document 6 SECTOR ASSESSMENT: EDUCATION. Retrieved on May 19, 2019 from: <https://www.adb.org/sites/default/files/linked-documents/6-SRI-Sector-Assessment-Education.pdf>.
- Cantle T. (2012). *Interculturalism: The New Era of Cohesion and Diversity*. Springer. Retrieved on May 19, 2019 from: [https://www.google.co.uk/books/edition/Interculturalism The New Era of Cohesion/GSUhAQAAQBAJ?hl=en&gbpv=1&pg=PP1&printsec=frontcover](https://www.google.co.uk/books/edition/Interculturalism%20The%20New%20Era%20of%20Cohesion/GSUhAQAAQBAJ?hl=en&gbpv=1&pg=PP1&printsec=frontcover).
- Carini, M. R., Kuh, G. D., and Klein, S. P. (2006). Student Engagement and Student Learning: Testing the Linkages. *Research in Higher Education*, 47, 1-32. 10.1007/s11162-005-8150-9. Retrieved on March 02, 2020 from: https://www.researchgate.net/publication/225669802_Student_Engagement_and_Student_Learning_Testing_the_Linkages.
- Cassell, E. J. (2002). Compassion. In C. R. Snyder and S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 434-445). New York, Oxford University Press.
- Castelli, F. R., and Sarvary M. A. (2021). Why students do not turn on their video cameras during online classes and an equitable and inclusive plan to encourage them to do so. *Ecology and Evolution* published by John Wiley & Sons Ltd. Retrieved on February 17, 2021 from: <https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.7123>.

- Cavaleri, M., Kawaguchi, S., Di Biase, B. and Power, C. (2019). How recorded audio-visual feedback can improve academic language support. *Journal of University Teaching and Learning Practice*, 16(4), 1-19. 10.53761/1.16.4.6. Retrieved on March 02, 2020 from: https://www.researchgate.net/publication/335993399_How_recorded_audio-visual_feedback_can_improve_academic_language_support.
- Chhetri, C. (2020, October). " I Lost Track of Things" Student Experiences of Remote Learning in the COVID-19 Pandemic. In *Proceedings of the 21st annual conference on information technology education* (pp. 314-319). Retrieved on March 02, 2023 from: https://dl.acm.org/doi/abs/10.1145/3368308.3415413?casa_token=6EmRhTVxstMAAAAA:n2TWzKrv_OZr43m_j8cMuhx142oyvZKHeYyVYsEaCah4YLG8mJsBx-IIs2EZSRVNg1awW-EvUAnY.
- Chickering, A. W. (2010). A retrospect on higher education's commitment to moral and civic education. *Journal of College and Character*. 11(3), 1-6.
- Churchill, E. F. & Snowdon, D. (1998). Collaborative virtual environments: An introductory review of issues and systems. *Virtual Reality*, 3(1), 3-15. December 14, 2021 from: <https://doi.org/10.1007/BF01409793>.
- Clark, C. (1997). *Misery and company: Sympathy in everyday life*. Chicago. The University of Chicago Press.
- Colonnello, V., Petrocchi, N. and Heinrichs, M. (2017), The psychobiological foundation of prosocial relationships: the role of oxytocin in daily social exchanges, in Gilbert, P. (Ed.), *Compassion: Concepts, Research and Applications*. Routledge, Oxon. Retrieved December 14, 2021 from: <https://www.taylorfrancis.com/chapters/edit/10.4324/9781315564296-6/psychobiological-foundation-prosocial-relationships-valentina-colonnello-nicola-petrocchi-markus-heinrichs?context=ubx>.
- Cohen, L., Manion, L. and Morrison, K. (2007). *Research methods in education*. (5th ed.). London, Routledge.
- Cohen D, Crabtree B. (2006). Qualitative Research Guidelines Project. Retrieved on January 6, 2020, from: <http://www.qualres.org/HomeMaxi-3803.html>.
- Compassionate Mind Foundation, (2005). Retrieved December 14, 2019 from: <http://www.compassionatemind.co.uk>.
- Condon, p., Desbordes, G., and Miller, W.B., (2013). Meditation Increases Compassionate Responses to Suffering. PubMed. <https://doi.org/10.1177/0956797613485603> Retrieved August 04 2019 from: <https://journals.sagepub.com/doi/10.1177/0956797613485603>.

-
- Coperahewa, C. (2009). The Language Planning Situation in Sri Lanka. In *Current Issues in Language Planning*, 10(01), (pp. 69-150). London, Routledge.
- Corrégé, J. B., and Michinov, N. (2021). Group size and peer learning: Peer discussions in different group size influence learning in a biology exercise performed on a tablet with stylus. In *Frontiers in Education* (p. 458). Frontiers. Retrieved November 12, 2022 from: <https://www.frontiersin.org/articles/10.3389/feduc.2021.733663/full>.
- Cosley, B., McCoy, S., Saslow, L., and Epel, E. (2010). Is compassion for others stress buffering? Consequences of compassion and social support for physiological reactivity to stress. *Journal of Experimental Social Psychology*, 46, 816-823.
- Costa J., Marôco J., Pinto-Gouveia J., Ferreira C., Castilho P. (2015). Validation of the psychometric properties of the Self-Compassion Scale: Testing the factorial validity and factorial invariance of the measure among borderline personality disorder, anxiety disorder, eating disorder and general populations. *Clinical Psychology and Psychotherapy*, 23, 460-468. Retrieved June 16, 2022, from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/cpp.1974>.
- Cozolino, L. (2013). The Social Neuroscience of Education: Optimizing Attachment and Learning in the Classroom. *The Norton Series on the Social Neuroscience of Education*. WW Norton & Company.
- Crocker, J., and Canevello, A. (2008). Creating and undermining social support in communal relationships: The role of compassionate and self-image goals. *Journal of Personality and Social Psychology*, 95(3), 555-575. Retrieved June 16, 2022, from: <https://psycnet.apa.org/fulltext/2008-11108-005.html>.
- Crocker, J., and Canevello, A. (2012). Consequences of self-image and compassionate goals. *Advances in experimental social psychology* (45), 229-277. Academic Press. Retrieved June 19, 2022, from: <https://freebeacon.com/wp-content/uploads/2015/07/advances-2012.pdf#page=237>.
- Csernica, J., Hanyka, M., Hyde, D., Shooter, S., Toole, M., and Vigeant, M. (2002). Practical guide to teamwork, version 1.1. College of Engineering, Bucknell University.
- Cunningham, D. J. (1992). Beyond educational psychology: Steps toward an educational semiotic. *Educational Psychology Review*, 4(2), 165-194.
- Curşeu, P. L., Janssen, S. E. A., and Raab, J. (2011). Connecting the dots: social network structure, conflict, and group cognitive complexity. *Higher Education*, 63(5), 621-629.

- Dahanayake, D., Rajapakse, H., Wickramasinghe, A., Chandradasa, M., Rohanachandra, Y., Perera, S., ... and Molodynski, A. (2022). Psychological wellbeing and mental health amongst medical undergraduates: A descriptive study assessing more than 1,000 medical students in Sri Lanka. *International Journal of Social Psychiatry*, 68(6), 1263-1269. Retrieved on February 17, 2023 from: https://journals.sagepub.com/doi/pdf/10.1177/00207640211027211?casa_token=2IgpWwxwWU0AAAAA:N0llHRtrSeDjVF78KI1Vzm0Ee62VhKDoz8DzwC7jRV6PtXcRRQFpEglbl PNEVQrm4oppKzoPuVT.
- Daily Mirror, (2019, August 08). Swords, knives returned to mosques. Retrieved on September 17, 2019 from: <file:///C:/Users/vijit/OneDrive/Documents/2022.09.15%20PhD/Literature/To%20be%20Included%20in%20Thesis/Daily%20Mirror%20-%20Sri%20Lanka%20Latest%20Breaking%20News%20and%20Headlines%20-%20Print%20Edition%20Swords,%20knives%20returned%20to%20mosques.pdf>.
- Daily Mirror, (2019, August 03). Two members of banned JMI arrested. Retrieved on August 05, 2019 from: http://www.dailymirror.lk/top_story/Two-members-of-banned-JMI-arrested/155-172288.
- Dalai Lama (1995). *The power of compassion*. London, Thorsons.
- Dale, J. (2014). Teaching languages with technology: tools that help students become fluent. Retrieved on January 12, 2020 from: <https://www.theguardian.com/teacher-network/2014/may/13/modern-foreign-languages-technology-tools-students-fluent>.
- Dal Monte, O., Fan, S., Fagan, N. A., Chu, C. C. J., Zhou, M. B., Putnam, P. T., Nair, A. R. and Chang, S. W. (2022). Widespread implementations of interactive social gaze neurons in the primate prefrontal-amygdala networks. *Neuron*. 110(13). 2183–2197. Retrieved on August 5, 2022 from: <https://www.sciencedirect.com/science/article/pii/S0896627322003580>.
- Davis, B. G. (1993). *Tools for Teaching*. Jossey-Bass Inc., San Francisco: California.
- Darwin, C.R. (1872). *The Expression of the Emotions in Man and Animals*. London, John Murray.
- Davidson, R., and Harrington, A., (2012). Visions of Compassion: Western Scientists and Tibetan Buddhists Examine *Human Nature*. Oxford Scholarship Online: March 2012, DOI:10.1093/acprof:oso/9780195130430.001.0001. Retrieved January 2022, from: <https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780195130430.001.0001/acprof-9780195130430>.

-
- Davies, W.M., (2009). Group work as a form of assessment: common problems and recommended solutions, *The International Journal of Higher Education and Educational Planning*, 58, 563, 584.
- Davis, C., Greenaway, R., Moore, M., and Cooper, L. (2019). Online teaching in social work education: Understanding the challenges. *Australian Social Work*, 72(1), 34–46. Retrieved on August 05, 2021 from: <https://doi.org/10.1080/0312407X.2018.1524918>.
- Decuyper, S., Dochy, F., and Van den Bossche, P., (2010). Grasping the dynamic complexity of team learning: an integrative model for effective team learning in organisations, *Educational Research Review*, 5(2), 111-133.
- Department of Examination, Sri Lanka, (2019). Statistics. Retrieved on September 4, 2019 from: <https://doenets.lk/statistics>.
- Department for International Trade, (2017) Education Opportunities in South-East Asia and Sri Lanka. December 2017. Retrieved on May 19, 2019 from: <https://www.bettshow.com/media/Educationbrochure.pdf>.
- Depue, R. A. and Morrone-Strupinsky, J. V. (2005). A Neurobehavioural model of affiliative bonding. *Behavioural and Brain Sciences*, 28, 313-395.
- Dillenbourg, P. and Schneider, D. (1995). Collaborative Learning and the Internet. Proceedings of the International Conference on Computer Assisted Instruction (ICCAI) (pp. S-10-6 - S-10-13). Hsinchu: Taiwan, 7-10. Retrieved on May 19, 2019 from: https://www.researchgate.net/publication/2336975_Collaborative_Learning_and_the_Internet.
- Duhigg, C. (2016). What Google learned from its quest to build the perfect team. The New York Times Magazine. Retrieved on April 14, 2019 from: <http://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-itsquest-to-build-the-perfect-team>.
- Dukes, S. (1984). Phenomenological methodology in the human sciences. *Journal of Religion and Health*, 23(3), 197–203. Retrieved on May 1, 2019 from: <https://link.springer.com/article/10.1007/BF00990785>.
- Duncan, L., Coatsworth, J., and Greenberg, M. (2009). A model of mindful parenting: Implications for parent–child relationships and prevention research. *Clinical Child and Family Psychology Review*, 12(3), 255-270.

- Dundar, H., Millot, B., Riboud, M., Shojo, M., Aturupane, H., Goyal, S., and Raju, D. (2017). Sri Lanka Education Sector Assessment: Achievements, Challenges, and Policy Options. *Directions in Development—Human Development*, Washington, DC, World Bank. Retrieved on May 20, 2019 from: <https://openknowledge.worldbank.org/handle/10986/27042>.
- Dunleavy, J., Willms, J. D., Milton, P., and Friesen, S. (2012). The relationship between student engagement and academic outcomes. What did you do in school today. Research Series Report Number One. Toronto, *Canadian Education Association*. Retrieved on March 02, 2023 from: <https://www.edcan.ca/wp-content/uploads/cea-2012-wdydist-report-3.pdf>.
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (1991). *Management Research: An Introduction*. London: Sage Publications.
- Egan, H., O'Hara, M., Cook, A., and Mantzios, M., (2022). Mindfulness, self-compassion, resiliency, and wellbeing in higher education: a recipe to increase academic performance, *Journal of Further and Higher Education*, 46(3), 301-311, DOI: 10.1080/0309877X.2021.1912306. Retrieved on June 15, 2022, from: <https://pubmed.ncbi.nlm.nih.gov/32406392/>.
- Ehret, A., Joorman, J., and Berking, M. (2014). Examining risk and resilience factors for depression: The role of self-criticism and self-compassion. *Journal of Cognition and Emotion*, 29, 1496-1504.
- Eisenberg, N. (2006, October). Empathy-related responding and prosocial behaviour. In *Empathy and Fairness: Novartis Foundation Symposium 278* (pp. 71-88). Chichester, UK: John Wiley & Sons, Ltd. Retrieved on June 12, 2020, from: https://d1wqtxts1xzle7.cloudfront.net/79193473/A_social_interaction_analysis_of_empathy20220120-6668-11dfl11.pdf?1642712490=&response-content-disposition=inline%3B+filename%3DA_social_interaction_analysis_of_empathy.pdf&Expires=1689874274&Signature=HFDIDFY5R0Q~eRHEikmuNQGMyLopw5m3qPiAFK-CULsFIYamZPLZVeFcvRKSbV4YwugMwtiPCxZB8CkF9Hz6f016-egTFImvm12cmy2Q90SjdB3HflAlp4SU1GsTCATFNr~fk9HlMn0~VP2pMn1nQrYRX7677LiGGsFvJc2OxYd2WcVjyHK~xSniHYtl0wpl4jAky~d2XY99ZdrU2zvNK8HEtCjXxKi53IsX6LyD0Ksy1jDNqMgifiIuKTfHUSoBPIDcHsRVc2CdCEz2eG3uM9zmzCd7T0iUZqlyB-nBg6aJLmlvBUJa6kNigcNO3IrYiyNKJ96dYU161D1LkB8A &Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA#page=80.
- Ekman, P. (2003). *Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life* (1st ed.). Times Books, ISBN 0-8050-7516-X.
- Eldor, L., and Shoshani, A. (2016). Caring relationships in school staff: Exploring the link between compassion and teacher work engagement. *Teaching and Teacher Education*, 59, 126-136.

- Erickson, F. (1992). Ethnographic microanalysis of interaction. The handbook of qualitative research in education, (pp. 201-225).
- Eriksson, P., and Kovalainen, A. (2008). *Ethnographic research*. SAGE Publications Ltd. Retrieved on January 15, 2020, from: <https://doi.org/10.4135/9780857028044>.
- Estrada, M., Monferrer, D., Rodríguez, A., and Moliner, M. Á. (2021). Does emotional intelligence influence academic performance? The role of compassion and engagement in education for sustainable development. *Sustainability*, 13(4), 1721. Retrieved on June 15, 2022, from: <https://www.mdpi.com/2071-1050/13/4/1721>.
- Ewing, L. A., and Cooper, H. B. (2021). Technology-enabled remote learning during COVID-19: perspectives of Australian teachers, students, and parents. *Technology, pedagogy, and education*, 30(1), 41-57. Retrieved on June 15, 2022, from: <https://www.tandfonline.com/doi/epdf/10.1080/1475939X.2020.1868562?needAccess=true&role=button>.
- Fernando, M. and Kadirgamar, S. (2010). Education in Sri Lanka: A casualty of nationalism. Retrieved on January 15, 2020 from: <https://www.himalmag.com/a-casualty-of-nationalism/>.
- Ferri, F., Grifoni, P., and Guzzo, T. (2020). Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. *Societies*, 10(4), 86. Retrieved on January 15, 2023 from: <https://doi.org/10.3390/soc10040086>.
- Finn, J. D. (1993). *School Engagement & Students at Risk*. Washington DC: National Center for Education Statistics.
- Fung, Y. Y. H. (2004). Collaborative online learning: interaction patterns and limiting factors, *Open Learning. The Journal of Open, Distance and e-Learning*, 19(2), 135-149, DOI: [10.1080/0268051042000224743](https://doi.org/10.1080/0268051042000224743). Retrieved on January 15, 2023 from: https://www.tandfonline.com/doi/full/10.1080/0268051042000224743?casa_token=yfs6FuzLtWAAAAAA%3AR76BB6YuN84Lk4mqAyZhA7k2XnmojsG0vLd43zadUcO7rPZQv7QEk_vrkI9LXhgmhNWAEIE-orRS.
- Garcez P. M. (1997) Microethnography. In: Hornberger N. H., Corson D. (Eds.), *Encyclopedia of Language and Education*, 8. Springer, Dordrecht. Retrieved on June 15, 2019 from: https://doi.org/10.1007/978-94-011-4535-0_18.
- Greenfield, S., (2010). Neuroscience of consciousness. Retrieved on September 08, 2020 from: https://www.youtube.com/watch?v=WN5Fs6_O2mY&ab_channel=ANUTV.
- Gardner, J. S. (2008). Simultaneous Media Usage: Effects on attention. Unpublished doctoral dissertation, Virginia Tech. Blacksburg, VA.

- Galton, M. and Williamson, J. (1992). *Group work in the primary classroom*. London. Routledge.
- Galton, M. J., Hargreaves, L., and Pell, T. (2009). Group work and whole-class teaching with 11–14-years-old compared. *Cambridge Journal of Education*, 39, 119–147. doi: 10.1080/03057640802701994.
- Garland E, Gaylord S, Park J. (2009). The role of mindfulness in positive reappraisal. *Explore New York*. 2009 Jan-Feb;5(1):37-44. doi: 10.1016/j.explore.2008.10.001. PMID: 19114262; PMCID: PMC2719560. Retrieved on June 15, 2019 from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2719560/>.
- Garrison, D. R., Anderson, T., and Archer, W., (1999). Critical inquiry in a text-based environment: computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87-105, 10.1016/S1096-7516(00)00016-6.
- Gasevic, D., Zouaq, A., and Janzen, R., (2013). Choose your classmates, your GPA is at stake: the association of cross-class social ties and academic performance. *American Behavioral Scientist*, 57, 1460-1479, 10.1177/0002764213479362.
- Gelles, L. A., Lord, S. M., Hoople, G. D., Chen, D. A., and Mejia, J. A. (2020). Compassionate Flexibility and Self-Discipline: Student Adaptation to Emergency Remote Teaching in an Integrated Engineering Energy Course during COVID-19. *Education Sciences*, 10(11), 304. Retrieved on June 14, 2022, from: <https://doi.org/10.3390/educsci10110304>
- George L. K., Blazer D. G., Hughes D.C., Fowler N. (1989). Social Support and the Outcome of Major Depression. *The British Journal of Psychiatry*, 154(4), 478 – 485. Retrieved on January 06, 2020 from: <https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry/article/abs/social-support-and-the-outcome-of-major-depression/245F0927D49686C39CFAA444FC91CE0F>.
- Gherhes, V., and Para, S. S. I, (2021). Analysing Students' Reasons for Keeping Their Webcams on or off during Online Classes. Retrieved January 05, 2022 from: https://www.researchgate.net/publication/350091697_Analysing_Students%27_Reasons_for_Keeping_Their_Webcams_on_or_off_during_Online_Classes.
- Gherheș, V., Stoian, C. E., Fărcașiu, M. A., and Stanici, M. (2021). E-Learning vs. Face-To-Face Learning: Analyzing Students' Preferences and Behaviors. *Sustainability*, 13, 4381. https://pdfs.semanticscholar.org/2948/d853d384c92d3f3de9b8b41f9ff5a20ecf74.pdf?_ga=2.190885610.1921795052.1648634848-36397666.1648634848.
- Gibbs, P. (2017). Coda. In Gibbs, P. (Ed.), *The Pedagogy of Compassion at the Heart of Higher Education* (pp. 229-233). Cham, Switzerland, Springer.

-
- Gill, S. K., and Ursuleanu, A. (2017). Compassion and the student Experience. In Gibbs, P. (Ed.), *The Pedagogy of Compassion at the Heart of Higher Education* (pp. 225-228). Cham, Switzerland, Springer.
- Gillies, R. M. (2003). The behaviours, interactions, and perceptions of junior high school students during small-group learning. *Journal of Educational Psychology*, 95, 137–147. doi: 10.1037/0022-0663.95.1.137.
- Gillies, R. M., and Boyle, M. (2011). Teachers' reflections on cooperative learning (CL): a two-year follow-up. *Teacher Education*, 1, 63–78. doi: 10.1080/10476210.2010.538045.
- Glaser, A. (2005). *A call to compassion*. Berwick, Maine: Nicolas-Hays.
- Gilbert, P. (2005). Compassion and cruelty: A biopsychosocial approach. In Gilbert, P. (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 9 - 74). New York, Routledge.
- Gilbert, P. (2016). *Human nature and suffering*. Routledge.
- Gilbert, P. (2017). Compassion: Definitions and controversies. In P. Gilbert (Ed.), *Compassion: Concepts, research, and applications* (pp. 3–15). Routledge/Taylor & Francis Group. Retrieved on June 18, 2019 from: <https://doi.org/10.4324/9781315564296-1>.
- Gilbert, P. (2019). Explorations into the nature and function of compassion. *Current Opinion in Psychology*, 28, 108-114, ISSN 2352-250X, <https://doi.org/10.1016/j.copsyc.2018.12.002>. Retrieved December 16, 2021, from: <https://www.sciencedirect.com/science/article/pii/S2352250X18301222>.
- Gilbert P, and Choden, (2013). *Mindful compassion*. London: Constable & Robinson.
- Gilbert, P., Broomhead, C., Irons, C., McEwan, K., Bellew, R., Mills, A., Gale, C. and Knibb, R. (2007). Development of a striving to avoid inferiority scale. *British Journal of Social Psychology*, 46, 633–648.
- Gilbert, P., Catarino, F., Duarte, C. et al. (2017). The Development of Compassionate Engagement and Action Scales for Self and Others. *Journal of Compassionate Health Care*, 4, 4 doi:10.1186/s40639-017-0033-3. Retrieved on November 25, 2019 from: <https://jcompassionatehc.biomedcentral.com/track/pdf/10.1186/s40639-017-0033-3>.
- Gilbert, P., McEwan, K., Bellew, R., Mills, A., and Gale, C. (2009). The dark side of competition: How competitive behaviour and striving to avoid inferiority are

- linked to depression, anxiety, stress, and self-harm. *Psychology and Psychotherapy: Theory, Research and Practice*, 82(2), 123-136. doi:10.1348/147608308X379806.
- Gilbert, P., McEwan, K., Irons, C., Bhundia, R., Christie, R., Broomhead, C. and Rockliff, H. (2010), Self-harm in a mixed clinical population: The roles of self-criticism, shame, and social rank. *British Journal of Clinical Psychology*, 49, 563-576. Retrieved on June 12, 2019 from: <https://doi.org/10.1348/014466509X479771>.
- Gilbert, P., and Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy*, 13(6), 353-379. doi:10.1002/cpp.507. Retrieved on June 20, 2019 from: <https://doi.org/10.1002/cpp.507>.
- Gilbert, T (2012) Enhancing Inclusivity in the Higher Education Discussion Group: Strategies for Employability, Internationalisation and Assessment in a UK University. In Thornton M. and Wankede G. (Eds.), *Widening participation and social cohesion amongst diverse, disadvantaged and minority groups in higher education* (pp. 81-92). Mumbai, Tata Institute of Social Sciences. Retrieved December 16, 2021, from: https://www.researchgate.net/publication/283665372_Gilbert_T_2012_Enhancing_Inclusivity_in_the_Higher_Education_Discussion_Group_Strategies_for_Employability_Internationalisation_and_Assessment_in_a_UK_University_In_M_Thornton_G_Wankede_Eds_Widening_p.
- Gilbert, T. (2015). Using the psychological concept of compassion to inform pedagogic strategies for higher education seminars. Retrieved December 16, 2021, from: <https://uhra.herts.ac.uk/handle/2299/16366>.
- Gilbert, T. (2016). Assess compassion in Higher Education? Why and how would we do that? *LINK an online journal*, 2(1). Retrieved on July 12, 2019 from: <https://www.herts.ac.uk/link/volume-2,-issue-1>.
- Gilbert, T. (2017). When Looking is Allowed: What Compassionate Group Work Looks Like in a UK University. In Gibbs, P. (Ed.), *The Pedagogy of Compassion at the Heart of Higher Education* (pp. 189-202). Cham, Switzerland, Springer.
- Gilbert, T. (2018). Compassion in Education, Embedding and Assessing Compassion in the University Curriculum. Retrieved on December 09, 2018 from: <https://compassioninhe.wordpress.com/>.
- Gilbert, T. Doolan, N., Martina, Beka, S., Spencer, N., Crotta, M., and Davari, S. (2018). Compassion on university degree programmes at a UK university: The neuroscience of effective group work. *Journal of Research in Innovative Teaching and Learning*, 11(1), 4-21. doi:10.1108/JRIT-09-2017-0020. Retrieved on December 17, 2019 from: <https://www.emerald.com/insight/content/doi/10.1108/JRIT-09-2017-0020/full/pdf>.

-
- Gill, S. K., and Ursuleanu, A., (2017). Compassion and the Student Experience. In Gibbs, P., (Ed.), *The Pedagogy of Compassion at the Heart of Higher Education* (pp. 225-228). Cham, Switzerland, Springer.
- Gillath, O., Shaver P. R., and Mikulincer, M. (2005). An attachment-theoretical approach to compassion and altruism. In Gilbert, P. (Ed.), *Compassion: Conceptualisations, Research and use in Psychotherapy*. (pp. 121-147). New York, Routledge. Retrieved on February 15, 2019 from: https://www.researchgate.net/profile/Omri-Gillath/publication/287255588_Attachment_and_Caregiving/links/5c40a5a3458515a4c72d302a/Attachment-and-Caregiving.pdf.
- Gillett-Swan, J. (2017). The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design*, 10(1), 20-30. Retrieved on February 15, 2019 from: <https://eprints.qut.edu.au/102750/>.
- Gkonou, C. and Mercer, S., (2017). Understanding emotional and social intelligence among English language teachers. *ELT Research Papers*. London. British Council 2017. Retrieved on November 07, 2019 from: https://englishagenda.britishcouncil.org/sites/default/files/attachments/g211_eltra_gkonou_and_mercer_paper_final_web.pdf.
- Glaser, B., and Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Mill Valley, CA: Sociology Press.
- Godin, M. (2020, May 08). Irish Donors Are Helping a Native American Tribe Face the Coronavirus Crisis. Here's the Historical Reason Why. *Time*. Retrieved on November 08, 2021 from: <https://time.com/5833592/native-american-irish-famine/>
- Goetz, J. L., Keltner, D. and Simon-Thomas, E. (2010). Compassion: An evolutionary analysis and empirical review. *Psychological Bulletin*, 136(3), pp. 351– 374.
- Goldingay, S., and Land, C. (2014). Emotion: The “e” in engagement in online distance education in social work. *Journal of Open, Flexible, and Distance Learning*, 18(1), 58–72. Retrieved September 30, 2022 from: <https://www.learntechlib.org/p/148548/>.
- Goleman, D., Boyatzis, R. and McKee, A. (2002). *Primal Leadership: Realizing the Importance of Emotional Intelligence*. Harvard Business School Press: Boston.
- Gorden, L. J. (1987). The Cognitive Antecedents of Procrastination among Secondary Students. Doctoral Dissertation, University of British Columbia, Vancouver, BC, Canada.
- Gorczyński, P. (2018). More academics and students have mental health problems than ever before. *The National Student*. Retrieved on January 06, 2020 from: <https://theconversation.com/more-academics-and-students-have-mental->

[health-problems-than-ever-before-90339?utm_source=twitter&utm_medium=twitterbutton.](https://doi.org/10.1080/01435120010309425)

- Granström, K. (2006). Group phenomena and classroom management in Sweden. In Evertson, C.M. and Weinstein, C.S. *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 1141–1160). Mahwah, NJ: Lawrence Erlbaum.
- Griffith University, (2017) Living Well: Learning area: Introduction to self-compassion focused work with men who have been sexually abused: A guide for practitioners (livingwell.org.au). Retrieved on January 25, 2023 from: <https://learn.livingwell.org.au/course/view.php?id=18>.
- Gunasingam, M. (1999). *Sri Lankan Tamil nationalism: A Study of its Origins*. Sydney: MV Publications. p. 246. ISBN 0646381067.
- Haigh, M. J. (2002). Internationalisation of the curriculum: Designing inclusive education for a small world. *Journal of Geography in Higher Education*, 26(1), 46-66.
- Hammar Chiriac, E. (2011). Research on group work in education. In Nata R. (Ed.), *Emerging issues in compulsory education, Progress in education* (pp. 25–44). New York, Nova Science.
- Hammar Chiriac, E., and Granström, K. (2012). Teachers' leadership and students' experience of group work. *Teachers and Teaching*, 18(3), 345-363. Retrieved on January 07, 2020 from: <https://www.tandfonline.com.ezproxy.herts.ac.uk/doi/full/10.1080/13540602.2012.629842>.
- Hammersley, M. (2018). What is ethnography? Can it survive? Should it? *Ethnography and Education*, 13(1), 1-17, DOI: 10.1080/17457823.2017. Retrieved on January 27, 2020 from: <https://www.researchgate.net/publication/314857926> What is ethnography Can it survive Should it.
- Hammersley, M. (2015). Ethnography. The Blackwell Encyclopedia of Sociology. doi:10.1002/9781405165518.wbeose070.pub2. Retrieved on January 07, 2020 from: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781405165518.wbeose070.pub2>.
- Hannabuss, S. (2000). Being There: Ethnographic Research and Autobiography. *Library Management*, 21(2), 99-107. Retrieved on January 05, 2020 from: <https://doi.org/10.1108/01435120010309425>.
- Hardiman, P. T., Pollatsek, A., and Well, A. D. (1986). Learning to Understand the Balance Beam. *Cognition and Instruction*, 3(1), 63–86. Retrieved on September 18, 2020 from: <http://www.jstor.org/stable/3233605>.

-
- Harrison, N. and Peacock, N. (2010). Cultural distance, mindfulness, and passive xenophobia: Using Integrated Threat Theory to explore home higher education students' perspectives on 'internationalisation at home.' *British Educational Research Journal*, 36(6), 877-902.
- Hart, S. and Hodson, V. K. (2004). *The Compassionate Classroom: Relationship Based Teaching and Learning*. Independent publisher group. ISBN-13: 978-1892005069.
- Harvey, C., Maratos, F.A, Montague, J, Gale, M., Clarke, K and Gilbert, T. (2020) Embedding Compassionate Micro Skills of Communication in Higher Education: implementation with psychology undergraduates. *Psychology of Education Review*, 44 (2), 68-72.
- Hawkley, L. C., and Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, 40(2), 218-227. Retrieved on September 12, 2020 from: <https://academic.oup.com/abm/article/40/2/218/4569527>.
- Hayes, D. (2010). 'Education is all about opportunities, isn't It?': A biographical perspective on learning and teaching English in Sri Lanka. *Harvard Educational Review*, 80(4), 517-541.
- Hellawell, D. (2006). Inside-out: analysis of the insider-outsider concept as a heuristic device to develop reflexivity in students doing qualitative research. *Teaching in Higher Education*, 11(4), 483-494, DOI: 10.1080/13562510600874292. Retrieved on January 07, 2020 from: <https://www.tandfonline.com/doi/abs/10.1080/13562510600874292>.
- Hermanto, N. and Zuroff, D. C. (2016) The Social Mentality Theory of Self-compassion and Self-reassurance: The interactive effect of care-seeking and caregiving. *The Journal of Social Psychology*, 156(5), 523-535. Retrieved on January 07, 2020 from: <https://www.tandfonline.com/doi/abs/10.1080/00224545.2015.1135779>.
- Hermanto, N., Zuroff, D. C., Kopala-Sibley, D. C., Kelly, A. C., Matos, M., Gilbert, P., and Koestner, R. (2016). Ability to receive compassion from others buffers the depressogenic effect of self-criticism: A cross-cultural multi-study analysis. *Personality and Individual differences*, 98, 324-332. Retrieved on January 07, 2020 from: <https://www.sciencedirect.com/science/article/abs/pii/S0191886916303154>.
- Hickey, D. and Zuiker, S. (2005). Engaged Participation: A Sociocultural Model of Motivation With Implications for Educational Assessment. *Educational Assessment*, 10, 277-305. 10.1207/s15326977ea1003_7. Retrieved on January 07, 2020 from: https://www.researchgate.net/publication/235548255_Engaged_Participation_A_Sociocultural_Model_of_Motivation_With_Implications_for_Educational_Assessment.

-
- Hombres, J., Rienties, B., Grave, W., Bos, G., Schuwirth, L., and Scherpbier, A. (2012). Visualising the invisible, A network approach to reveal the informal social side of student learning. *Advances in Health Sciences Education*, 17(5), 743, 757.
- Hope, N., R. Koestner, and M. Milyavskaya. (2014). The Role of Self-compassion in Goal Pursuit and Well-being among University Freshmen. *Self and Identity*, 13, 579–593. Retrieved on June 14, 2022, from: <https://www.tandfonline.com/doi/full/10.1080/15298868.2014.889032>.
- Horvát, E. Á., and Uzzi, B. (2022). Virtual collaboration hinders a key component of creativity. *Nature*. Retrieved on June 14, 2022, from: <https://www.nature.com/articles/d41586-022-00126-2>.
- Hrastinski, S. (2009). A theory of online learning as online participation. *Computers & Education*, 52, 78-82. <https://doi.org/10.1016/j.compedu.2008.06.009>.
- Immordino-Yang, M. H. & Damasio, A. (2007). We feel, therefore we learn: The relevance of affective and social neuroscience to education. *Mind, Brain, and Education*, 1(1), 115- 131.
- Immordino-Yang, M. H., McColl, A., Damasio, H. & Damasio, A. (2009). Neural correlates of admiration and compassion. *Proceedings of the National Academy of Sciences, USA*, 106 (19), 8021–8026. Retrieved December 10, 2019, from <http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pmcentrez&artid>.
- Internationalist Communist Forum, (2006) Sri Lanka - the poisoned legacy of British colonial rule. Retrieved on July 31, 2019 from: <https://www.union-communiste.org/de/2006-12/77-sri-lanka-the-poisoned-legacy-of-british-colonial-rule-2156>.
- Ironson, G., Kremer, H., & Lucette, A. (2018). Compassionate love predicts long-term survival among people living with HIV followed for up to 17 years. *The Journal of Positive Psychology*, 13(6), 553-562.
- Jaldemark, J., Lindberg, O., and Olofsson, A. D. (2005). Sharing the distance or a distance shared: Social and individual aspects of participation in ICT-supported distance-based teacher education. In *ICT in teacher education: Challenging prospects* (pp. 142–160). Jönköping. Jönköping University Press. Retrieved on March 02, 2020 from: <http://urn.kb.se/resolve?urn=urn:nbn:se:miun:diva-2581>.
- Jayapalan, A. (2015). The Sri Lankan National Left, Imperialism, and the Tamil National Question. Retrieved on July 31, 2019 from: https://www.researchgate.net/publication/281937022_The_Sri_Lankan_National_Left_Imperialism_and_the_Tamil_National_Question.
- Jayasundara, J.M.P.V.K., Gilbert, T., Kersten, S., and Meng, L. (2022). How UK HE STEM Students Were Motivated to Switch Their Cameras on: A Study of the Development

-
- of Compassionate Communications in Task-focused Online Group Meetings. *Education Sciences*, 12, 317. Retrieved on May17, 2022 from: <https://doi.org/10.3390/educsci12050317>.
- Jayasundara, J.M.P.V.K. Premarathna, C.D.H.M., and Sivagurunathan, S.G. (2013). The Most Prominent Sources of Errors in ESL Learners' Interlanguage. Proceedings of the 6th Research Conference of The Royal Asiatic Society of Sri Lanka, March 28-30, 2013. P. 75.
- Jayasundara J.M.P.V.K. and Premarathna C.D.H.M. (2011). A Linguistic Analysis on Errors Committed in English by Undergraduates. *International Journal of Scientific and Research Publications*. 1. Retrieved on April 12, 2019 from: http://www.ijsrp.org/research_paper_dec2011/paper05.html.
- Jayathilake, C., Hettiarachchi, S., and Pereira, S. S. (2021). 'EMI Is a War'—Lecturers' Practices of, and Insights Into English Medium Instruction Within the Context of Sri Lankan Higher Education. *Journal of Language Teaching and Research*, 12(6), 864-874. Retrieved on December 02, 2021 from: <https://jltr.academypublication.com/index.php/jltr/article/view/1815/1481>.
- Jensen, K.B., Petrovic, R., Kerr, C.E., Kirsch, I., Raicek, J., Cheetham, A., Spaeth, R., Cook, A., Gollub, R. L., Kong, J. and Kaptchuk, T.J. (2013), Sharing pain and relief: neural correlates of physicians during treatment of patients. *Molecular Psychiatry*, 19(3), 392-398.
- Jinpa T. A. (2015). *Fearless heart. Why compassion is the key to greater well-being*. London, Little Brown.
- Johnson, D. W., Johnson, R. T., and Smith, K. A. (1998). Cooperative learning returns to college what evidence is there that it works? *Change: the magazine of higher learning*, 30(4), 26-35. Retrieved on July 08, 2020 from: <https://www.tandfonline.com/loi/vchn20>.
- Johnson, D. W., and Johnson, R. T. (1999). *Learning Together and Alone: Cooperative, Competitive, and Individualistic Learning* (5th ed.). Boston, MA, Allyn, and Bacon.
- Johnson, D.W. and Johnson, R.T. (2009). An educational psychology success story. Social interdependence theory and cooperative learning. *Educational Researcher*, 38(5), 365-379.
- Kandiah, T. (1984). Kaduva: Power and the English language weapon in Sri Lanka. In Thome P.C. and Halpe A. (Eds.), *Honouring EFC Ludowyk* (pp. 117-154). Dehiwala, Tisara Prakashakayo.
- Karunaratne, I. M. (2009). *Teaching of English*. New Delhi, A.P.H. Publishing Corporation.

- Katchen, J. E. (1992). Using the video camera to improve speaking and performance skills. In 8th Conference on English Language Teaching and Learning in The republic of China, 531-540. Retrieved January 06, 2022 from: <http://mx.nthu.edu.tw/~katchen/professional/Using%20the%20video%20camera.htm>.
- Keltner, D. (2012). The Evolutionary Roots of Compassion - Dacher Keltner (Greater Good Science Center). Retrieved January 06, 2022 from: <https://www.youtube.com/watch?v=3qrShIMtYJU>.
- Kemeny, M. E., Foltz, C., Cavanagh, J. F., Cullen, M., Giese-Davis, J., Jennings, P., ... and Ekman, P. (2012). Contemplative/emotion training reduces negative emotional behavior and promotes prosocial responses. *Emotion*, 12(2), 338. Retrieved January 12, 2022 from: <https://psycnet.apa.org/record/2011-28769-001>.
- Kemmis S. and McTaggart, R. (1982 and 1992). *The Action Research Planner*. Geelong, Victoria, Deakin University Press.
- Khalil, R., Mansour, A. E., Fadda, W. A. ... Al-Wutayd, O. (2020). The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: a qualitative study exploring medical students' perspectives. *BMC Medical Education*, 20, 285. Retrieved January 06, 2022 from: <https://doi.org/10.1186/s12909-020-02208-z>.
- Kiesler, S., Siegel, J., and McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist*, 39(10), 1123-1134. Retrieved on December 20, 2021 from: <https://doi.org/10.1037/0003-066X.39.10.1123>.
- Kim, A. Y., Sinatra, G. M. and Seyranian, V. (2018). Developing a STEM identity among young women: A social identity perspective. *Review of Educational Research*, 88(4), 589-625.
- Kim, J. (2013). Influence of group size on students' participation in online discussion forums. *Computers & Education*, 62, 123-129. Retrieved on June 14, 2022, from: <https://doi.org/10.1016/j.compedu.2012.10.025>.
- Kim, J., Kwon, Y., and Cho, D. (2011). Investigating factors that influence social presence and learning outcomes in distance higher education. *Computers & Education*, 57(2), 1512-1520. Retrieved on June 14, 2022, from: <https://doi.org/10.1016/j.compedu.2011.02.005>.
- Kim, J. J., Cunnington, R. and Kirby, J. N. (2020). The neurophysiological basis of compassion: An fMRI meta-analysis of compassion and its related neural processes. *Neuroscience & Biobehavioral Reviews*, 108, 112-123.
- King, A. and Eckersley, R. (2019). *Statistics for Biomedical Engineers and Scientists*. Elsevier Science & Technology.

-
- King, N. (1998). Template analysis. In Symon G .and Cassell C. (Eds.), *Qualitative Methods and Analysis in Organizational Research* (pp. 118-135). London, Sage.
- King N. (2004). Doing Template Analysis. In Cassell, C., and Symon, G. (Eds.), *Essential Guide to Qualitative Methods in Organizational Research: Core Methods and Current Challenges* (pp. 426-451). London, Sage.
- King, N., and Horrocks, C. (2010). An introduction to Interview Data Analysis. In *Interviews in qualitative research* (pp. 142–174).
- Kingston, E. (2008). Emotional competence and dropout rates in higher education. *Education and Training, 50*(2), 128-139.
- Kirby, J. N., Tellegen, C. L., Steindl, S. R., (2017). A Meta-Analysis of Compassion-Based Interventions: Current State of Knowledge and Future Directions. *Behavior Therapy, 48*, 778–792. ScienceDirect. Retrieved on February 14, 2020, from: <https://self-compassion.org/wp-content/uploads/2022/02/Kirby-et-al-2017.pdf>.
- Kirschner, P.A., Sweller, J., Clark, R.E. (2006). Why Minimal Guidance during Instruction Does not Work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychology, 41*, 75–86.
- Klimecki, O. M. (2019). The Role of Empathy and Compassion in Conflict Resolution. *Emotion Review, 11*(4), 310–325. Retrieved on February 14, 2022, from: <https://doi.org/10.1177/1754073919838609>.
- Klimecki, O. M., Leiberg, S., Lamm, C., Singer, T. (2013). Functional Neural Plasticity and Associated Changes in Positive Affect After Compassion Training. *Cerebral Cortex, 23*(7), 1552–1561. Retrieved on February 14, 2022, from: <https://doi.org/10.1093/cercor/bhs142>.
- Klimecki, O. M., Leiberg, S., Ricard, M., and Singer, T. (2014). Differential pattern of functional brain plasticity after compassion and empathy training. *Social cognitive and affective neuroscience, 9*(6). 873-879. Retrieved on February 14, 2020, from: <https://academic.oup.com/scan/article/9/6/873/1669505?login=true>.
- Klimecki, O. M., and Singer, T. (2017). The Compassionate Brain. In Doty, J.R. Worline, M. Simon-Thomas, E. Cameron D., and Brown., S. *The Oxford Handbook of Compassion Science* (pp. 109-120). Oxford, Oxford University Press Retrieved November 19, 2022, from: https://www.unige.ch/fapse/e3lab/files/8215/4072/9893/Klimecki_2017_BC.pdf.

-
- Knipe, D., Metcalfe, C., and Gunnell, D., (2015). WHO suicide statistics – a cautionary tale. *Ceylon Medical Journal*, 60(1), 35.
- Koh, M. H., and Hill, J. R. (2009). Student Perceptions of Groupwork in an Online Course: Benefits and Challenges. *International Journal of E-Learning & Distance Education*, 23(2), 69-92. Retrieved September 30, 2022 from: <https://www.ijede.ca/index.php/jde/article/view/477>.
- Kozar, O. (2015). Perceptions of webcam use by experienced online teachers and learners: A seeming disconnect between research and practice. *Computer Assisted Language Learning*, 29(4), 779–789. Retrieved September 26, 2022 from: <https://www.tandfonline.com/doi/full/10.1080/09588221.2015.1061021>.
- Kuh, G. and Hu, S. (2001) The Effects of Student Faculty Interaction in the 1990s. *Review of Higher Education*, 24, 309-332. <https://doi.org/10.1353/rhe.2001.0005>.
- Kurebayashi, L. F. S., Prado, J. M., and Silva, M. J. P. (2012). Correlations between stress and anxiety levels in nursing students. *Journal of Nursing Education and Practice*, 2 (3), 128-134.
- Kukk, C. L. (2017). *The compassionate achiever: How helping others fuels success*. HarperCollins.
- Kuruppuarachchi, K. A. J. M., Somerathna, S., Madurapperuma, B. D., and Talagala, I. M. M. (2012). Factors associated with psychological distress among B.Sc. undergraduates of the Open University of Sri Lanka. Annual Academic Session, 2012, Open University of Sri Lanka. Retrieved on February 11, 2019 from: http://digital.lib.ou.ac.lk/docs/bitstream/701300122/541/1/OU5161_000.pdf.
- Kuyken W, Ball S, Crane C, et al. (2022). Effectiveness of universal school-based mindfulness training compared with normal school provision on teacher mental health and school climate: results of the MYRIAD cluster randomised controlled trial. *BMJ Mental Health*. 25(3), 125-134. Retrieved on February 11, 2023 from: <https://mentalhealth.bmj.com/content/25/3/125>.
- Laerd. Statistics (2018). Wilcoxon Signed Rank Test in SPSS Statistics - procedure, output and interpretation of output using a relevant example. (laerd.com). Retrieved on January 12, 2021 from : <https://statistics.laerd.com/spss-tutorials/wilcoxon-signed-rank-test-using-spss-statistics.php#procedure>.
- Lama, D. (1995). *The Power of Compassion*. India, HarperCollins.
- Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham, F. D. (2013). To Belong Is to Matter: Sense of Belonging Enhances Meaning in Life. *Personality and Social Psychology Bulletin*, 39(11), 1418–1427. Retrieved on October 11, 2019 from: <https://doi.org/10.1177/0146167213499186>.

- Leary, M. R., Tate, E. B., Adams, C. E., Batts, A. A., and Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology*, 92, 887–904. doi:10.1037/0022-3514.92.5.887.
- Leask, B. (2005). Internationalisation of the curriculum: teaching and learning. In Carroll, J. and Ryan, J. (Eds.), *Teaching international students: Enhancing learning for all students* (pp. 119-129). London: Routledge Falmer.
- Leiberg, S., Klimecki, O., and Singer, T. (2011). Short-term compassion training increases prosocial behavior in a newly developed prosocial game. *PLoS One*, 6(3), e17798. doi:10.1371/journal.pone.0017798. Retrieved September 09, 2019 from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0017798>.
- Lefebvre, J. I., Montani, F., Courcy, F., & Dagenais-Desmarais, V. (2021). Self-compassion at work: A key for enhancing well-being and innovation through social safeness at multiple levels. *Canadian Journal of Administrative Sciences*, 38(4), 398-413. Retrieved on January 11, 2023 from: https://onlinelibrary.wiley.com/doi/epdf/10.1002/cjas.1599?saml_referrer.
- Lemay, D. J., Bazalais, P., and Doleck, T. (2021). Transition to online learning during the COVID-19 pandemic. *Computers in human behavior reports*, 4, 100130. Retrieved on January 11, 2022 from: <https://www.sciencedirect.com/science/article/pii/S2451958821000786>.
- Leung, H. T. T., Bruce, H., and Korszun, A. (2021). To see or not to see: Should medical educators require students to turn on cameras in online teaching. *Medical Teacher*, 43(9), 1099. Retrieved January 06, 2022, from: https://cfrps.unistra.fr/fileadmin/uploads/websites/cfrps/Analyse_d_articles/2021_juin_ML.pdf.
- Lewin, K. (1946). Action Research and Minority Problems. *Social Issues*, 2(4), 34-46. Retrieved on July 25, 2019 from: <https://doi.org/10.1111/j.1540-4560.1946.tb02295.x>.
- Li, N., Romera Rodriguez, G., Xu, Y., Bhatt, P., Nguyen, H. A., Serpi, A., ... and Carroll, J. M. (2022). Picturing One's Self: Camera Use in Zoom Classes during the COVID-19 Pandemic. In Proceedings of the Ninth ACM Conference on Learning@ Scale (pp. 151-162). Retrieved on June 21, 2019 from: https://dl.acm.org/doi/abs/10.1145/3491140.3528284?casa_token=52HJ9cFbqDMAAAAA:2ef43FtQiccjillGCVBZTAEtL7-1K ANW3Itjh6fpqORsZr1OI-Ks2SPo8PJMkCPyabr-txv9lKx.
- Lin, C. G. S., Tan, K. Y., and Müller, A. M. (2021). Exploring students' experience with and perceptions towards elearning in an online public health module. *ASCILITE-2021-Proceedings-Goh-Tan-Muller*. Retrieved on September 12, 2022 from:

<https://2021conference.ascilite.org/wp-content/uploads/2021/11/ASCILITE-2021-Proceedings-Goh-Tan-Muller.pdf>.

- Little, A. W., and Green, A. (2009). Successful globalisation, education and sustainable development. *International Journal of Educational Development*, 29(2), 166–174.
- Little, A. W., and Hettige, S. T. (2013). *Globalisation, employment and education in Sri Lanka: Opportunity and division*. London, Routledge.
- Little, A.W., Shojo, M., Sonnadara, U., and Aturupane, H. (2018): Teaching English as a second language in Sri Lankan primary schools: opportunity and pedagogy, Language, Culture and Curriculum. Retrieved on July 01, 2019 from: <https://doi.org/10.1080/07908318.2018.1532437>.
[https://www.researchgate.net/publication/328194946 Teaching English as a second language in Sri Lankan primary schools opportunity and pedagogy](https://www.researchgate.net/publication/328194946_Teaching_English_as_a_second_language_in_Sri_Lankan_primary_schools_opportunity_and_pedagogy).
- Lonczak, H. (2020, September 1) 20 reason why compassion is so important in psychology. In Positive Psychology. Retrieved on October 10, 2022 from: <https://positivepsychology.com/why-is-compassion-important/>.
- Lopes A.R., and Nihei O.K. (2021) Depression, anxiety and stress symptoms in Brazilian university students during the COVID-19 pandemic: Predictors and association with life satisfaction, psychological well-being and coping strategies. *PLoS ONE* 16(10): e0258493. Retrieved on October 10, 2022 from: <https://doi.org/10.1371/journal.pone.0258493>.
- López A., Sanderman R., Schroevers M. J. (2016). Mindfulness and self-compassion as unique and common predictors of affect in the general population. *Mindfulness*, 7, 1289–1296. Retrieved on June 10, 2022 from: <https://link.springer.com/article/10.1007/s12671-016-0568-y>.
- Ludvik, M. B., (2017). Learning About Consequences, Community, Creativity and Courage: Cultivating Compassion in Higher Education Leadership. In Gibbs, P., (Ed.), *The Pedagogy of Compassion at the Heart of Higher Education* (pp. 155-170). Cham, Switzerland. Springer nature.
- Lundberg, C. A., and Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis by student race/ethnicity. *Journal of College student development*, 45(5), 549-565. Retrieved on March 02, 2022 from: <https://muse.jhu.edu/article/173984>.
- Lutz, C. A., and White, G. M. (1986). The Anthropology of Emotions. *Annual Review of Anthropology*.
- MacBeth, A., and Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review*, 32(6), 545-552. doi: 10.1016/j.cpr.2012.06.003.

- Maginess, T., and MacKenzie, A. (2018). Achieving Moralised Compassion in Higher Education. *Journal of Perspectives in Applied Academic Practice*, 6(3), 42-48. Retrieved on March 02, 2022 from: <https://web.p.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=20519788&AN=137371645&h=RySd9Ur8gaovX%2fCL6ZzInBQhM3ByS7eJOy0HhVhEK2FEEdWHgnpob0ikTMdoYDyWwuqJ%2fM47jekAHLK6PMqdHA%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNoAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d20519788%26AN%3d137371645>.
- Mahyoob, M. (2020). Challenges of e-Learning during the COVID-19 Pandemic Experienced by EFL Learners. *Arab World English Journal (AWEJ)*, 11(4), 351-362. Retrieved on April 02, 2022 from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3652757.
- Manpreet, K., and Maheshwari, S. K. (2015). Depression, anxiety and stress among postgraduate nursing students. *International Journal of Therapeutic Applications*, 21, 12-18.
- Mantzios, M., H. Egan, A. Cook, J. Jutley-Neilson, and M. O'Hara. (2020). Wellbeing and the NSS: the potential of mindfulness and self-compassion for an enhanced student experience. *Journal of Further and Higher Education*, 44 (3), 300-310. Retrieved on June 14, 2022, from: <https://pubmed.ncbi.nlm.nih.gov/32406392/>.
- Maratos, F. A., Gilbert, P., Gilbert, T. (2019). Improving Well-Being in Higher Education: Adopting Compassionate Approach. In Gibbs, P., Jameson, J., Elwick, A., (Eds.), *Values of the University in a Time of Uncertainty* (pp 261-278). Cham, Springer. doi: 10.1007/978-3-030-15970-2.
- Marshall, C., and Rossman, G. B. (1995). Data collection methods. *Designing Qualitative Research*. California: SAGE.
- Marturano, A., Wood, M. and Gosling, J. (2010). Towards a linguistic analysis of leadership, Centre for Leadership Studies, University of Exeter, Exeter. Retrieved on March 01, 2020 from: www.academia.edu.
- Mascaro, J. S., Rilling, J. K., Negi, L. T., Raison, C. L., (2013). Compassion meditation enhances empathic accuracy and related neural activity. *Social Cognitive and Affective Neuroscience*, 8(1), 48-55, <https://doi.org/10.1093/scan/nss095>. Retrieved August 04, 2019 from: <https://academic.oup.com/scan/article/8/1/48/1697140>.
- Mathieu, J.E., Heffner, T.S., Goodwin, G.F., and Salas, E., (2000). Cannon-Bowers JA, The influence of shared mental models on team processes and performance. *Journal of Applied Psychology*, 85(2), 273-282, 10.1037/0021-9010.85.2.273.

- Maunder, R. E., Cunliffe, M., Galvin, J., Mjali, S., and Rogers, J. (2013). Listening to student voices: student researchers exploring undergraduate experiences of university transition. *Higher Education*, 66(2), 139-152.
- McAllister, C. (2013). A process evaluation of an online BSW program: Getting the student perspective. *Journal of Teaching in Social Work*, 33(4-5), 514-530. Retrieved September 30, 2022 from: <https://doi.org/10.1080/08841233.2013.838200>.
- McBrien, J. L., Jones, P., and Cheng, R. (2019). Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. *International Review of Research in Open and Distance Learning*, 10(3), 1-17. <https://doi.org/10.19173/irrodl.v10i3.605>.
- McCombes, S. (2019). *An introduction to sampling methods*. Scribbr. Revised on October 2, 2020. Retrieved on January 05, 2020 from: <https://www.scribbr.com/methodology/sampling-methods/>.
- McDermott, R. P., Gospodinoff, K., and Aron, J. (1978). Criteria for an ethnographically adequate description of concerted activities and their contexts. *Semiotica*, 24(3-4), 245-276.
- McNiff, J., and Whitehead, J. (2002). *Action Research in organisations*. London: Routledge.
- Medawattegedera, V.V. (2015). Kaduwa or Manne? Issues and Tensions Related to Bilingual Education Policy in Sri Lanka. *OUSL Journal*, 8, 39-50. Retrieved on August 08, 2019 from: <https://ouslj.sljol.info/articles/abstract/10.4038/ouslj.v8i0.7317/>.
- Meehan, F., et al. (2014). Compassion at work toolkit. Retrieved on August 08, 2019 from: <https://www.alliancembs.manchester.ac.uk/media/ambs/content-assets/documents/health-and-wellbeing-forum/compassion-at-work-toolkit.pdf>.
- Mercer, J. (2007). The challenges of insider research in educational institutions: Wielding a double-edged sword and resolving delicate dilemmas. *Oxford Review of Education*, 33(1), 1-17.
- Mikulincer, M., Shaver, P. R., Gillath, O., and Nitzberg, R. A. (2005). Attachment, Caregiving, and Altruism: Boosting Attachment Security Increases Compassion and Helping. *Journal of Personality and Social Psychology*, 89(5), 817-839. Retrieved on February 15, 2019 from: <https://doi.org/10.1037/0022-3514.89.5.817>.
- Mikulincer, M., and Shaver, P. R. (2017). Adult attachment and compassion: Normative and individual difference components. *The Oxford handbook of compassion science*, (pp. 120-133). Retrieved on February 15, 2019 from: https://books.google.co.uk/books?hl=en&lr=&id=xMQ2DwAAQBAJ&oi=fnd&pg=PA79&dq=Mikulincer+and+Shaver,+2017&ots=UIujWwo2jj&sig=I2D_eFrZ_d_FM

[VID3a7-hDv7WoQ#v=onepage&q=Mikulincer%20and%20Shaver%2C%202017&f=false.](#)

- Mills, A., Gilbert, P., Bellew, R., McEwan, K., & Gale, C. (2007). Paranoid beliefs and self-criticism in students. *Clinical Psychology & Psychotherapy*, 14(5), 358-364. Retrieved on October 12, 2021 from: https://onlinelibrary.wiley.com/doi/epdf/10.1002/cpp.537?saml_referrer.
- Mills J., & Chapman, M. (2016). Compassion and self-compassion in medicine: Self-care for the caregiver. *Australasian Medical Journal*, 9(5), 87-91.
- Mindfulness and Clinical Psychology Solutions, (2019). Retrieved on October 20, 2019 from: <https://mi-psych.com.au/your-brains-3-emotion-regulation-systems/>.
- Ministry of Education (July, 2021). Annual Performance Report – 2020. Retrieved on October 20, 2019 from: <https://moe.gov.lk/wp-content/uploads/2022/10/Annual-Report-2020-English.pdf>.
- Mittelmeier, J., Héliot, Y., Rienties, B., and Whitelock, D., (2016). Using Social Network Analysis to predict online contributions: The impact of network diversity in cross-cultural collaboration. Paper presented at the Web Science 2016 conference, Hannover, Germany.
- Mitra, S., Dangwal, R., (2017). Acquisition of computer literacy skills through self-organizing systems of learning among children in Bhutan and India. *Prospects (Paris)*, 47(3).
- Mitra, S. (2018). New Systems for Children’s Learning: Changes Required in Education. In Handbook of Research on Educational Design and Cloud Computing in Modern Classroom Settings. *IGI Global* (pp. 22–33). Hershey, PA, USA.
- Moreno, R. (2004). Decreasing cognitive load in novice students: Effects of explanatory versus corrective feedback in discovery-based multimedia. *Instructional Science*, 32, 99–113.
- Muhria, L., Supriatna, N., & Nurfirdaus, N. (2023). Students' Challenges of Blended Learning Model in Higher Education. *Journal Corner of Education, Linguistics, and Literature*, 2(3), 223-233. Retrieved on March 05, 2023 from: <http://journal.jcopublishing.com/index.php/jcell/article/view/123/113>.
- Munasinghe, L., and Jayawardena, P. (1999). Continuous quality improvement in higher education: A model for Sri Lanka. *Quality in Higher Education*, 5(1), 69-79. doi:10.1080/1353832990050107.
- Muraleetharan, O. (2016, December 21). The Unseen Consequences of War: Responding to Sri Lanka’s Mental Health Burden. *The Yale Global Health Review*. Retrieved on

June 21, 2019 from: <https://yaleglobalhealthreview.com/2016/12/21/the-unseen-consequences-of-war-responding-to-sri-lankas-mental-health-burden/>.

Muris P., Petrocchi N. (2017). Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. *Clinical Psychology and Psychotherapy*, 24, 373–383. Retrieved on June 21, 2020 from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/cpp.2005>.

Narvaez, D. (2017). Evolution, child raising, and compassionate morality. In Gilber, P. (Ed.), *Compassion: Concepts, Research and Applications* (pp. 173-186). London. Routledge.

National Committee on Education, (2009). New Education Act for General Education in Sri Lanka. Context, issues and proposals. Final report. Sri Lanka: National Committee for Formulating A New Education Act for General Education.

Nawaz, A. M. M. (2016). Challenges Faced by Students in English Medium Undergraduate Classes: An Experience of A Young University in Sri Lanka. *Journal of Arts, Science and Commerce*, 7(4), 158–166. Retrieved on July 31, 2019 from: https://www.researchgate.net/publication/328627518_CHALLENGES_FACED_BY_STUDENTS_IN_ENGLISH_MEDIUM_UNDERGRADUATE_CLASSES_AN_EXPERIENCE_OF_A_YOUNG_UNIVERSITY_IN_SRI_LANKA_INTRODUCTION.

Neely, M. E., Schallert, D. L., Mohammed, S. S., Roberts, R. M., and Chen, Y. J. (2009). Self-kindness when facing stress: The role of self-compassion, goal regulation, and support in college students' well-being. *Motivation and Emotion*, 33(1), 88-97. Retrieved January 20, 2020, from: <https://link.springer.com/article/10.1007/s11031-008-9119-8#>.

Neff, K. D. (2003a). Self-compassion: An alternative conceptualization of a health attitude toward oneself. *Self and Identity*, 2(2), 85-102. Retrieved January 20, 2020, from: <https://www.tandfonline.com/doi/abs/10.1080/15298860309032>.

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223-250. Retrieved January 20, 2020, from: <https://www.tandfonline.com/doi/abs/10.1080/15298860309027>.

Neff, K. D., Hsieh, Y. P., and Dejitterat, K. (2005). Self-compassion, Achievement Goals, and Coping with Academic Failure. *Self and Identity*, 4(3), 263-287. doi:10.1080/13576500444000317.

Neff, K., Kirkpatrick, K., and Rude, S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality*, 41, 139-154.

Neff, K. D., and Dahm, K. A. (2015). Self-compassion: What it is, what it does, and how it relates to mindfulness. In B. D. Ostafin, M. D. Robinson, & B. P. Meier

- (Eds.), *Handbook of mindfulness and self-regulation* (pp. 121–137). Springer Science + Business Media. https://doi.org/10.1007/978-1-4939-2263-5_10
- Neff, K., and Germer, C. (2017). Self-compassion and psychological well-being. *The Oxford Handbook of Compassion Science. c, 21*, 371-390.
- Nesiah, K. (1945). *The mother tongue in education*. Colombo, The Ola Book Company.
- Newmann, F. M. (1992). *Student engagement and achievement in American secondary schools*. Teachers College Press, 1234 Amsterdam Avenue, New York, NY 10027. ISBN-0-8077-3182-X. Retrieved on March 02, 2021 from: <https://eric.ed.gov/?id=ED371047>.
- News First (2019, May 21) University student connected to April 21 bomber arrested. Retrieved on September 21, 2019 from: <https://www.newsfirst.lk/2019/05/21/university-student-connected-to-april-21-bomber-arrested/>.
- News First (May 21, 2019), News 1st: Prime Time Sinhala News, YouTube Video (00:17:00- 00:17:34). Retrieved on September 21, 2019 from: https://www.google.com/search?q=newsfirst+2019.05.21&sxsrf=AB5stBjdVH-Mf0XKdvKbg6wNFy_5v9j-Vg%3A1689694124897&ei=rK-2ZN6vNsS2hbIP9u6DWA&ved=0ahUKEwjtd-QyZiAAxVEW0EAHXb3AAsQ4dUDCA8&uact=5&oq=newsfirst+2019.05.21&gs_l=Egxn3Mtd2l6LXNlcnAiFG5ld3NmaXJzdCAyMDE5LjA1LjlxMgUQABiiBEiqG1D1DVjsEHABeACQAQCYAZkBoAGSAqoBAZluMbgBA8gBAPgBAcICBAAGKIEGLADwglHECMYsAIYJ-IDBBgBIEGIBgQBgE&sclient=gws-wiz-serp#fpstate=ive&vld=cid:29d4155f,vid:60weudKc1Mc
- Nilsen, A. G., Almås, A. G., and Krumsvik, R. J. (2013). Teaching online or on-campus? – What students say about desktop videoconferencing. *Nordic Journal of Digital Literacy, 8*(1–2), 90–106. Retrieved on June 14, 2022, from: <http://www.idunn.no/dk/2013/01-02/teaching-online-or-on-campus-what-students-say-about-des>.
- Noble, D., and Russell, A. C. (2013). Research on webbed connectivity in a web-based learning environment: Online social work education. *Journal of Teaching in Social Work, 33*(4–5), 496–513. Retrieved September 30, 2022 from: <https://doi.org/10.1080/08841233.2013.829167>.
- Norman, E. (2020). Should students show their faces on Zoom? 10x your teaching. Retrieved on June 14, 2022, from: <https://normaneng.org/should-students-show-their-faces-on-zoom/>.
- Nussbaum, M. C. (1996). Compassion: The basic social emotion. *Social Philosophy and Policy, 13*, 27-58. <http://people.whitman.edu/~frierspr/nussbaum%201996%20compassion.pdf>.

- Nyanaponika Thero (1994). The Four Sublime States: Contemplations on Love, Compassion, Sympathetic Joy and Equanimity Retrieved on November 18, 2019 from:
<https://www.accesstoinsight.org/lib/authors/nyanaponika/wheel006.html>.
- Office of the National Statistics (2017). Estimating suicide among higher education students, England and Wales: Experimental Statistics: 2017 to 2020. Retrieved September 08, 2022 from:
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/estimating-suicide-among-higher-education-students-england-and-wales-experimental-statistics/2017-to-2020>.
- Okech, D., Barner, J., Segoshi, M., and Carney, M. (2014). MSW student experiences in online vs. face-to-face teaching formats? *Social Work Education*, 33(1), 121–134. Retrieved September 30, 2022 from:
<https://doi.org/10.1080/02615479.2012.738661>.
- Page-Gould, E., Mendoza-Denton, R. and Tropp, L. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology*, 95(5), 1080-1094.
- Palacios, N., Rafique, R., Kwihangana, F., and Zhao, X. (2022). Online peer-led group reflective practice in higher education: a seminar-based project evaluation. *Reflective Practice*, 23(6), 1-14. Retrieved on January 10, 2023 from:
<https://www.tandfonline.com/doi/epub/10.1080/14623943.2022.2116567?nedAccess=true>.
- Papert, S., and Harel, I. (1991). Situating constructionism. *Constructionism*, 36, 1-11.
- Pardasani, M., Goldkind, L., Heyman, J. C., and Cross-Denny, B. (2012). How much does the distance in distance education matter? Our students speak. *Social Work Education*, 31(4), 406–421. Retrieved September 30, 2022 from:
<https://doi.org/10.1080/02615479.2011.573547>.
- Park, J. J., Long, P., Choe, N. H., and Schallert, D. L. (2018). The contribution of self-compassion and compassion to others to students' emotions and project commitment when experiencing conflict in group projects. *International Journal of Educational Research*, 88, 20-30.
- Park, W., Park, D., Ahn, B., Kang, S., Kim, H., and Kim, R., (2019). Interactive AI for Linguistic Education Built on VR Environment Using User Generated Contents. Published in 2019 21st International Conference on Advanced Communication Technology (ICACT). IEEE Xplore. Retrieved July 02, 2019 from
<https://ieeexplore.ieee.org/document/8701950>.
- Parsons, J. and Taylor, L. (2011). Improving Student Engagement. *Current Issues in Education*. 14(1), 1-34. Retrieved on March 02, 2021 from:

https://www.researchgate.net/publication/277031893_Improving_Student_Engagement.

- Patton, M. Q. (2001). *Qualitative Research and Evaluation Methods* (2nd Ed.). Thousand oaks, CA, Sage Publications.
- Pavlov, V., Smirnova, N. V., and Nuzhnaia, E. (2021). Beyond the Avatar: Using Video Cameras to Achieve Effective Collaboration in an Online Second Language Classroom. *Journal of University Teaching and Learning Practice*, 18(7), 228-241. Retrieved on September 22, 2022 from: <https://files.eric.ed.gov/fulltext/EJ1326199.pdf>.
- Perera, M. E. S. (2000). Role of attitudes in learning English in Sri Lanka: Has there been a change after Independence? In *Developments in Education. 25th Anniversary Volume*. Sri Lanka: The Faculty of Education University of Colombo.
- Perera, L., Wijetunge, S., and Balasooriya, A. S. (2004). Education reform and political violence in Sri Lanka. In S. Tawil and A. Harley (Eds.), *Education, conflict and social cohesion* (pp. 375–433). Geneva, UNESCO International Bureau of Education.
- Perera, K. and Canagarajah, S. (2010) Globalization of Language and Culture in Asia, Continuum, Editors: Viniti Vaish, pp.106-119. Retrieved on November 19, 2018 from: https://www.researchgate.net/publication/279931490_Globalization_and_English_Teaching_in_Sri_Lanka_Foreign_Resources_and_Local_Responses.
- Pérez-Navarro, A., García, V. and Conesa, J. (2021). Students' Behavior and Perceptions Regarding Complementary Videos for Introductory Physics Courses in an Online Environment. *Applied Sciences*, 11(523), 1-22. 10.3390/app11020523. Retrieved on October 21, 2022 from: https://www.researchgate.net/publication/348303843_Students'_Behavior_and_Perceptions_Regarding_Complementary_Videos_for_Introductory_Physics_Courses_in_an_Online_Environment.
- Pfattheicher, S., Sassenrath, C., and Schindler, S. (2016). Feelings for the suffering of others and the environment: Compassion fosters pro environmental tendencies. *Environment and behavior*, 48(7), 929-945.
- Phillips, W., and Ferguson, S. (2013). Self-compassion: A resource for positive aging. *The Journal of Gerontology*, 68(4), 529-539.
- Pitner, R. O., and Sakamoto, I. (2005). The Role of Critical Consciousness in Multicultural Practice: Examining How Its Strength Becomes its Limitation. *American Journal of Orthopsychiatry*, 75(4), 684–694. <https://doi.org/10.1037/0002-9432.75.4.684>. Retrieved on October 21, 2019 from: <https://psycnet.apa.org/fulltext/2005-13342-020.html>.

-
- Poorkavoos, M. (2016). *Compassionate Leadership: What is it and why do organizations need more of it?* Research Paper. Roffey Park Institute 2016. Poh Keong, P., Chee S. L., Ming, F. and Che, I. (2015) 'The relationship between mental health and academic achievement among university students–A literature review', in *Second International Conference on Global Trends in Academic Research*, Bandung, Global Illuminators.
- Poh Keong, P., Chee S. L., Ming, F. and Che, I. (2015) 'The relationship between mental health and academic achievement among university students–A literature review', in *Second International Conference on Global Trends in Academic Research*, Bandung, Global Illuminators.
- Preston, S. D. (2013). The origins of altruism in offspring care. *Psychological bulletin*, 139(6), 1305. Retrieved on January 12, 2020 from: <https://psycnet.apa.org/doiLanding?doi=10.1037%2Fa0031755>.
- Producers, L., Travis, E., and Pownall, M. (2022). "It's hard to feel a part of something when you've never met people": defining "learning community" in an online era. *Higher Education*, 1-16. Retrieved on January 16, 2023 from: <https://link.springer.com/article/10.1007/s10734-022-00886-w>.
- Punchi, L. (2001). Resistance towards the language of globalisation: The case of Sri Lanka. *International Review of Education*, 47(3/4), 361–378.
- Rabe, M. (2003). Revisiting 'insider' and 'outsider' as social researchers. A research note', *African Sociological Review*, 7 (2), 149–61.
- Radway, J. (1988). Reception study: Ethnography and the problems of dispersed audiences and nomadic subjects. *Cultural Studies*, 2(3), 359–376. Retrieved on October 21, 2019 from: <https://doi.org/10.1080/09502388800490231>.
- Rahmahani, D., Suyoto, Pranowo. (2020). The Effect of Gamified Student Response System on Students' Perception and Achievement. *International Journal of Engineering Pedagogy*, 10(2), 45-59.
- Rathnayake, P. (2013). Clearing impediments to the use of English by the undergraduates: A case study of the Faculty of Humanities and Social Sciences at the University of Ruhuna, Sri Lanka. *Procedia - Social and Behavioral Sciences*, 93, 70 – 76. Retrieved on March 31, 2020 from: [sciencedirectassets.com](https://www.sciencedirect.com).
- Rathnayake S., and Ekanayaka J., (2016). Depression, Anxiety and Stress among Undergraduate Nursing Students in a Public University in Sri Lanka. *International Journal of Caring Sciences*. 9(3), 1020. Retrieved on October 08, 2019 from: https://www.researchgate.net/publication/312017216_Depression_Anxiety_and_Stress_among_Undergraduate_Nursing_Students_in_a_Public_University_in_Sri_Lanka.

- Razeem, A. (2019). English Language Proficiency and Employability of University Students: A Sociological Study of Undergraduates at the Faculty of Arts and Culture, Southeastern University of Sri Lanka (SEUSL). *International Journal of English Linguistics*, 9 (2). ISSN 1923-869X E-ISSN 1923-8703 Published by Canadian Center of Science and Education. Retrieved on June 31, 2019 from: [https://www.researchgate.net/publication/331338098_English_Language_Proficiency_and_Employability_of_University_Students_A_Sociological_Study_of_Undergraduates_at_the_Faculty_of_Arts_and_Culture_South_Eastern_University_of_Sri_Lanka_SEUSL#pag:5:mrect:\(131.48,479.72,62.88,11.09\)](https://www.researchgate.net/publication/331338098_English_Language_Proficiency_and_Employability_of_University_Students_A_Sociological_Study_of_Undergraduates_at_the_Faculty_of_Arts_and_Culture_South_Eastern_University_of_Sri_Lanka_SEUSL#pag:5:mrect:(131.48,479.72,62.88,11.09)).
- Révész, A., Michel, M., and Lee, M. (2019). EXPLORING SECOND LANGUAGE WRITERS' PAUSING AND REVISION BEHAVIORS: A MIXED-METHODS STUDY. *Studies in Second Language Acquisition*, 41(3), 605-631. doi:10.1017/S027226311900024X. Retrieved on June 12, 2021 from: <https://www-cambridge-org.ezproxy.herts.ac.uk/core/journals/studies-in-second-language-acquisition/article/exploring-second-language-writers-pausing-and-revision-behaviors/A84135AD35874EDED50D8BD6D36B911>.
- Ricard, M. (2015). *Altruism. The power of compassion to change yourself and the world*. London: Atlantic Books.
- Rienties, B., Johan, N., and Jindal-Snape, D. (2015). Bridge building potential in cross-cultural learning: A mixed method study. *Asia Pacific Education Review*, 16(1), 37-48. doi: 10.1007/s12564-014-9352-7.
- Rizzolatti, G., Sinigaglia, C. (2016). The mirror mechanism: a basic principle of brain function. *Nature Review. Neuroscience*, 17, 757-765.
- Robinson, K., and Lee, J. R. (2011). *Out of our minds*. Tantor Media, Incorporated.
- Rock, D., and Cox, C. (2012). SCARF in 2012: Updating the social neuroscience of collaborating with others. *NeuroLeadership Journal*, 4, 1-16. Retrieved on November 10, 2019 from: https://www.saskatoonhealthregion.ca/about/PFMS/Documents/Change_Leadership_Module/SCARF%20Model%20-%20Updating%20the%20Social%20Neuroscience%20of%20Collaborating%20with%20Others.pdf.
- Role of English in skills development in South Asia (Report), (2014). Retrieved on November 20, 2019 from: <https://www.britishcouncil.lk/programmes/education/internationalising-higher-education/role-english-skills-development-south-asia#:~:text=Role%20of%20English%20in%20skills%20development%20in%20South,language%20learning%20programmes%20as%20part%20of%20skills%20development>.

- Roselli, N. D. (2016). Collaborative learning: Theoretical bases and strategies applicable in university education. *Purposes and Representations*, 4(1), pp. 219–280. <https://doi.org/10.20511/pyr2016.v4n1.90>.
- Sabaratnam, T. (2012). Sri Lankan Tamil Struggle – Chapter 18: The First Sinhalese- Tamil Rift. Lankai Tamil Sangam. Retrieved on August 01, 2019 from: https://www.sangam.org/2010/12/Tamil_Struggle_18.php.
- Sabelli, N. (2008). Constructionism: A New Opportunity for Elementary Science Education. DRL Division of Research on Learning in Formal and Informal Settings. 193–206.
- Samarakkody, M. (2001). Language Acquisition and Motivation among Learners of English for Professional and Administration Purposes: A Linguistic and Social Psychological Study.
- Sapolsky, R. M. (2017). *Behave: The biology of humans at our best and worst*. Penguin. Retrieved September 30, 2022 from: https://nonfiction.ru/media/fragments/biolodiya_dobra_i_zla.pdf.
- Saunders, M., Lewis, P., and Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Essex, Pearson Education.
- Sawrikar, P., Lenette, C., McDonald, D., and Fowler, J. (2015). Don't silence "the dinosaurs": Keeping caution alive with regard to social work distance education. *Journal of Teaching in Social Work*, 35(4), 343–364. Retrieved September 30, 2022 from: <https://doi.org/10.1080/08841233.2015.1068262>.
- Schunk, D. H. (1991). Self-Efficacy and Academic Motivation, *Educational Psychologist*, 26:3-4, pp. 207-231, DOI: 10.1080/00461520.1991.9653133. Retrieved March 06, 2022, from: <https://web-p-ebscohost-com.ezproxy.herts.ac.uk/ehost/pdfviewer/pdfviewer?vid=0&sid=9f5a4cd7-ef2f-4353-a11a-d32f23bf0d3b%40redis>.
- Schwenck, C. M., and Pryor, J. D. (2021). Student perspectives on camera usage to engage and connect in foundational education classes: It's time to turn your cameras on. *International Journal of Educational Research Open*, 2, 100079. Retrieved January 06, 2022, from: <https://www.sciencedirect.com/science/article/pii/S2666374021000492>.
- Schwartz, S.H. and Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, 32, 268-290.
- Seppala, E. Rossomando, T. and Doty, J. R., (2013). Social Connection and Compassion: Important Predictors of Health and Well-Being. *Social Research: An International Quarterly*. 80. 411-430. 10.1353/sor.2013.0027.

- Shapiro S. L., Carlson L. E., Astin J. A., Freedman B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, 62(3), 373–386. Retrieved on February 12, 2020 from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/jclp.20237>.
- Shapira, L. and Mongrain, M., (2010). The benefits of self-compassion and optimism exercises for individuals vulnerable to depression. *The Journal of Positive Psychology*. 5. 377-389. 10.1080/17439760.2010.516763. Retrieved on February 13, 2021 from: https://www.researchgate.net/publication/233219786_The_benefits_of_self-compassion_and_optimism_exercises_for_individuals_vulnerable_to_depression.
- Shoulders, C. W., Whitehead, I., and Morrison, C. C. (2018). Using Images to Engage Online and On-Campus Students in Meaningful Reflection. *North American Colleges and Teachers of Agriculture (NACTA) Journal*, 62(2), 181–188. <https://www.jstor.org/stable/90022554>.
- Singer, T., and Bolz, M. (2013). Compassion: Bridging practice and science. Max Planck Institute for Human Cognitive and Brain Sciences. Retrieved on August 20, 2021 from: <https://hdl.handle.net/21.11116/0000-0004-A284-F>.
- Singer, T. and Klimecki, O. (2014). Empathy and Compassion. *Current Biology*. 24. R875–R878. Retrieved on February 13, 2021 from: 10.1016/j.cub.2014.06.054. https://www.researchgate.net/publication/265909916_Empathy_and_Compassion.
- Sittarage, N. P. K. (2018). English Language Education in Sri Lanka Link with the Learners' Motivational Factors. *Humanizing Language Teaching*. August 2018 - Year 20 - Issue 4. Retrieved on August 20, 2019 from: <https://www.hltmag.co.uk/aug18/english-language-education-in-sri-lanka>.
- Skinner, B.F. (1938). *The Behavior of Organisms; Appleton-Century-Crofts*, New York NY, USA.
- Somasundaram, D., and Jamunanantha, C. (2002). Trauma, war, and violence: Public mental health in socio-cultural context (J. De Jong, Ed.). New York, Kluwer Academic/Plenum. Retrieved on March 27, 2020 from: <http://www.ebrary.com>.
- Spikins, P. (2015). *How compassion made us human: the evolutionary origins of tenderness, trust and morality*. Pen and Sword Ltd.
- Spikins, P. (2018). How Compassion Made Us Human: The origins of tenderness, trust and morality. Retrieved on February 21, 2022 from: https://www.researchgate.net/publication/326718360_How_Compassion_Made_Us_Human_The_origins_of_tenderness_trust_and_morality.
- Spunt, R. P., Falk, E. B., and Lieberman, M. D., (2010). Dissociable neural systems support retrieval of how and why action knowledge, *Psychological Science*, 21(11), 1593-

1598. Retrieved on March 27, 2020 from: <https://www.asc.upenn.edu/sites/default/files/2021-03/Dissociable%20neural%20systems%20support%20retrieval%20of%20A%20how%20and%20why%20action%20knowledge.pdf>.
- Stanford University, (2020). Cameras and Masks: Sustaining Emotional Connections with Your Students in an Age of COVID19 (Part 2 of 2): Tomorrow's Teaching and Learning. Retrieved on January 12, 2021 from: <https://tomprof.stanford.edu/posting/1814>.
- Steffens, N. K., Haslam, S. A., Kerschreiter, R., Schuh, S. C., and van Dick, R. (2014). Leaders Enhance Group Members' Work Engagement and Reduce Their Burnout by Crafting Social Identity. *German Journal of Human Resource Management*, 28(1-2), 173-194. Retrieved on November 06, 2019 from: <https://journals.sagepub.com/doi/10.1177/239700221402800110>.
- Strauss, A., and Corbin, J. (1994). Grounded Theory Methodology. In *Handbook of Qualitative Research* (pp. 273-285).
- Strong J. T., Anderson R. E. (1990). Free-riding in group projects: Control mechanisms and preliminary data. *Journal of Marketing Education*, 12(2), 61-67. Retrieved on March 03, 2020 from: <https://journals.sagepub.com/doi/10.1177/027347539001200208>.
- Subramanian, S. (2015) *This divided island: Stories from the Sri Lankan war*. London: Penguin Books Limited.
- Summers, M., and Volet, S. (2010). Group work does not necessarily equal collaborative learning: evidence from observations and self-reports. *European Journal of Psychology of Education*, 25(4), 473-492. Retrieved on December 23, 2021 from: <https://link.springer.com/article/10.1007/s10212-010-0026-5>.
- Tam, M. (2000). Constructivism, instructional design, and technology: Implications for transforming distance learning. *Educational Technology and Society*, 3(2), 50-60. Retrieved on November 06, 2021 from: <https://repository.eduhk.hk/en/publications/constructivism-instructional-design-and-technology-implications-f-2>.
- Tan, C. (2014). *Search inside yourself: the unexpected path to achieving success, happiness (and world peace)*. First HarperCollins paperback edition. New York, NY: HarperOne.
- The Gardian (2018, June 25). Male students in England and Wales more likely to kill themselves. Retrieved on June 05, 2019 from: <https://www.theguardian.com/education/2018/jun/25/male-students-in-england-and-wales-more-likely-to-kill-themselves>

- The Sunday Times, (2019, April 28). Easter Sunday massacres: Where do we go from here? Retrieved on May 12, 2020 from: <https://www.sundaytimes.lk/190428/columns/easter-sunday-massacres-where-do-we-go-from-here-347090.html>.
- The Times Higher Education (2018, July 6). Half of UK academics 'suffer stress-linked mental health problems'. Retrieved on October 02, 2019 from: <https://www.timeshighereducation.com/news/half-uk-academics-suffer-stress-linked-mental-health-problems>.
- The World Bank, (2009). The towers of learning performance, peril and promise of higher education in Sri Lanka. Colombo: The World Bank, Human Development Unit, South Asia Region.
- The World Bank, (2011). The Promotion of Social Cohesion Through Education in Sri Lanka. South Asia human development sector; discussion paper series no. 46. World Bank, Washington, DC, World Bank. Retrieved on October 12, 2019 from: <https://openknowledge.worldbank.org/handle/10986/18013> License: CC BY 3.0 IGO.
- Thomas, G., James, D. (2006). Re-inventing grounded theory: some questions about theory, ground and discovery. *British Educational Research Journal*. 32 (6), 767–795. doi:10.1080/01411920600989412.
- Thomas, L. (2020). How to use stratified sampling. Scribbr, published on September 18, 2020 and revised on October 12, 2020. Retrieved on January 06, 2020 from: <https://www.scribbr.com/methodology/stratified-sampling/>.
- Thompson, B. L., and Waltz, J. (2008). Self-compassion and PTSD symptom severity. *Journal of traumatic stress*, 21(6), 556–558. Retrieved on February 13, 2020 from: <https://doi.org/10.1002/jts.20374>.
- Thorley, C. (2017). Not By Degrees: Not by degrees: Improving student mental health in the UK's universities. *IPPR*: London, UK. Retrieved on January 02, 2020 from: <https://www.ippr.org/files/2017-09/not-by-degrees-summary-sept-2017.pdf>.
- Thurmond, V. A. (2001). The Point of Triangulation. *Clinical Scholarship*, 33(3), 253–258.
- Tobi, B., Osman, W. H., Bakar, A. L. A., and Othman, I. W. (2021). A Case Study on Students' Reasons for not Switching on Their Cameras During Online Class Sessions. *Learning*, 6(41), 216-224. Retrieved on February 13, 2023 from: https://www.researchgate.net/profile/Bernadette-Tobi/publication/354270028_A_Case_Study_On_Students'_Reasons_For_Not_Switching_On_Their_Cameras_During_Online_Class_Sessions/links/612f18dc0360302a006f79db/A-Case-Study-On-Students-Reasons-For-Not-Switching-On-Their-Cameras-During-Online-Class-Sessions.pdf.

- Trower, P., and Gilbert, P. (1989). New theoretical conceptions of social anxiety and social phobia. *Clinical Psychology Review*, 9(1), 19-35. Retrieved on January 08, 2020 from: <https://www.sciencedirect.com/science/article/abs/pii/0272735889900445>.
- Trueba, H. T., and Wright, P. G. (1981). On ethnographic studies and multicultural education. *Bilingual Research Journal: The Journal of the National Association for Bilingual Education (NABE Journal)*, 5(2), 29-56. Retrieved on January 05, 2020 from: <https://www.tandfonline.com/doi/abs/10.1080/08855072.1981.10668403>.
- Tuovinen, J.E., Sweller, J. (1999). A comparison of cognitive load associated with discovery learning and worked examples. *Journal of Educational Psychology*, 91, 334-341.
- Turner, Y. (2009). Knowing me, knowing you, Is there nothing we can do? Pedagogic Challenges in Using Group Work to Create an Intercultural Learning Space. *Journal of Studies in International Education*, 13(2), 240-255.
- Tzanelli, R. (2012). Domesticating the tourist gaze in Thessaloniki's Prigipos. *Ethnography*, 13(3), 278-305. Retrieved on January 05, 2020 from: <https://doi.org/10.1177/1466138111420619>.
- Umbach, P. and Wawrzynski, M. (2005). Faculty Do Matter: The Role of College Faculty in Student Learning and Engagement. *Research in Higher Education*, 46(2), 153-184. 10.1007/s11162-004-1598-1. Retrieved on January 05, 2020 from: https://www.researchgate.net/publication/226752079_Faculty_Do_Matter_The_Role_of_College_Faculty_in_Student_Learning_and_Engagement.
- Underwood, J. D. (2003). Student attitudes towards socially acceptable and unacceptable group working practices. *British Journal of Psychology*, 94(3), pp. 319-337. Retrieved on February 05, 2020 from: <https://bpspsychub-onlinelibrary-wiley-com.ezproxy.herts.ac.uk/doi/pdf/10.1348/000712603767876253>.
- University Grants Commission, (2018). University Admissions. Retrieved on January 08, 2021 from: https://www.ugc.ac.lk/downloads/statistics/stat_2017/Chapter%202.pdf.
- Uvnäs-Moberg, K., Handlin, L., and Petersson, M. (2015). Self-soothing behaviors with particular reference to oxytocin release induced by non-noxious sensory stimulation. *Frontiers in psychology*, 5, 1529.
- Van der Cingel, M. (2011). Compassion in care: A qualitative study of older people with a chronic disease and nurses. *Nursing ethics*, 18(5), 672-685. Retrieved on February 13, 2021 from: https://journals.sagepub.com/doi/pdf/10.1177/0969733011403556?casa_token=ZFvBu-

[xPJX8AAAAA:ONimCjsVTOfrHcHdOLleAvnhMH20HFngM7onFzsZUL2FKQmOLwvMwRVrD4jRJAOSF8G0W0oXmHVva](https://doi.org/10.1007/978-3-030-15970-2).

- Van der Ginkel, M. (2014). Compassion: The missing link in quality of care. *Nurse Education Today*, 34(9), 1253–1257.
- Vandeyar, S., and R. Swart. (2019). Shattering the Silence: Dialogic Engagement About Education Protest Actions in South African University Classrooms. *Teaching in Higher Education*, 24 (6), 772–788. Retrieved on June 15, 2022 from: <https://www.tandfonline.com/doi/10.1080/13562517.2018.1502170>.
- Vertegaal, R., and Ding, Y. (2002). Explaining effects of eye gaze on mediated group conversations: Amount or synchronization? Proceedings of the ACM Conference on Computer Supported Cooperative Work, 41–48.
- Vertegaal, R., Weevers, I., Sohn, C., and Cheung, C. (2003, April). Gaze-2: conveying eye contact in group video conferencing using eye-controlled camera direction. In Proceedings of the SIGCHI conference on Human factors in computing systems (pp. 521-528). Retrieved on February 13, 2020 from: <https://dl.acm.org/doi/abs/10.1145/642611.642702>.
- Vujovic, M. and Hernández-Leo, D. (2022). How Do Table Shape, Group Size, and Gender Affect On-Task Actions in Computer Education Open-Ended Tasks. *IEEE Transactions on Education*, (65)4, 533-543. Retrieved on February 12, 2023 from: <https://ieeexplore.ieee.org/abstract/document/9705218>.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher mental process*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Cambridge, MA, Harvard University Press.
- Vygotsky, L. S. (1987). *The Collected Works of L. S. Vygotsky (Vol. 1)*. In Rieber, R. W., Carton, A. S., (Eds.), New York, Plenum Press.
- Waddington, K. (2019). Understanding and Creating Compassionate Institutional Cultures and Practices. In Gibbs, P., Jameson, J., Elwick, A., (Eds.), *Values of the University in a Time of Uncertainty* (pp 241-260). Cham, Springer. doi: 10.1007/978-3-030-15970-2.
- Wang, Q., Huang, C., and Quek, C. L. (2018). Students' perspectives on the design and implementation of a blended synchronous learning environment. *Australasian Journal of Educational Technology*, 34(1). <https://doi.org/10.14742/ajet.3404>.
- Webb, N. M. and Palincsar, A. S. (1996). Group processes in the classroom. In Berliner, D. C. and Calfee, R. C. (Eds.), *Handbook of Educational Psychology* (pp. 841–873). New York, NY: Macmillan.

- Weng, H. Y., Fox, A. S., Shackman, A. J., Stodola, D. E., Caldwell, J. Z., Olson, M. C., ... and Davidson, R. J. (2014). Compassion training alters altruism and neural responses to suffering. *Psychological science*, 24(7), 1171-1180. Retrieved on February 13, 2020 from: <https://journals.sagepub.com/doi/pdf/10.1177/0956797612469537>.
- WHO (World Health Organization), (2021). COVID-19: Physical Distancing. COVID-19 Advice—Know the Facts—WHO Western Pacific. Retrieved on October 15, 2021 from: <http://www.who.int/westernpacific/emergencies/covid-19/information/physical-distancing>.
- Wickramasinghe, A., Essén, B., Surenthirakumaran, R., and Axemo, P. (2023). Prevalence of depression among students at a Sri Lankan University: A study using the Patient Health Questionnaire-9 (PHQ-9) during the COVID-19 pandemic. *BMC Public Health*, 23(1), 528. Retrieved on March 15, 2023 from: <https://link.springer.com/article/10.1186/s12889-023-15427-y>.
- Widyalankara, R. C. (2009). Kaduwa and the evolution of a theory. Golden Jubilee Commemoration Volume of University of Kelaniya. Research and Publication Committee, University of Kelaniya, Sri Lanka.
- Wills, S. (2022, May). Bristol's universities reveal number of student suicides since 2018 - special report, BristolWorld. Retrieved on October 15, 2021 from: <https://www.bristolworld.com/news/bristols-universities-reveal-number-of-student-suicides-since-2018-3710761>.
- Wilson, V. (2014). Research Methods: Triangulation Virginia. *Evidence Based Library and Information Practice*, 9(1), 74–75. Retrieved on October 18, 2021 from: <https://doi.org/10.1108/OIR-11-2011-0193>.
- Worline M. C., Dutton J. E. (2017). Awakening compassion at work: the quiet power that elevates people and organizations. New York City, NY: McGraw-Hill Education.
- Wuthnow, R. (1991). Acts of compassion: Caring for others and helping ourselves. Princeton, NJ, Princeton University Press.
- Yazdani, M., Rezaei, S., and Pahlavanzadeh, S. (2010). The effectiveness of stress management training program on depression, anxiety and stress of the nursing students. *Iranian journal of nursing and midwifery research*, 15(4), 208. Retrieved on October 17, 2020 from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3203278/>.
- Yalom, I. D. (1985). *The Theory and Practice of Group Psychotherapy* (3rd ed.). New York, Basic Books.
- Yalom, I. and Leszcz, M. (2005). *The theory and practice of group psychotherapy*. (5th ed.). New York: Basic Books.

-
- YouGov (2016, August). One in four students suffer from mental health problems. Retrieved on February 13, 2021 from: <https://yougov.co.uk/topics/society/articles-reports/2016/08/09/quarter-britains-students-are-afflicted-mental-hea>.
- Young, S. B., and Bruce, M. A. (2020). Student and faculty satisfaction: Can distance course delivery measure up to face-to-face courses? *Educational Research: Theory and Practice*, 31(3), 36–48.
- Zapata-Barrero, R. (2013). The three strands of intercultural polities: a comprehensive view. A critical review of Bouchard and Cante recent books on interculturalism. Retrieved on February 13, 2021 from: <http://hdl.handle.net/10230/20970>.
- Zessin, U., Dickhäuser, O., and Garbade, S. (2015). The Relationship Between Self-Compassion and Well-Being: A Meta-Analysis. *Applied psychology. Health and well-being*, 7(3), 340–364. Retrieved on February 13, 2021 from: <https://doi.org/10.1111/aphw.12051>.
- Zhao, L. X., Blankinship, B., Duan, Z., Huang, H., Sun, J., and Bak, T. H. (2020). Comparing face-to-face and online teaching of written and spoken Chinese to adult learners: An Edinburgh-Sheffield case study. *International Journal of Chinese Language Teaching*, 1(1), 83-98.
- Zimmerman, B. J., Bandura, A., and Martinez-Pons, M. (1992). Self-Motivation for Academic Attainment: The Role of Self-Efficacy Beliefs and Personal Goal Setting. *American Educational Research Journal*, 29(3), pp. 663–676. <https://doi.org/10.3102/00028312029003663>.
- Zuber-Skerritt, O. (2005). A model of values and actions for personal knowledge management. *Journal of Workplace Learning*, 17(1/2), 49–64.

APPENDIX A

Appendix A

Cycle 1

Supplementary Materials and Results

Appendix A.1

A.1. Wilcoxon Signed-Rank Test Results – Cycle 1

A.1.1. Cycle 1: Group 1

A.1.1.1. Presenters

```
> sp1 <- dat3[(dat3$role == "S" & dat3$group == "1" & dat3$Cycle== "1"),]  
> wilcox.test(sp1$af_gazeTimePER, sp1$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank exact test

data: sp1\$af_gazeTimePER and sp1\$bf_gazeTimePER

p-value = 0.0625

alternative hypothesis: true location shift is greater than 0

A.1.1.2. Presenters' Audience Members/Listeners

```
> ls1 <- dat3[(dat3$role == "L" & dat3$group == "1" & dat3$Cycle== "1"),]  
> wilcox.test(ls1$af_gazeTimePER, ls1$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank exact test

data: ls1\$af_gazeTimePER and ls1\$bf_gazeTimePER

p-value = 0.0002441

alternative hypothesis: true location shift is greater than 0

A.1.1.3. Discussants

```
> mt1 <- dat3[(dat3$role == "M" & dat3$group == "1" & dat3$Cycle== "1"),]  
> wilcox.test(mt1$af_gazeTimePER, mt1$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank exact test

data: mt1\$af_gazeTimePER and mt1\$bf_gazeTimePER

p-value = 0.00000526

alternative hypothesis: true location shift is greater than 0

A.1.2. Cycle 1: Group 2

A.1.2.1. Presenters

```
> sp2 <- dat3[(dat3$role == "S" & dat3$group == "2" & dat3$Cycle == "1"),]  
> wilcox.test(sp2$af_gazeTimePER, sp2$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank exact test

data: sp2\$af_gazeTimePER and sp2\$bf_gazeTimePER

p-value = 0.125

alternative hypothesis: true location shift is greater than 0

A.1.2.2. Presenters' Audience Members/Listeners

```
> ls2 <- dat3[(dat3$role == "L" & dat3$group == "2" & dat3$Cycle == "1"),]  
> wilcox.test(ls2$af_gazeTimePER, ls2$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank test

data: ls2\$af_gazeTimePER and ls2\$bf_gazeTimePER

p-value = 0.001626

alternative hypothesis: true location shift is greater than 0

A.1.2.2. Discussants

```
> mt2 <- dat3[(dat3$role == "M" & dat3$group == "2" & dat3$Cycle == "1"),]  
> wilcox.test(mt2$af_gazeTimePER, mt2$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank test

data: mt2\$af_gazeTimePER and mt2\$bf_gazeTimePER

p-value = 0.0003527

alternative hypothesis: true location shift is greater than 0

A.1.3. Cycle 1: Groups 1 & 2 - Presenters, Presenters' Audience Members and Discussants

A.1.3.1. Presenters

```
> sp <- dat3[(dat3$role == "S" & dat3$Cycle == "1"),]  
> wilcox.test(sp$af_gazeTimePER, sp$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank exact test

data: sp\$af_gazeTimePER and sp\$bf_gazeTimePER

p-value = 0.007813

alternative hypothesis: true location shift is greater than 0

A.1.3.2. Presenters' Audience Members/Listeners

```
> ls <- dat3[(dat3$role == "L" & dat3$Cycle == "1"),]  
> wilcox.test(ls$af_gazeTimePER, jitter(ls$bf_gazeTimePER), paired = TRUE, alternative  
= "greater")
```

Wilcoxon signed rank exact test

data: ls\$af_gazeTimePER and jitter(ls\$bf_gazeTimePER)

p-value = 1.192e-07

alternative hypothesis: true location shift is greater than 0

A.1.3.3. Discussants

```
> mt <- dat3[(dat3$role == "M" & dat3$Cycle == "1"),]  
> wilcox.test(mt$af_gazeTimePER, jitter(mt$bf_gazeTimePER), paired = TRUE,  
alternative = "greater")
```

Wilcoxon signed rank exact test

data: mt\$af_gazeTimePER and jitter(mt\$bf_gazeTimePER)

p-value = 1.164e-09

alternative hypothesis: true location shift is greater than 0

Appendix A.2

A.2. R Plots – Cycle 1

A.2.1. Cycle 1: Group 1

A.2.1.1. Cycle 1: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

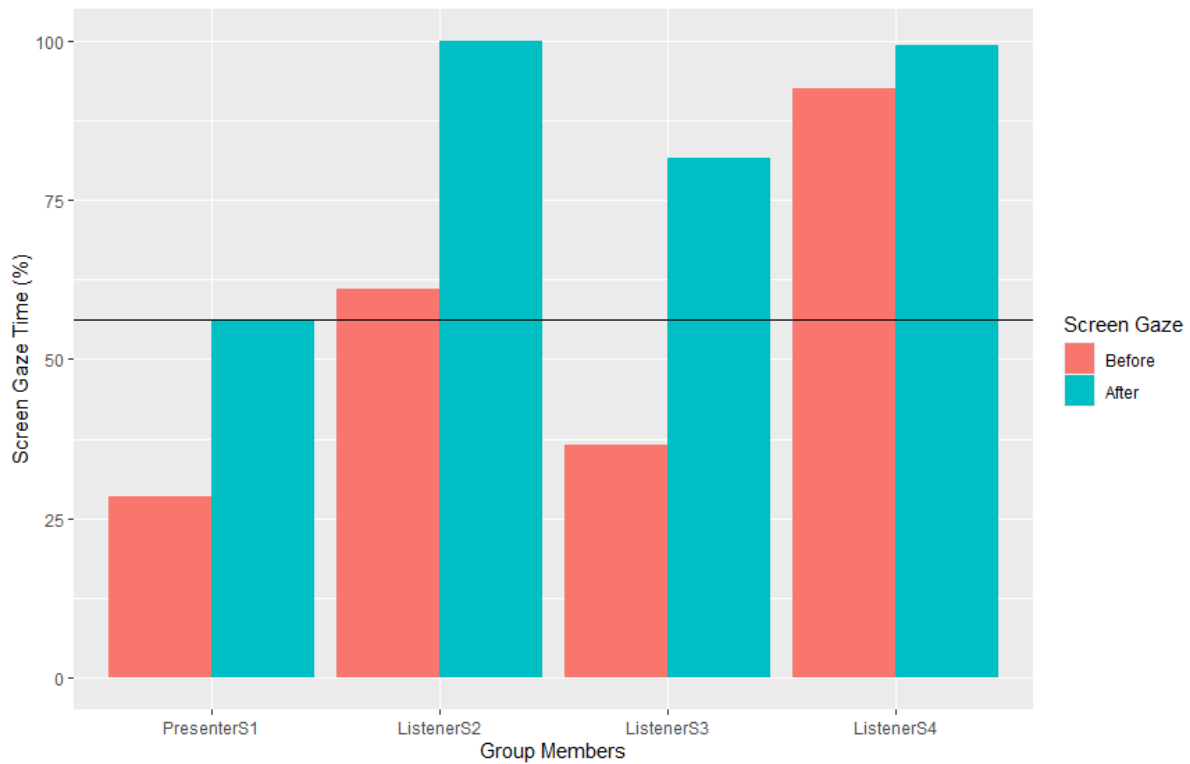


Figure A2.1: Cycle 1, Group 1 Members' Screen Gaze During S1's Pre- Vs Post-Intervention Journal Article Presentations

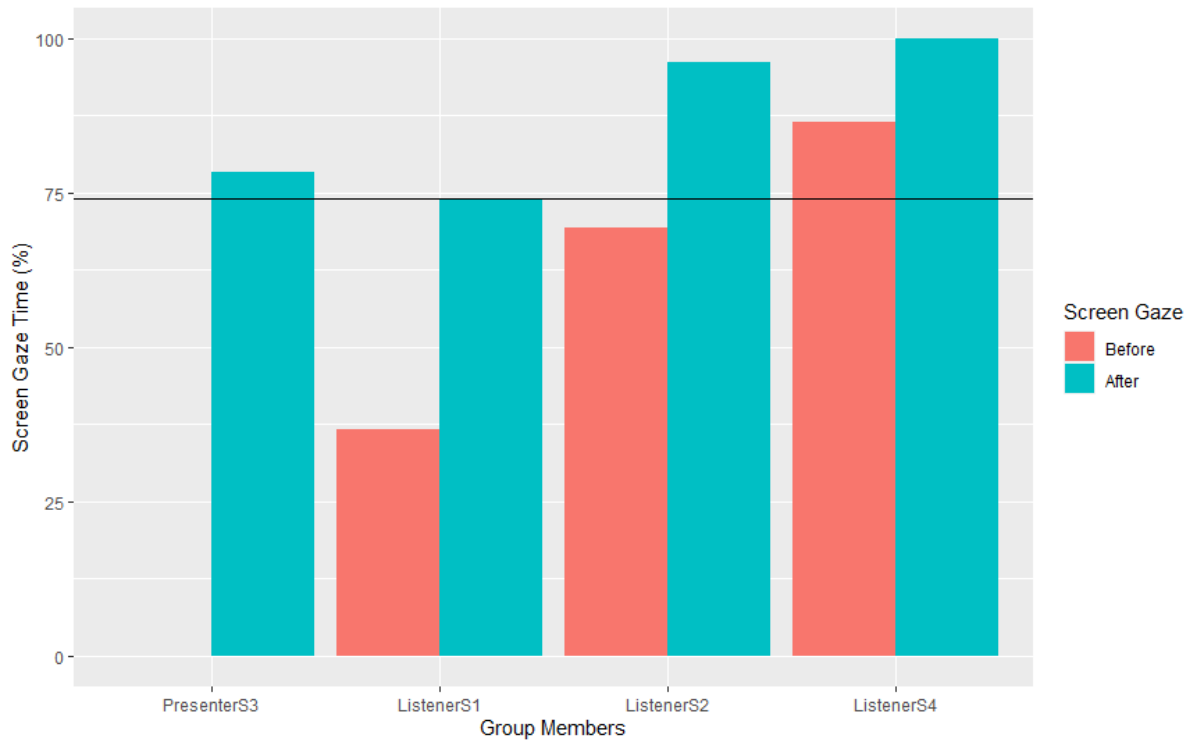


Figure A2.2: Cycle 1, Group 1 Members' Screen Gaze During S3's Pre- Vs Post-Intervention Journal Article Presentations

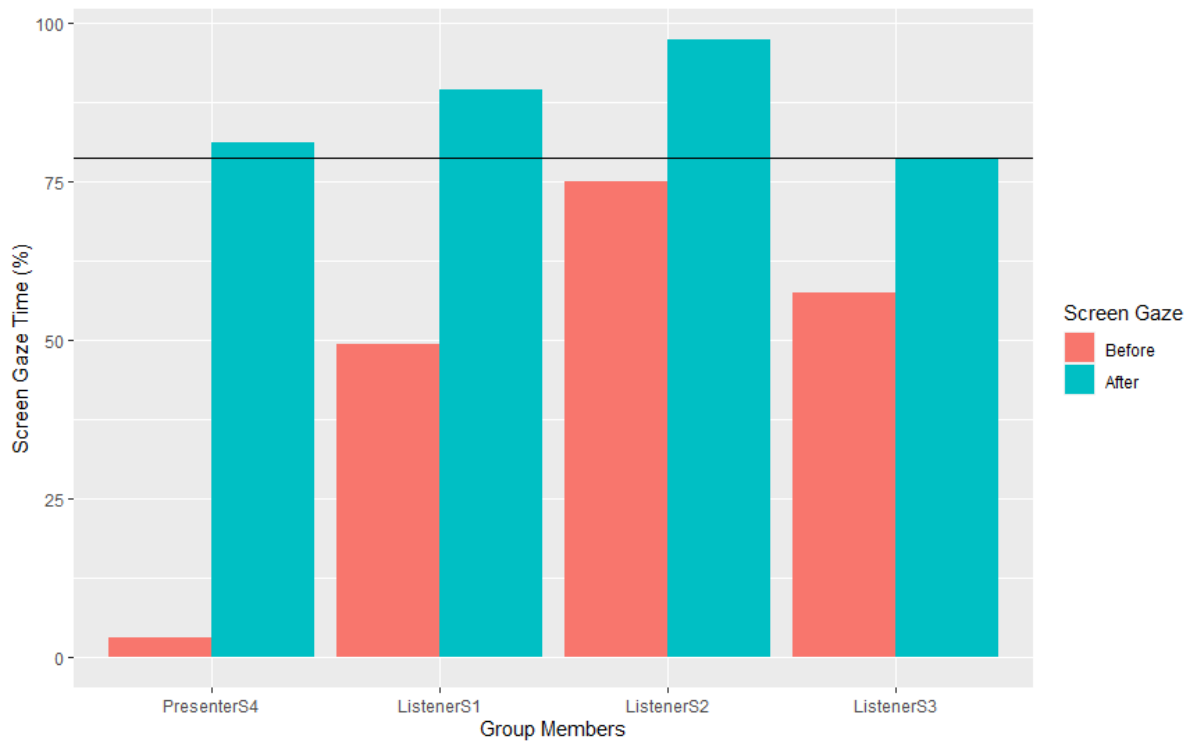


Figure A2.3: Cycle 1, Group 1 Members' Screen Gaze During S4's Pre- Vs Post-Intervention Journal Article Presentations

A.2.1.2. Cycle 1: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Discussions

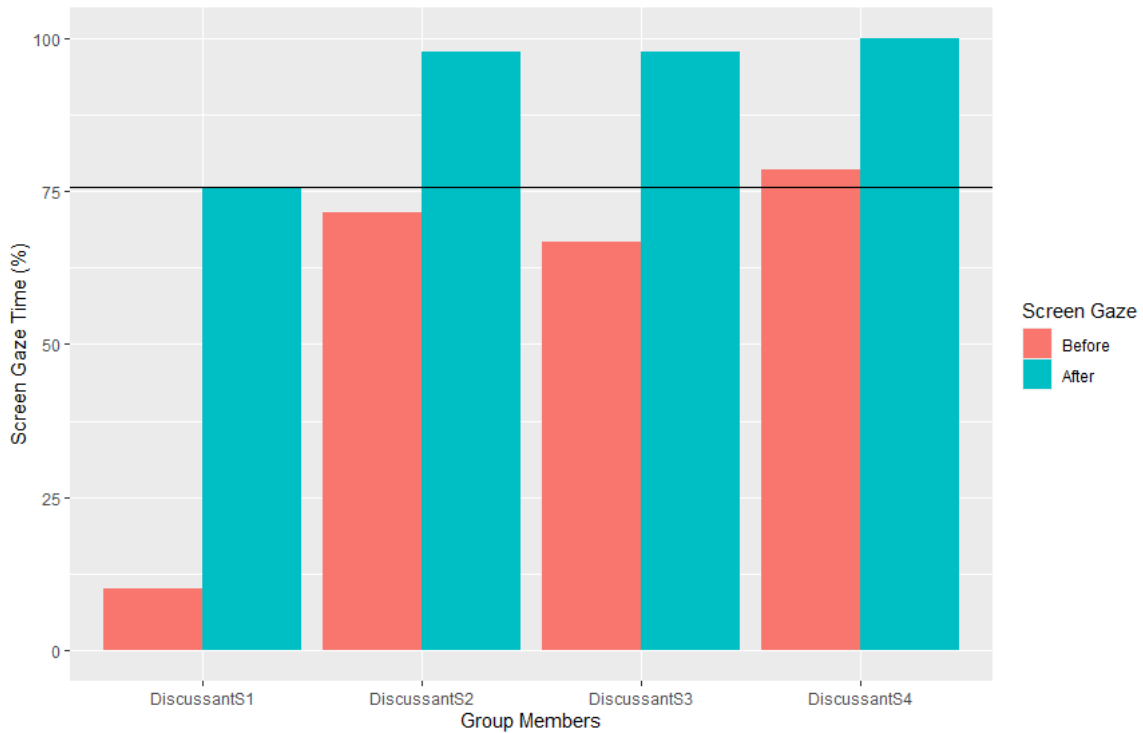


Figure A2.4: Cycle 1, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S1's Journal Articles

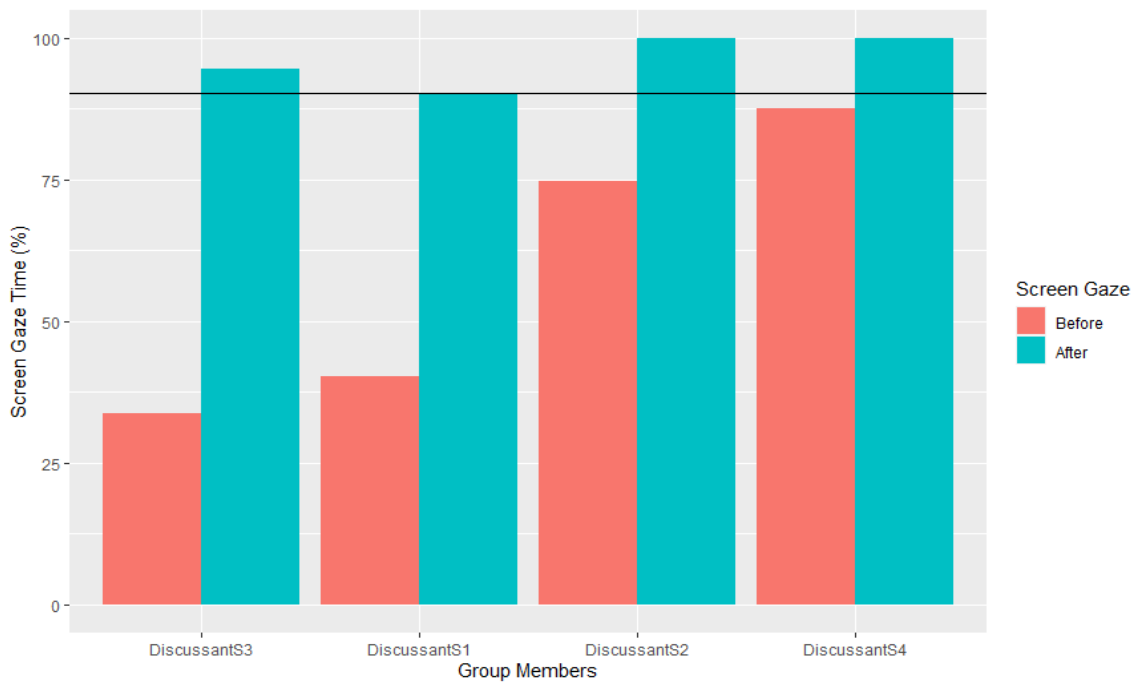


Figure A2.5: Cycle 1, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S3's Journal Articles

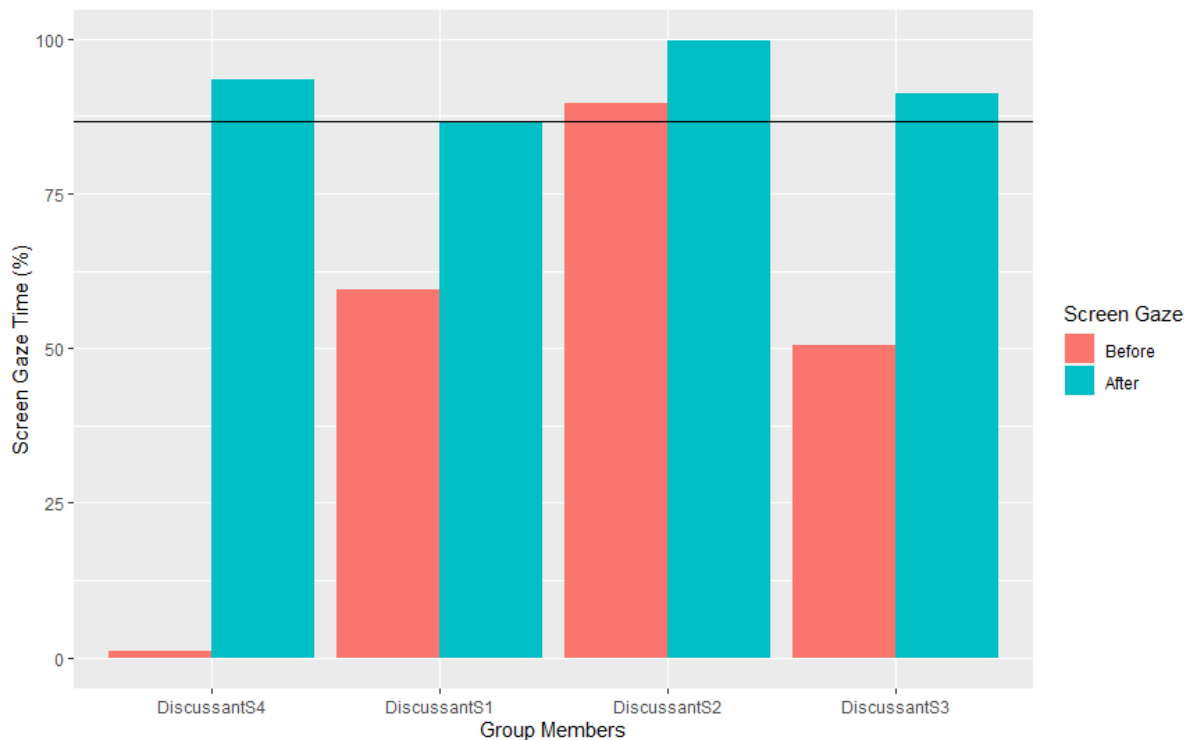


Figure A2.6: Cycle 1, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S4's Journal Articles

A.2.2. Cycle 1: Group 2

A.2.2.1. Cycle 1: Group 2 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

Figure A2.7 shows that *before* CSCC developmental training, S5 (while presenting his article), sustained his screen gaze attentiveness for 30.05%⁹⁹ of the time while S6, S7, and S8 (his listeners) sustained their screen gaze attentiveness for 0%, 48.36% and 89.67% of the presentation time, respectively. In contrast, *after* CSCC intervention, S5 (the presenter) sustained his screen gaze attentiveness for 81.22% of his journal article presentation. Similarly, listener S6 sustained her screen gaze attentiveness throughout the whole of (100%) S5's presentation while S7 and S8 sustained their screen gaze attentiveness for 98.78% and 93.47% respectively.

As shown in Section 5.1.1.2.1 in Chapter 5, these results were found to be representative for all presenters' screen gazes and that of their listeners in group 2.

⁹⁹ S21 switched off her video camera just after she started presenting and switched on again just after she completed her presenting the chosen article. She had not met with any technical difficulties as her internet connection was good.

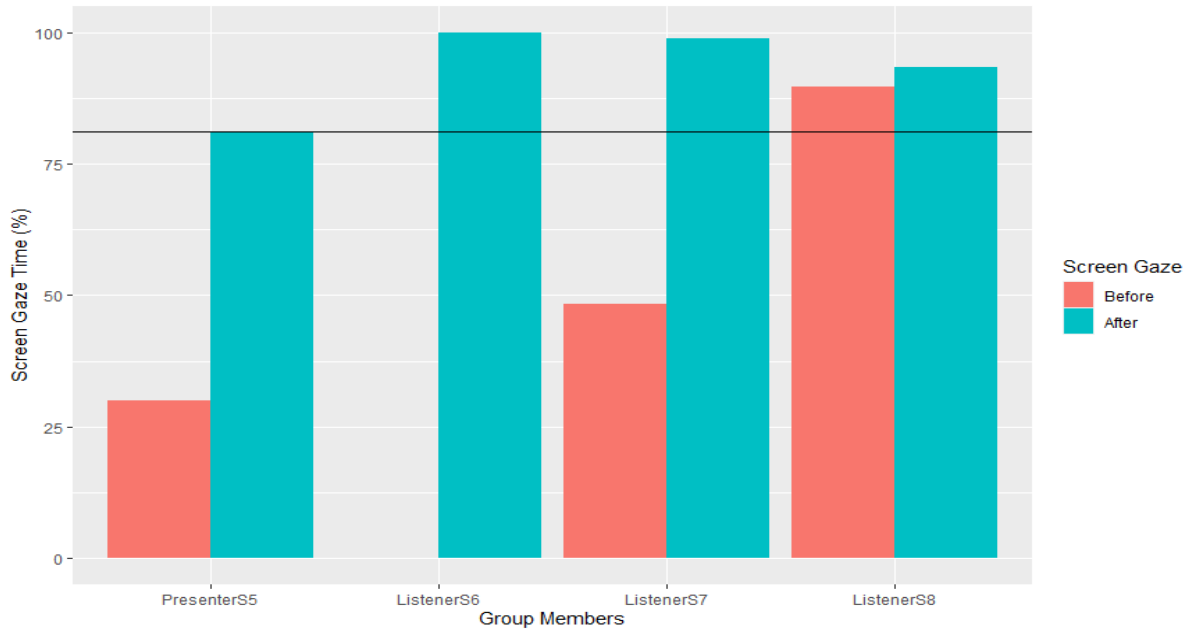


Figure A2.7: Cycle 1, Group 2 Members' Screen Gaze During S5's Pre- Vs Post-Intervention Journal Article Presentations

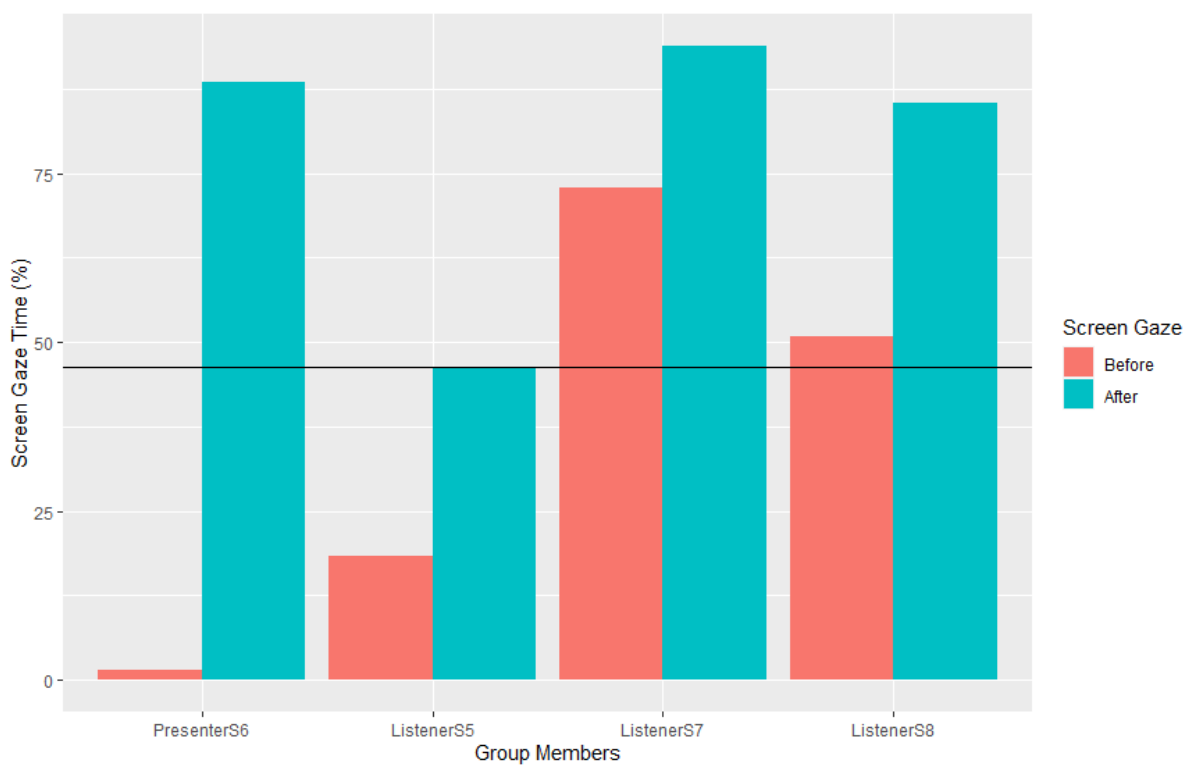


Figure A2.8: Cycle 1, Group 2 Members' Screen Gaze During S6's Pre- Vs Post-Intervention Journal Article Presentation

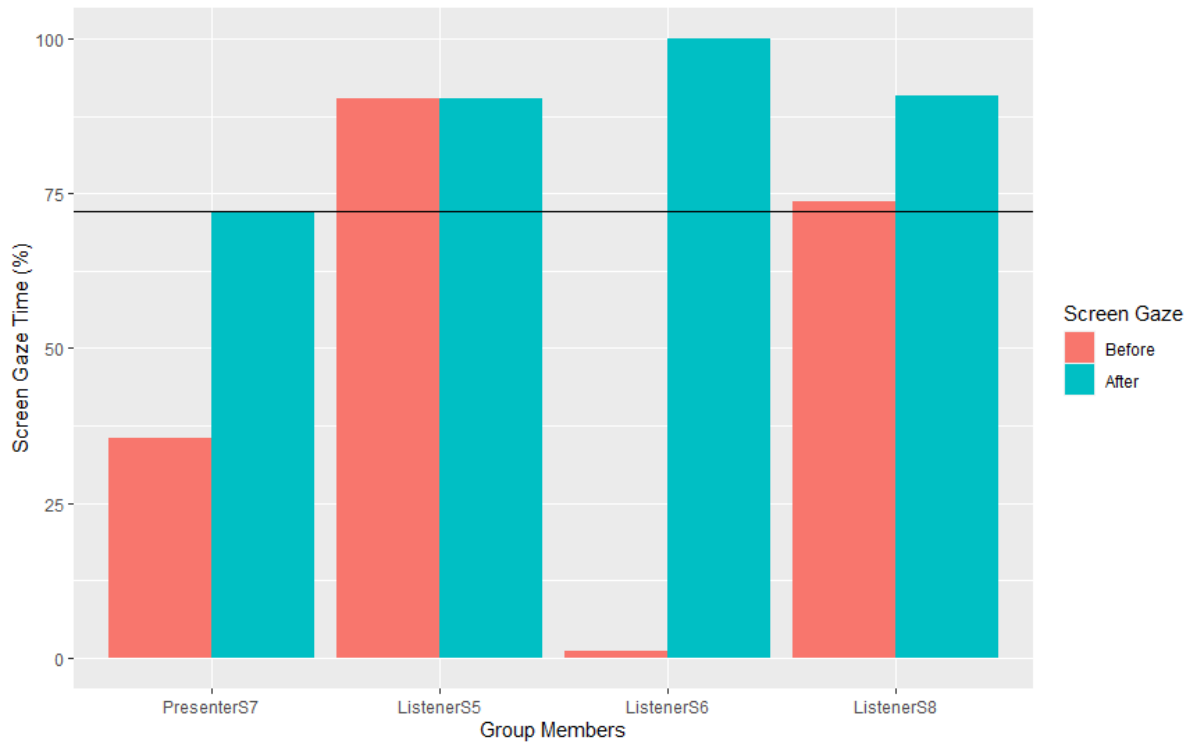


Figure A2.9: Cycle 1, Group 2 Members' Screen Gaze During S7's Pre- Vs Post-Intervention Journal Article Presentation

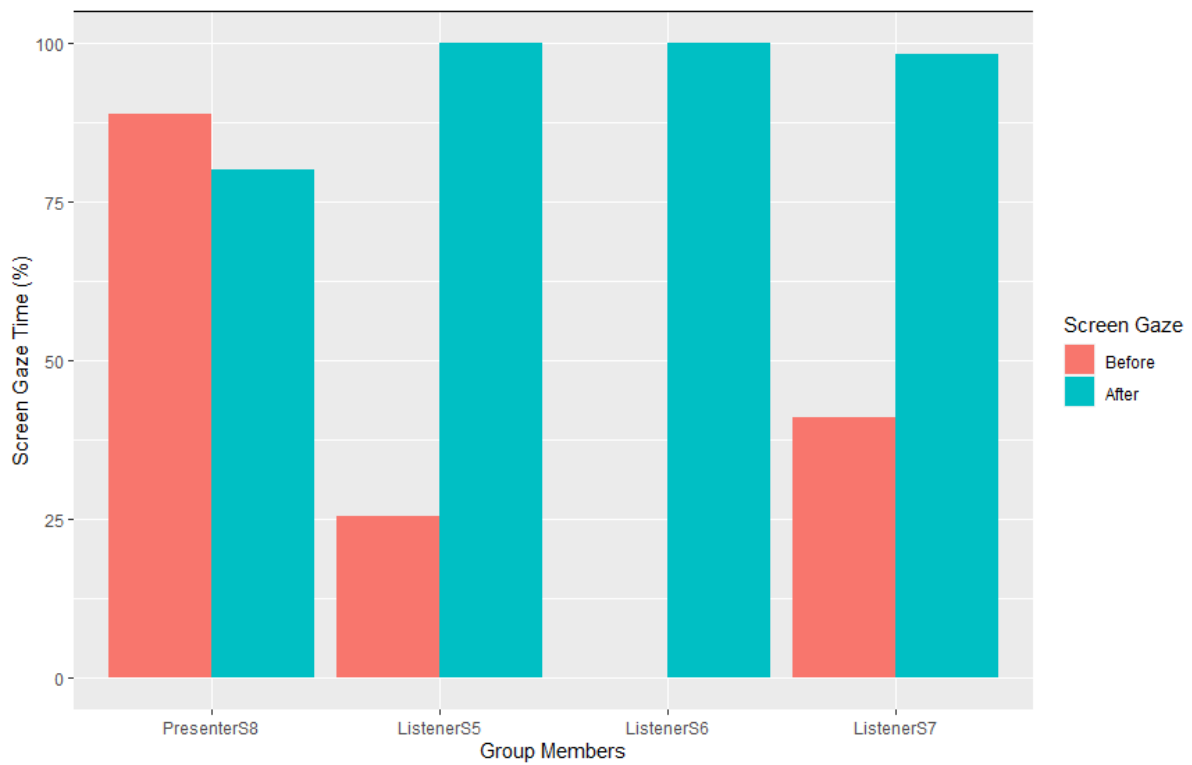


Figure A2.10: Cycle 1, Group 2 Members' Screen Gaze During S8's Pre- Vs Post-Intervention Journal Article Presentation

A.2.2.2. Cycle 1: Group 2 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Discussions

Figure A2.11 shows that *before* CSCC intervention, during the follow-up discussion of S5's journal article, the discussants: S5, S6, S7, and S8 sustained their screen gaze attentiveness for 66.39%, 0%, 70.59%, and 96.22% of the discussion time respectively. In contrast, *after* CSCC intervention, S5 and S6, and S8 sustained their screen gaze attentiveness throughout the whole of the discussion while S7 sustained his screen gaze attentiveness for 85.09% of the discussion time.

As shown in Section 5.1.1.2.2 in Chapter 5 these results were found to be representative of all discussants' screen gazes during the follow-up discussions after each presentation.

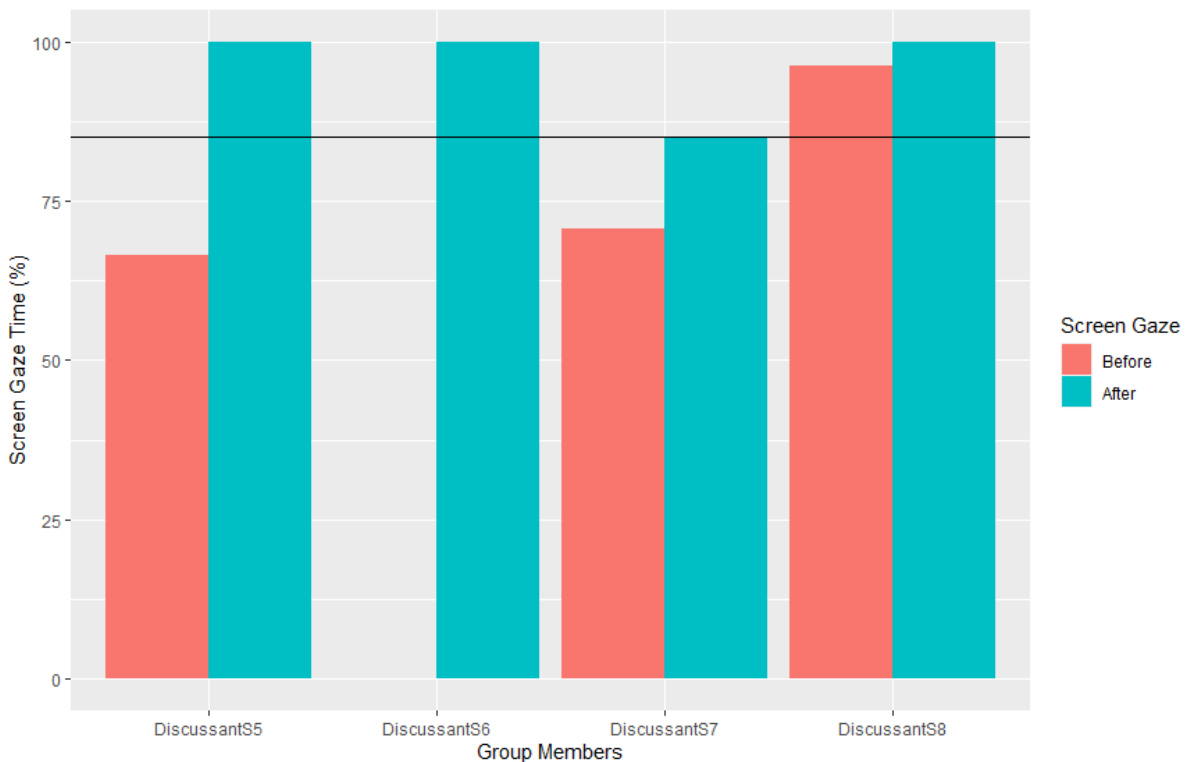


Figure A2.11: Cycle 1, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S5's Journal Articles

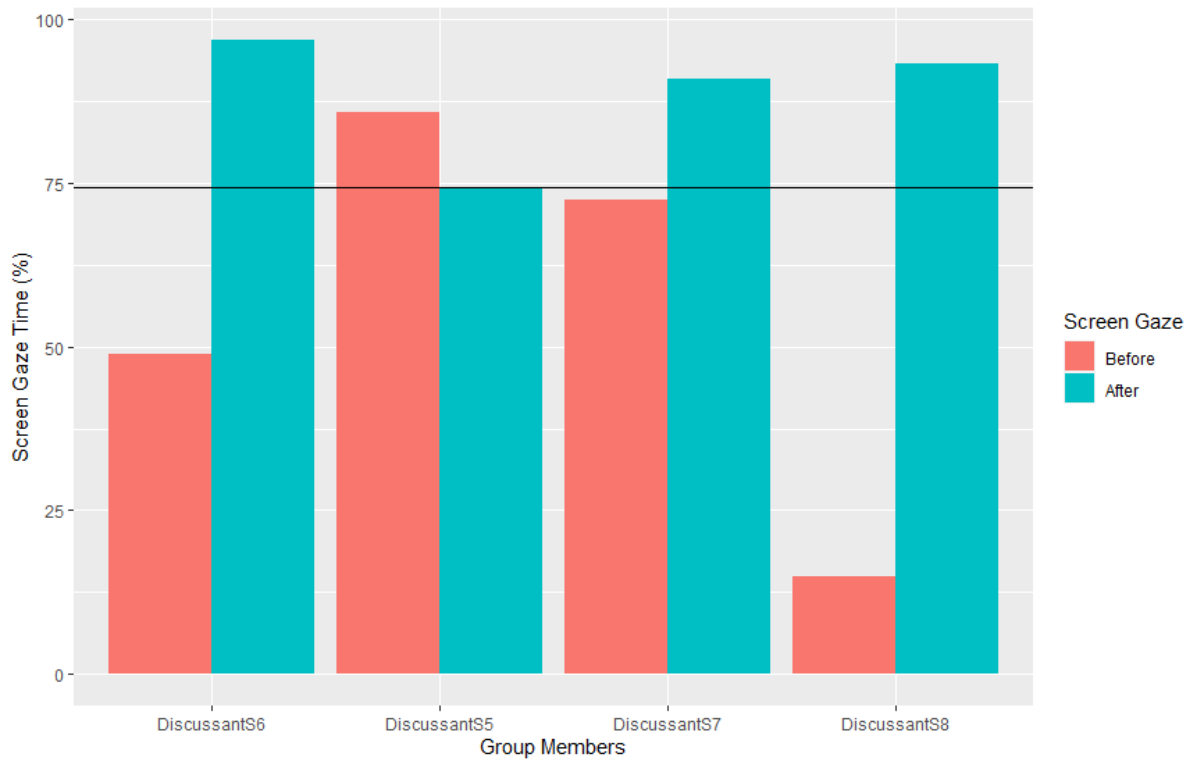


Figure A2.12: Cycle 1, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S6's Journal Articles

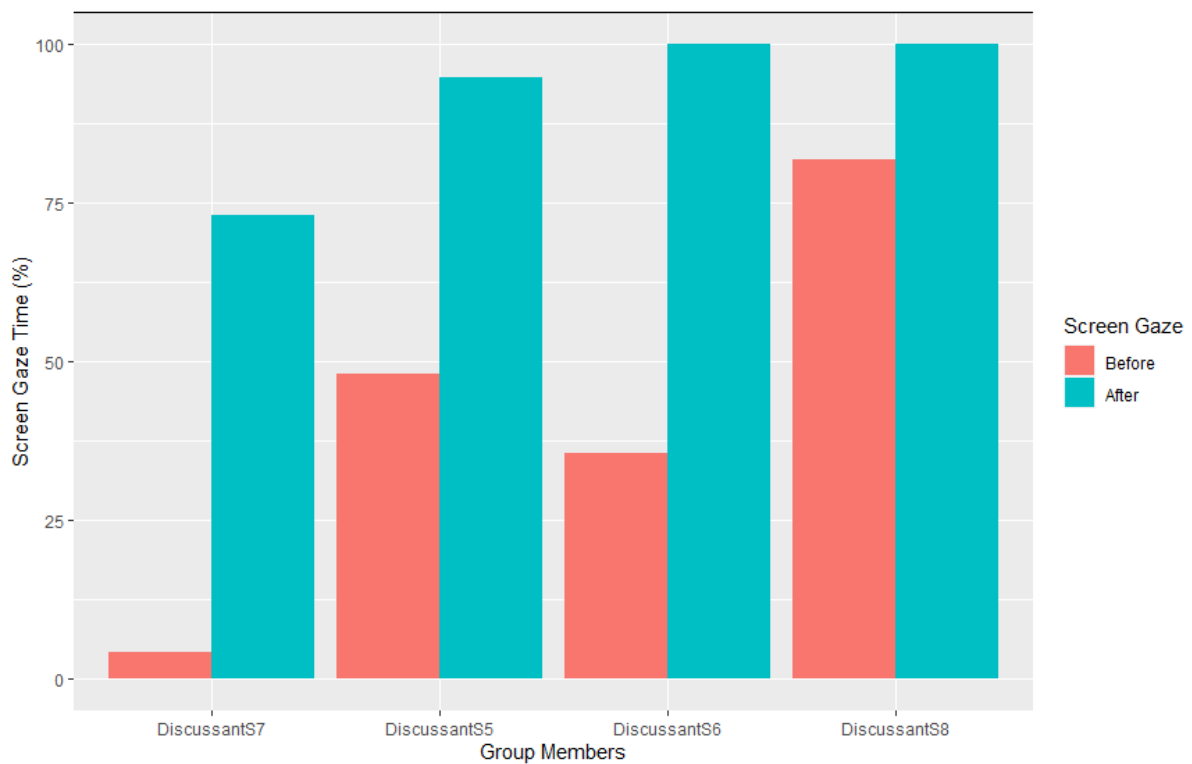


Figure A2.13: Cycle 1, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S7's Journal Articles

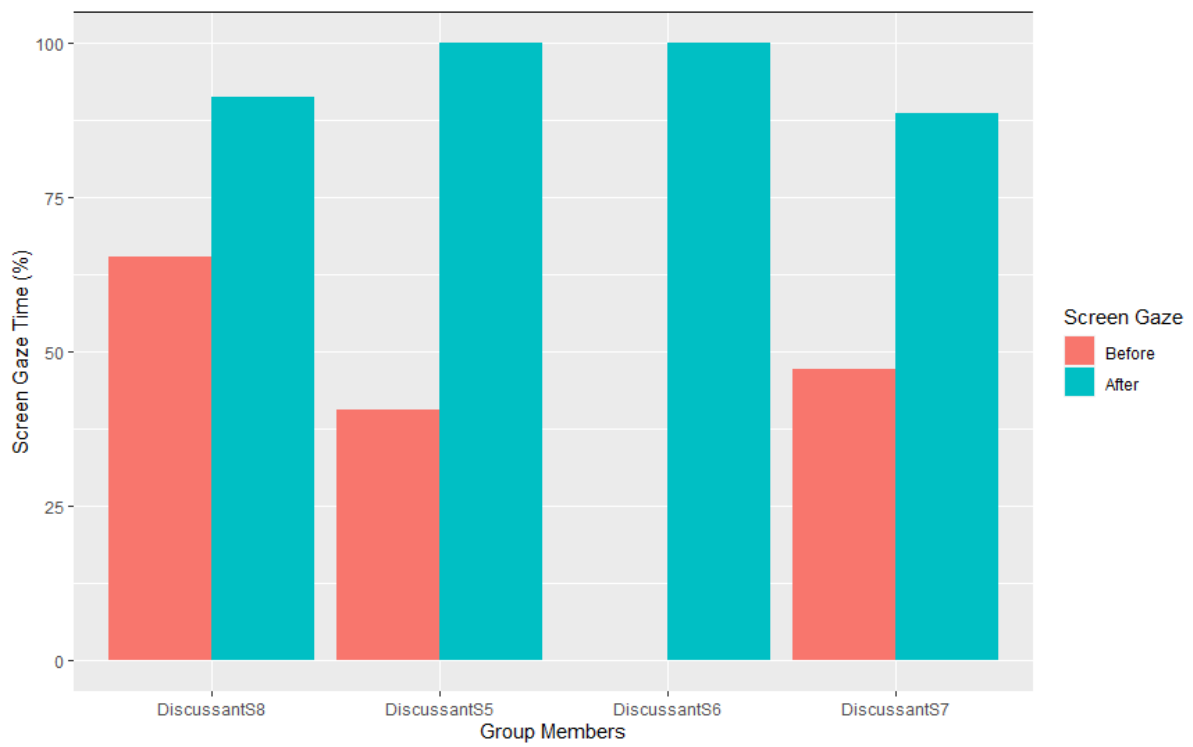


Figure A2.14: Cycle 1, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S8's Journal Articles

Appendix A.3

A.3. Results of Microsoft Excel Analysis – Cycle 1

MS Excel Graphs Showing Each Group's (Average) Screen Gaze Behaviours During Each Presentation and Follow-up Discussion

Each six-graph set [x (n=24)] is divided as follows:

The first three graphs show the average screen gaze of whole group during each group member's pre-intervention presentations. The second three graphs demonstrate the average screen gaze of whole group during each group member's post-intervention presentations.

The third three graphs in the set present the average screen gaze of whole group during the follow-up discussion after each group member's presentation in order to show pre-intervention. The fourth three graphs in the set exhibit the average screen gaze of whole group during the follow-up discussion after each group member's presentation during post-intervention.

For a full explanation of what each graph is showing, please see Section 5.1.1.3 Chapter 6.

A.3.1. Cycle 1: Group 1

A.3.1.1. Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

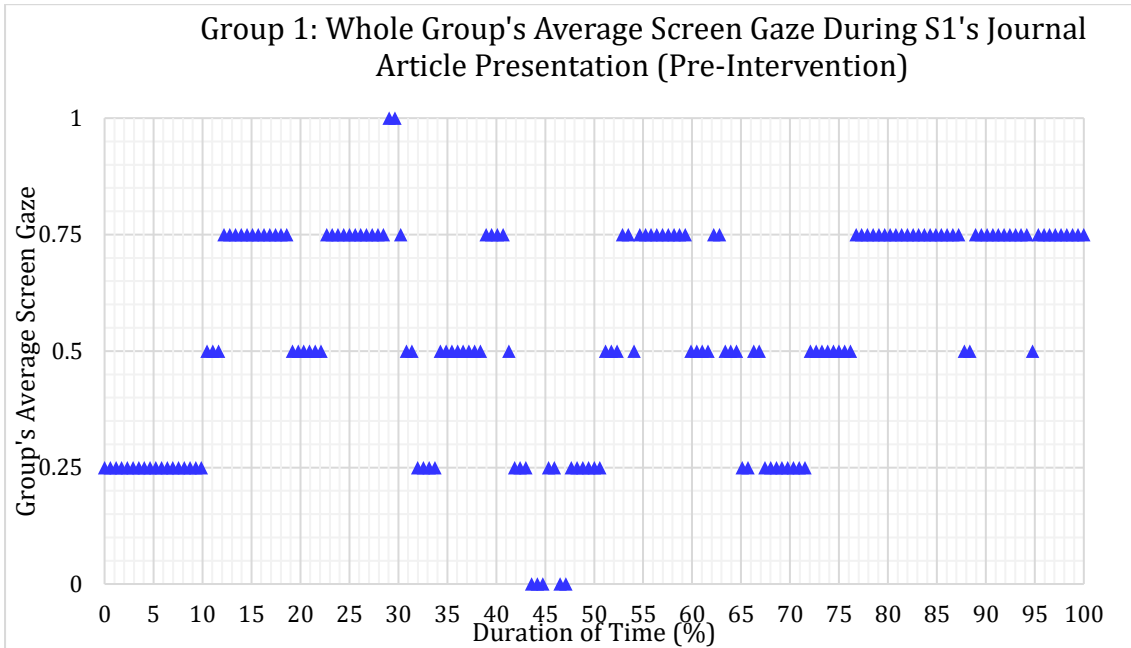


Figure A3.1: Whole Group's Screen Gaze During S1's Journal Article Presentation (Pre-Intervention)

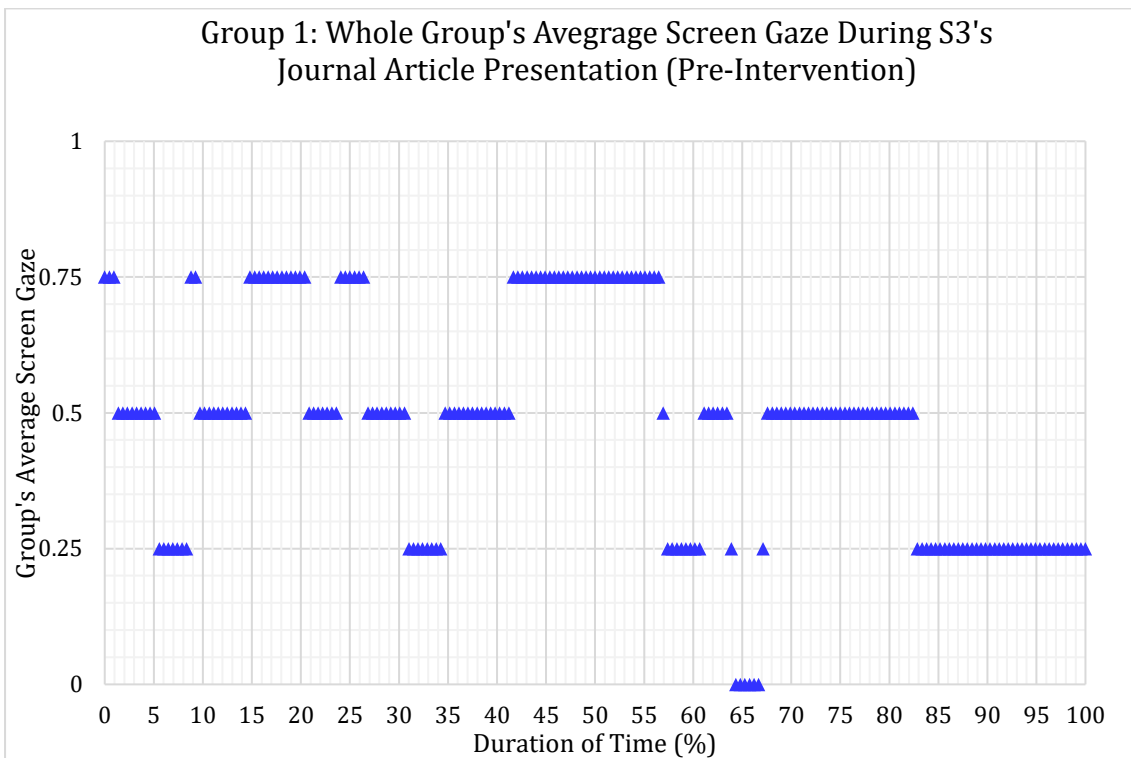


Figure A3.2: Whole Group's Screen Gaze During S3's Journal Article Presentation (Pre-Intervention)

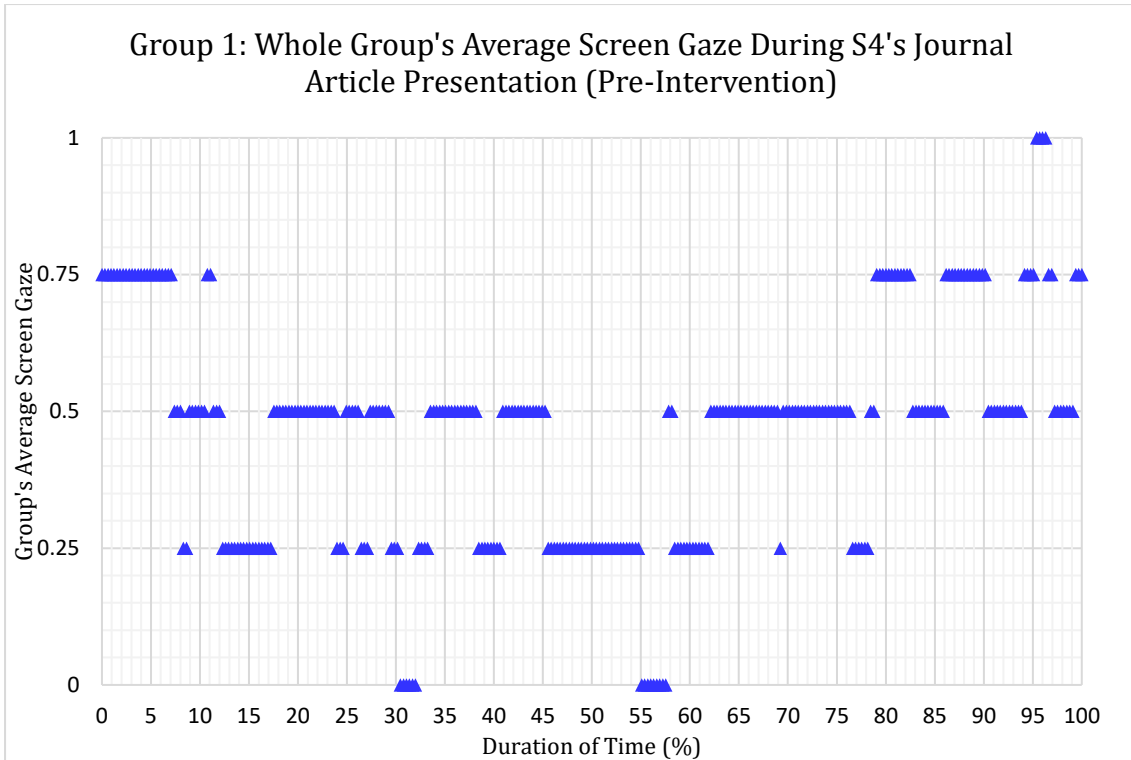


Figure A3.3: Whole Group's Screen Gaze During S4's Journal Article Presentation (Pre-Intervention)

A.3.1.2. Group 1- Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations

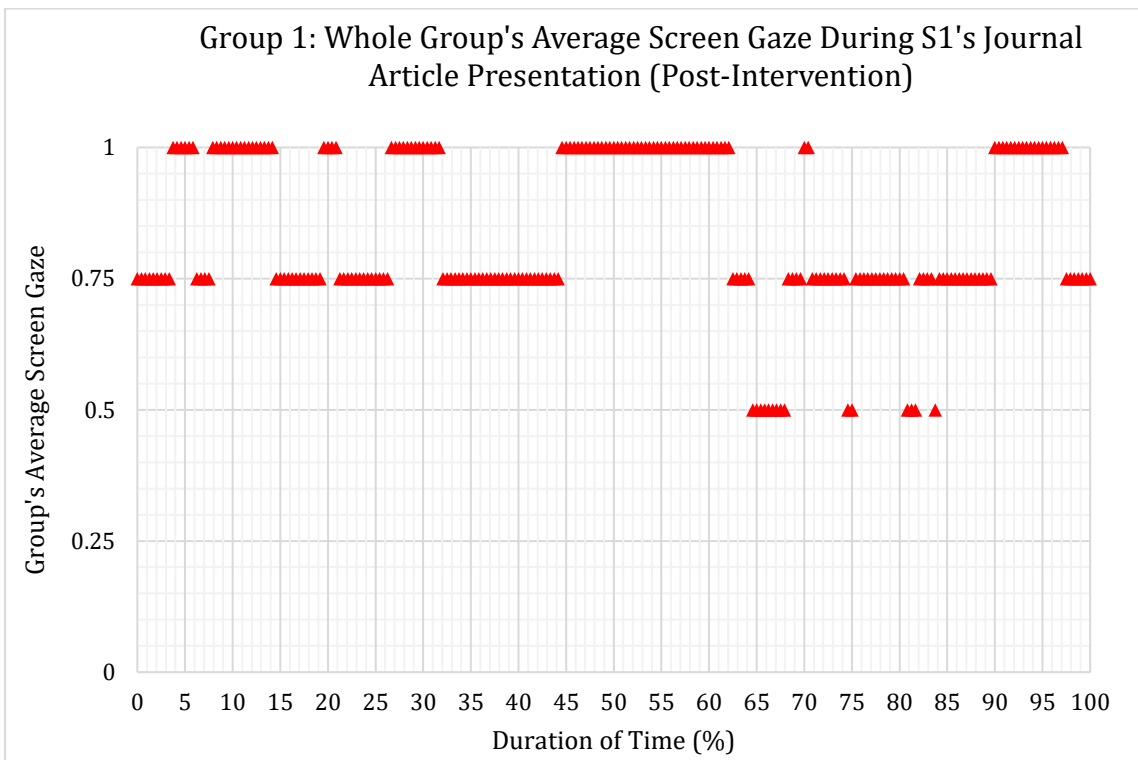


Figure A3.4: Whole Group's Screen Gaze During S1's Journal Article Presentation (Post-Intervention)

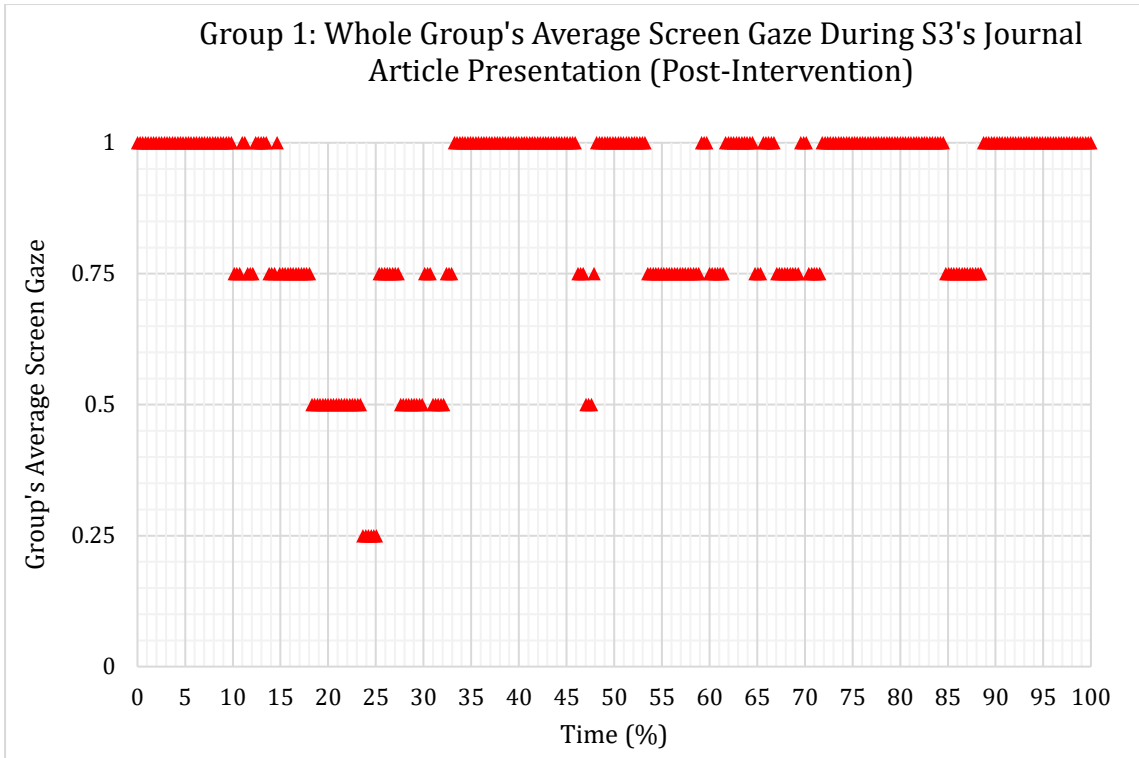


Figure A3.5: Whole Group's Screen Gaze During S3's Journal Article Presentation (Post-Intervention)

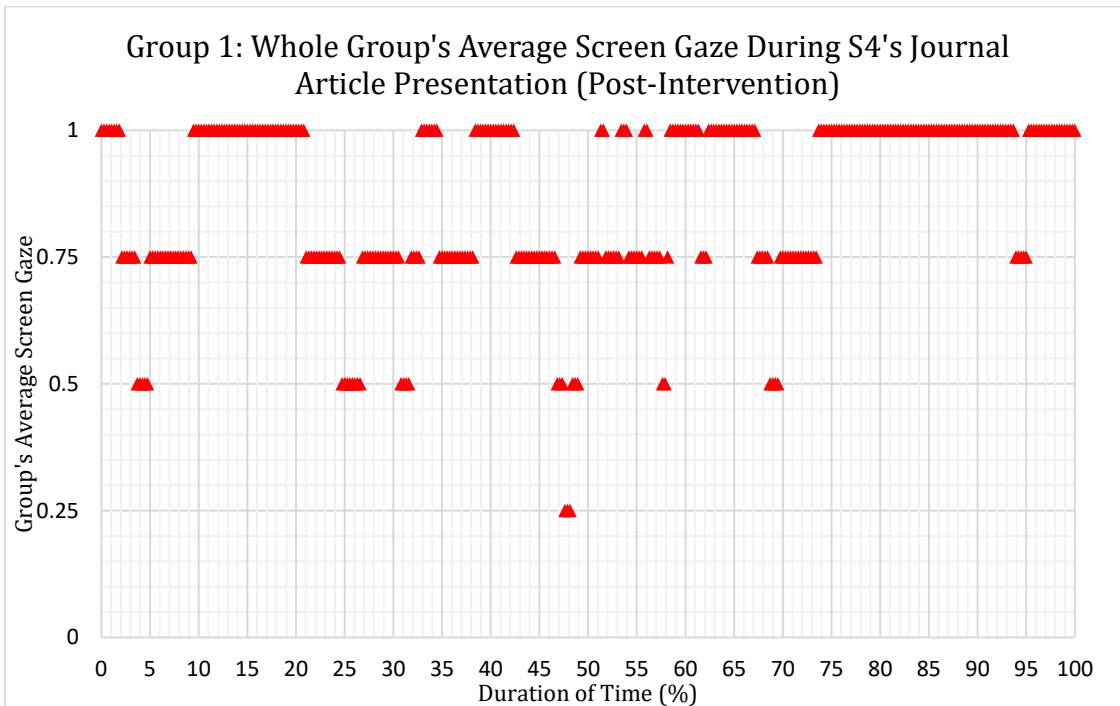


Figure A3.6: Whole Group's Screen Gaze During S4's Journal Article Presentation (Post-Intervention)

A.3.1.3. Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Discussions

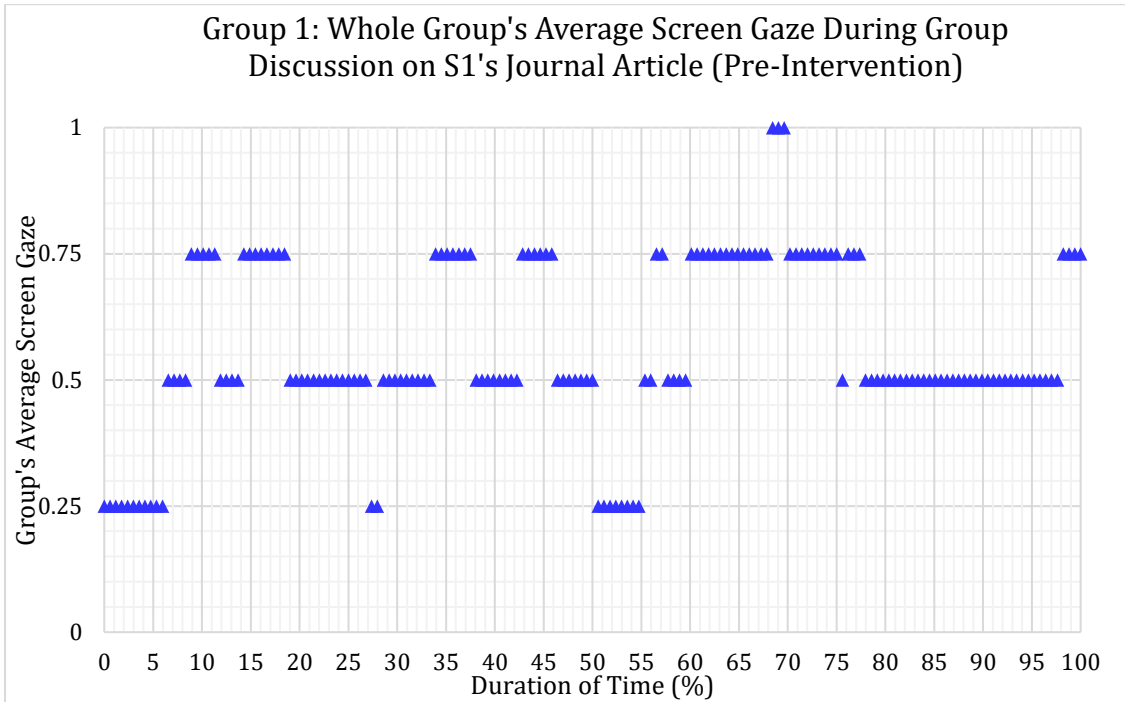


Figure A3.7: Whole Group's Screen Gaze During Group Discussion on S1's Journal Article (Pre-Intervention)

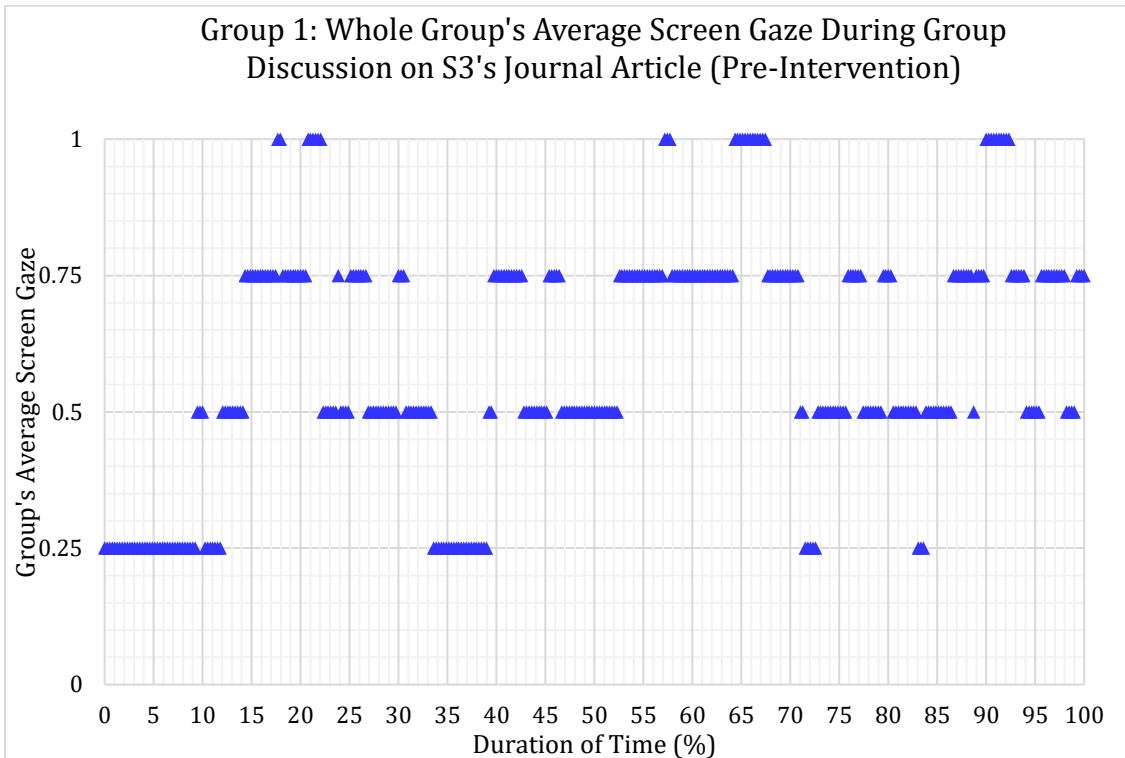


Figure A3.8: Whole Group's Screen Gaze During Group Discussion on S3's Journal Article (Pre-Intervention)

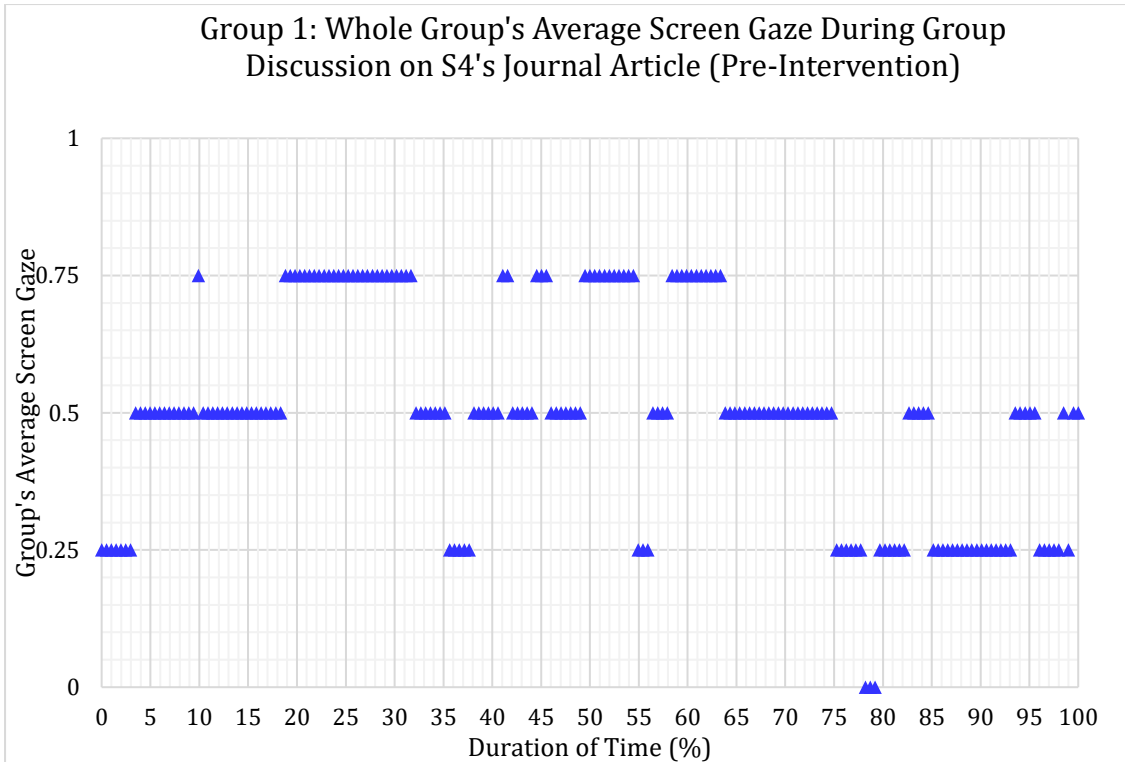


Figure A3.9: Whole Group's Screen Gaze During Group Discussion on S41's Journal Article (Pre-Intervention)

A.3.1.4. Group 1- Whole Group's Average Screen Gaze During Post-Intervention Discussions

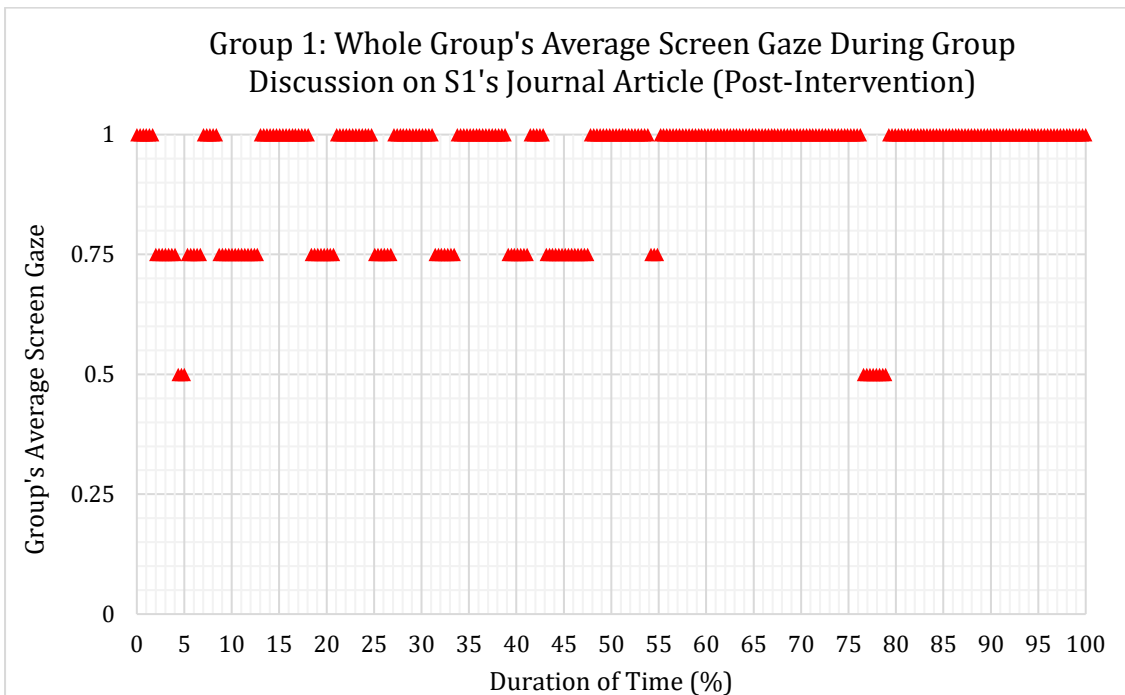


Figure A3.2: Whole Group's Screen Gaze During Group Discussion on S1's Journal Article (Post-Intervention)

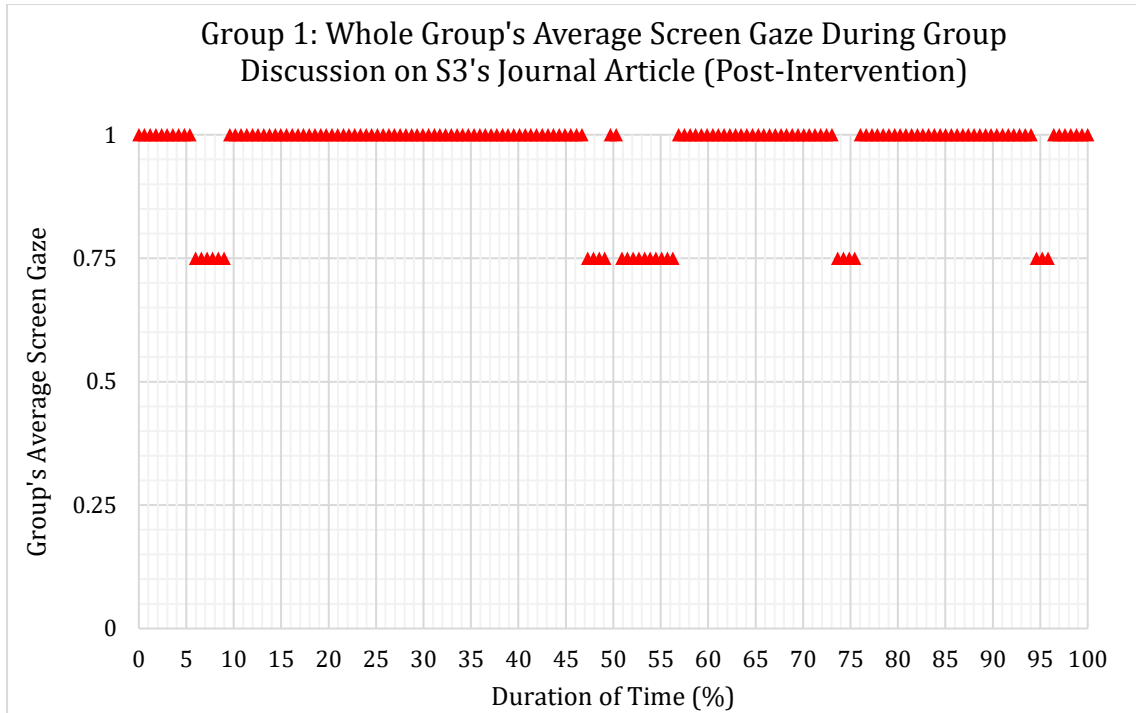


Figure A3.3: Whole Group's Screen Gaze During Group Discussion on S3's Journal Article (Post-Intervention)

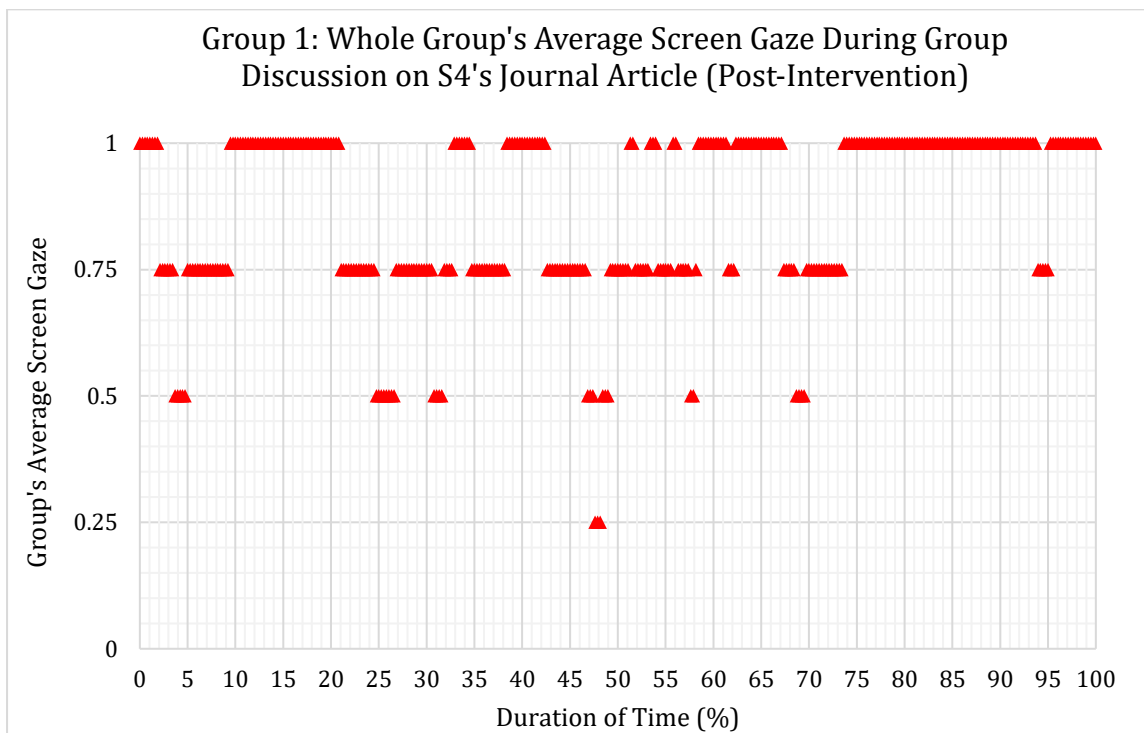


Figure A3.4: Whole Group's Screen Gaze During Group Discussion on S4's Journal Article (Post-Intervention)

A.3.2. Cycle 1: Group 2

A.3.2.1. Group 2- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

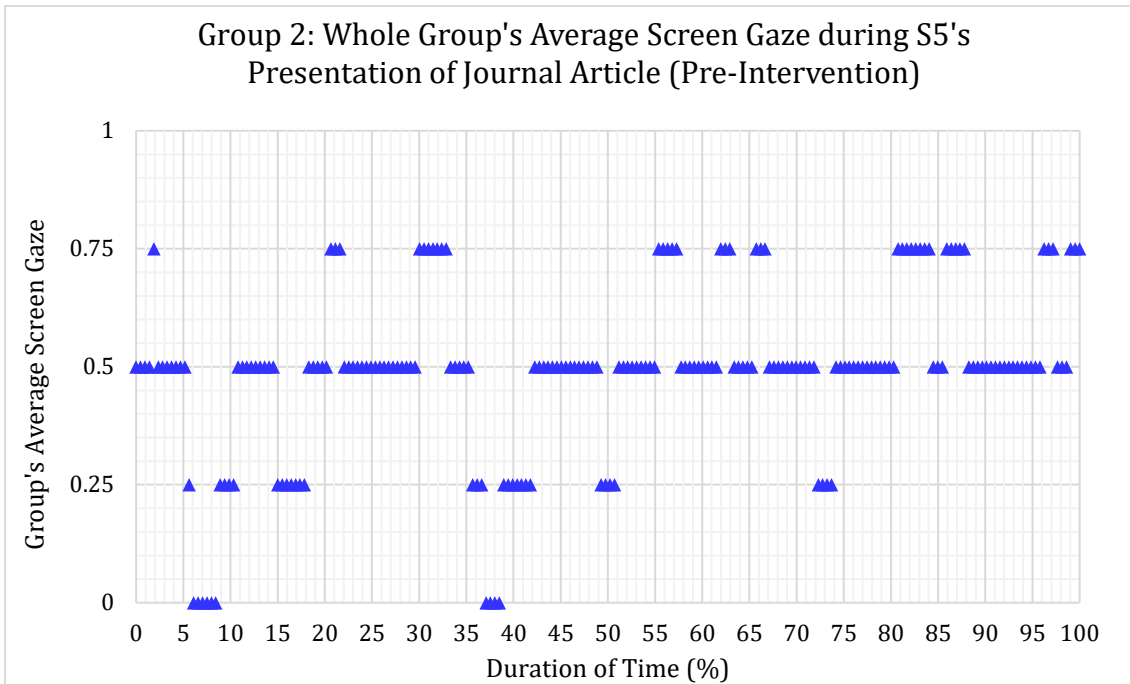


Figure A3.5: Whole Group's Screen Gaze During S5's Journal Article Presentation (Pre-Intervention)

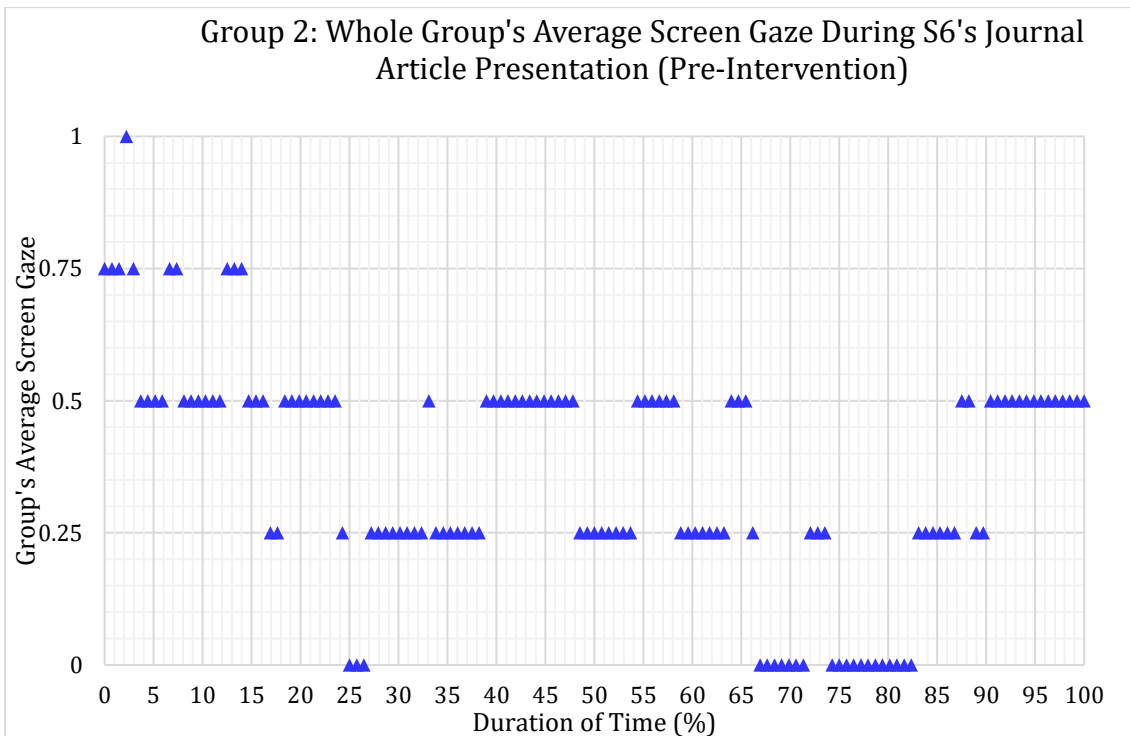


Figure A3.6: Whole Group's Screen Gaze During S6's Journal Article Presentation (Pre-Intervention)

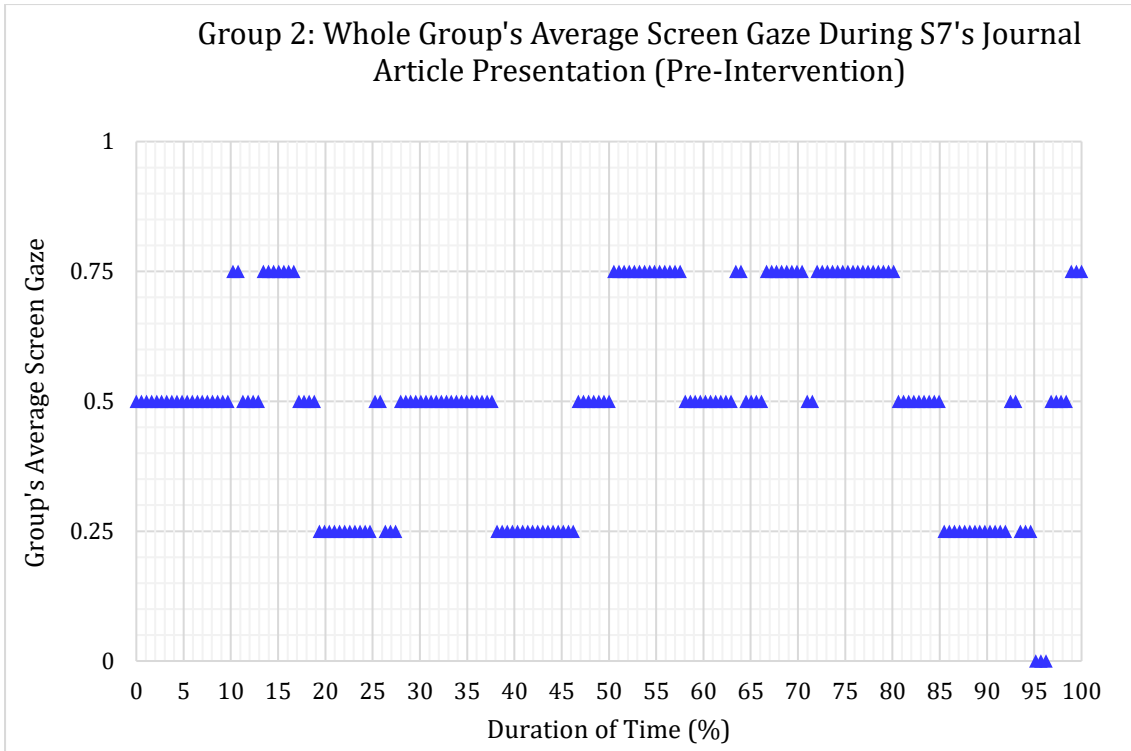


Figure A3.7: Whole Group's Screen Gaze During S7's Journal Article Presentation (Pre-Intervention)

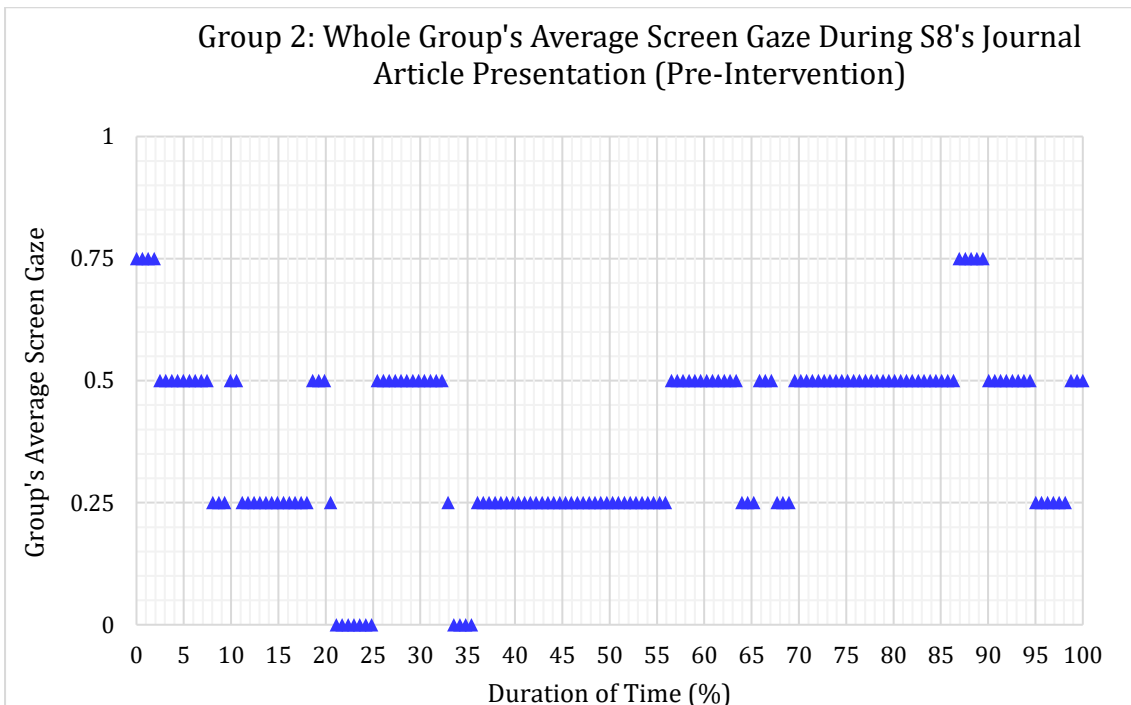


Figure A3.8: Whole Group's Screen Gaze During S8's Journal Article Presentation (Pre-Intervention)

A.3.2.2. *Group 2 - Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations*

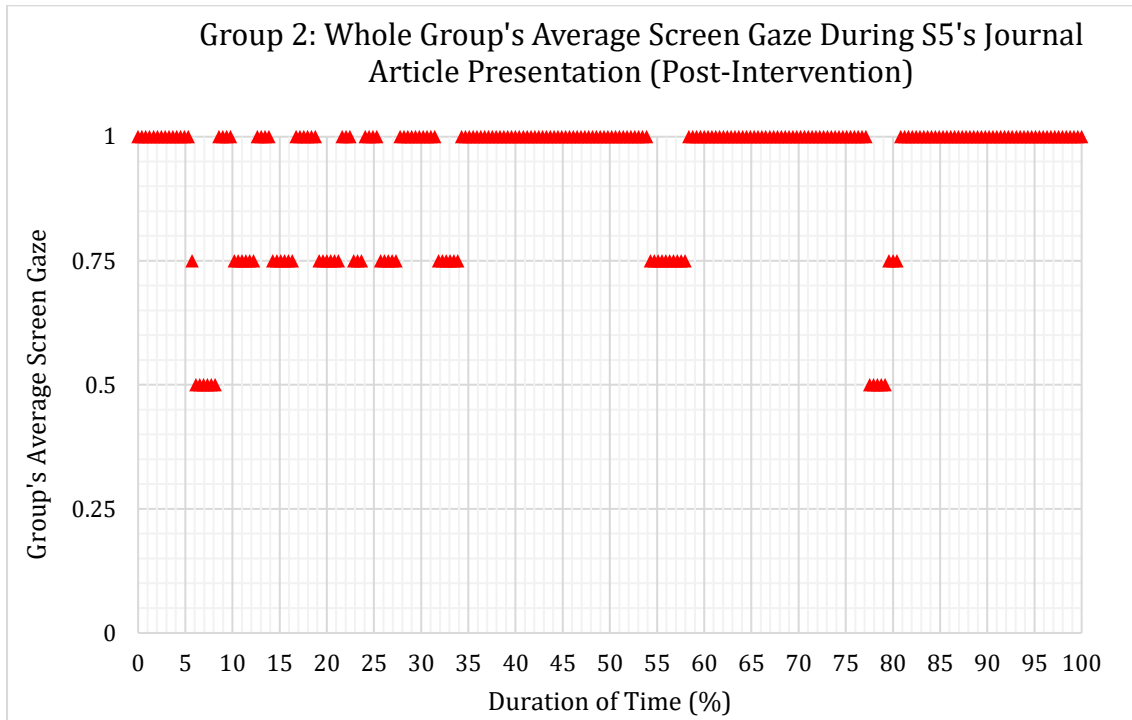


Figure A3.9: *Whole Group's Screen Gaze During S5's Journal Article Presentation (Post-Intervention)*

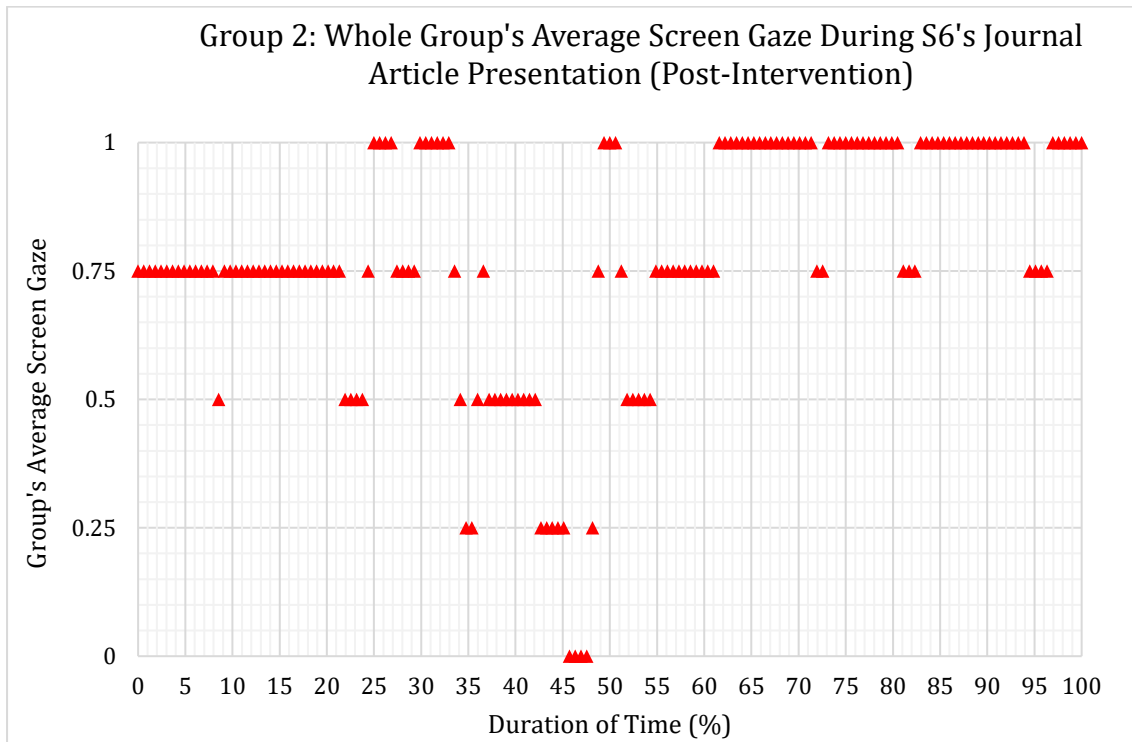


Figure A3.10: *Whole Group's Screen Gaze During S6's Journal Article Presentation (Post-Intervention)*

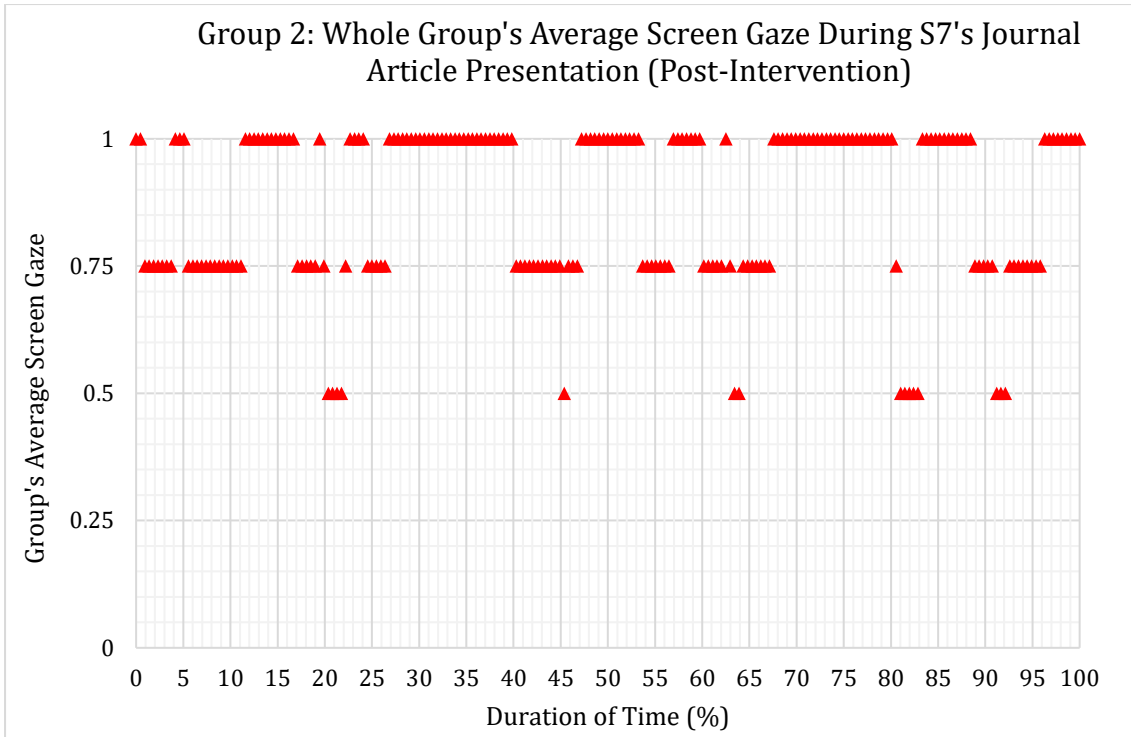


Figure A3.11: Whole Group's Screen Gaze During S7's Journal Article Presentation (Post-Intervention)

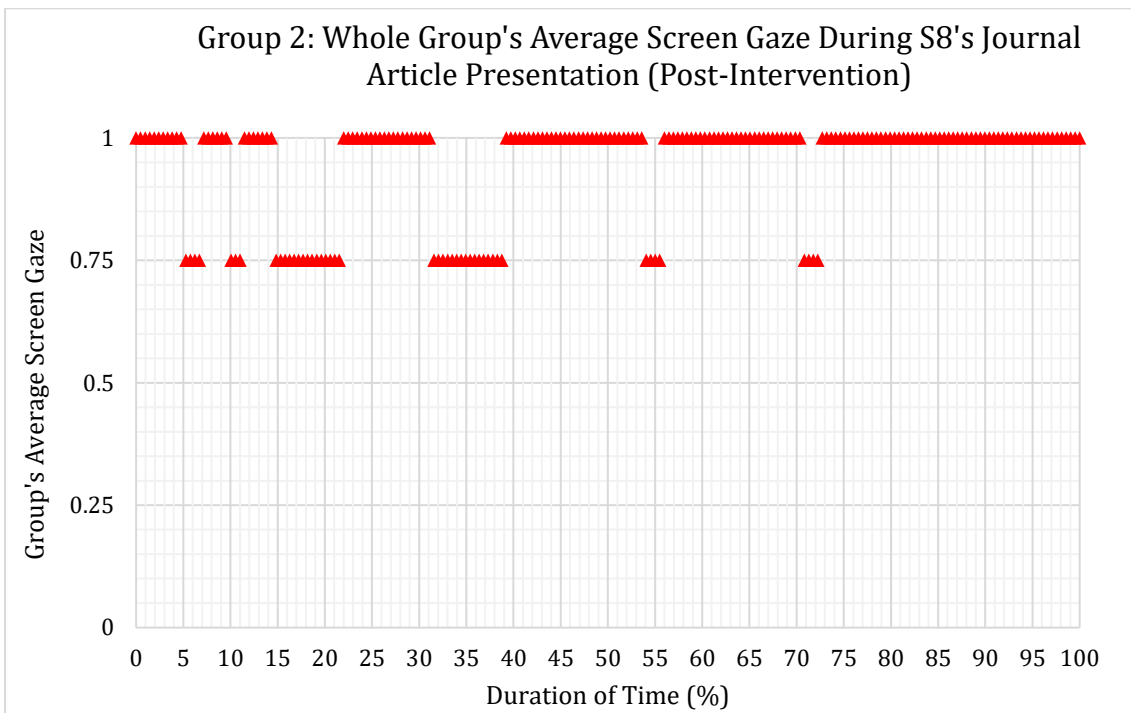


Figure A3.12: Whole Group's Screen Gaze During S8's Journal Article Presentation (Post-Intervention)

A.3.2.3. Group 2 - Whole Group's Average Screen Gaze During Pre-Intervention Discussions

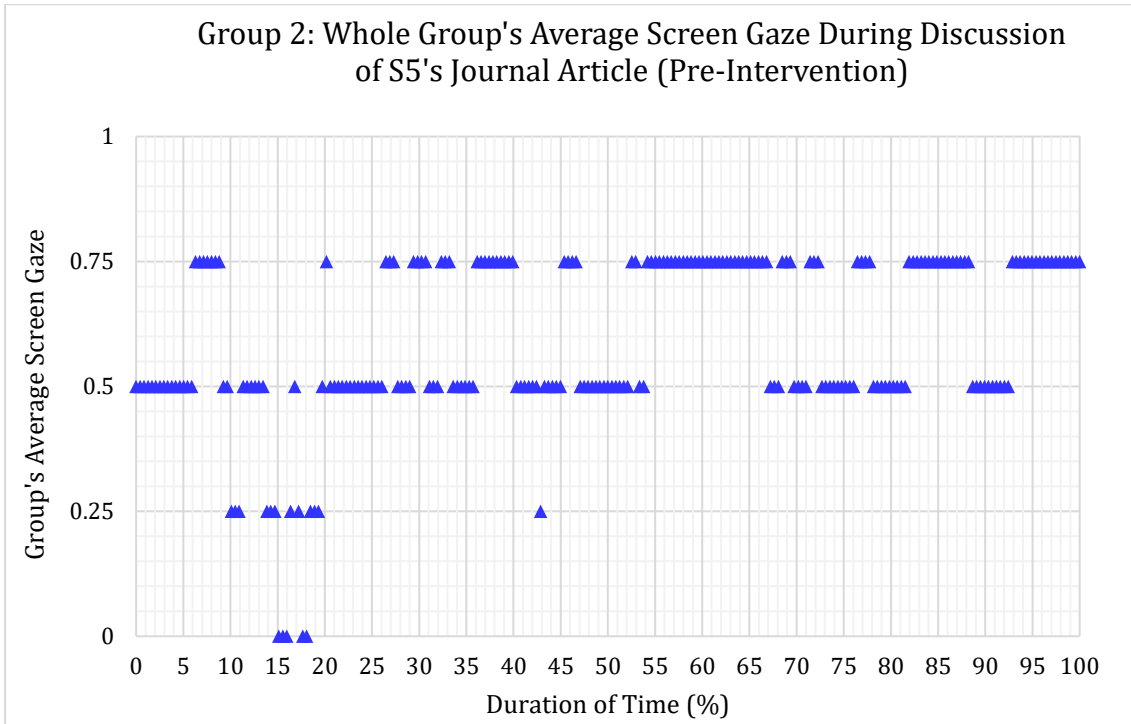


Figure A3.13: Whole Group's Screen Gaze During Group Discussion on S5's Journal Article (Pre-Intervention)

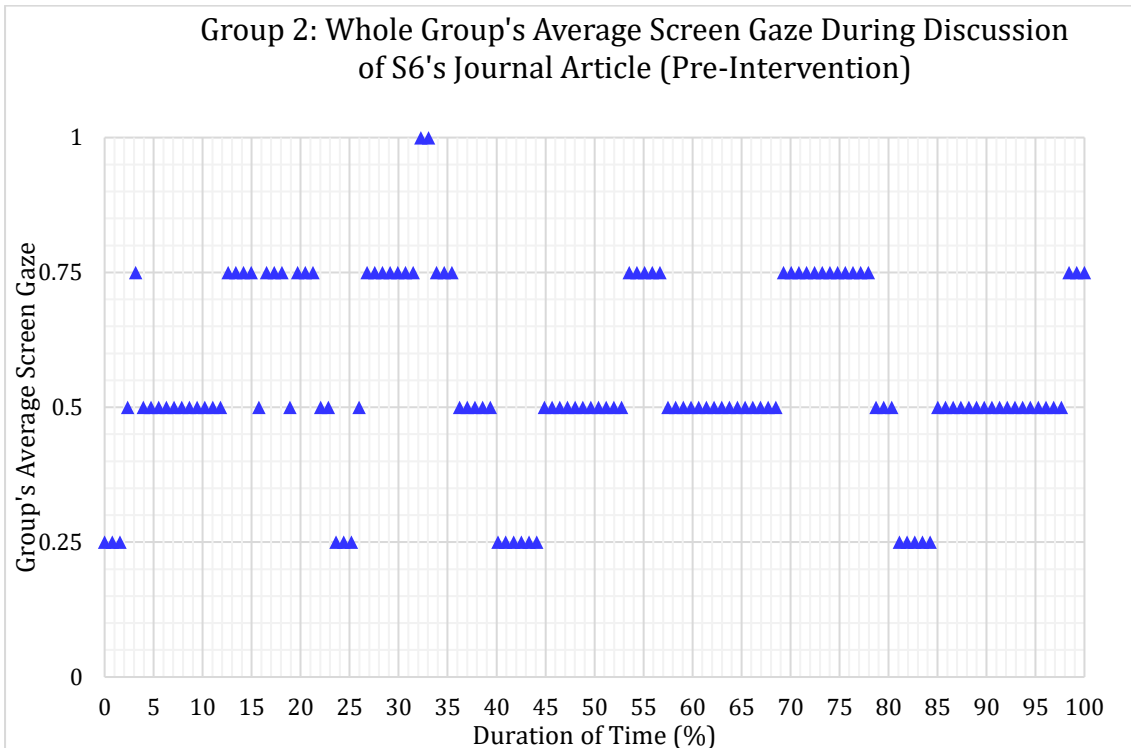


Figure A3.14: Whole Group's Screen Gaze During Group Discussion on S6's Journal Article (Pre-Intervention)

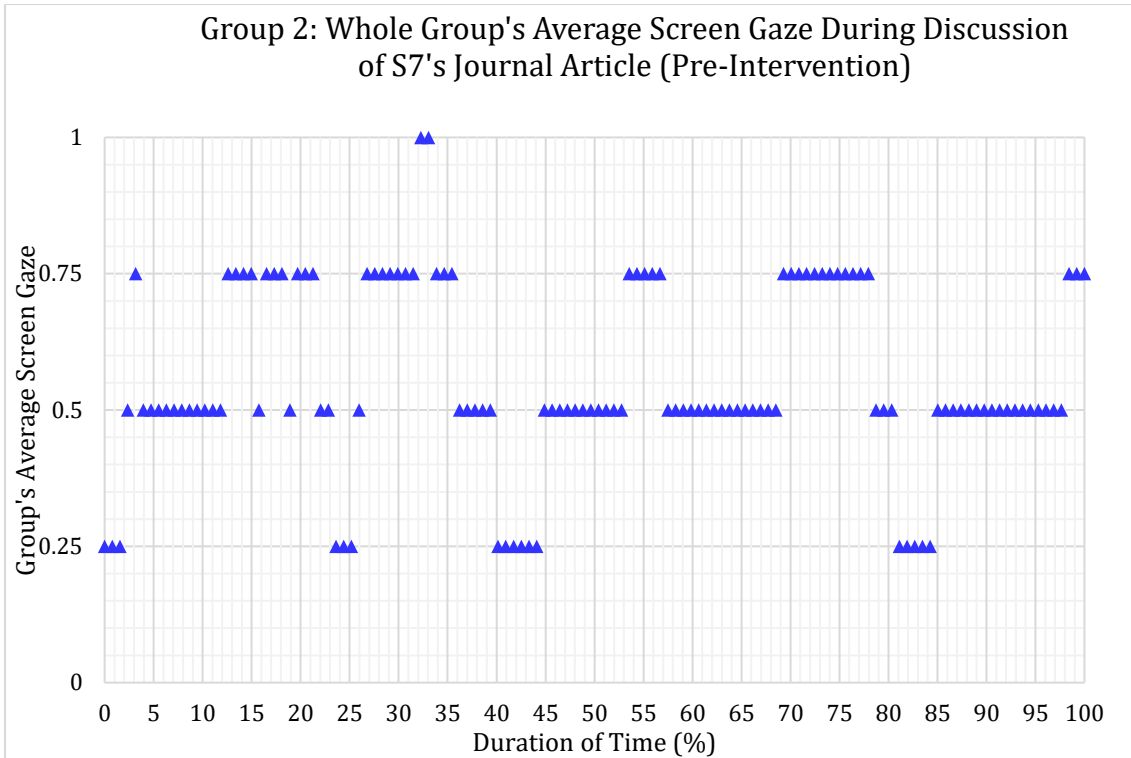


Figure A3.15: Whole Group's Screen Gaze During Group Discussion on S7's Journal Article (Pre-Intervention)

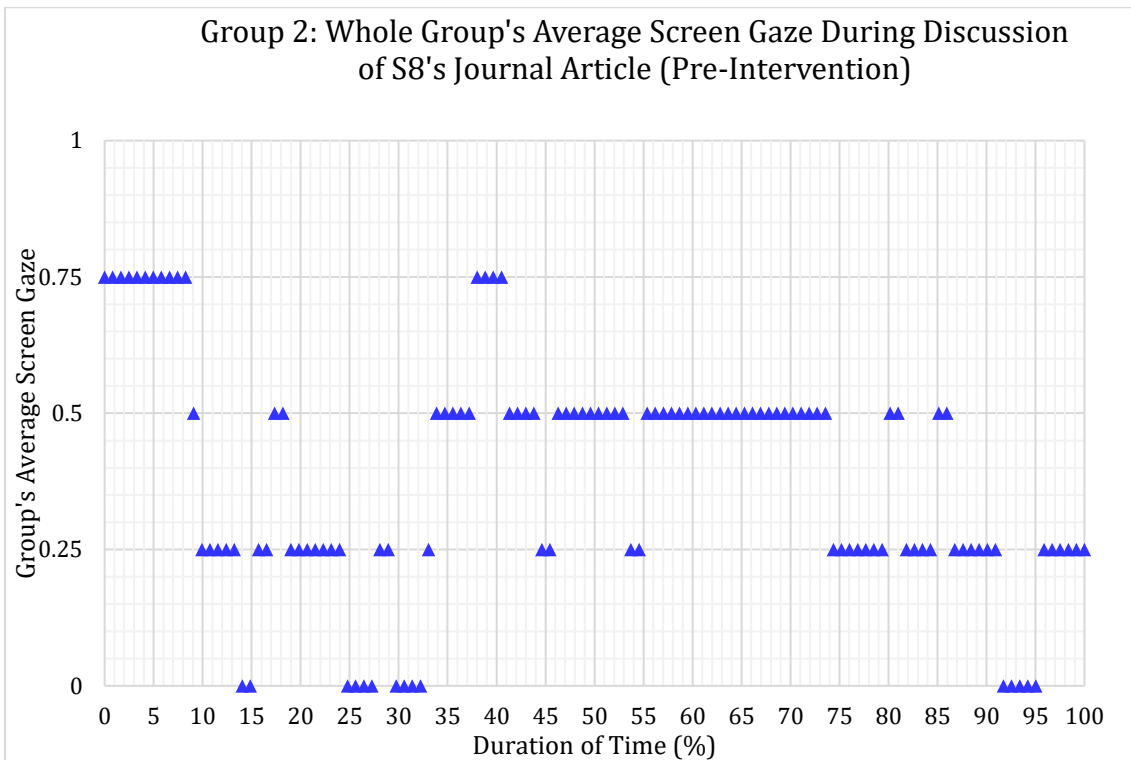


Figure A3.16: Whole Group's Screen Gaze During Group Discussion on S8's Journal Article (Post-Intervention)

A.3.2.4. Group 2 - Whole Group's Average Screen Gaze During Post-Intervention Discussions

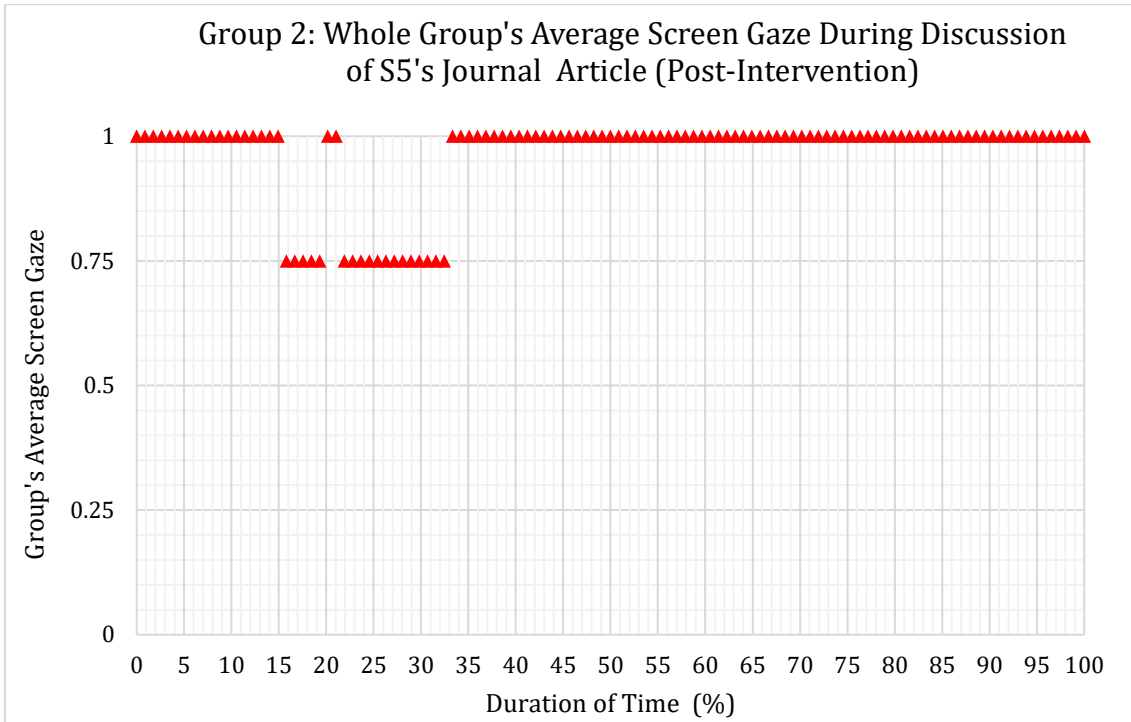


Figure A3.17: Whole Group's Screen Gaze During Group Discussion on S5's Journal Article (Post-Intervention)

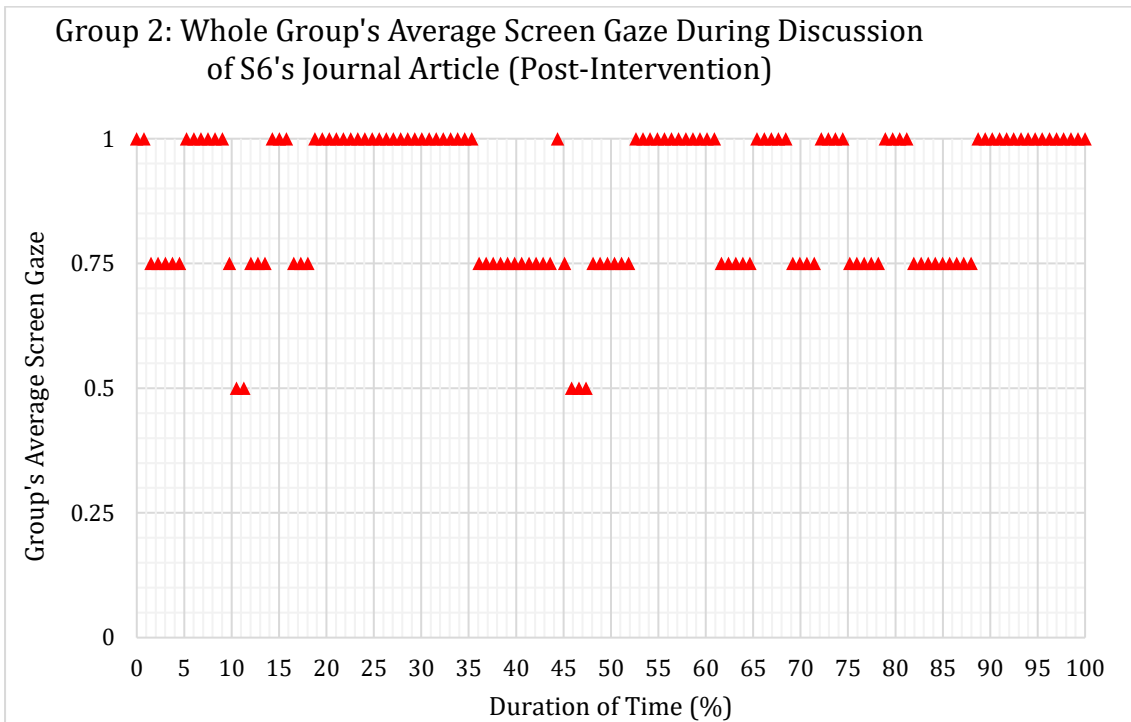


Figure A3.18: Whole Group's Screen Gaze During Group Discussion on S6's Journal Article (Post-Intervention)

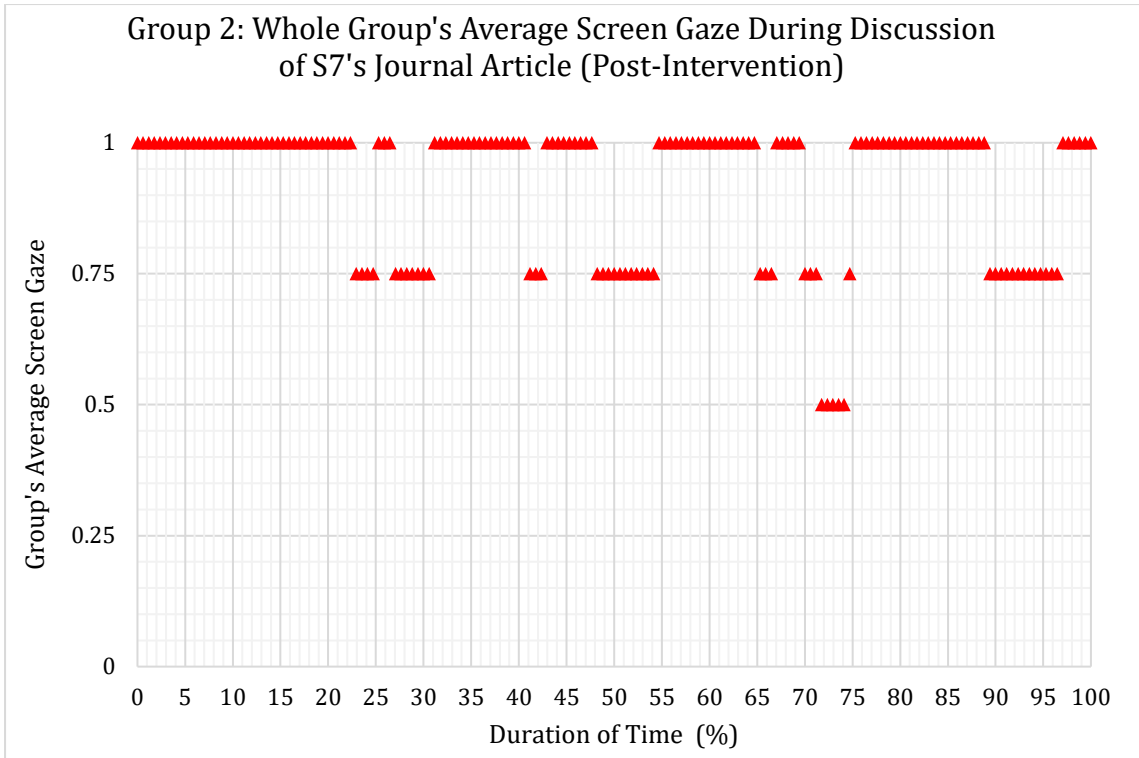


Figure A3.19: Whole Group's Screen Gaze During Group Discussion on S7's Journal Article (Post-Intervention)

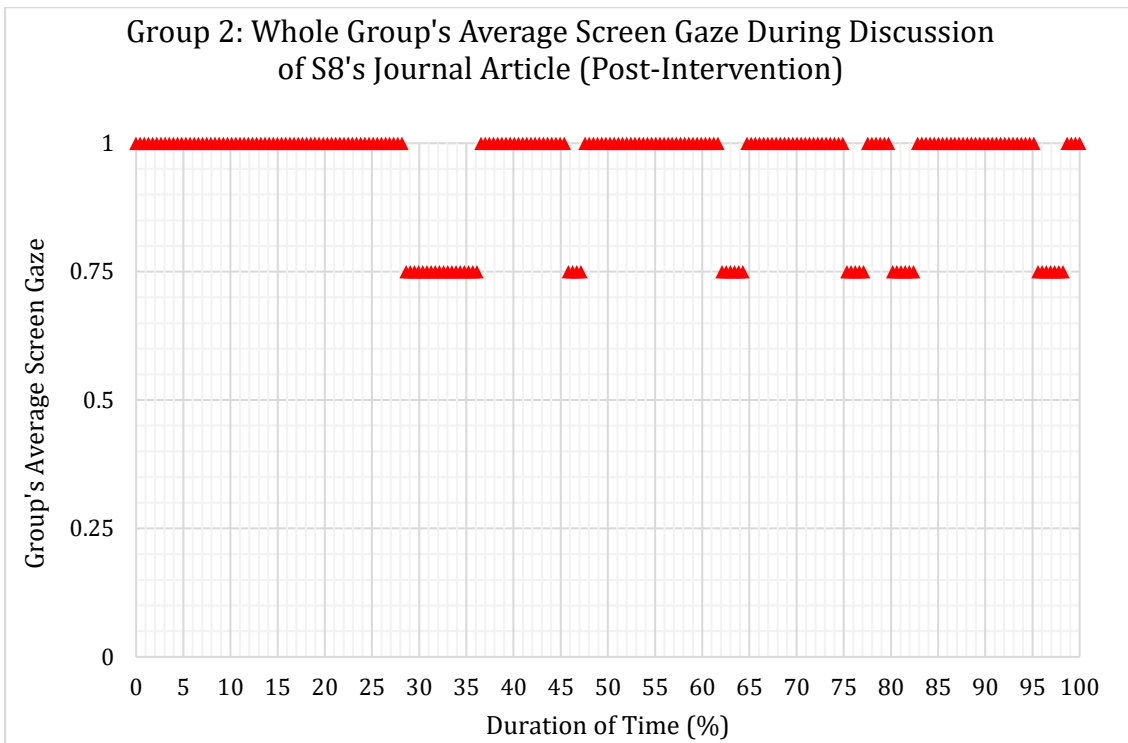


Figure A3.20: Whole Group's Screen Gaze During Group Discussion on S8's Journal Article (Post-Intervention)

Appendix A.4

A.4. Template Analysis of Focus Group Transcriptions – Cycle 1

Table A4.1: Example Student Statements on the Three Key Emergent Themes – Post-Intervention Focus Groups (Cycle 1)

Main Theme	Frequency	Cycle 1
		Students' Statements
Screen Gaze	06	S2: <i>Yes, definitely. Definitely, it is. It is so after like I can see their facial expressions and ... if you feel if you see people are interested, it motivates you personally as well to give much more like a really good outcome from you. (TR PostIFG, G1)</i>
		S8: <i>For me, another thing was responses from others, ... and their eye contact was a lot better. (TR PostIFG, G2)</i>
		S6: <i>For me like, Hasim has already said it, like while I was looking at them ..., So, that's one thing. (TR PostIFG, G2)</i>
Nodding	05	S1: <i>I think nodding is helping. So, when I do that, people – the one who uh, speaking is - they know that I understand it and they try to continue the continue their talking rather than explaining the same thing. (TR PostIFG, G1)</i>
		S8: <i>For me, another thing was responses from others, nodding my head. (TR PostIFG, G2)</i>

Appendix A.5

A.5. Ethnographic Field Notes – Cycle 1

A.5.1. Cycle 1/ Group 1 – Pre-Intervention

A.5.1.1. *Screen Gaze During Pre-Intervention Presentations of Journal Articles*

S4's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S4's presentation

Total presentation time: 5 m and 25 s.

1. The presenter appears to be mainly reading, eyes down, at the expense of maintaining optimal screen gaze. He looks at his notes and presents without sustaining screen gaze with other group members during most of his presentation. His screen gaze connection to others is infrequent and fleeting. S4 breaks screen gaze for a combined total of 5 m and 15 s.
2. At the start of the presentation, S2's brother enters the room [00:17:07] and sits on a sofa behind S2 but then talks to S2 from behind. S2 moves his outstretched right hand [00:12:16] behind him as expecting to be given something by his brother behind him. Then he turns his body in his chair to communicate [for seven seconds 00:12:17-00:12:25] with his brother.
3. Within the group, S1 appears to notice this event and is suddenly smiling then covering his mouth with his left hand as if to hide his smile. S4 may not be aware of this as he seldom looks at the screen.
4. After this, S1 also looks down and bites his little finger of the left hand [00:12:25-00:12:40] and then communicates with another person in his room breaks his screen gaze and seldom looks at screen.
5. S1 looks at his left and it seems non-verbally communicating (nodding and smiling) with another person outside their group [00:13:26- 00:13:34]. S1 repeatedly communicates four more times looking at the left continually till 00:13:56. Afterwards he fixes his eye gaze downward [00:13:59-00:14:17].
6. S2, speaking, nodding, and smiling to his brother, in the room repeats his actions two more times [00:14:00-00:14:12, 00:15:21-00:15:29] during S4's presentation.
7. S1 fixes his eye gaze downward for 17 seconds. [00:14:19-00:14:36]. Afterwards, S1 looks outside moving his head down and then into the left side, breaking screen gaze with the group members [00:14:57- 00:15:08].
8. There is a long pause (11 s) when S4 finishes presenting his journal article. [00:16:00 – 00:16:11].
9. S1 breaks screen gaze for a combined total of 2 m and 40 s.
10. S2 breaks screen gaze for a combined total of 1 m and 21 s.
11. S3 breaks her eye gaze for a combined total of 2 m and 18 s.

S1's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S1's presentation

Total Presentation time: 2 m and 52 s.

1. S1 conducted his presentation with little eye gaze directed to the group as he looks at his notes most of his presentation breaking screen gaze for a combined total of 2 m and 3 s.
2. S2 breaks his eye gaze for a combined total of 1 m and 7 s.
3. S3 breaks screen gaze for a combined total of 1 m and 49 s.
4. S4 looks away from the group for a combined total of 14 s.

S3's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S3's presentation

Total Presentation time: 3 m and 36 s.

1. From the moment S3 starts to present her journal article, she directs her gaze downward to her notes and fixes this downward gaze throughout her three minutes and 38 seconds presentation. She does not look even once at her fellow students while she is presenting to them. Only when she has finished her presentation to the group does she look at them.
2. S1 breaks screen gaze for a combined total of 2 m and 17 s (looks at his right-hand side).
3. S2 breaks screen gaze for a combined total of 1 m and 6 s (looks up and sides).
4. S4 breaks screen gaze for a combined total of 29 s.

A.5.1.2. Screen Gaze During Pre-intervention Discussions of Journal Articles

Discussion of S4's journal article

Group 1/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S4.

Total discussion time: 3 m and 22 s.

1. S4 speaks continuously [00:16:37 - 00:19:38] without sustaining screen gaze – an extended period of downward gaze. S4 breaks screen gaze for a combined total of 3 m and 20 s.
2. S1 breaks screen gaze (looks downward) for a combined total of 1 m and 22 s.
3. S2 breaks screen gaze (communicates with a person in his room and looks downward) for a combined total of 21 s.
4. S3 breaks screen gaze (touches her hair and looks downward) for a combined total of 1 m and 29 s during the discussion.

Discussion of S1's journal article

Group 1/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S1.

Total discussion time: 2 m and 48 s.

1. S1 breaks screen gaze for a combined total of 2 m and 31 s as he looks away down and up during the discussion.
2. S2 breaks screen gaze for a combined total of 48 s.
3. S3 breaks screen gaze for a combined total of 56 s.
4. S4 breaks his screen gaze for a combined total of 36 s.

Discussion of S3's journal article

Group 1/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S3.

Total discussion time: 6 m and 30 s.

1. S3 breaks screen gaze for a combined total of 4 m and 18 s.
2. S1 breaks screen gaze (looks right, left, and downward, communicates with an external person in his room and looks away) for a combined total of 3 m and 53 s.
3. S2 breaks screen gaze (looks down, communicates with a person in his room and rolls his eyes looking away) for a combined total of 1 m and 38 s.
4. S4 breaks screen gaze (looks away even while he talks) for a combined total of 48 s.

A.5.2. Cycle 1/ Group 1 – Post-Intervention

A.5.2.1. Screen Gaze During Post-Intervention Presentations of Journal Articles

S4's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S4's presentation

Total Presentation time: 6 m and 20 s.

1. S4 breaks screen gaze for a combined total of 1 m and 12 s.
2. S1 looks at the screen during most of S4's presentation and breaks screen gaze for a combined total of 40 s.
3. S2 sustains his screen gaze throughout S4's presentation he breaks screen gaze for a combined total of 10 s.
4. S3 sustains screen gaze throughout S4's presentation and he breaks screen gaze for a combined total of 1 m and 21 s.

S1's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S1's presentation

Total presentation time: 4 m.

1. S1 breaks screen gaze for a combined total of 1 m and 45 s and he sustains screen gaze during most of his talking.
2. S2 sustains screen gaze throughout S1's presentation.
3. S3 she breaks screen gaze for a combined total of 44 s and she sustains screen gaze during most of S1's presentation.
4. S4 breaks screen gaze for a combined total of 2 s.

S3's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S3's presentation

Total presentation time: 5 m and 55 s.

1. S3 breaks screen gaze for a combined total of 1 m and 17 s.
2. S1 breaks screen gaze for a combined total of 1 m and 32 s and he looks at the screen during most of S3's presentation.
3. S2 breaks screen gaze for a combined total of 14 s.
4. S4 sustains screen gaze throughout S3's presentation.

A.5.2.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S4's journal article

Group 1/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S4.

Total discussion time: 5 m and 37 s.

1. S4 breaks screen gaze for a combined total of 22 s.
2. S1 breaks screen gaze for a combined total of 45 s.
3. S2 sustains screen gaze throughout this discussion.
4. S3 breaks screen gaze for a combined total of 30 s.

Discussion of S1's journal article

Group 1/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S1.

Total discussion time: 4 m and 59 s.

1. S1 breaks screen gaze for a combined total of one minute and 13 s.
2. S2 breaks screen gaze for a combined total of 7 s and he sustains screen gaze during most of the discussion of S1's journal article.
3. S3 breaks screen gaze for a combined total of 7 s.
4. S4 sustains his screen gaze throughout the whole discussion time.

Discussion of S3's journal article

Group 1/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S3.

Total discussion time: 2 m and 47 s.

1. S3 breaks screen gaze for a combined total of 9 s.
2. S1 breaks screen gaze for a combined total of 16 s.
3. S2 sustains screen gaze throughout the discussion of S3's journal article.
4. S4 sustains his screen gaze throughout the whole discussion time.

A.5.3. Cycle 1/ Group 2 – Pre-Intervention

A.5.3.1. Screen Gaze During Pre-Intervention Presentations of Journal Articles

S7's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S7's presentation

Total presentation time: 3 m and 6 s.

1. S7 breaks screen gaze (looks down, up and sides) for a combined total of 2 m.
2. S5 breaks screen gaze (looks down and closes his eyes) for a combined total of 18 s.
3. S6 breaks screen gaze (looks down) for a combined total of 3 m and 4 s.
4. S8 breaks screen gaze (looks down and right) for a combined total of 49 s.

S8's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S8's presentation

Total presentation time: 2 m and 41 s.

1. S8 breaks screen gaze (looks down) for a combined total of 18 s.
2. S5 breaks screen gaze (looks down and closes his eyes) for a combined total of 2 m.
3. S6 breaks screen gaze (looks down) for a combined total of 2 m and 41 s.
4. S7 breaks screen gaze (looks right) for 8 s and his video camera is switched off for a combined total of 1 m and 35 s.

S5's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S5's presentation

Total presentation time: 3 m and 33 s.

1. S5 breaks screen gaze (looks right, up, and down) for a combined total of 2 m and 30 s.
2. S6 breaks screen gaze for a combined total of 3 m and 34 s.
3. S7 breaks screen gaze (looks down) for a combined total of 51 s.
4. S8 breaks screen gaze (looks down) for a combined total of 23s.

A.5.3.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles.

Discussion of S7's journal article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S7.

Total discussion time: 3 m and 12 s.

1. S7 breaks screen gaze for a combined total of 3 m and 4 s.
2. S5 breaks screen gaze for a combined total of 1 m and 40 s.
3. S6 breaks her screen gaze for a combined total of 2 m and 4 s, and her camera was off for 23 s.
4. S8 breaks screen gaze (looks sides and away) for a combined total of 35 s.

Discussion of S8's journal article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S8.

Total discussion time: 2 m and 1 s.

5. S8 breaks screen gaze for a combined total of 41 s.
6. S5 breaks screen gaze for a combined total of 1 m and 12 s.
7. S6 breaks her screen gaze for a combined total of 1 m and 38 s, and her camera was off for 23 s.
8. S7 breaks screen gaze (looks sides and away) for a combined total of 1 m and 4 s.

Discussion of S5's journal article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S5.

Total discussion time: 3 m 58 s.

1. S5 breaks screen gaze for a combined total of 1 m and 20s.
2. S6 loses her connection and breaks screen gaze for the whole time.
3. S7 breaks screen gaze (looks down and away) for a combined total of 1 m and 10 s.
4. S8 breaks screen gaze for a combined total of 9 s.

A.5.4. Cycle 1/ Group 2 – Post-Intervention

A.5.4.1. Screen Gaze During Post-Intervention Presentations of Journal Articles

S7's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S7's presentation

Total presentation time: 3 m and 36 s.

1. S7 breaks screen gaze for a combined total of 1 m.
2. S5 breaks screen gaze for a combined total of 21 s.
3. S6 sustains screen gaze throughout S7's presentation.
4. S8 breaks screen gaze for a combined total of 20 s.

S8's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S8's presentation

Total presentation time: 3 m and 29 s.

1. S8 breaks screen gaze for a combined total of 42 s.
2. S5 sustains screen gaze throughout the whole time of S8's presentation.
3. S6 sustains screen gaze during the whole presentation time of S8.
4. S7 breaks screen gaze for a combined total of 4 s.

S5's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S5's presentation

Total presentation time: 4 m and 5 s.

1. S5 breaks screen gaze for a combined total of 46 s.
2. S6 sustains screen gaze throughout S5's presentation.
3. S7 sustains screen gaze during S5's presentation and he breaks screen gaze for 3 s.
4. S8 breaks screen gaze for a combined total of 16 s.

A.5.4.2. Screen Gaze During Post-Intervention Discussions of Journal Articles.

Discussion of S7's journal article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S7.

Total presentation time: 2 m and 50 s.

1. S7 breaks screen gaze for a combined total of 46 s.
2. S5 breaks screen gaze for a combined total of 9 s.
3. S6 sustains screen gaze throughout whole discussion time of S7's journal article.
4. S8 sustains screen gaze throughout whole discussion time of S7's journal article.

Discussion of S8's journal article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S8.

Total presentation time: 3 m and 47 s.

1. S8 breaks screen gaze for a combined total of 20 s.
2. S5 sustains screen gaze throughout the whole discussion time of S8's journal article.
3. S6 sustains screen gaze throughout the whole discussion time of S8's journal article.
4. S7 breaks screen gaze for a combined total of 26 s.

Discussion of S5's journal article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S5.

Total presentation time: 1 m and 54 s.

1. S5 sustains screen gaze throughout the whole discussion time.
2. S6 sustains screen gaze throughout the whole discussion time of S5's journal article.
3. S7 breaks screen gaze for a combined total of 17 s.
4. S8 sustains screen gaze throughout the whole discussion time of S5's journal article.

Appendix A.6

A.6 Template Analysis of PreIGMs and PostIGMs (Example Transcription Extracts) – Cycle 1

Table A6.1: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycle 1)

Main Theme	Sub-theme	Examples of Students' Statements			
		Frequency	Pre-Intervention	Frequency	Post-Intervention
1. Social Experience		14		68	
Disruptions to Group Cohesion		09		00	
	Simultaneous Talk		<p>S1: [talking simultaneously with S4] <i>Meth is going to present first-</i></p> <p>S4: <i>-Yeah, that's good so we can use the same order.</i></p> <p>(TR, PreIGM, G1, C1)</p> <p>S6: <i>Everybody happy?</i></p> <p>S5: <i>I have - [Simultaneous talk]</i></p> <p>S7: <i>- I'm pretty much here.</i></p> <p>(TR, PreIGM, G2, C1)</p>		--

	<p>S6: <i>I wish I could have the same technology with me so I could read like Okay. Are they going sad or are they going happy? I wish I had that now because everyone is blank -</i></p> <p>S7: <i>- What did you say? [S7 asks from S5 as S5 talks simultaneously with S6]</i></p> <p>(TR, PreIGM, G2, C1)</p>
Competitive Individualism	<p>S8: <i>I can go first because I want to...</i></p> <p><i>[The members of the group do not discuss as a group presenting their research articles, but S7 tells that he does first, which appears the competitive individualism and lack of group cohesion]</i></p> <p>S7: <i>Alright, uh so guys I'll I'll go first.</i></p> <p>(TR, PreIGM, G2, C1)</p>
Interruptions	<p>S3: <i>... I could say that if you take currently, we all ... aware of Wagan R-</i></p> <p>S4: <i>-Yeah, that's the one. I'm using anyway in Sri Lanka.</i></p> <p>(TR, PreIGM, G1, C1)</p> <p>S6: <i>I wish I could have the same technology with me so I could read like Okay. Are they going sad or are they going happy? I wish I had that now because everyone is blank -</i></p> <p>S7: <i>- What did you say? [S7 asks from S5 interrupting S6] (TR, PreIGM, G2, C1)</i></p>

Validation	02	44
Validating other's Expressions	<p>S1: <i>Yeah, yeah.</i> [S4 moves backwards and leans in his chair after his talk]. (TR, PreIGM, G1, C1)</p>	<p>S2: <i>Yes, yes you can go ahead. Yes.</i> (TR, PostIGM, G1, C1)</p> <p>S3: <i>I agree with that. Because I think love is very complicated like Maths you have so many equations. So many derivatives.</i> (TR, PostIGM, G1, C1)</p> <p>S8: <i>Okay, that makes sense.</i> (TR, PostIGM, G2, C1)</p>
Expressing Gratitude	<p>S6: <i>That is all that I read, thank you.</i> (TR, PreIGM, G2, C1)</p>	<p>S4: <i>That's very good. Thank you.</i> (TR, PostIGM, G1, C1)</p> <p>S5: <i>Thank you, Thank you Shan.</i> (TR, PostIGM, G2, C1)</p> <p>S7: <i>... cool. Thanks Hasim.</i> (TR, PostIGM, G2, C1)</p>
Inviting by Name	--	<p>S4: <i>Next one is Jenuru I believe yeah yeah, can you take over?</i> (TR, PostIGM, G1, C1)</p> <p>S1: <i>I will ask Vidma to continue with her research.</i> (TR, PostIGM, G1, C1)</p> <p>S8: <i>Alright, so Daham you can go on.</i> (TR, PostIGM, G2, C1)</p>
Complimenting	--	<p>S4: <i>Yes, Meth, of course, we enjoyed your findings.</i> (TR, PostIGM, G1, C1)</p> <p>S4: <i>Actually, it's a new thing that came into me. That's very good.</i> (TR, PostIGM, G1, C1)</p> <p>S2: <i>Yes, it's quite interesting.</i> (TR, PostIGM, G1, C1)</p>

Social Connectedness	03	24
Apologizing	<p>S1: <i>I'm sorry I couldn't hear you.</i> (TR, PreIGM, G1, C1)</p> <p>S7: <i>I am actually sending the research paper. I'm sorry actually it should be sent earlier.</i> (TR, PreIGM, G2, C1)</p>	<p>S1: Sorry. [there is background noise while he is presenting his article]. (TR, PostIGM, G1, C1)</p> <p>S3: ... <i>I'm sorry.</i> [S3 corrects a point, she states during her journal article presentation]. (TR, PostIGM, G1, C1)</p> <p>S6: ... <i>sorry, 52 of them were from the higher dropout rate course.</i> [S6 corrects a point, she states during her journal article presentation]. (TR, PostIGM, G1, C1)</p>
Creating opportunities for others to speak	--	<p>S2: <i>Jenuru, is there any things that you'd like to ask from me? Is there any topics that you are interested about this?</i> (TR, PostIGM, G1, C1)</p> <p>S4: <i>Yeah. Vidma, do you have any problem?</i> (TR, PostIGM, G1, C1)</p> <p>S6: ... <i>sorry Hasim you wanted to ask something; I think? [00:04:13 S6 noticed that S8 could not ask his question due to crosstalk and after answering S7, S6 invites S8 to ask his question].</i> (TR, PostIGM, G2, C1)</p>
Social Risk Taking	--	<p>S4: ... <i>I was joking.</i> (TR, PostIGM, G1, C1)</p> <p>S2: <i>No, it is not me. I think Jenuru.</i> (TR, PostIGM, G1, C1)</p> <p>S4: <i>Meth, it looks like you have a big question.</i> (TR, PostIGM, G1, C1)</p>

2. Learning Experience	05	34
Productive Participation	01	14
Knowledge Dissemination and Critical Perspectives		<p>S2: <i>Yes. ... after doing this research they used to find like what cause like if it is something with the neuron or if it's something with the axon so likewise we can see in people and we can uh use extended therapies like medical therapies. We can refer to medical therapy to reduce uh the firing rates. So that's the main idea. (TR, PostIGM, G1, C1)</i></p> <p>S1: <i>Basically, nowadays every moving object is using a gyroscope, to calculate the rotational movement, their rotational movement. So basically, this has to be done for my project for an aircraft. And if you take, uh if we took a ship let's say that only ship. It has to have some kind of a way to measure the banking angle of the ship. (TR, PostIGM, G1, C1)</i></p> <p>S8: <i>Yeah, yeah, I wanted to ask about the validity of this experiment, because obviously, it is about emotionally, like something statistics only. So, how does it easy to come out on actually ask someone if their emotions and feelings some way or another? (TR, PostIGM, G2, C1)</i></p>
Purposeful Facilitations	04	
Keeping Focus	--	S4: <i>You mean trusting the WhatsApp company? (TR, PostIGM, G1, C1)</i>

			S2: <i>I like to add something...</i> (TR, PostIGM, G1, C1)
Seeking Clarification		S2: <i>So, what are comparatively like the traditional aircraft? and is there any environmental impacts like comparing these ones with the?</i> (TR, PreIGM, G1, C1)	S4: <i>Is that the proximity sensor? I don't really know about these sensors anyway. So, is that the proximity centre, sensor that we use in the phone?</i> (TR, PostIGM, G1, C1)
		S8: <i>So obviously you said use face like emotions are recognized, right, so, um, how accurate is the actual face recognition?</i> (TR, PreIGM, G2, C1)	S7: <i>Uh, I didn't get to the first part though. Is it conducted in UK?</i> (TR, PostIGM, G2, C1)
		S5: <i>So, you have in your training algorithm like right? yeah, so I heard that people use Python as a language? or Are you using Python as well?</i> (TR, PreIGM, G2, C1)	S5: <i>I have a quick question. [00:16:48 S5 leans forward] Do those things depend on the distance from the sun or something have they mentioned anything like that?</i> (TR, PostIGM, G2, C1)
3. Social Experience Mediated Learning Experience	12		08
Psychological Safety	00		02
Reduction of Anxiety		--	S7: <i>I'm not that prepared like ... but I'll give it a go.</i> (TR, PostIGM, G2, C1)
The Notion of Equal Agency	12		06
Negative		S4: <i>... do you have any questions to ask? [After S2's journal article presentation S4 raises this stating that he doesn't have the background knowledge to ask questions].</i> (TR, PreIGM, G1, C1)	--

S1: *So, any questions about that?* [After presenting his journal article]. (TR, PreIGM, G1, C1)

S6: *Do any one of you have any questions?* (TR, PreIGM, G2, C1)

Positive

--

S6: *That is about the article that I read, would you like to discuss it further or would you like to ask anything?* (TR, PostIGM, G2, C1)

S7: *So, the research that I selected today was, I want to select something that every one of you would have some relation to it because others are doing tech stuff.* (TR, PostIGM, G2, C1)

S5: *Do you need to discuss more about it or you guys really know about it?* (TR, PostIGM, G2, C1)

Appendix A.7

A.7. Template Analysis of Pre- and Post-Intervention Focus Groups (Example Transcription Extracts) – Cycle 1

Table A7.0.1: Template Analysis of Pre-Intervention Focus Groups - Outside Study & During Study Example Transcription Extracts (Cycle 1)

Main Theme	Sub-theme	Examples of Students' Statements			
		Frequency	Pre-Intervention	Frequency	Post-Intervention
1. Social Experience		54		47	
Disruption to Group Cohesion (Common Group Work Behaviours)	Inequality of Sharing Time/ Dominating	28	<p>S1: ... Some people have expertise in some subject, and some people have expertise different subjects. So uh, when we talk about uh, about uh one subject in a group meeting, so some people talk about more about more things than the others, because they know that thing more than the others. (TR, PreIFG, G1)</p> <p>S3: ... we don't get a chance to talk because most of the time to be honest I'd to be one always listening. (TR, PreIFG, G1)</p> <p>S7: ... somebody is leading the discussion, and somebody is asking questions or saying something that is not related. ... in my experience, there are more listeners than</p>	00	--

people who are actually talking. (TR, PreIFG, G2)

S3: *What happens actually, sometimes the whole group is left out and one person is leading the whole group the whole time interactions answers, continuously. So, uh, I think that happens when the rest of the group has no idea what the conversation is, what the topic is and one person is an extreme expert in that area. (TR, PreIFG, G1)*

S5: *For me, uh, before I knew this, I was responding to like threat more often. I was behaving defending myself like really not impressive way because it was on most of the discussions when they disagree, and then we disagree about it. I try to speak against I try to pull away people, but I don't let them speak. I don't let them finish speaking. (TR, PreIFG, G2)*

S5: *When the group is a bit larger, I try, well I try to stay quiet and then see what they are asking and then I'm more of a listening person. (TR, PreIFG, G1)*

Non-contribution 17

S4: *So, in my case what I felt actually that the groups I joined with uh they came up with like very lower level of knowledge. Some people didn't even talk. (TR, PreIFG, G1)*

00

--

		<p>S5: So, everyone chooses to stay quiet and listen to whatever everyone else has to say. (TR, PreIFG, G2)</p> <p>S8: So, lot of friends I know They can't actually do group work, ... they are more quiet and stay behind the camera. (TR, PreIFG, G2)</p>		
Cliques	05	<p>S1: ... some people know each other very well than the others, so those group in the group, the group will be divided into two or three more groups. So those small groups tend to do work together than without the others. (TR, PreIFG, G1)</p> <p>S2: I have seen that as well, when people are doing a group discussion, some people do like backchatting, while because that, I think because they have lack of background on the specific area. (TR, PreIFG, G1)</p> <p>S8: ... a bit of like me a bit more laid back and somewhere in the middle back for like with the boys, segregating a group in the side. Then you get another group back in all different allocated areas and not because we put it in there. They just, that you interact with certain group. (TR, PreIFG, G1)</p>	00	--
Feeling of Being Left out	04	<p>S4: Yeah, that's right. When we have different knowledge levels then we talk differently. You know the levels will be different and some people like uh as example, the lower</p>	00	--

level group, actually they kind of like ignoring the discussion because the thing is they don't really understand what the others are talking about because we don't address their level. So that's gonna be a problem. (TR, PreIFG, G1)

S8: *All the time. (TR, PreIFG, G2)*

S5: *Most of the time. (TR, PreIFG, G2)*

S7: *Yeah, depending on what the lecture is. If it's just a lecture of obviously the lecturer be speaking and everyone would be left out, and if it's more of a discussion there would always be someone who's leading the discussions and others will be listeners. So yeah. (TR, PreIFG, G2)*

Social Connectedness		00	--	47	
	Enhancing Interactivity	00	--	18	<p>S4: <i>I learned how to interact people like without ignoring them. So I I'm going to give most people a second chance by uh dynamically adjusting. Uh, like we discussed by by using many, many skills that we discussed. So, I think it's a good opportunity for me to change accordingly. And to use whoever the people that we have in that group to, uh, find the solutions for whatever the discussion that relates to us. So this is a good move actually. (TR, PostIFG, G1)</i></p> <p>S2: <i>I saw people are not engaging a lot more than before... when we started this conversation like 3 days back. But now people are more engaging, more curious about to know</i></p>

things like even when we are doing our own articles like. They're not like much shy like before, they're much open now. (TR, PostIFG, G1)

S5: *Yeah, I think I think they [CSCC] definitely do [help enhance social experience] because I have noticed it. Uh, people can't believe how I behave with them when they have these arguments previously and then after I had that session. So my friends basically. So it [CSCC intervention session] definitely makes an impact in a good way, yes. If you know how to use them [CSCC] when anything happens. (TR, PostIFG, G2).*

Improving
Listening

00

--

12

S6: *So, it was good to know that they all were paying attention and listening. (TR, PostIFG, G2)*

S5: *For me, uh, before ..., I was responding to like threat more often. I was behaving defending myself like really not impressive way because it was on most of the discussions ... when they disagree, and then we disagree about it. I try to speak against I try to pull away people, but I don't let them speak. I don't let them finish speaking. [laugh]. So, and after that after we had last session, soothing and everything, I tend to listen to whatever they say and then respond. ...This session helps me in that. (TR, PostIFG, G2)*

S8: *Then, I became one who not only wants to speak to you [the group] but one wants to*

				<i>listen to you [the group] a lot more. (TR, PostIFG, G2)</i>
Increasing social comfort	00	--	08	<p>S4: ... now all are open to discuss anything and it's like we're having a comfortable environment to say what we have in our mind. (TR, PostIFG, G1)</p> <p>S2: ... now we are little bit comfortable with each other. ((TR, PostIFG, G1)</p> <p>S7: Right now I don't feel, I don't have that feeling like I, I yeah I am comfortable answering questions 'cause it feels like I'm not obviously, I'm not an expert at it. I just I just can clarify some stuff to you. (TR, PostIFG, G2)</p>
Building Confidence	00	--	04	<p>S4: So now we have like I have in my case I have confidence to talk in front of you all now without any fear so. That's I'm saying, again, that's what we gain through the techniques. (TR, PostIFG, G1)</p> <p>S2: Yes, I agree with what [S4] and [S3] said. (TR, PostIFG, G1)</p> <p>S8: It is now much more confident with each other to actually talk. (TR, PostIFG, G2)</p>
Creating opportunities for others to Speak	00	--	02	<p>S4: So what will happen next day, when he goes home, he will have to study and be ready for the next session because he knows he should talk in the classroom or in the meeting so he will try to improve himself and be prepared to the next discussion because he knows what the culture inside, new culture. Now you're changing the culture. It is not like listening culture. It's like interacting culture. So when</p>

you change the culture there, so like by using the techniques you change the culture there. So when you change the culture, that person get to interact and he's also trying to develop. These things actually I have personally seen. Once you interact and once you get all the people with the lower knowledge included [in the discussion] they will come up to a level where he can do something. I agree to a point from one hand and saying this anyway. Because you cannot bring the person to your level in some cases, but still you can find something from uh from that person. (TR, PostIFG, G1)

Enhancing Team Spirit 00

--

03

S4: *I mean the bonding so it's it's like we are developing some kind of bonding. (TR, PostIFG, G1)*

S5: *Yeah. We are like more familiar with each other. (TR, PostIFG, G2)*

2. Learning Experience

02

21

Productive Participation

Knowledge dissemination and critical perspectives

02

06

S2: *... more curious about to know things like even when we are doing our own articles. (TR, PostIFG, G1)*

S1: *Yeah, I agree with Meth. (TR, PostIFG, G1)*

S5: *I think if you do use, say for example when we are, saying something to a student right, and then if we know that it's going to trigger the, uh defending mode more and if we know that person's defending mode and then if we try to give and give an example of that they wouldn't defend but they*

					<i>would like to try to accept then it would go into the person that we're teaching to his mind. So, it will slowly be sinking in there. (TR, PostIFG, G2)</i>
Purposeful Facilitations		00		15	
	Keeping focus	00	--	08	<p>S1: I think this is, uh using these strategies help me focus and attract, more to the to the conversation that we had. (TR, PostIFG, G1)</p> <p>S3: I think when a person is failing to understand or learn anything around, being more and more compassionate and more kind to them and explain a very good way is the best approach. (TR, PostIFG, G1)</p> <p>S1: I believe learning is more up to the person who's listening. Uh, he has to grab the thing that the other person say. To do that, the person, has to be in focus. So those strategies help us to focus by learning process from listening and uh talking. (TR, PostIFG, G1)</p>
	Seeking clarification	00	--	07	<p>S6: ... they were listening. That's why they had this question. So, it was good to know that they all were paying attention. (TR, PostIFG, G2)</p> <p>S5: ... they have asked me questions and then after, they have invited me to speak. (TR, PostIFG, G2)</p> <p>S8: ... it [using CSCC] helps on with question asking because a lot of students don't ask questions when they need to ask questions. So yes, they stuck in that and they don't want to ask</p>

because you don't have that compassion to drive to ask them. That's like ... if I say it out loud, people might think I'm stupid. But having being more ... makes you want to ask questions that actually benefit you and others in the future or something that it helps. (TR, PostIFG, G2)

3. Social Experience Mediated Learning Experience **13** **65**

Challenges to Psychological Safety **13** **00**

- | | | |
|---|----|--|
| Communicating in English as a Second Language | 09 | <p>S2: <i>English is not our mother tongue and ... expressing uh their thoughts and what they think about ... not everyone is capable like not everyone is confident when it comes to describing their own things. (TR, PreIFG, G1)</i></p> <p>S7: <i>Let's say one of us is not great [in communicating in] English, so I wouldn't obviously feel good talking to anybody. (TR, PreIFG, G2)</i></p> <p>S6: <i>Yeah, because I remember this one. Chinese girl that came from China. She wasn't able to speak English. ..., actually she was very talented ..., but it's just like when we are doing any group projects or anything, she won't be able to communicate as much as we do I think it's because of her language problem. (TR, PreIFG, G2)</i></p> |
|---|----|--|
-

	Reluctance to Switch on Cameras	02		S8: <i>But majority of times they do not switch on cameras, from my experience. (TR, PreIFG, G2)</i>
	Social Anxiety	02		S7: <i>I was really feeling nervous at the moment (TR, PreIFG, G2)</i> S5: <i>Same, same thing with me. (TR, PreIFG, G2)</i>
Psychological Safety		00	--	53
	Reported Reduction of Anxiety	00		08 S4: <i>We are going off towards, like the fear that we have about the others. I mean the shyness and everything. So those are also affected from [by] the techniques that we use. (TR, PostIFG, G1)</i> S2: <i>They're not like much shy like like before they're much open now. (TR, PostIFG, G1)</i> S8: <i>When people ask questions am just like oho god's sake because I don't know how to answer actually. [Everybody laughs]. But now it's like because of compassion, I want people to ask questions. (TR, PostIFG, G2).</i> S7: <i>I noticed that the very first time everybody we weren't talking, we got to talk only at the end of the session. I guess on the very first day. But right now we're like we can talk more. (TR, PostIFG, G2)</i>
	Improving communication in English as a second language (ESL)	00	--	35 S2: <i>I think ... for some people it might limit their range of speaking ... because this [English] is their second language, this is not their mother tongue. so sometimes there are kind of difficulties. But throughout this session, I think everyone managed to deliver their</i>

				<p><i>outcome on the on the ideas their own ideas.</i> (TR, PostIFG, G1)</p> <p>S4: <i>Yeah, What I understand. Now, uh, yeah, I do. I do say yes for that because by using these compassionate skills, what will happen, it will help the other person to further talk. So, actually learning English will of course help you to like the more you use them to learn to use the language. So, if the other person is supporting you to talk, you get more room to talk so that way, my argument is that way you learn a lot.</i> (TR, PostIFG, G1)</p>
Willingness to switch on the camera	00	--	10	<p>S2: <i>... when I was presenting my article, people are curious, and their facial expressions that drive me to keep on going to complete my article.</i> (TR, PostIFG, G1)</p> <p>S6: <i>I think it was just a voice call. I think we wouldn't feel that bond [like here].</i> (TR, PostIFG, G2)</p> <p>S6: <i>So, I think having web cam turned on helps.</i> (TR, PostIFG, G2)</p> <p>S2: <i>Yeah, my my camera turned off and can't turn it on from my end. Can you turn it on from your end like I don't know what's going on like it it suddenly disappeared.</i> (TR, PostIFG, G2)</p>
Notion of Equal Agency	00	--	12	<p>S4: <i>So, everyone knows what to do and how to interact with people, and how to behave in the</i></p>

group. ... actually, it's very easy to have a better discussion in a group or whenever like we get together. (TR, PostIFG, G1)

S7: *... I didn't like people asking me questions in presentations. But but now I like that. As I went through the session [CSCC] and realized what I was doing. I mean I should be more compassionate. (TR, PostIFG, G2).*

S8: *For me. It's more like this kind of Preethi said that you know at first after asking, 'Do you have any questions?' ... I don't know how to answer actually. But now it's like because of compassion, I want people to ask questions. So, I have clarification to people actually listen to what I'm saying and are interested So, it is switched to the other side. So, it's a good way (TR, PostIFG, G2)*

S7: *Yeah, yeah, the whole point of how I view people asking questions was changed. (TR, PostIFG, G2).*

4. Group Management Strategies

Strategies		14		
Used to Enhance Group Engagement (Pre-Study)	Questioning	04	<p>S1: <i>Asking questions and answering them will uh, it will increase the, what do you call that ah? engagement. Uh, it's effective. (TR, PreIFG, G1)</i></p> <p>S4: <i>Yeah, I agree too. (TR, PreIFG, G1)</i></p> <p>S1: <i>Because even though, even though we didn't know the subject if we ask some questions there and if they give us the answer that we</i></p>	--

		<i>are able to learn that thing and we are engaging that more effectively than just listening. (TR, PreIFG, G1)</i>	
Appointing a Leader	03	<p>S2: <i>if we can appoint someone who is responsible to, so each and everyone, he will address equally.</i></p> <p>S1: <i>Yes, I agree with Meth. (TR, PreIFG, G1)</i></p>	--
Removing Group Members Who do not Involve	03	<p>S1: <i>Uh, to be honest, we used strategy. He didn't even [laughs] reply to the messages or answer the call</i></p> <p>S4: <i>-My concern over there is actually my strategy we should remove that person from the specific group, and we should continue with the people that we have otherwise we are wasting time on that particular thing [S1 tells 'Yes'] and not productive. ..., otherwise, we can't go to our targets. You know, we are going to fail because of him. (TR, PreIFG, G1)</i></p>	--
Assigning Task-Specific Roles	04	S2: <i>... we divide our roles in because some people are given okay, you will listen to these parts, and you will uh note down these things. So, if we divide the workload some people like we can take everyone's attention at a point rather than just one person or two just going through all the conversations all the ideas of each and everyone. (TR, PreIFG, G1)</i>	--

				<p>S4: <i>Yeah, absolutely. I agree with you. (TR, PreIFG, G1)</i></p> <p>S2: <i>So yeah, so people will be allocated like a different times to speak. (TR, PreIFG, G1)</i></p> <p>S1: <i>... if we could allocate some time to each member of the group. Uh, I think it will, uh, the group meeting will be more effective than just one one person talking.</i></p>
Strategies used to Manage PostIGMs	00		34	
CSCC	00		26	
Expressing Gratitude	--		08	
Inviting to Group Members by Their Names	--		03	<p>S6: <i>So, to me, like inviting everyone to discuss the topic. (TR, PostIFG, G2).</i></p> <p>S5: <i>... they have invited me to speak. (TR, PostIFG, G2)</i></p>
Addressing Monopolizing	--		02	<p>S2: <i>... sometimes people might think like, I'm dominating, sometimes, but after this [CSCC intervention session] I feel, yeah, there are certain rules. There are certain things to be covered and quite good understanding. (TR, PostIFG, G1).</i></p> <p>S1: <i>Yeah. I agree with Meth. (TR, PostIFG, G1).</i></p>
Complimenting	--		01	S6: <i>... they appreciate the others' efforts. (TR, PostIFG, G2).</i>
Warm Tone	--		01	S6: <i>And by trying to be compassionate we invite someone to engage in the discussion. By that, they'll start thinking on that warm tone and then they will have thoughts, like giving ideas into that discussion. (TR, PostIFG, G6).</i>
Sustained Screen Gaze	--		06	S2: <i>I 've seen, ... their facial expressions, how they smile and if they have like like Jenuru, if he's like</i>

				<p><i>little bit out of understanding, I can see how his face is different. So, I intend to express [explain] it a lot likewise. (TR, PostIFG, G1).</i></p> <p>S8: <i>For me, another thing was responses from others ..., and their eye contact was lot better. (TR, PostIFG, G2).</i></p> <p>S6: <i>I would say making eye contact. I'm a bit, I don't know, not shy but I'm scared to make eye contact because I'm scared if they have this blank look on their faces like they don't understand what I'm saying. I'll have to repeat something. I'm scared of that. After this discussion, I think, I tried my best to look at everyone. So that's one thing that I'm trying to like. I will improve in the future, hopefully. That's from my side. (TR, PostIFG, G2).</i></p>
Nodding	--	05	<p>S8: <i>I saw the other people also using it as well when I was talking like all you guys are nodding heads. So, it gives you more confidence like you guys actually paying attention. So this is quite good strategy. (TR, PostIFG, G8).</i></p> <p>S6: <i>For me like, Hasim has already said it, like while I was looking at them, they were nodding. So that's one thing. (TR, PostIFG, G2).</i></p> <p>S8: <i>For me, another thing was responses from others on, nodding my head. (TR, PostIFG, G2).</i></p>	
Student Developed	00	08		
Notion of Equal Agency	--	01	<p>S7: <i>... after we present something, instead of asking 'Any questions?', we could be more inviting. (TR, PostIFG, G2).</i></p>	

Offering more Explanations	--	01	S2: ... like Jenuru, if he's like little bit out of understanding, I can see how his face is different. So I intend to express [explain] it a lot. (TR, PostIFG, G1).
Questioning with Compassion	--	01	S4: Okey now, when I listen to Jenuru actually, but he as I said he was not smiling always. So I was like now it's I don't know whether it's the topic is boring itself to him as well so I was like going ahead asking question to make it more attractive and like more in a way that we can discuss further about the subject, so I think I felt like uh that change uh everything back to the track. I mean like even now, by doing that it was like thinking people are interested uh listening to the, uh I mean his subject so he come up with a different way of explaining the thing and the other people also got interacted with that. I think that went useful for all others and him as well to uh express what he wanted to say. I did that [on] purpose actually. (TR, PostIFG, G1).
Smiling	--	03	S4: When I looked at him [S1], no smile [before the CSCC session] and now he's smiling. (TR, PostIFG, G1). S4: I think, uh, everyone is smiling. (TR, PostIFG, G1).
Selecting Journal Article	--	01	S7: Well, for me, I tried to think about it this meeting beforehand and I kind of focused on finding a research paper that everyone would have some kind of relation to it. (TR, PostIFG, G2).

	Observing all four faces (Not only the Speaker)		--	01	S2: <i>I have seen when I'm talking people are when they're curious of their facial expressions. (TR, PostIFG, G1).</i>
5. Student Views on the Task	12			16	
Design for Attention to Compassion					
Students' Comments	12			16	
	Negative	00	--	00	--
	Positive	12		16	<p>S4: <i>We got to know about many things. Many new things. (TR, PreIFG, G1)</i></p> <p>S8: <i>Yes. It went quite well. (TR, PreIFG, G2)</i></p> <p>S7: <i>I think this is ideal. (TR, PreIFG, G2)</i></p> <p>S5: <i>For me, I try to stay quiet whether the camera is off or on but in this place for what it has matters is we are able to engage because the group is smaller.</i></p> <p>S2: <i>... I think the same, yes. We can get people more interactive interactions. We can get people more involved into this. In two weeks' time we have our viva as well, so I think it [CSCC] is much more beneficial for that (TR, PostIFG, G1)</i></p> <p>S7: <i>Exactly that was that was that was what I was gonna say, um. When you are employed, you'd obviously get to work in the work in teams. Your life is always good, and so much easier. If you apply [CSCC] strategies. (TR, PostIFG, G2)</i></p> <p>S8: <i>I do think it helps day-to-day life. (TR, PostIFG, G2)</i></p> <p>S6: <i>It helps to be friendly with others. (TR, PostIFG, G2)</i></p>

Appendix A.8

A.8. SPSS Analysis of Questionnaire 1 on Group Work Behaviours – Cycle 1

Table A8.1: Wilcoxon Signed-Rank Test Statistics - Questionnaire on Group Work Behaviours

	Z	Asymp.Sig. (2-tailed)
AELevel - EngLevel	-1.000 ^b	0.317
AQ4.1 - BQ4.1	-0.577 ^c	0.564
AQ4.2 - BQ4.2	-0.137 ^c	0.891
AQ4.3 - BQ4.3	-1.667 ^b	0.096
AQ4.4 - BQ4.4	-1.134 ^b	0.257
AQ4.5 - BQ4.5	-0.108 ^b	0.914
AQ4.6 - BQ4.6	-0.707 ^b	0.480
AQ4.7 - BQ4.7	-0.816 ^c	0.414
AQ4.8 - BQ4.8	-0.378 ^b	0.705
AQ4.9 - BQ4.9	-1.000 ^b	0.317
AQ4.10 - BQ4.10	-1.633 ^b	0.102
AQ4.11 - BQ4.11	.000 ^d	1.000
AQ4.12 - BQ4.12	-0.879 ^c	0.380
AQ4.13 - BQ4.13	-1.732 ^b	0.083
AQ4.14 - BQ4.14	-0.447 ^b	0.655
AQ5.1 - BQ5.1	-0.412 ^c	0.680
AQ5.2 - BQ5.2	-0.276 ^b	0.783
AQ5.3 - BQ5.3	0.000 ^d	1.000
AQ5.4 - BQ5.4	-0.184 ^b	0.854
AQ5.5 - BQ5.5	-0.604 ^b	0.546
AQ5.6 - BQ5.6	-0.378 ^b	0.705
AQ5.7 - BQ5.7	-0.378 ^c	0.705
AQ5.8 - BQ5.8	-0.087 ^b	0.931
AQ5.9 - BQ5.9	-0.879 ^b	0.380
AQ5.10 - BQ5.10	-0.577 ^b	0.564
AQ5.11 - BQ5.11	-0.213 ^b	0.832
AQ5.12 - BQ5.12	-0.425 ^b	0.671
AQ5.13 - BQ5.13	-1.633 ^b	0.102
AQ5.14 - BQ5.14	-1.732 ^b	0.083
AQ6.1 - BQ6.1	-1.732 ^c	0.083
AQ6.2 - BQ6.2	-0.577 ^c	0.564
AQ6.3 - BQ6.3	-1.633 ^c	0.102
AQ6.4 - BQ6.4	-1.414 ^c	0.157
AQ7.1 - BQ7.1	-1.732 ^c	0.083
AQ7.2 - BQ7.2	0.000 ^d	1.000
AQ7.3 - BQ7.3	-1.414 ^b	0.157

* a. Wilcoxon Signed-Rank Test, b. Based on positive ranks, c. Based on negative ranks, d. The sum of negative ranks equals the sum of positive ranks.

Appendix A.9

A.9. SPSS Analysis of Questionnaire 2 on Compassionate Engagement and Action Scale – Cycle 1

Table A9.1: Wilcoxon Signed-Rank Test Statistics - Questionnaire on Compassionate Engagement and Action Scale

	Z	Asymp.Sig. (2-tailed)		Z	Asymp.Sig. (2-tailed)
AQ1 - BQ1	-0.962 ^b	0.336	AQ36 - BQ36	-1.633 ^c	0.102
AQ2 - BQ2	-0.282 ^c	0.778	AQ37 - BQ37	-0.962 ^c	0.336
AQ3 - BQ3	-0.184 ^b	0.854	AQ38 - BQ38	-2.233 ^c	0.020
AQ4 - BQ4	-1.973 ^c	0.049	AQ39 - BQ39	-2.121 ^c	0.034
AQ5 - BQ4.5	-0.954 ^c	0.340			
AQ6 - BQ4.6	-1.980 ^c	0.048	a. Wilcoxon Signed-Ranks Test		
AQ7 - BQ4.7	-0.144 ^c	0.886	b. Based on negative ranks.		
AQ8 - BQ4.8	-0.340 ^c	0.734	c. Based on positive ranks.		
AQ9 - BQ4.9	-1.725 ^c	0.084	d. The sum of negative ranks equals the sum of positive ranks.		
AQ10 - BQ10	-0.000 ^d	1.000			
AQ11 - BQ11	-1.382 ^c	0.167			
AQ12 - BQ12	-0.425 ^c	0.671			
AQ13 - BQ13	-1.732 ^b	0.083			
AQ14 - BQ14	-0.447 ^c	0.655			
AQ15 - BQ15	-0.970 ^b	0.332			
AQ16 - BQ16	-1.065 ^c	0.287			
AQ17 - BQ17	-0.412 ^c	0.680			
AQ18 - BQ18	-1.414 ^b	0.157			
AQ19 - BQ19	-0.756 ^b	0.450			
AQ20 - BQ20	-1.276 ^c	0.202			
AQ21 - BQ21	-0.272 ^c	0.785			
AQ22 - BQ22	-0.000 ^d	1.000			
AQ23 - BQ23	-0.000 ^d	1.000			
AQ24 - BQ24	-0.000 ^d	1.000			
AQ25 - BQ25	-0.406 ^b	0.684			
AQ26 - BQ26	-1.725 ^b	0.084			
AQ27 - BQ27	-0.921 ^b	0.357			
AQ28 - BQ28	-0.755 ^c	0.450			
AQ29 - BQ29	-1.289 ^c	0.197			
AQ30 - BQ30	-0.351 ^c	0.725			
AQ31 - BQ31	-0.422 ^b	0.673			
AQ32 - BQ32	-1.378 ^c	0.168			
AQ33 - BQ33	-0.000 ^d	1.000			
AQ34 - BQ34	-1.289 ^c	0.197			
AQ35 - BQ35	-1.063 ^c	0.288			

APPENDIX B

Appendix B

Cycle 2

Supplementary Materials and Results

Appendix B.1

B.1. Wilcoxon Signed-Rank Test Results – Cycle 2

B.1.1. Cycle 2: Group 1

```
> O2 <- dat3[(dat3$Cycle == "2"),]
```

B.1.1.1. Presenters

```
> s1 <- O2[(O2$role == "S" & O2$group == "3"),]
```

```
> wilcox.test(s1$af_gazeTimePER, s1$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed-rank exact test

data: s1\$af_gazeTimePER and s1\$bf_gazeTimePER

p-value = 0.125

alternative hypothesis: true location shift is greater than 0

B.1.1.2. Presenters' Audience Members/Listeners

```
> l1 <- O2[(O2$role == "L" & O2$group == "3"),]
```

```
> wilcox.test(l1$af_gazeTimePER, l1$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: l1\$af_gazeTimePER and l1\$bf_gazeTimePER

p-value = 0.001953

alternative hypothesis: true location shift is greater than 0

B.1.1.3. Discussants

```
> m1 <- O2[(O2$role == "M" & O2$group == "3"),]
```

```
> wilcox.test(m1$af_gazeTimePER, m1$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: m1\$af_gazeTimePER and m1\$bf_gazeTimePER

p-value = 0.0002441

alternative hypothesis: true location shift is greater than 0

B.1.2. Cycle 2: Group 2

B.1.2.1. Presenters

```
> s2 <- O2[(O2$role == "S" & O2$group == "4"),]
```

```
> wilcox.test(s2$af_gazeTimePER, s2$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: s2\$af_gazeTimePER and s2\$bf_gazeTimePER

p-value = 0.0625

alternative hypothesis: true location shift is greater than 0

B.1.2.2. Presenters' Audience Members/Listeners

```
> l2 <- O2[(O2$role == "L" & O2$group == "4"),]
```

```
> wilcox.test(l2$af_gazeTimePER, l2$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank test

data: l2\$af_gazeTimePER and l2\$bf_gazeTimePER

p-value = 0.002961

alternative hypothesis: true location shift is greater than 0

B.1.2.3. Discussants

```
> m2 <- O2[(O2$role == "M" & O2$group == "4"),]
```

```
> wilcox.test(m2$af_gazeTimePER, m2$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: m2\$af_gazeTimePER and m2\$bf_gazeTimePER

p-value = 1.526e-05

alternative hypothesis: true location shift is greater than 0

B.1.3. Cycle 2: Group 3

B.1.3.1. Presenters

```
> s3 <- O2[(O2$role == "S" & O2$group == "5"),]
```

```
> wilcox.test(s3$af_gazeTimePER, s3$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: s3\$af_gazeTimePER and s3\$bf_gazeTimePER

p-value = 0.0625

alternative hypothesis: true location shift is greater than 0

B.1.3.2. Presenters' Audience Members/Listeners

```
> l3 <- O2[(O2$role == "L" & O2$group == "5"),]
```

```
> wilcox.test(l3$af_gazeTimePER, l3$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: l3\$af_gazeTimePER and l3\$bf_gazeTimePER

p-value = 0.0009766

alternative hypothesis: true location shift is greater than 0

B.1.3.3. Discussants

```
> m3 <- O2[(O2$role == "M" & O2$group == "5"),]
```

```
> wilcox.test(m3$af_gazeTimePER, m3$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: m3\$af_gazeTimePER and m3\$bf_gazeTimePER

p-value = 3.052e-05

alternative hypothesis: true location shift is greater than 0

B.1.4. Cycle 2: Groups 1, 2 & 3 - Presenters, Presenters' Audience Members and Discussants

B.1.4.1. Presenters

```
> sc2 <- O2[(O2$role == "S" & O2$Cycle == "2"),]  
> wilcox.test(sc2$af_gazeTimePER, sc2$bf_gazeTimePER, paired = TRUE, alternative =  
"greater")
```

Wilcoxon signed rank exact test

data: sc2\$af_gazeTimePER and sc2\$bf_gazeTimePER

p-value = 0.0004883

alternative hypothesis: true location shift is greater than 0

B.1.4.2. Presenters' Audience Members/Listeners

```
> lc2 <- O2[(O2$role == "L" & O2$Cycle == "2"),]  
> wilcox.test(lc2$af_gazeTimePER, jitter(lc2$bf_gazeTimePER), paired = TRUE,  
alternative = "greater")
```

Wilcoxon signed rank exact test

data: lc2\$af_gazeTimePER and jitter(lc2\$bf_gazeTimePER)

p-value = 2.328e-09

alternative hypothesis: true location shift is greater than 0

B.1.4.3. Discussants

```
> mc2 <- O2[(O2$role == "M" & O2$Cycle == "2"),]  
> wilcox.test(mc2$af_gazeTimePER, jitter(mc2$bf_gazeTimePER), paired = TRUE,  
alternative = "greater")
```

Wilcoxon signed rank exact test

data: mc2\$af_gazeTimePER and jitter(mc2\$bf_gazeTimePER)

p-value = 1.137e-13

alternative hypothesis: true location shift is greater than 0

Appendix B.2

B.2. R Plots – Cycle 2

B.2.1. Cycle 2: Group 1

B.2.1.1. Cycle 2: Group 1- Members' Screen Gaze during Pre- Vs Post-Intervention Journal Article Presentations

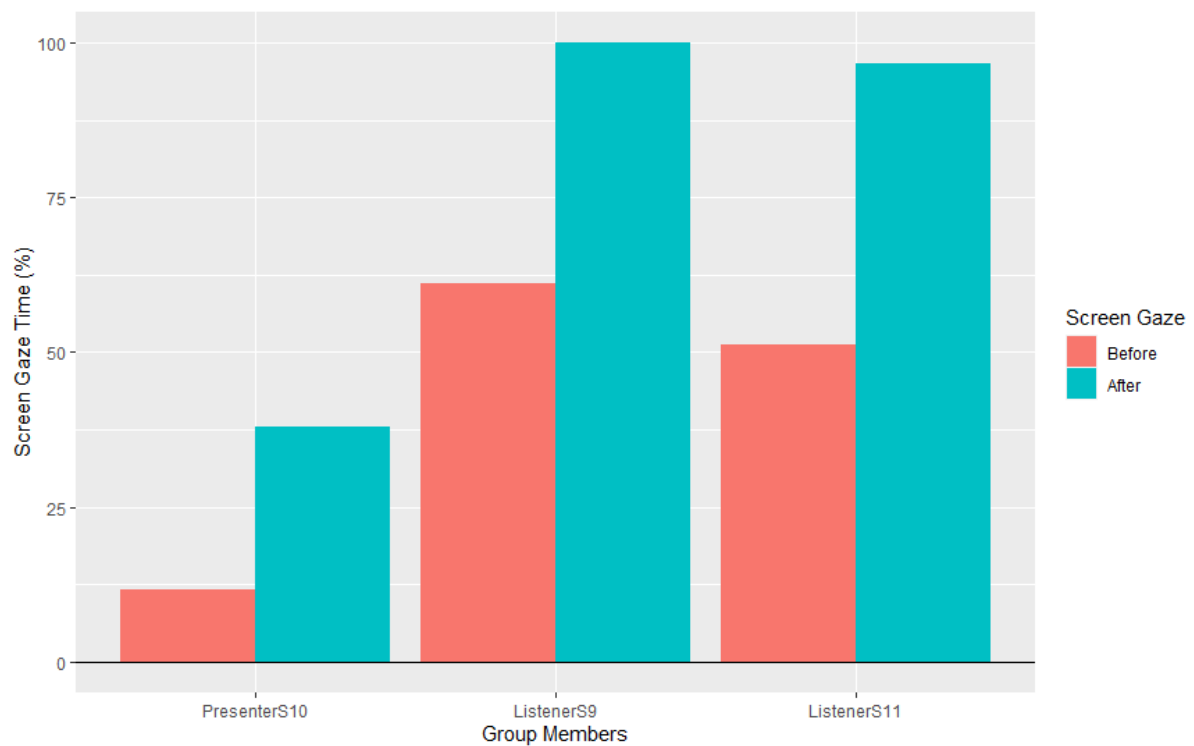


Figure B2.1: Cycle 2, Group 1 Members' Screen Gaze During S10's Pre- Vs Post-Intervention Journal Article Presentations

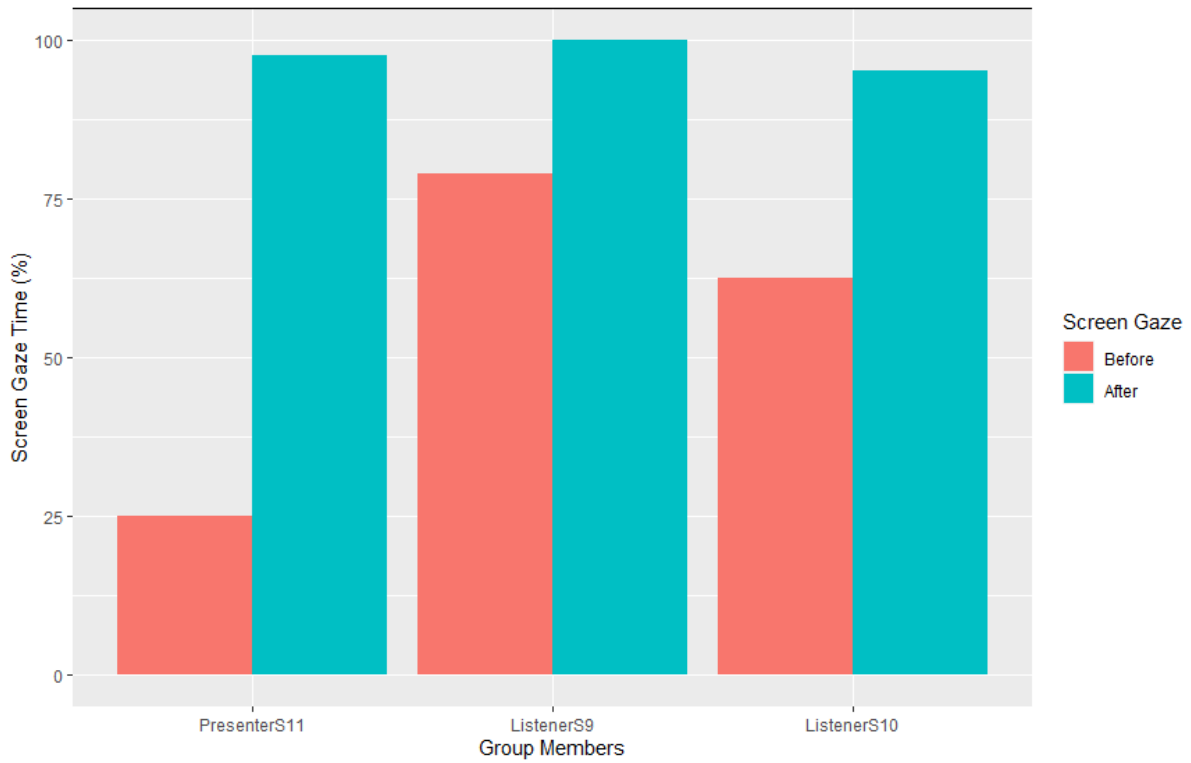


Figure B2.2: Cycle 2, Group 1 Members' Screen Gaze During S11's Pre- Vs Post-Intervention Journal Article Presentations

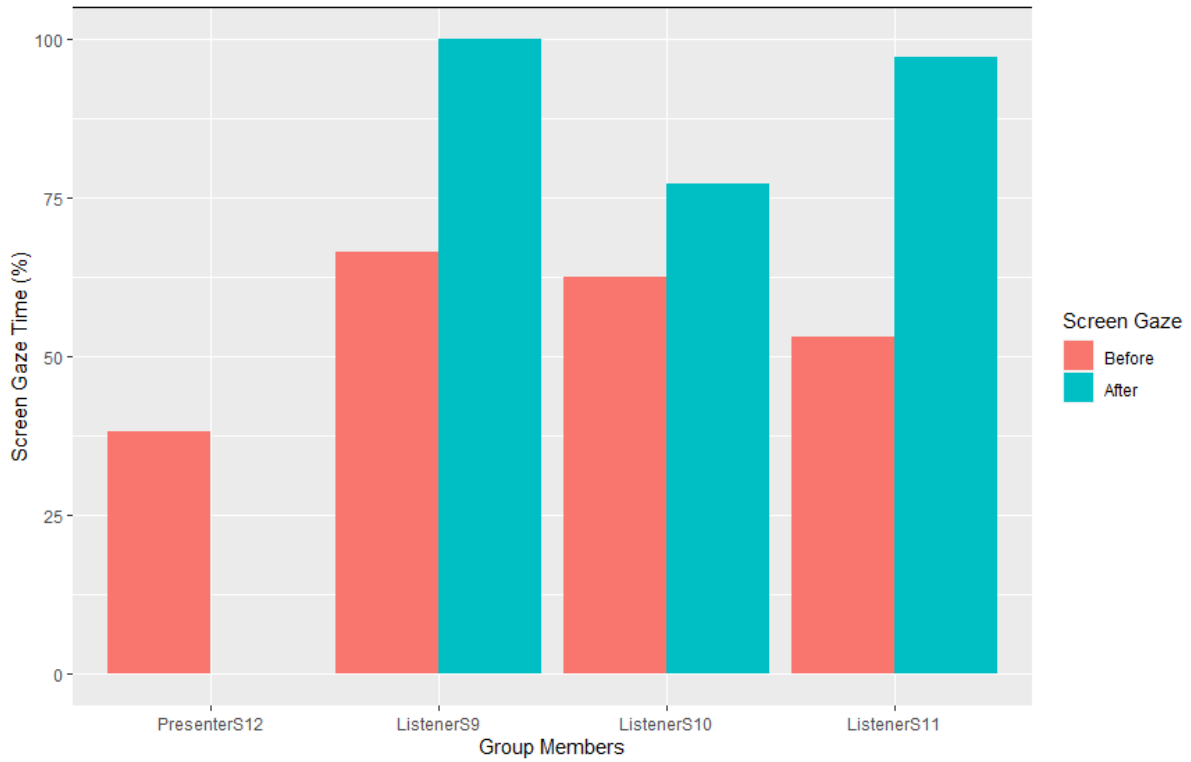


Figure B2.3: Cycle 2, Group 1 Members' Screen Gaze During S12's Pre- Vs Post-Intervention Journal Article Presentations

B.2.1.2. Cycle 2: Group 1- Members’ Screen Gaze During Pre- Vs Post-Intervention Discussions on Journal Articles

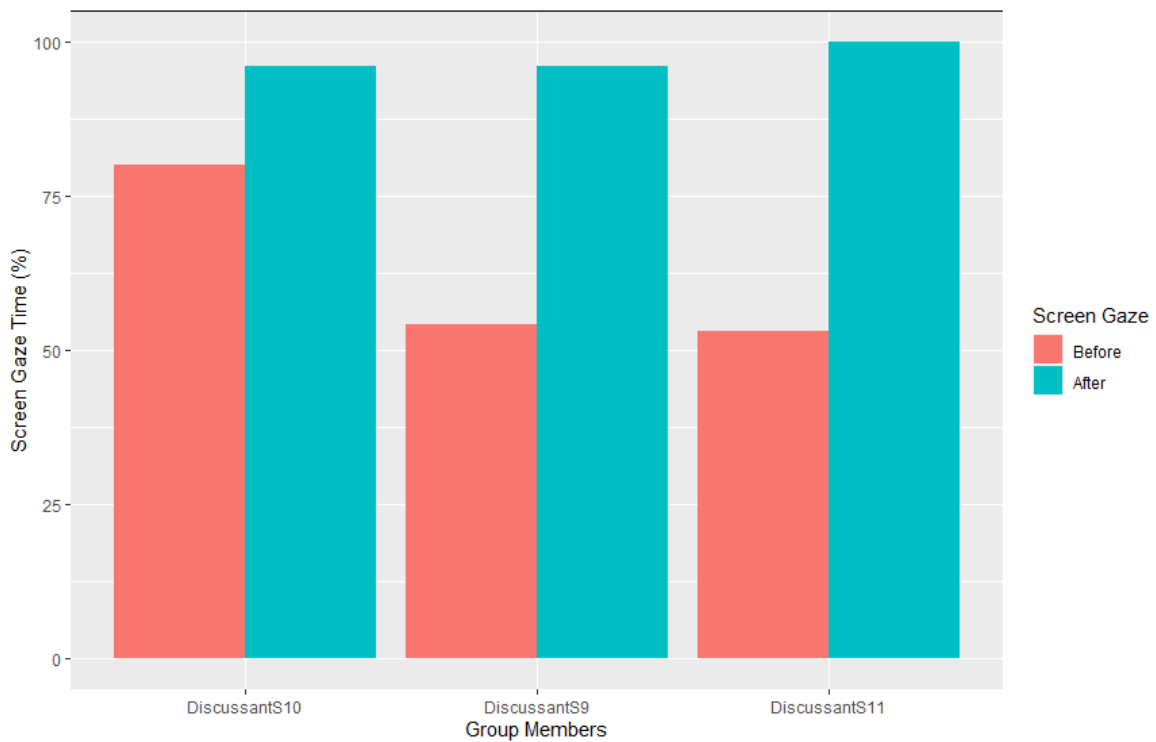


Figure B2.4: Cycle 2, Group 1 Members’ Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S10’s Journal Articles

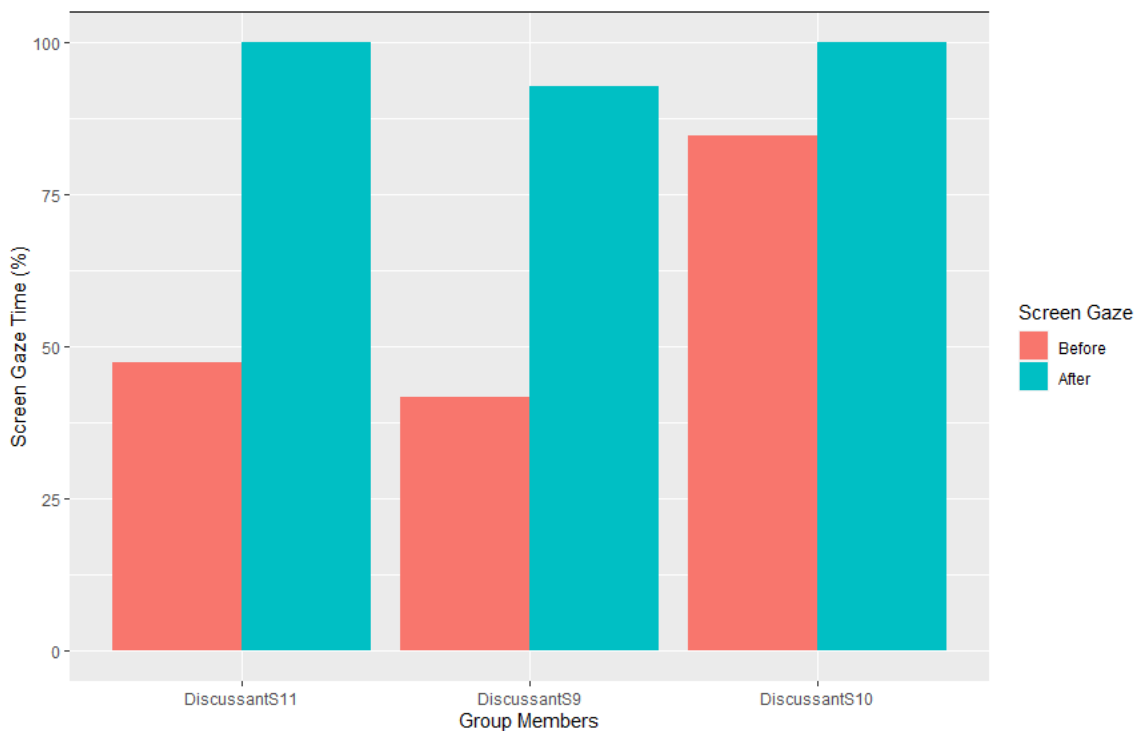


Figure B2.5: Cycle 2, Group 1 Members’ Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S11’s Journal Articles

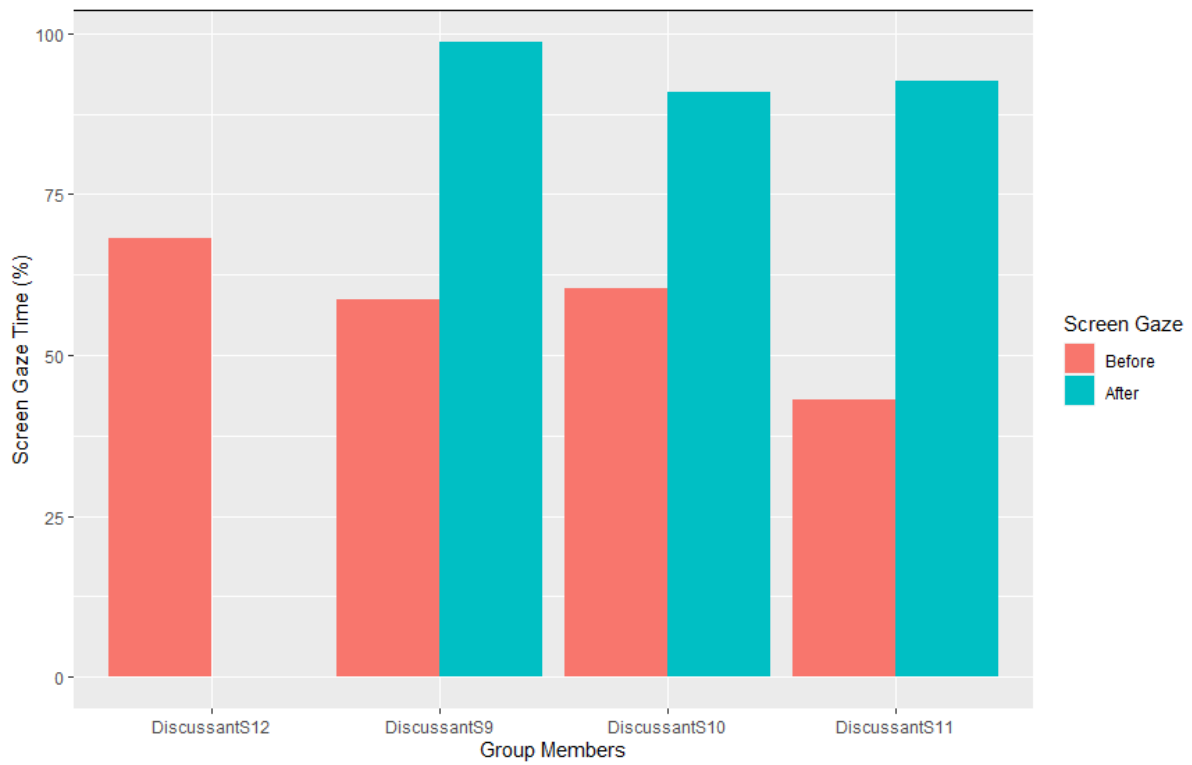


Figure B2.6: Cycle 2, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S12's Journal Articles

B.2.2. Cycle 2: Group 2

B.2.2.1. Cycle 2: Group 2- Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

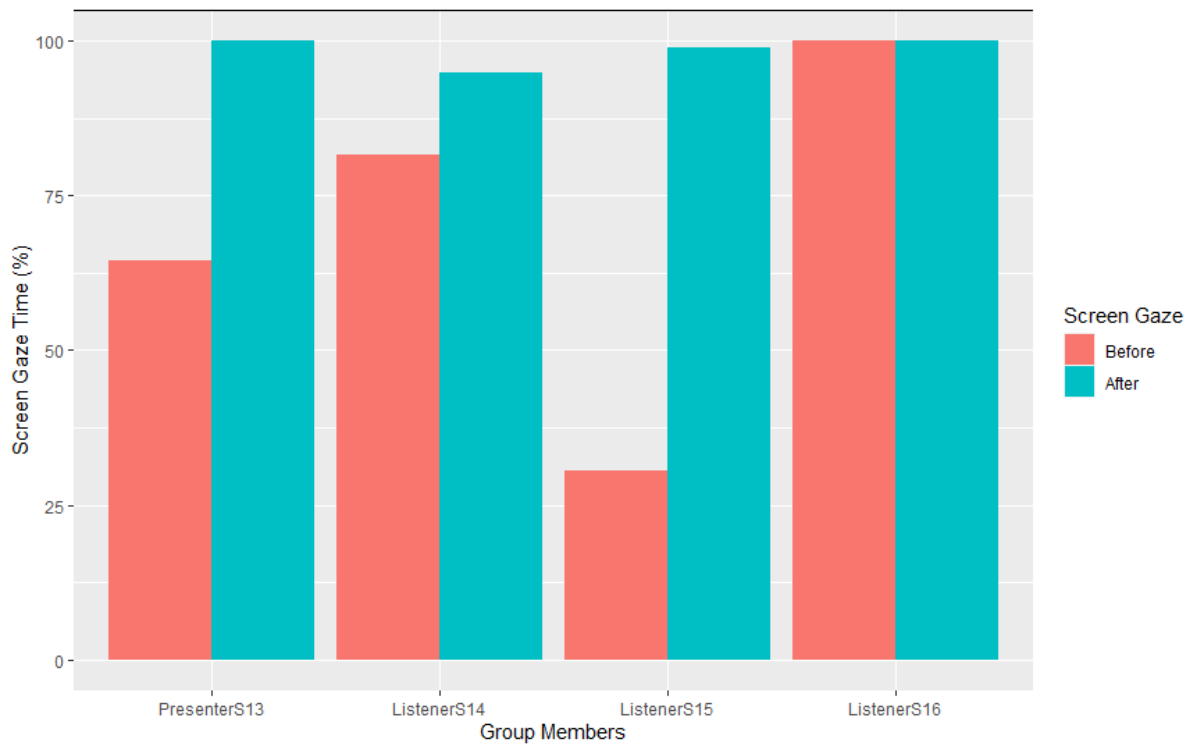


Figure B2.7: Cycle 2, Group 2 Members' Screen Gaze During S13's Pre- Vs Post-Intervention Journal Article Presentations

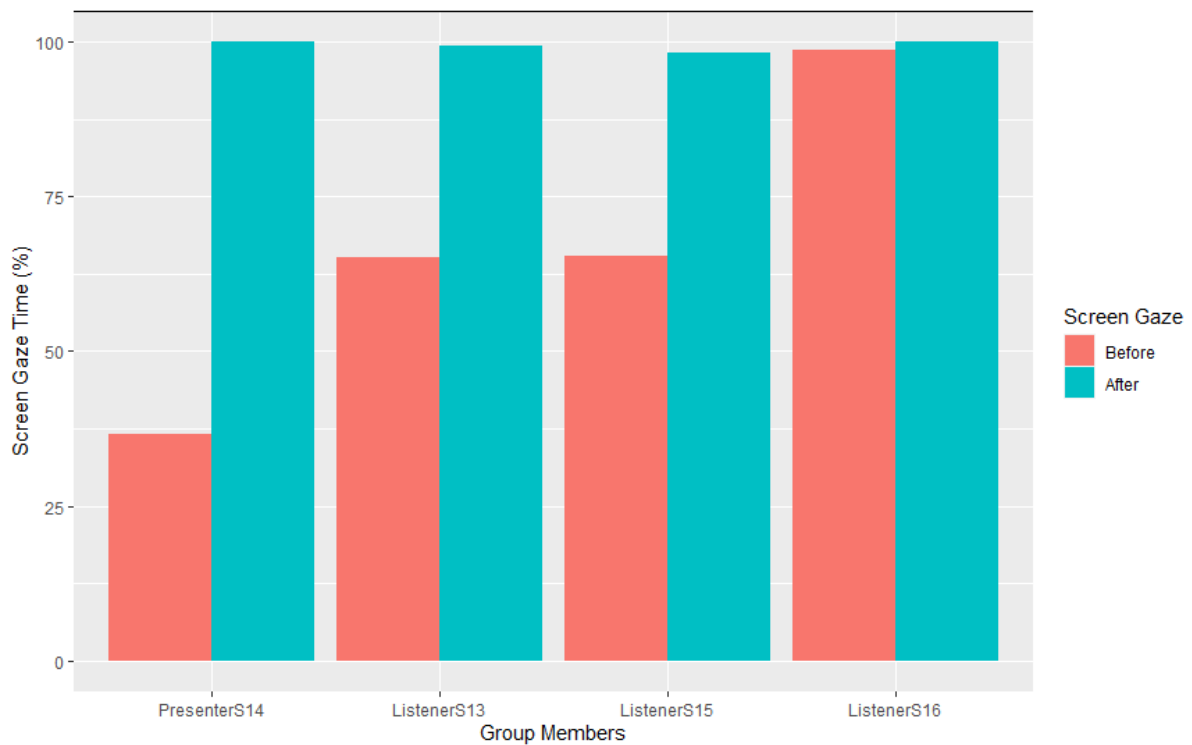


Figure B2.8: Cycle 2, Group 2 Members' Screen Gaze During S14's Pre- Vs Post-Intervention Journal Article Presentations

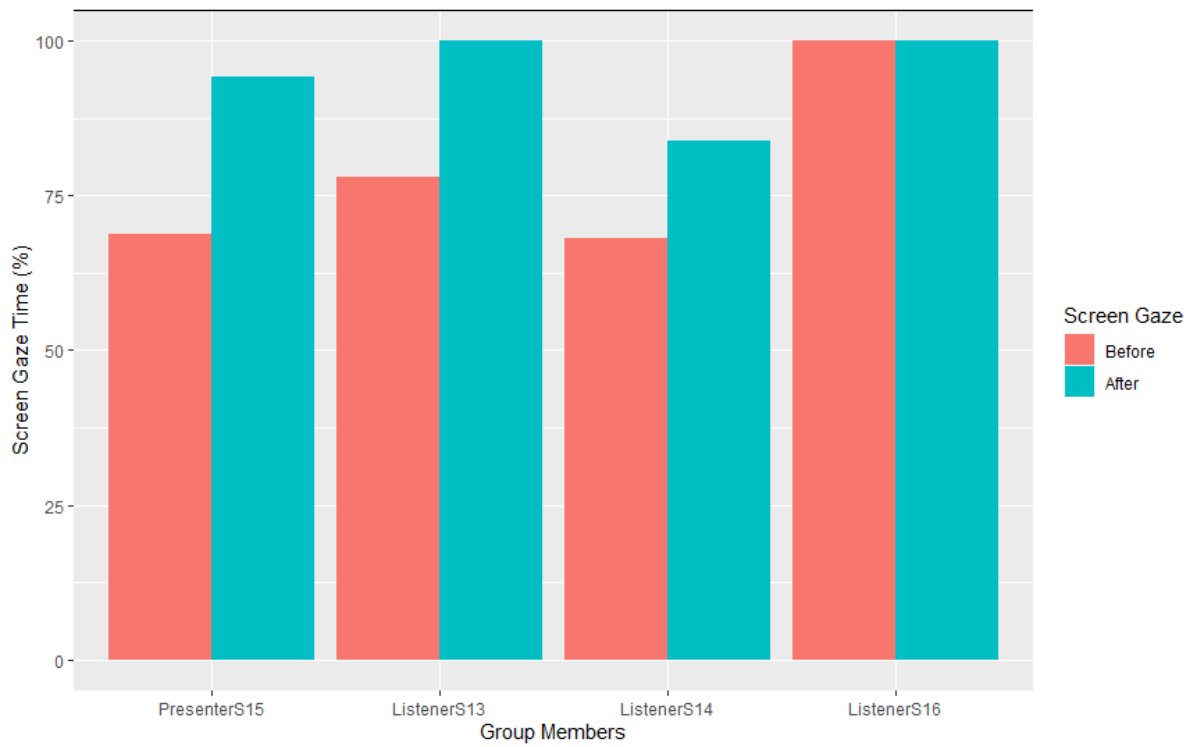


Figure B2.9: Cycle 2, Group 2 Members' Screen Gaze During S15's Pre- Vs Post-Intervention Journal Article Presentations

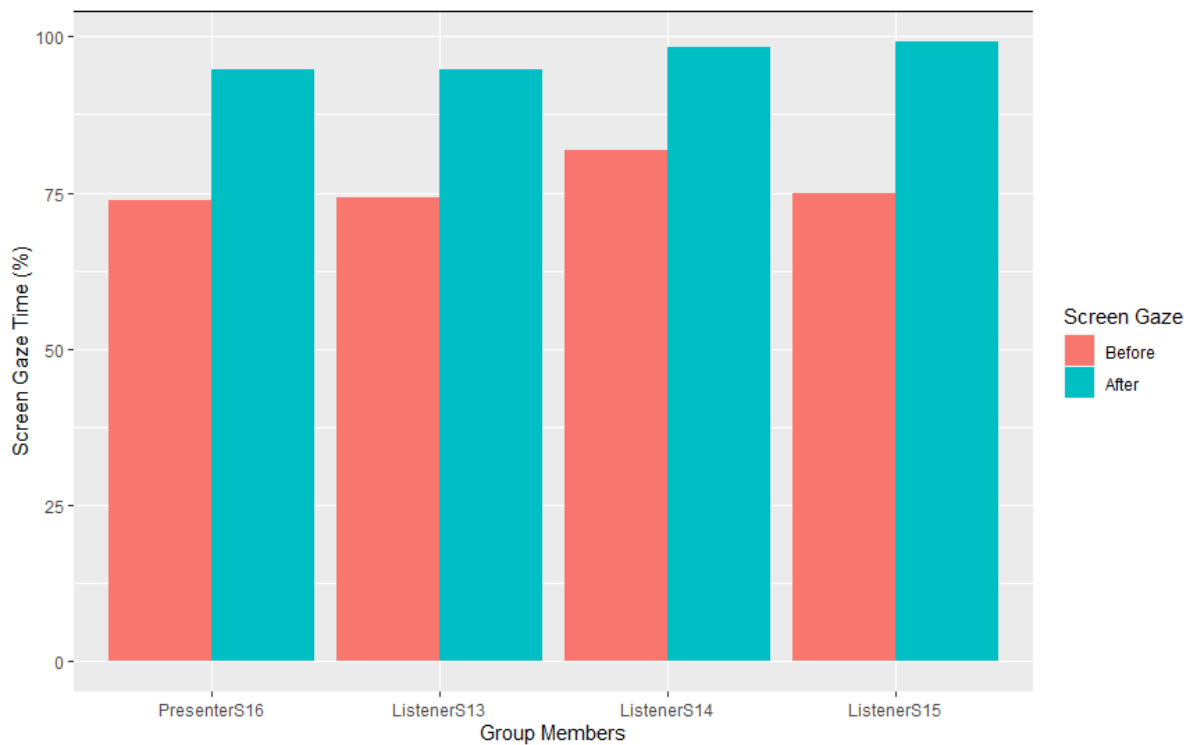


Figure B2.10: Cycle 2, Group 2 Members' Screen Gaze During S16's Pre- Vs Post-Intervention Journal Article Presentations

B.2.2.2. Cycle 2: Group 2- Members' Screen Gaze During Pre- Vs Post-Intervention Discussions on Journal Articles

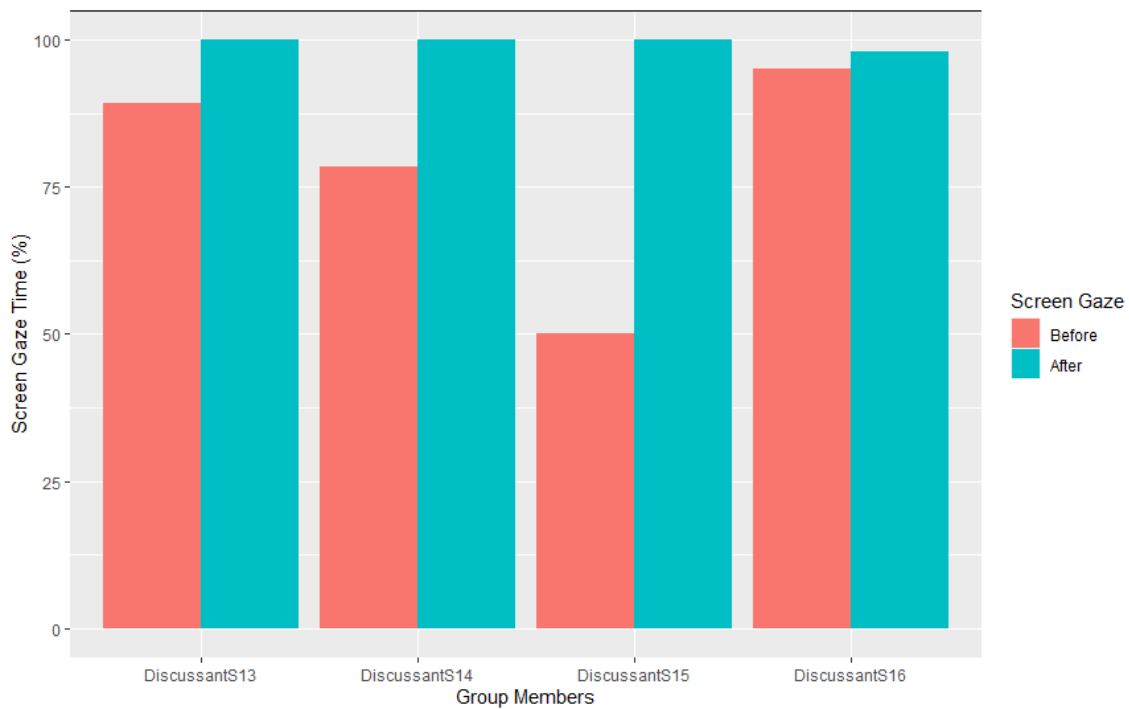


Figure B2.11: Cycle 2, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S13's Journal Articles

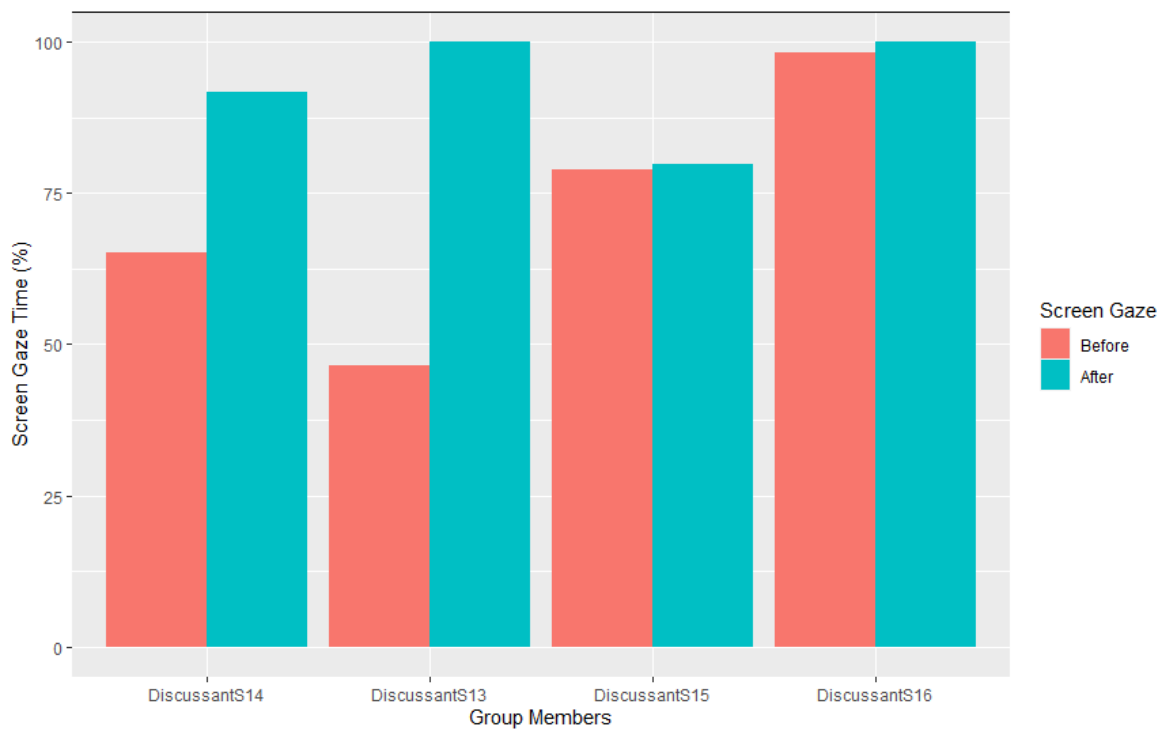


Figure B2.12: Cycle 2, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S14's Journal Articles

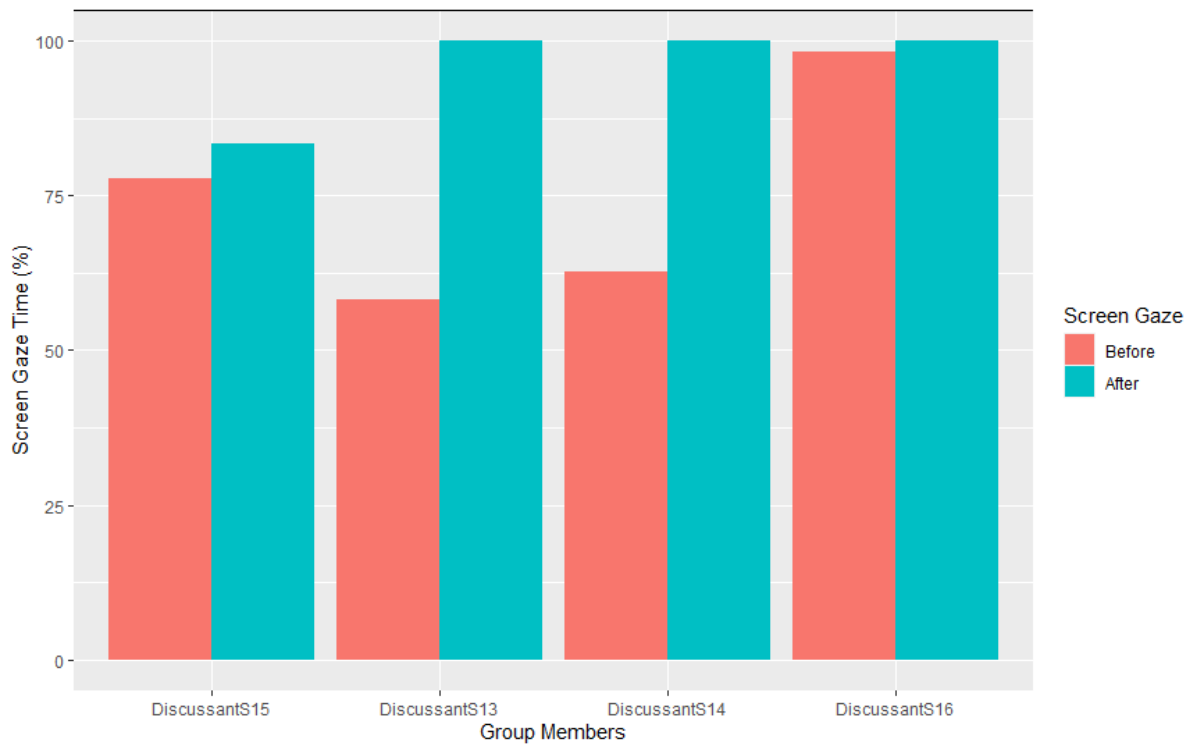


Figure B2.13: Cycle 2, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S15's Journal Articles

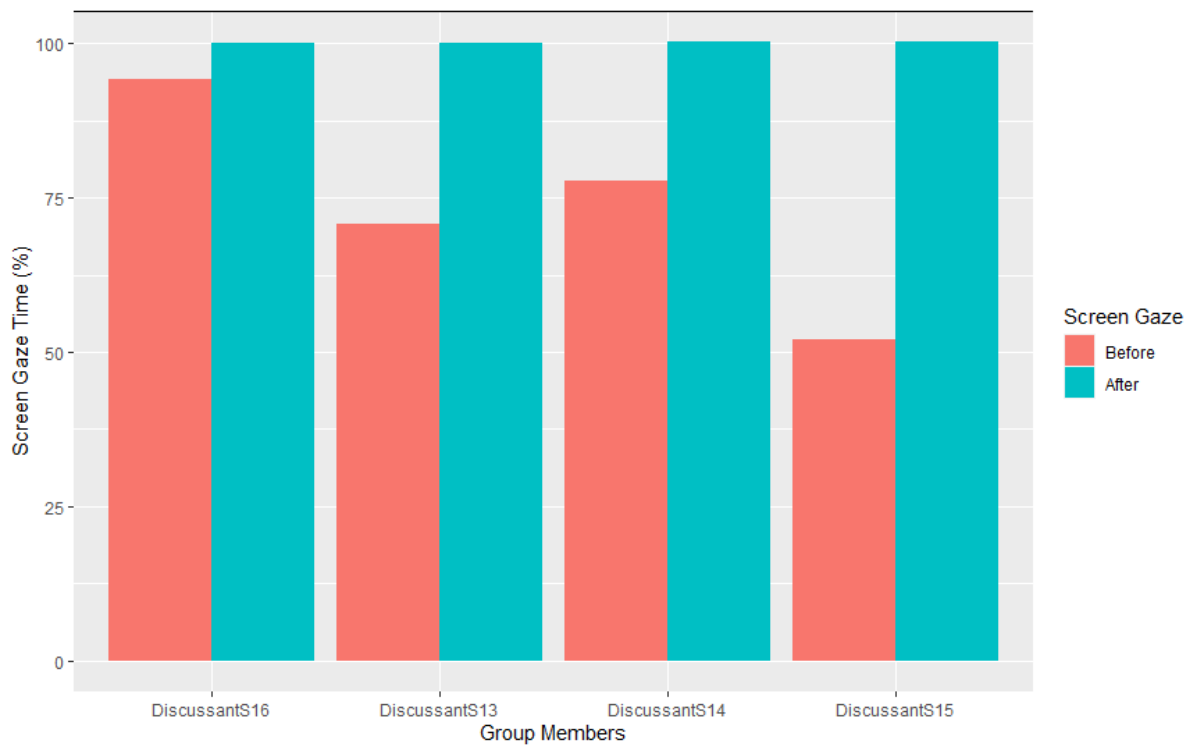


Figure B2.14: Cycle 2, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S16's Journal Articles

B.2.3. Cycle 2: Group 3

B.2.3.1. Cycle 2: Group 3 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

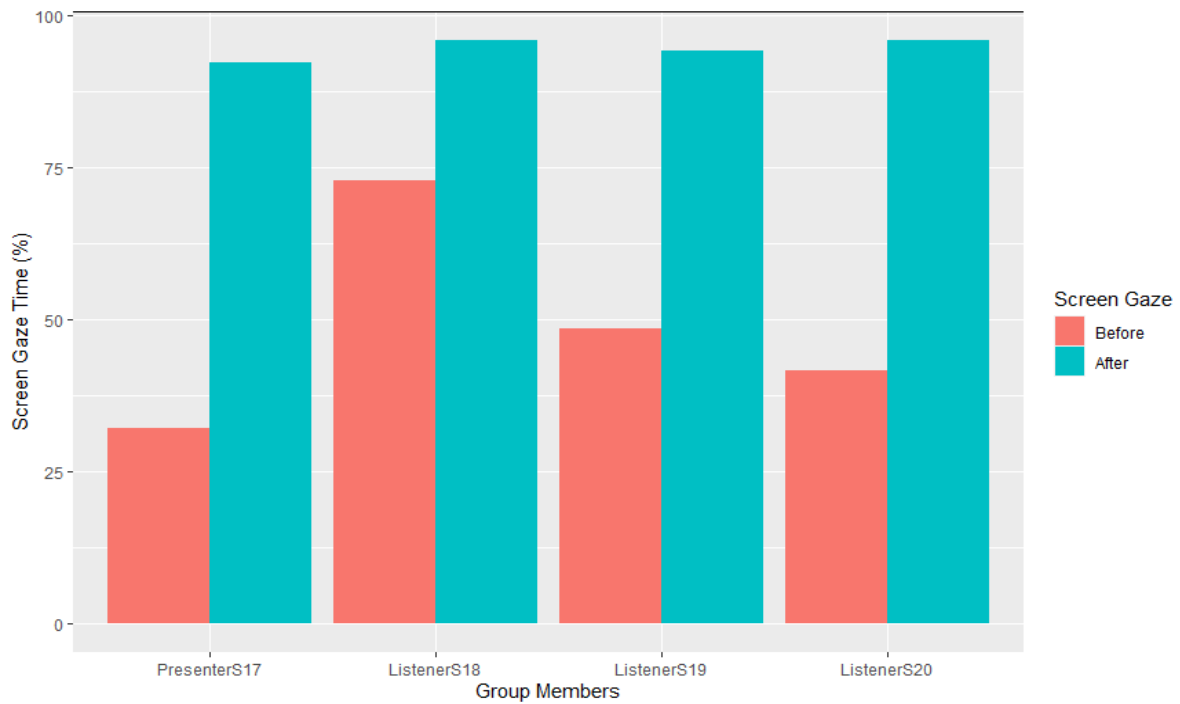


Figure B2.15: Cycle 2, Group 3 Members' Screen Gaze During S17's Pre- Vs Post-Intervention Journal Article Presentations

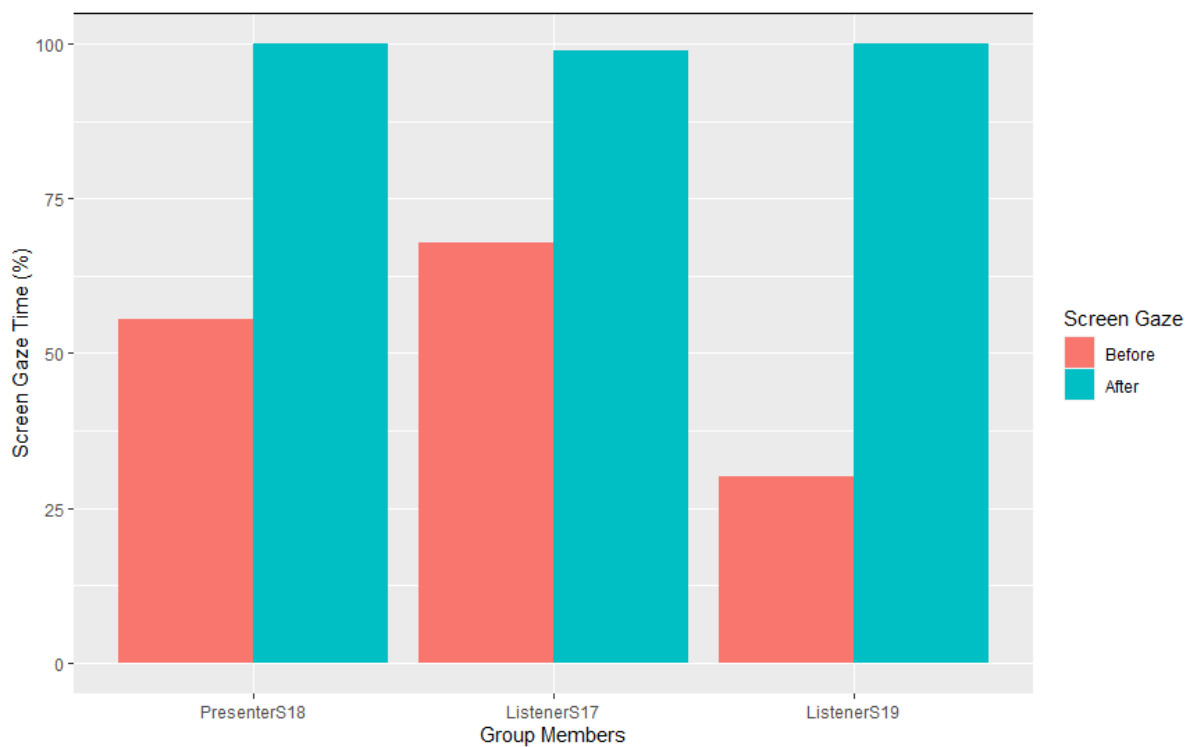


Figure B2.16: Cycle 2, Group 3 Members' Screen Gaze During S18's Pre- Vs Post-Intervention Journal Article Presentations

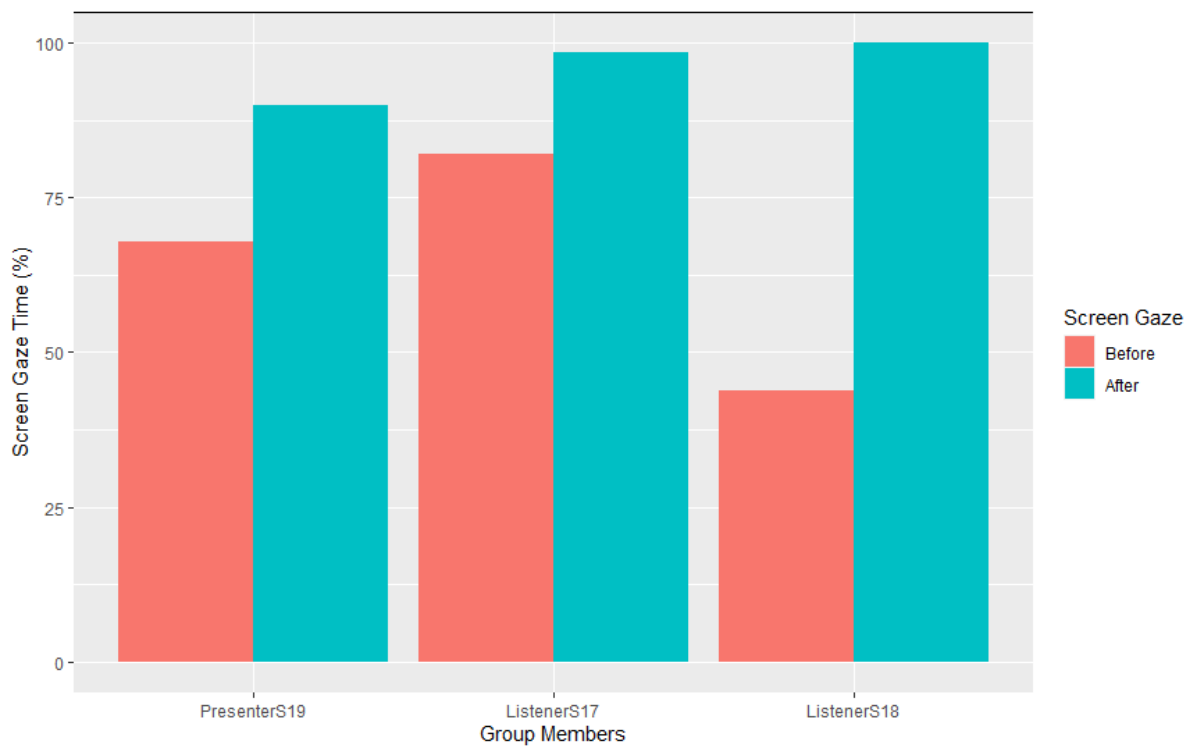


Figure B2.17: Cycle 2, Group 3 Members' Screen Gaze During S19's Pre- Vs Post-Intervention Journal Article Presentations

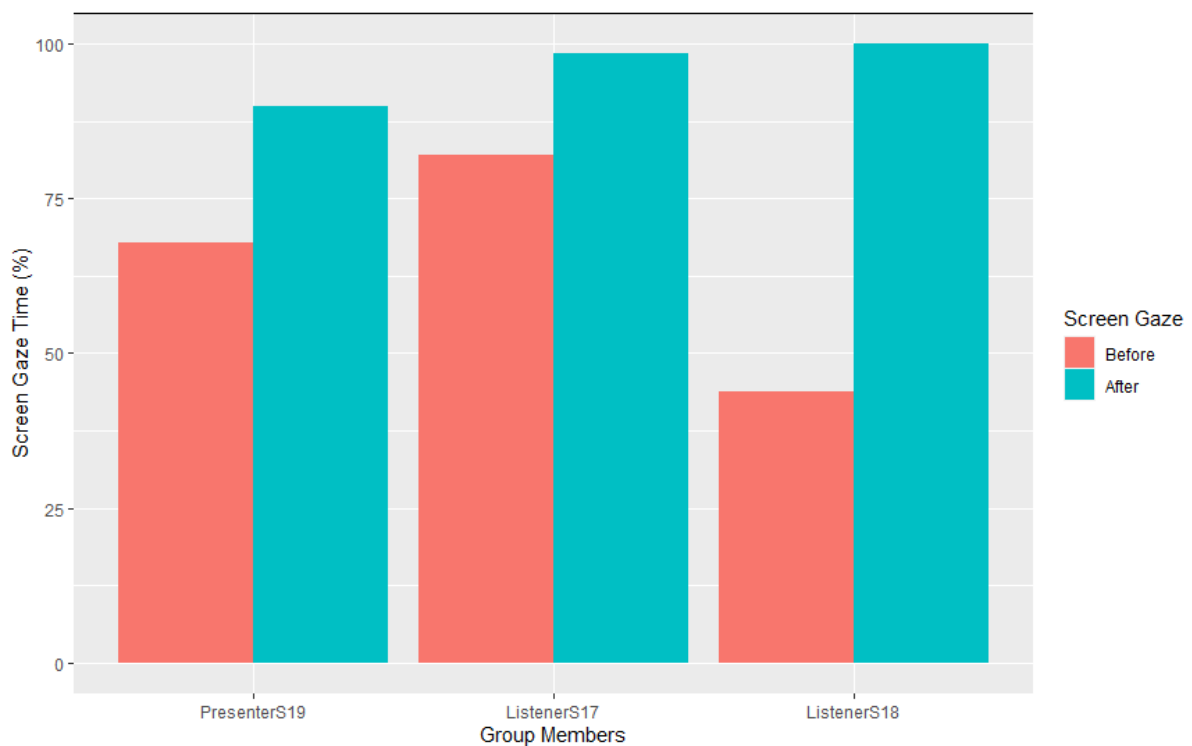


Figure B2.18: Cycle 2, Group 3 Members' Screen Gaze During S20's Pre- Vs Post-Intervention Journal Article Presentations

B.2.3.2. Cycle 2: Group 3 - Members' Screen Gaze During Pre- Vs Post-Intervention Discussions on Journal Articles

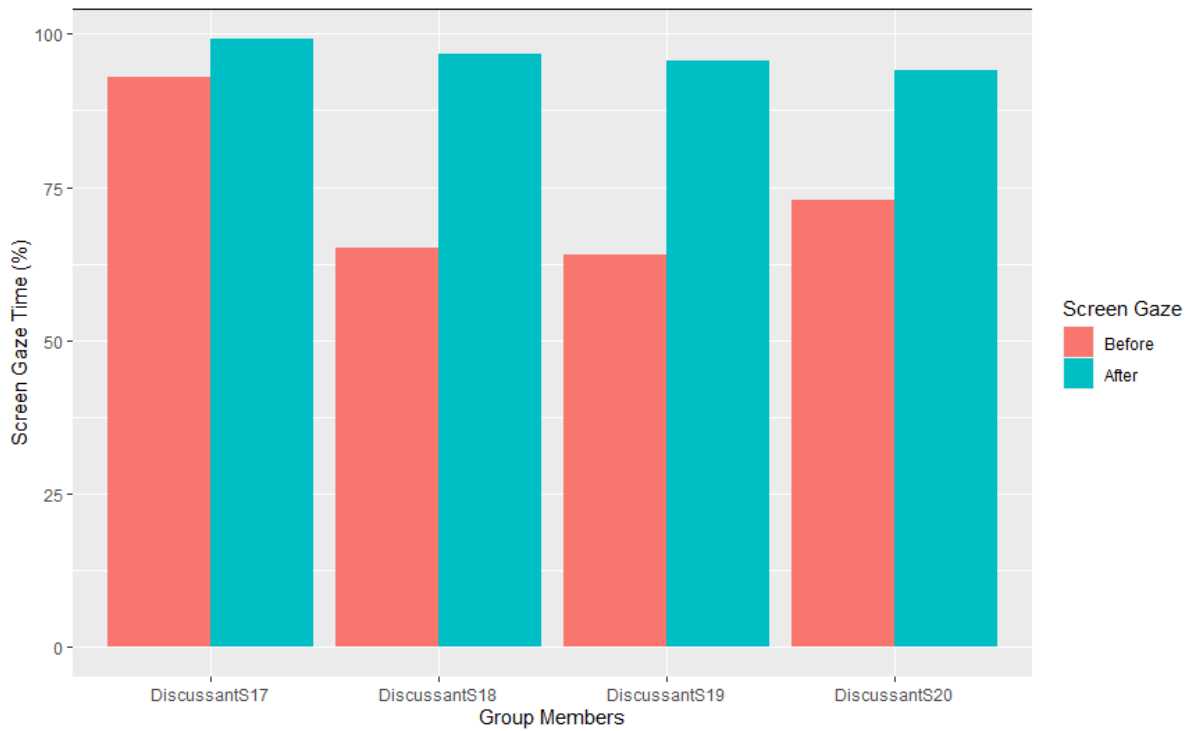


Figure B2.19: Cycle 2, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S17's Journal Articles

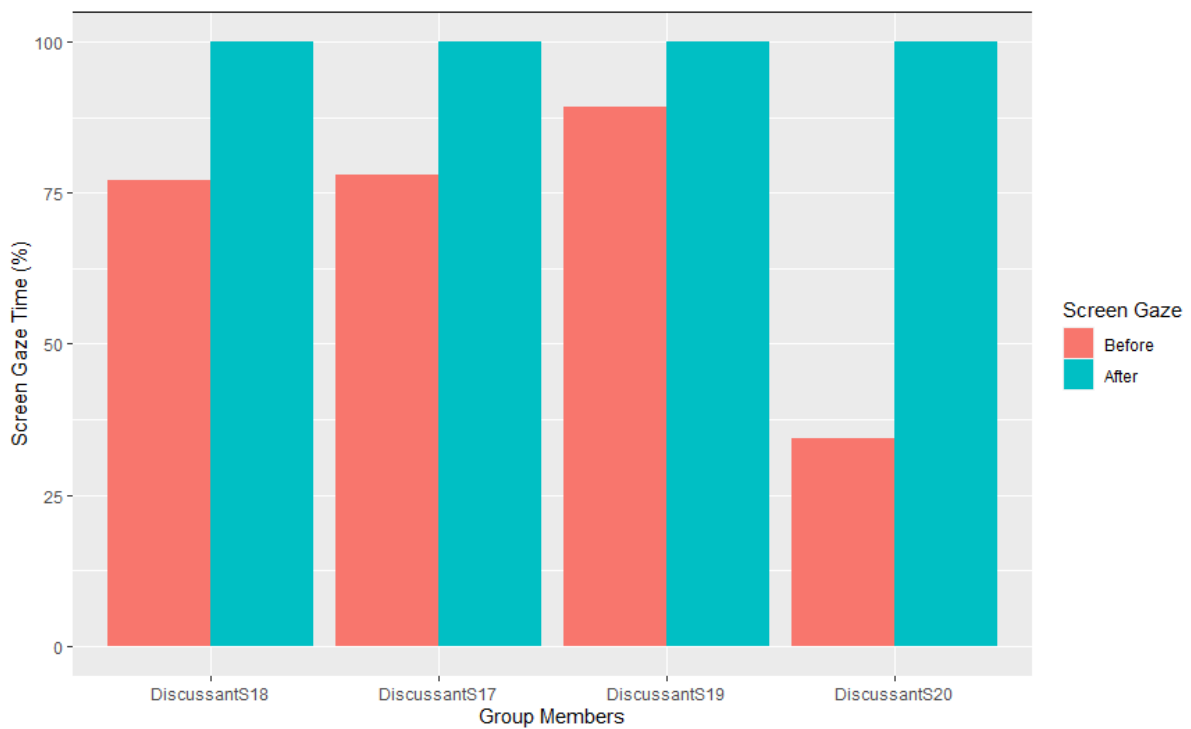


Figure B2.20: Cycle 2, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S18's Journal Articles

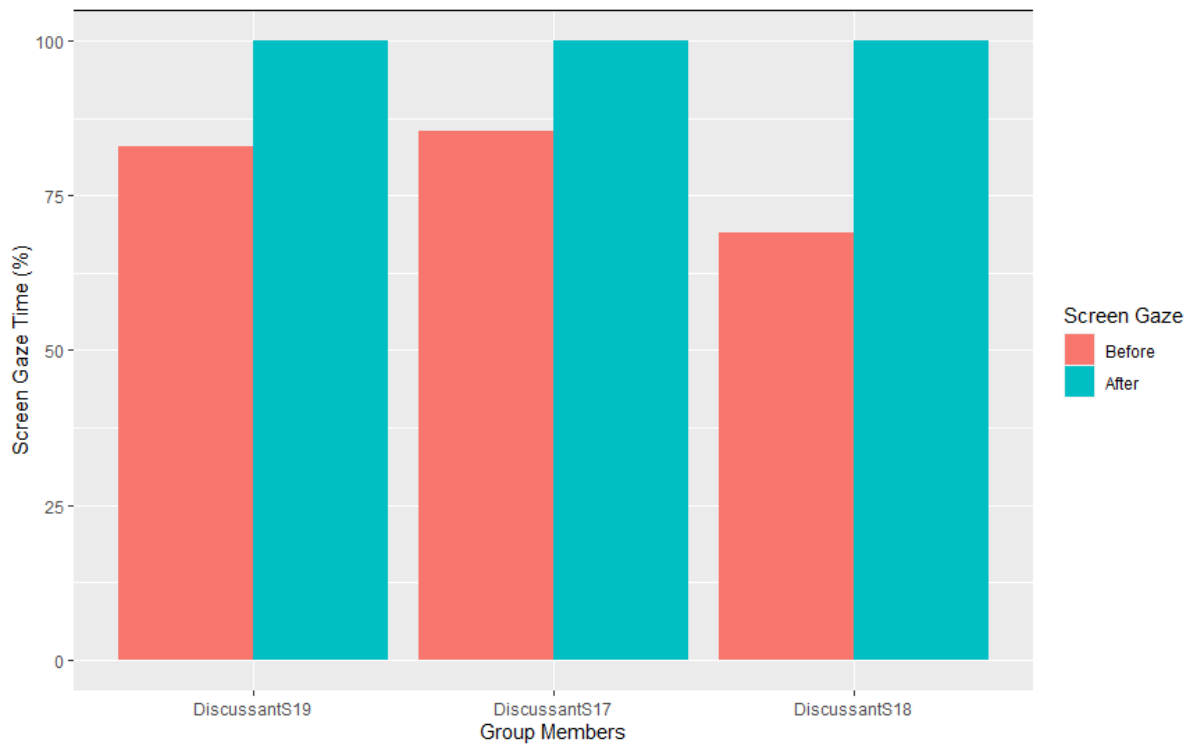


Figure B2.21: Cycle 2, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S19's Journal Articles

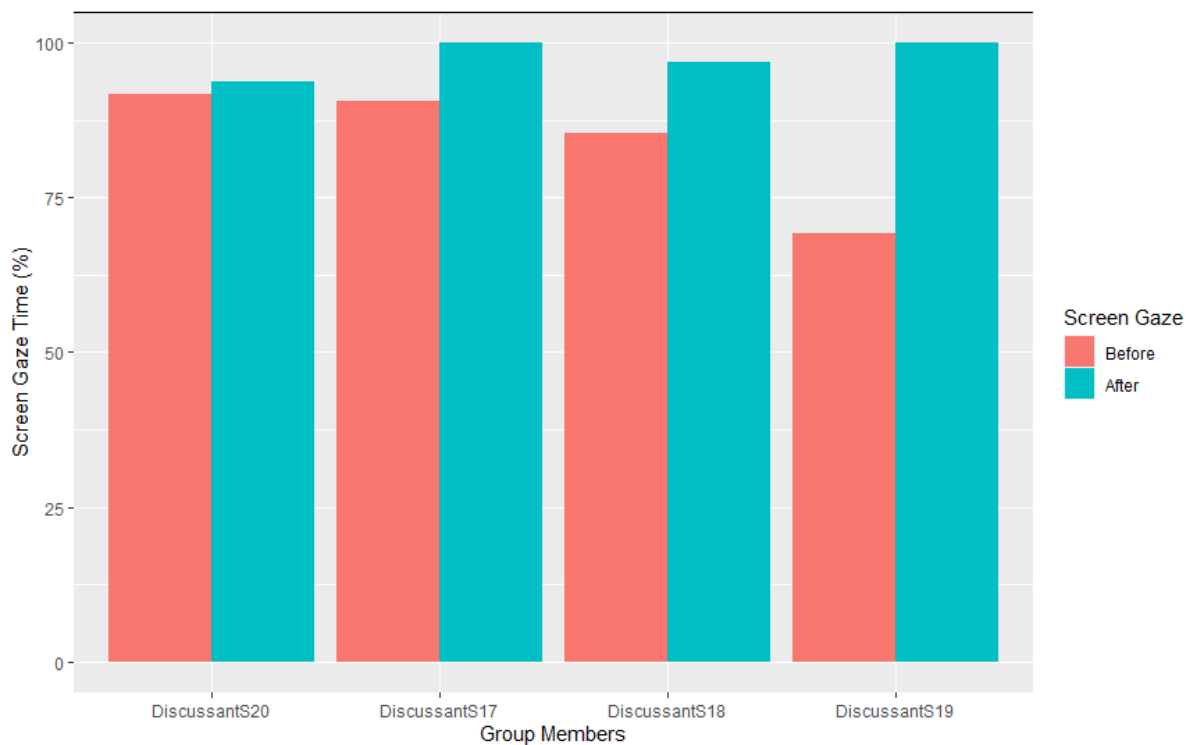


Figure B2.22: Cycle 2, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S20's Journal Articles

Appendix B.3

B.3. Results of Microsoft Excel Analysis – Cycle 2

MS Excel Graphs Showing Each Group's (Average) Screen Gaze Behaviours During Each Presentation and Follow-up Discussion

Each six-graph set [x (n=24)] is divided as follows:

The first three graphs show the average screen gaze of whole group during each group member's pre-intervention presentations. The second three graphs demonstrate the average screen gaze of whole group during each group member's post-intervention presentations.

The third three graphs in the set present the average screen gaze of whole group during the follow-up discussion after each group member's presentation in order to show pre-intervention. The fourth three graphs in the set exhibit the average screen gaze of whole group during the post-intervention follow-up discussion after each group member's presentation.

For a full explanation of what each graph is showing, please see Section 6.1.1.3 in Chapter 6.

B.3.1. Cycle 2: Group 1

B.3.1.1. Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

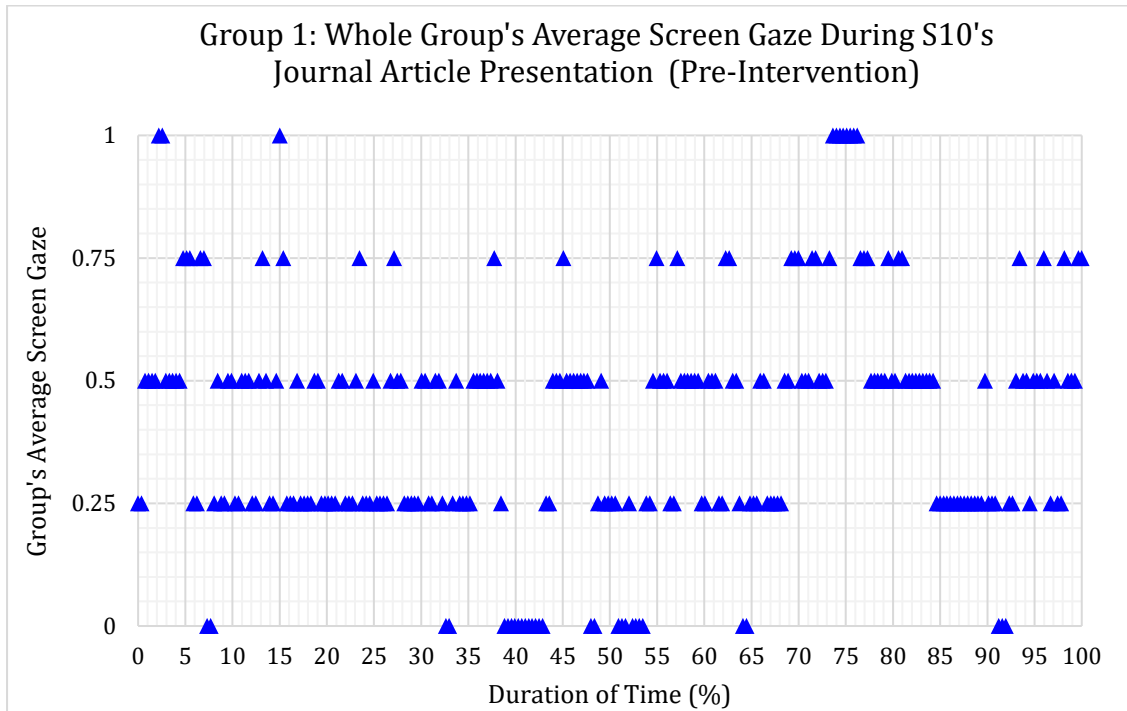


Figure B3.1: Whole Group's Screen Gaze During S10's Journal Article Presentation (Pre-Intervention)

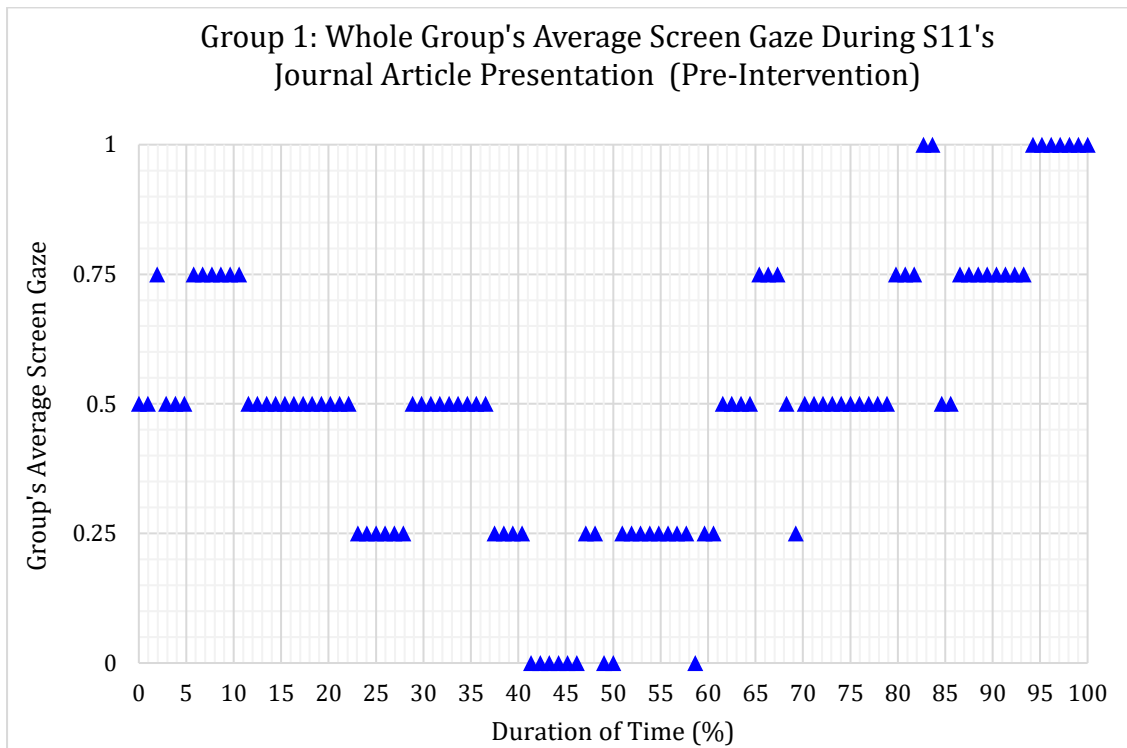


Figure B3.2: Whole Group's Screen Gaze During S11's Journal Article Presentation (Pre-Intervention)

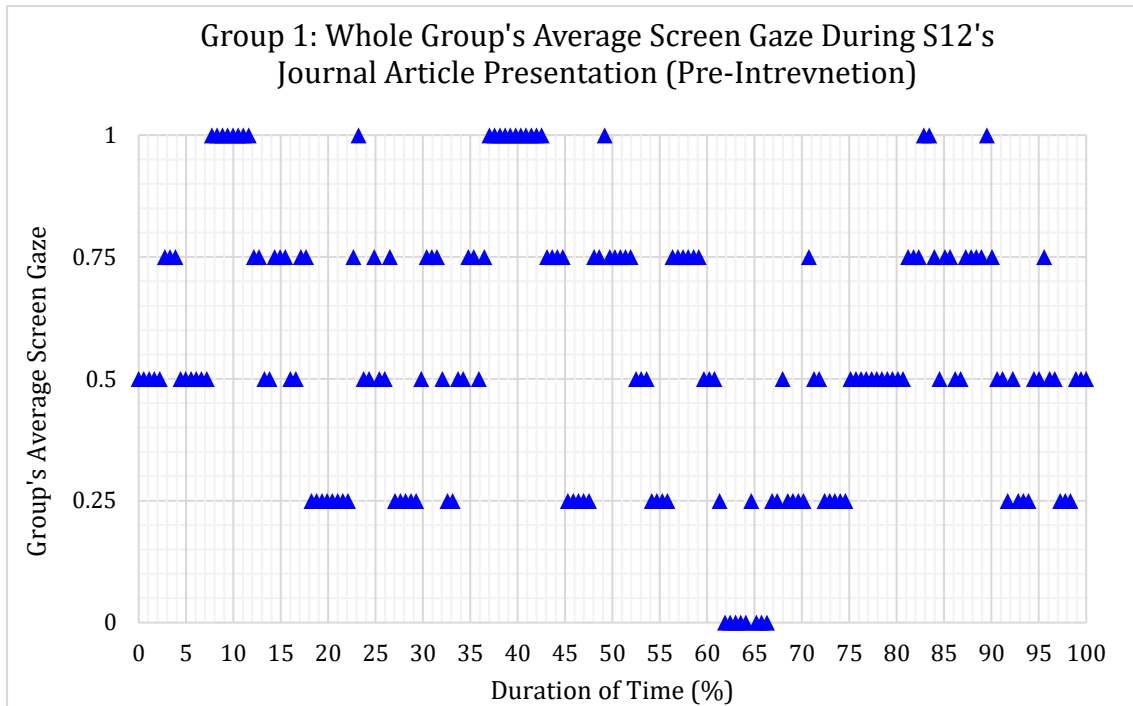


Figure B3.3: Whole Group's Screen Gaze During S12's Journal Article Presentation (Pre-Intervention)

B.3.1.2. Group 1 Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations

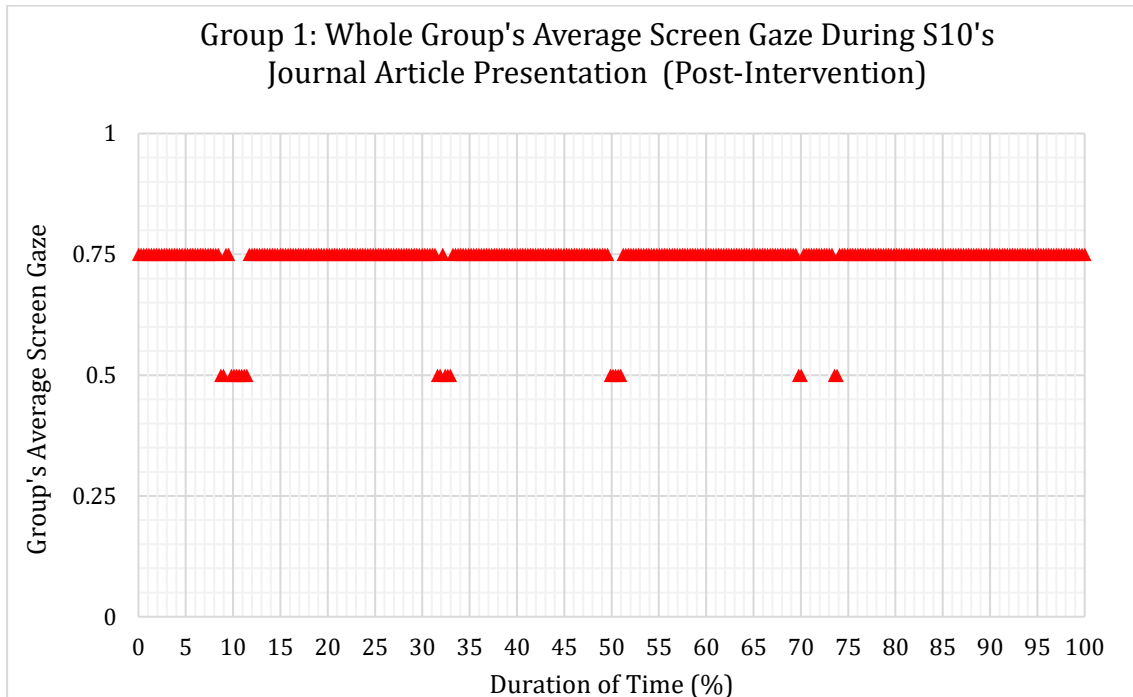


Figure B3.4: Whole Group's Screen Gaze During S10's Journal Article Presentation (Post-Intervention)

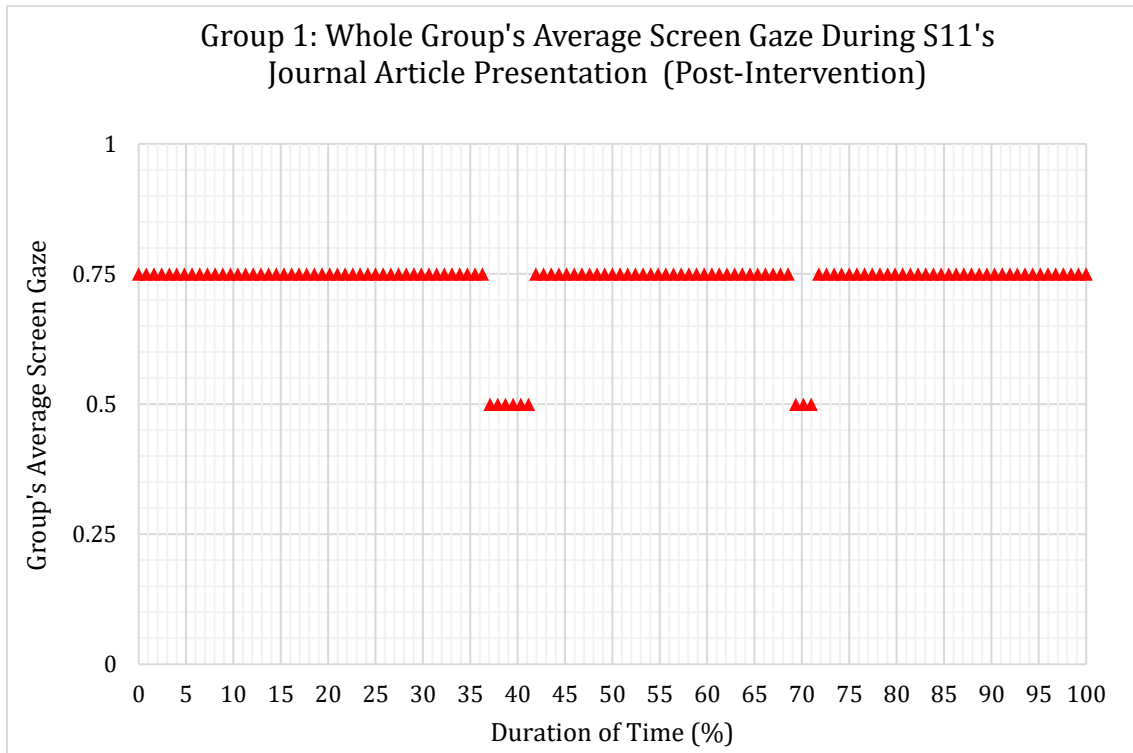


Figure B3.5: Whole Group's Screen Gaze During S11's Journal Article Presentation (Post-Intervention)

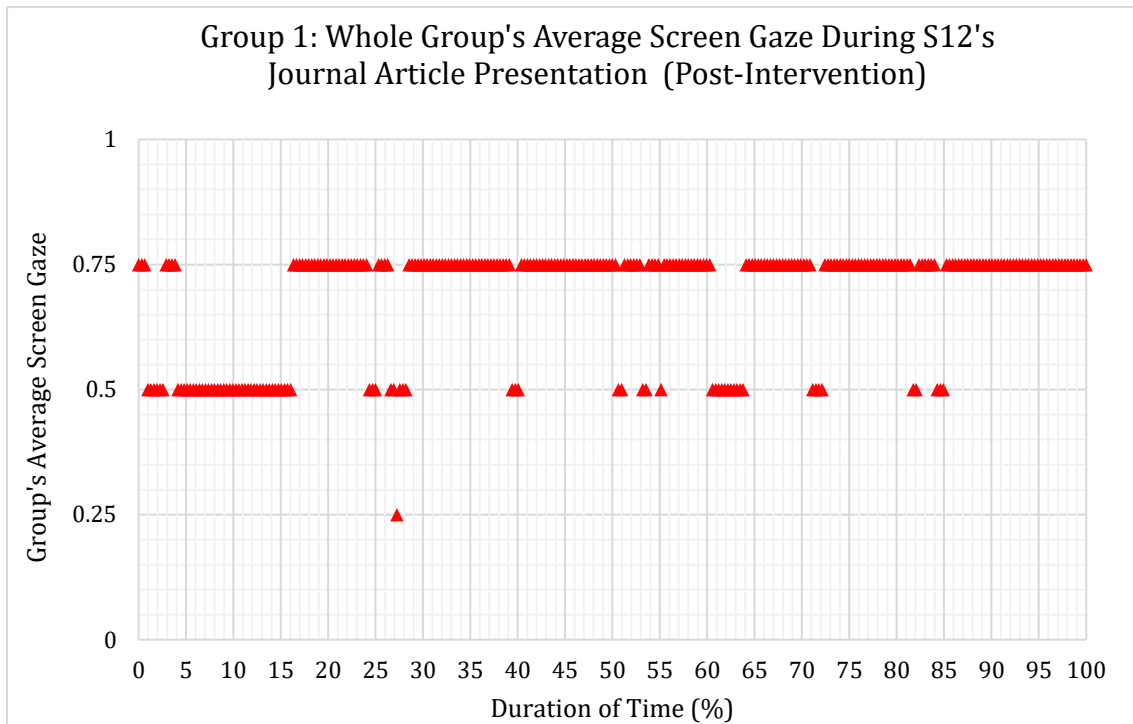


Figure B3.6: Whole Group's Screen Gaze During S12's Journal Article Presentation (Post-Intervention)

B.3.1.3. Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Discussions

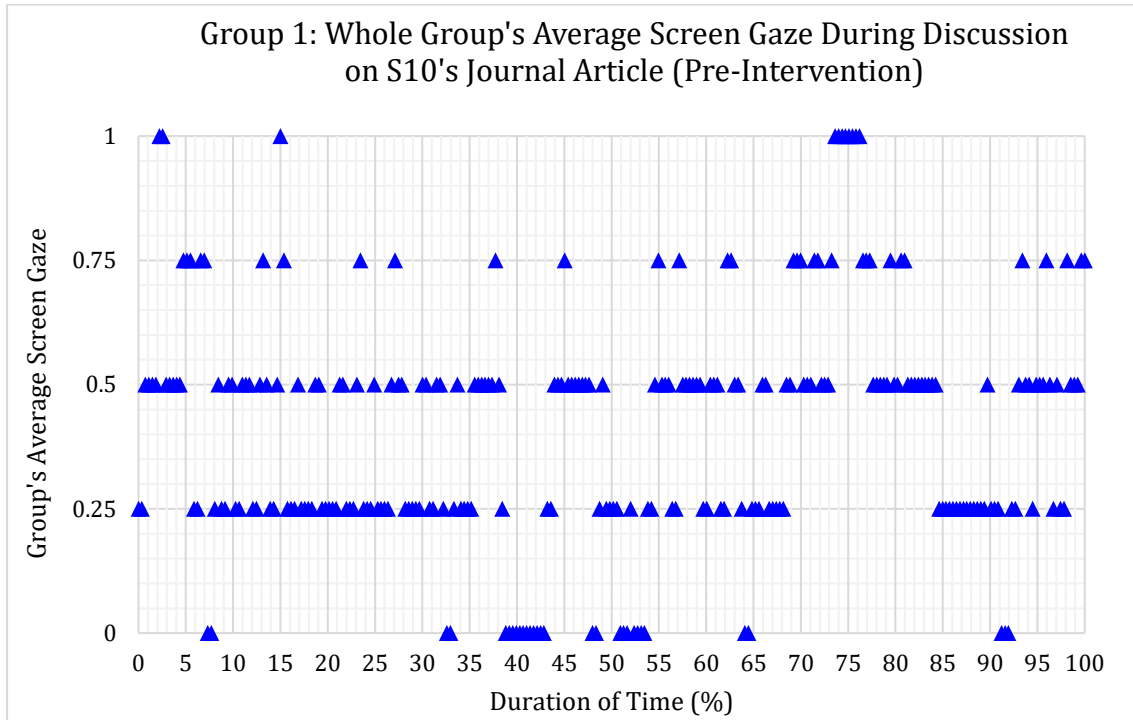


Figure B3.7: Whole Group's Screen Gaze During Group Discussion on S10's Journal Article (Pre-Intervention)

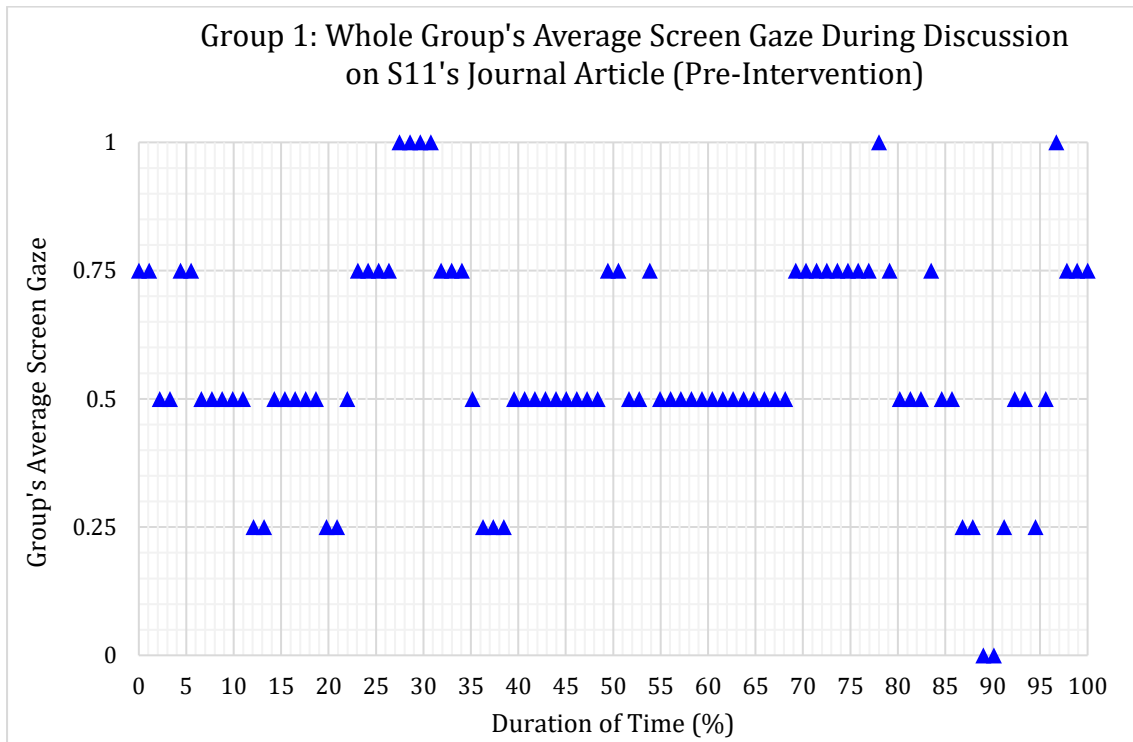


Figure B3.8: Whole Group's Screen Gaze During Group Discussion on S11's Journal Article (Pre-Intervention)

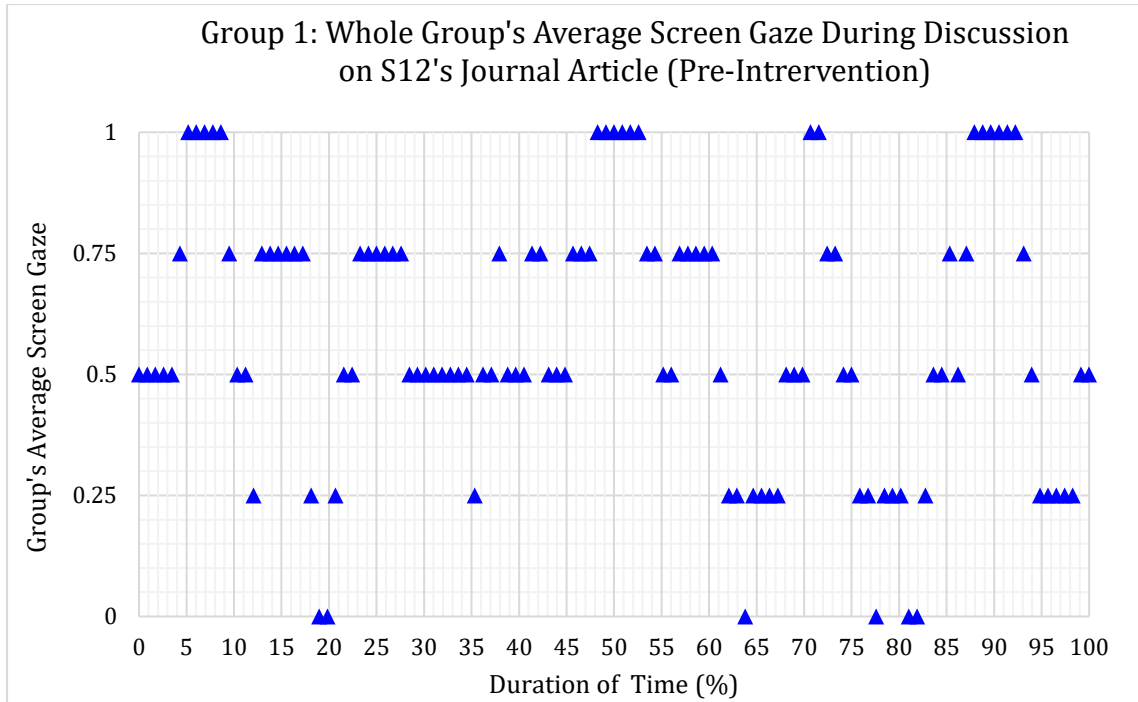


Figure B3.9: Whole Group's Screen Gaze During Group Discussion on S12's Journal Article (Pre-Intervention)

B.3.1.4. Group 1 Whole Group's Average Screen Gaze During Post-Intervention Discussions

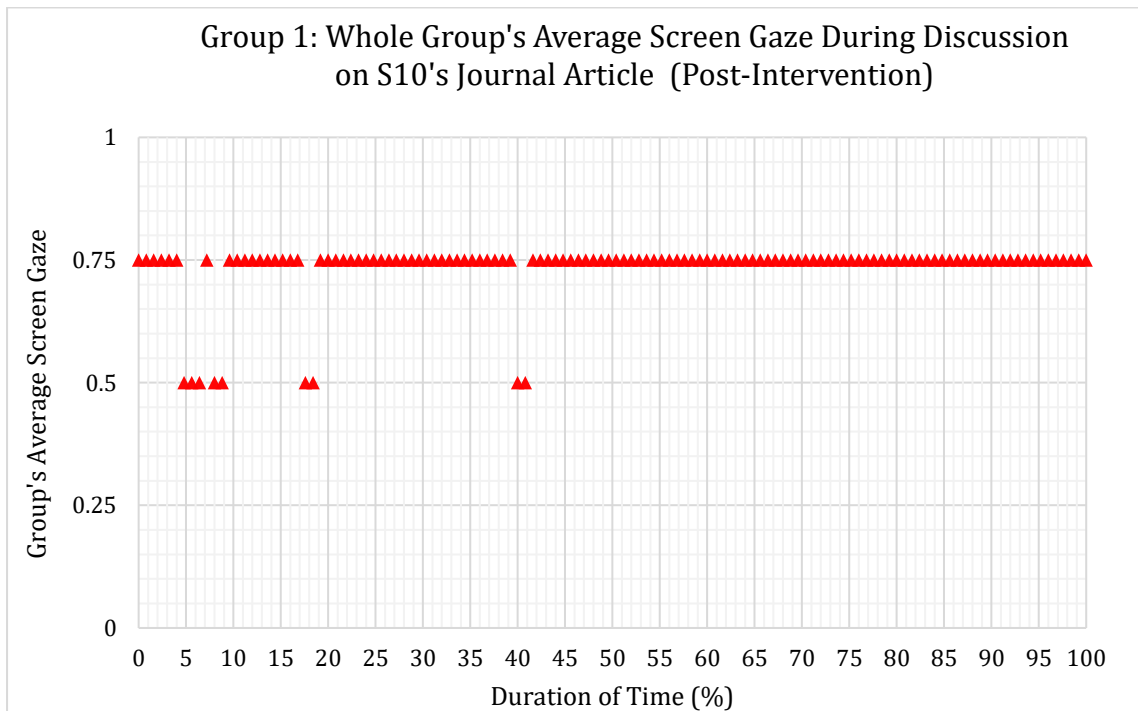


Figure B3.10: Whole Group's Screen Gaze During Group Discussion on S10's Journal Article (Post-Intervention)

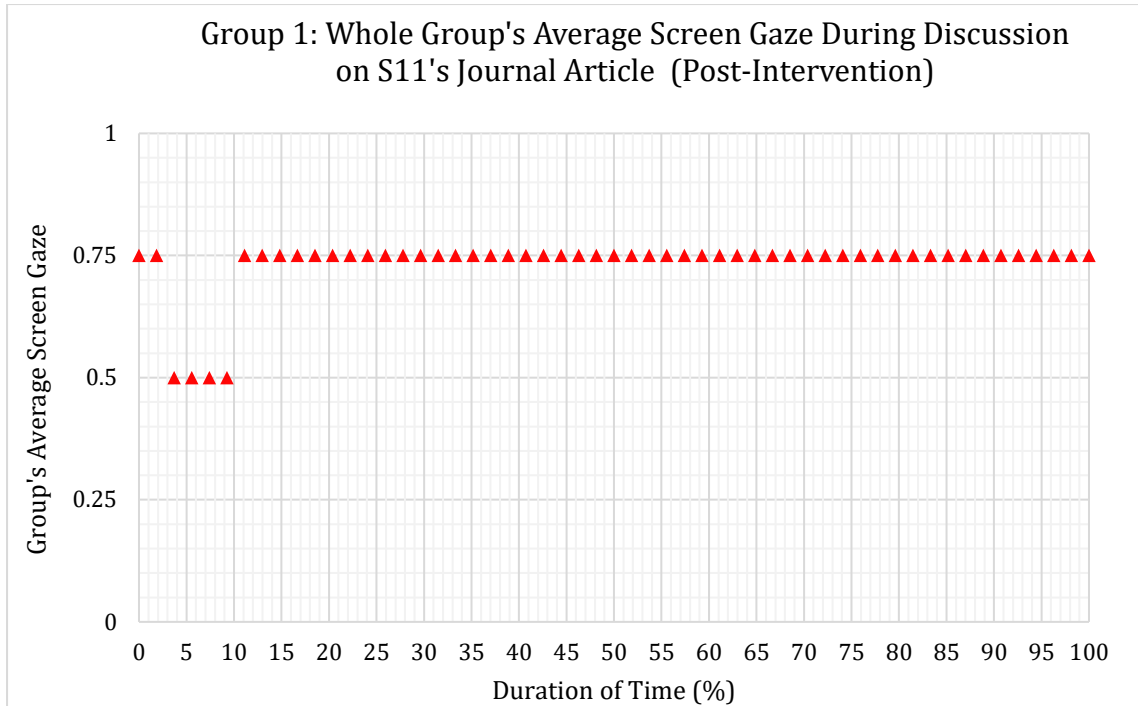


Figure B3.11: Whole Group's Screen Gaze During Group Discussion on S11's Journal Article (Post-Intervention)

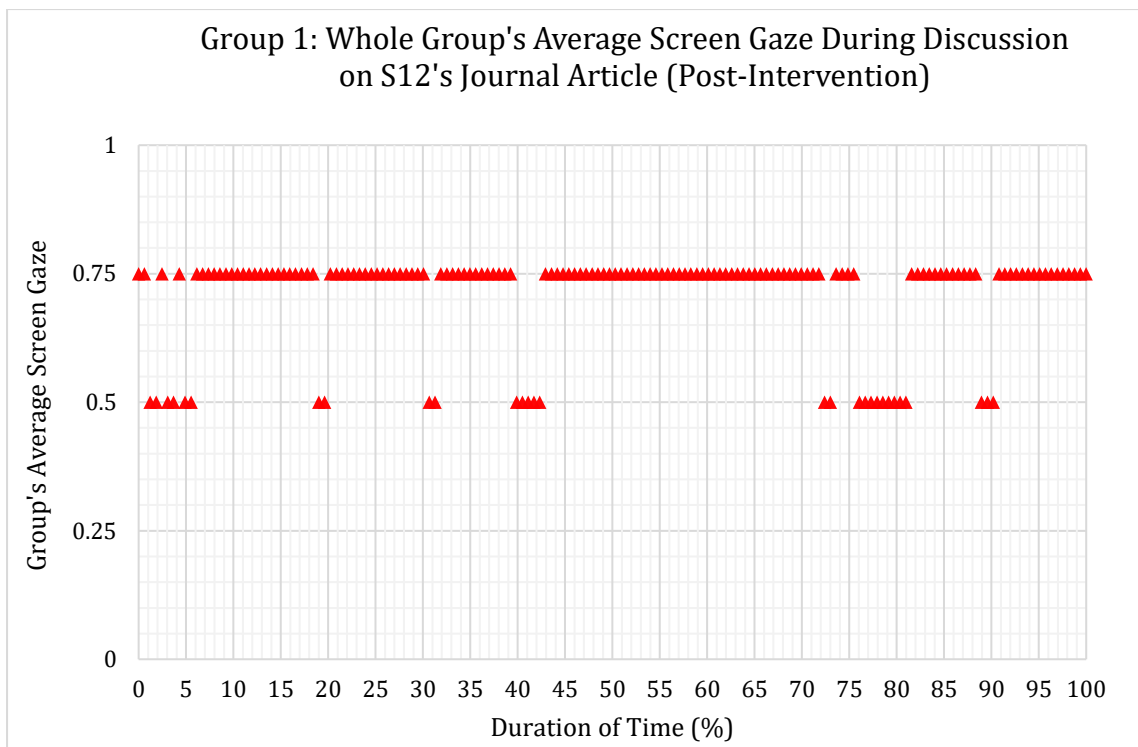


Figure B3.12: Whole Group's Screen Gaze During Group Discussion on S12's Journal Article (Post-Intervention)

B.3.2. Cycle 2: Group 2

B.3.2.1. Group 2- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

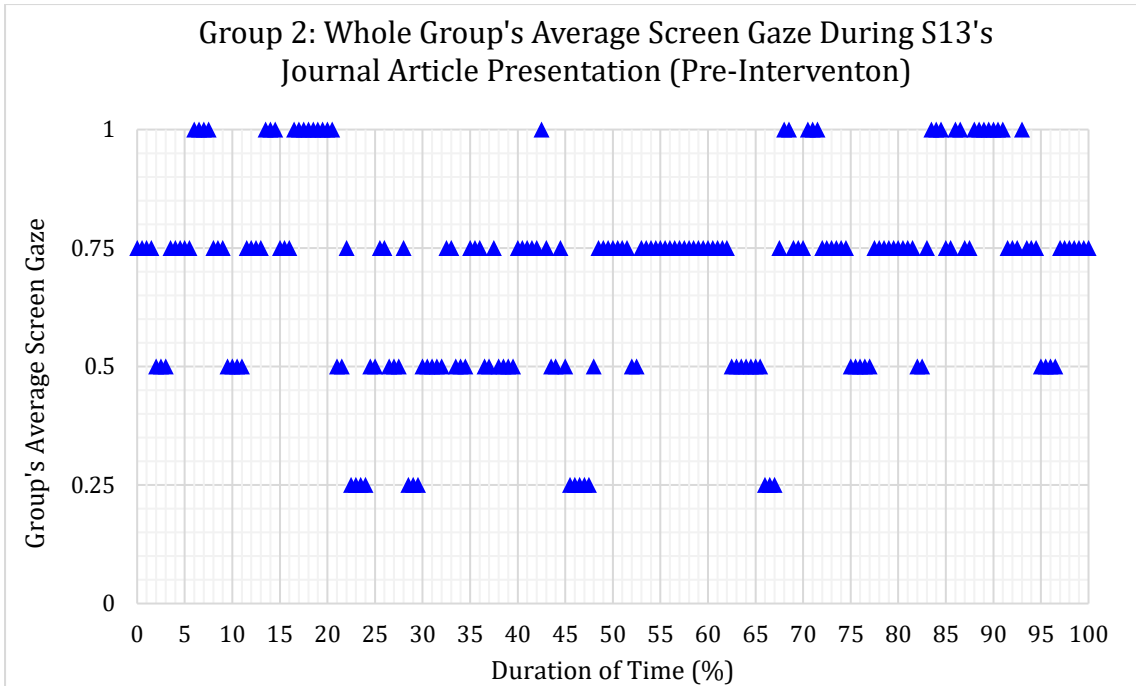


Figure B3.13: *Whole Group's Screen Gaze During S13's Journal Article Presentation (Pre-Intervention)*

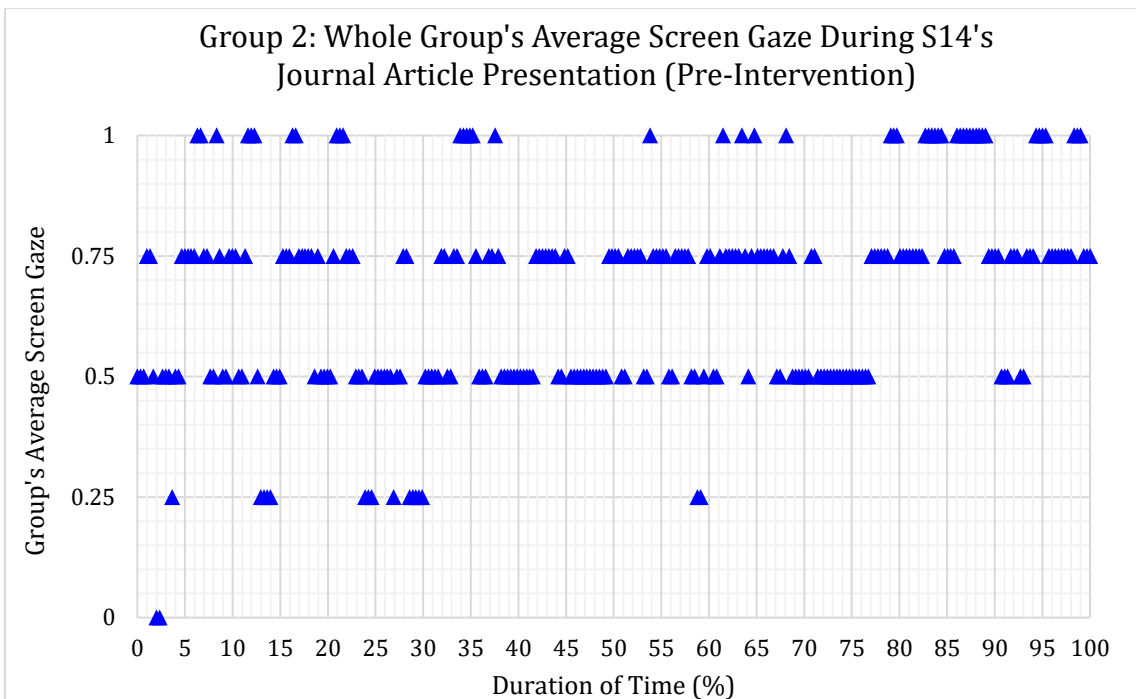


Figure B3.14: *Whole Group's Screen Gaze During S14's Journal Article Presentation (Pre-Intervention)*

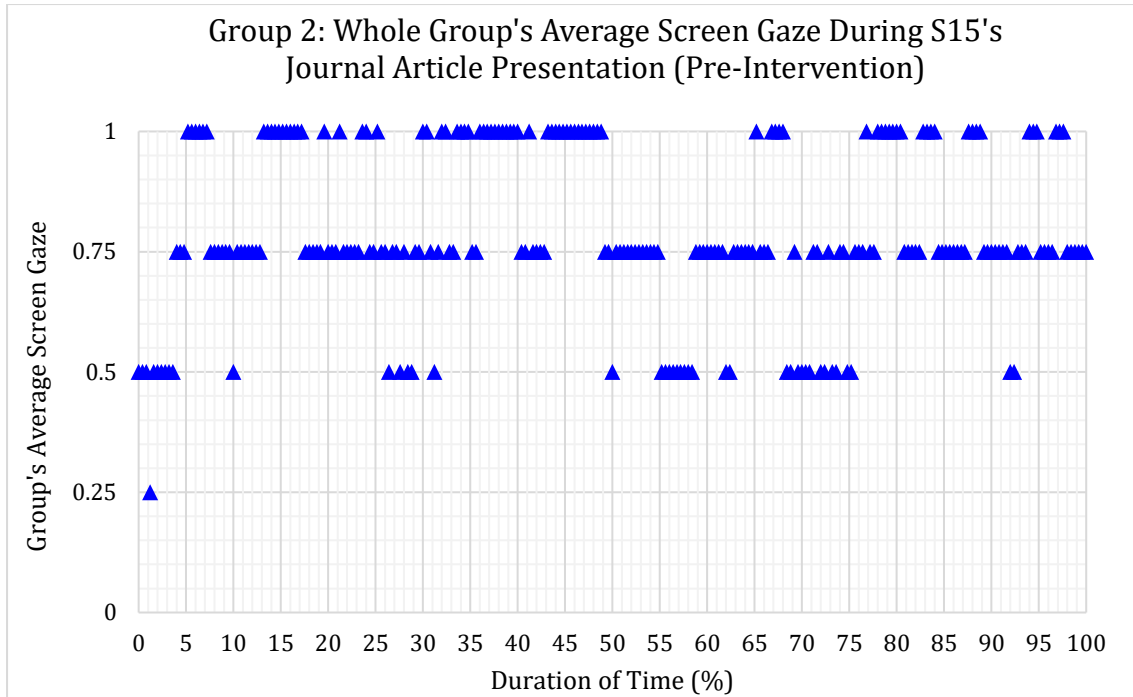


Figure B3.15: Whole Group's Screen Gaze During S15's Journal Article Presentation (Pre-Intervention)

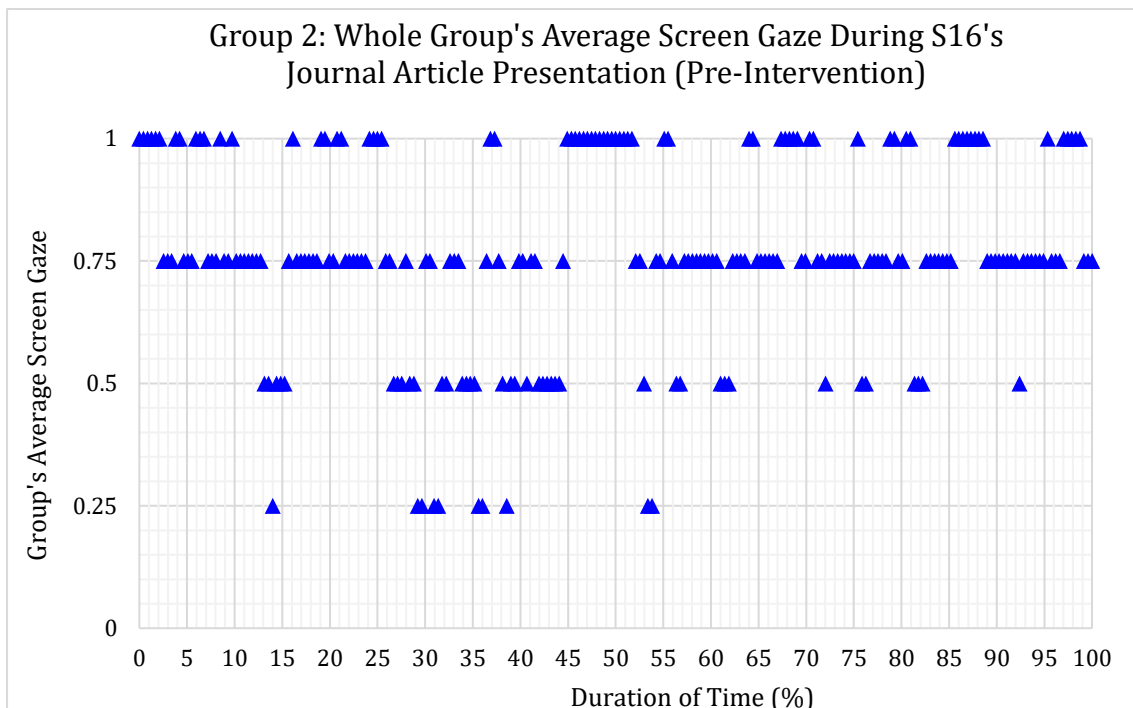


Figure B3.16: Whole Group's Screen Gaze During S16's Journal Article Presentation (Pre-Intervention)

B.3.2.2. *Group 2- Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations*

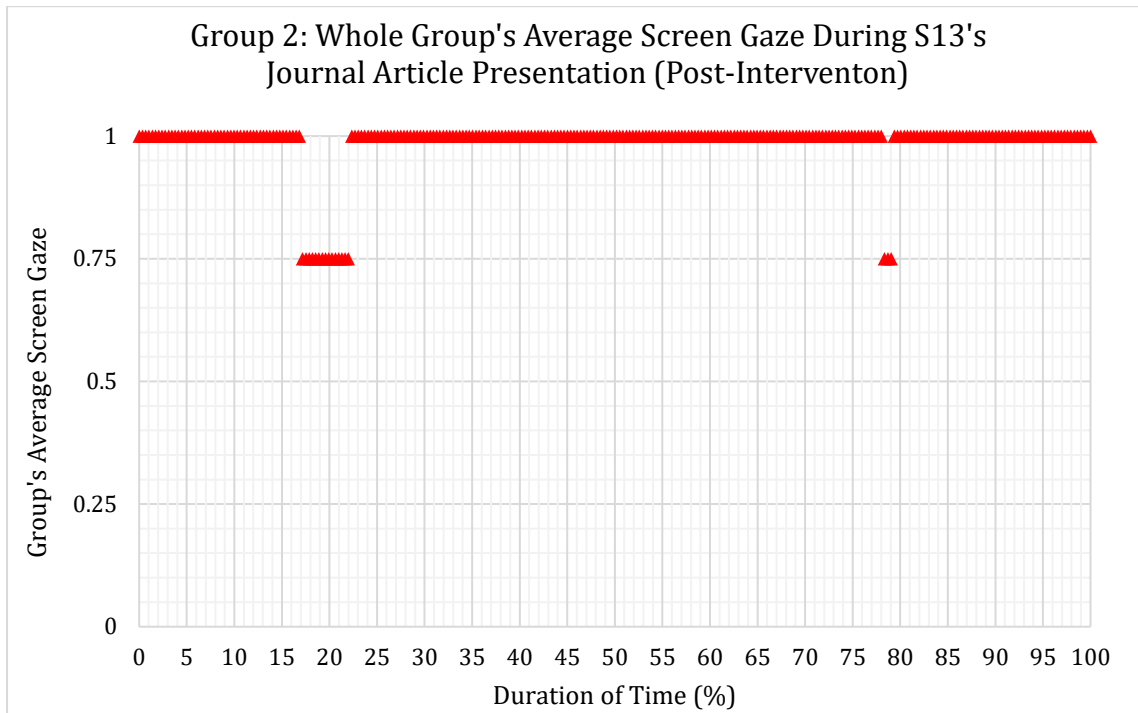


Figure B3.17: *Whole Group's Screen Gaze During S13's Journal Article Presentation (Post-Intervention)*

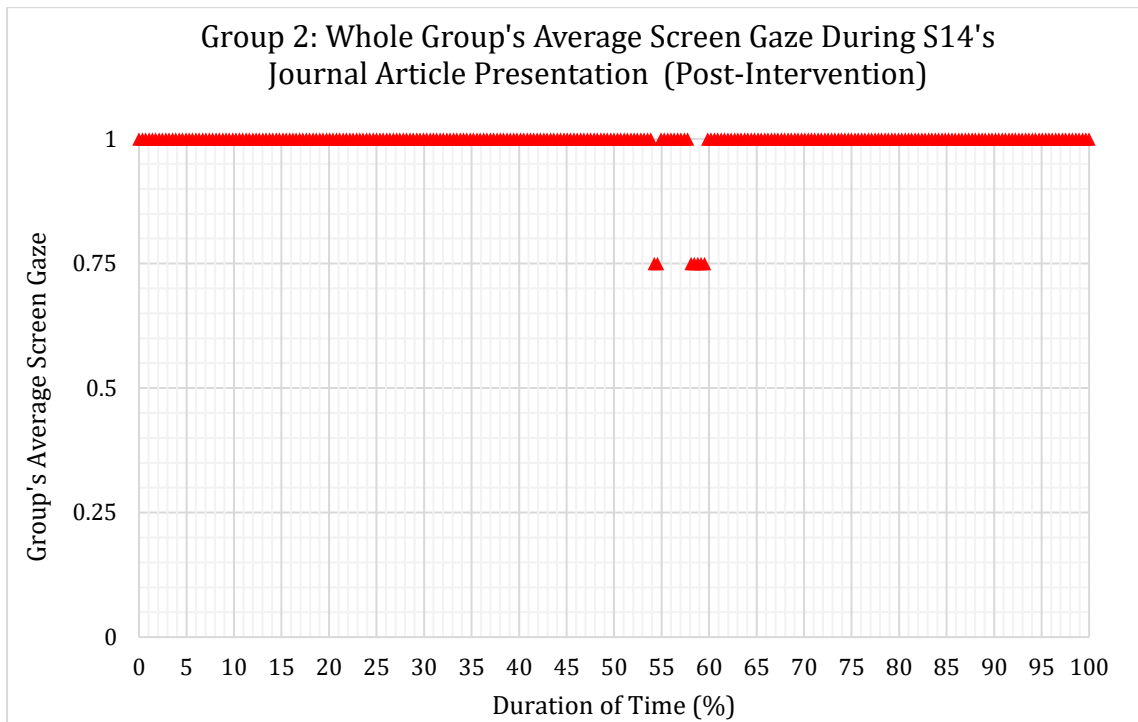


Figure B3.18: *Whole Group's Screen Gaze During S14's Journal Article Presentation (Post-Intervention)*

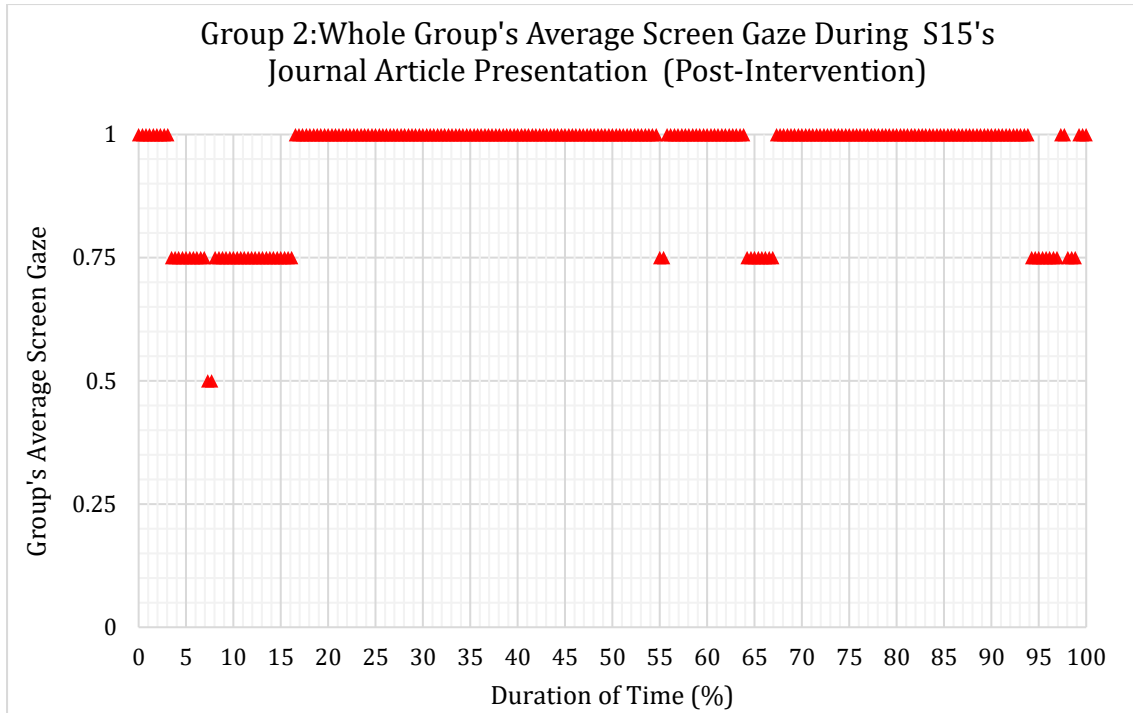


Figure B3.19: Whole Group's Screen Gaze During S15's Journal Article Presentation (Post-Intervention)

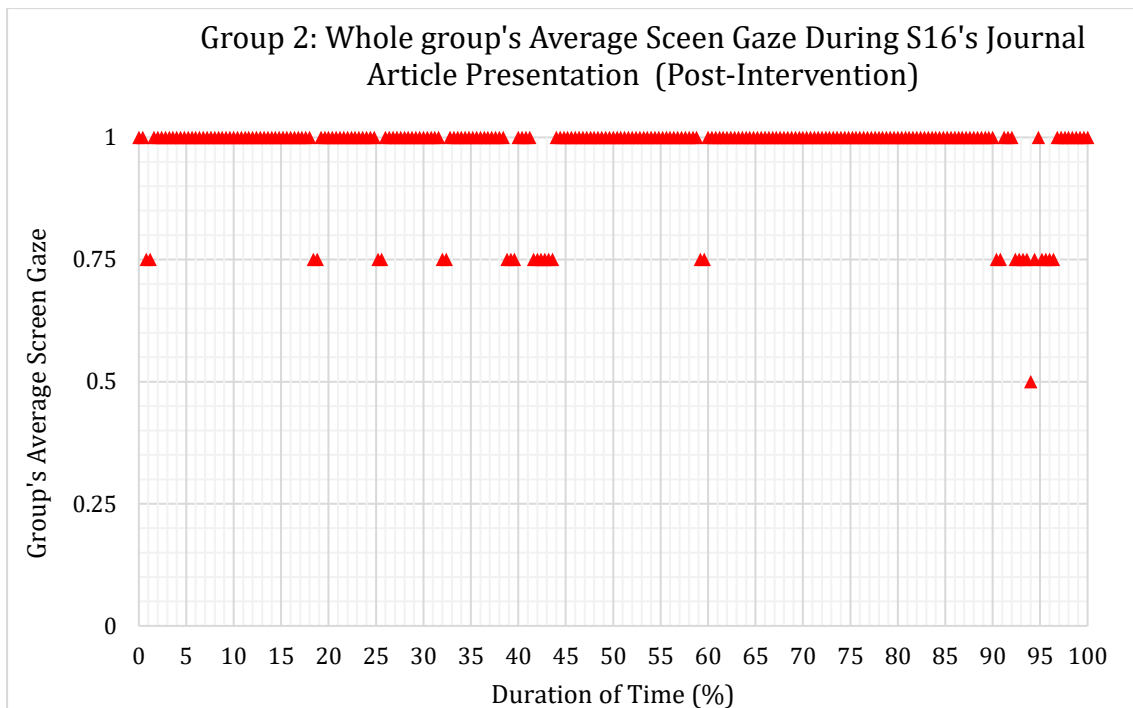


Figure B3.20: Whole Group's Screen Gaze During S16's Journal Article Presentation (Post-Intervention)

B.3.2.3. Group 2- Whole Group's Average Screen Gaze During Pre-Intervention Discussions

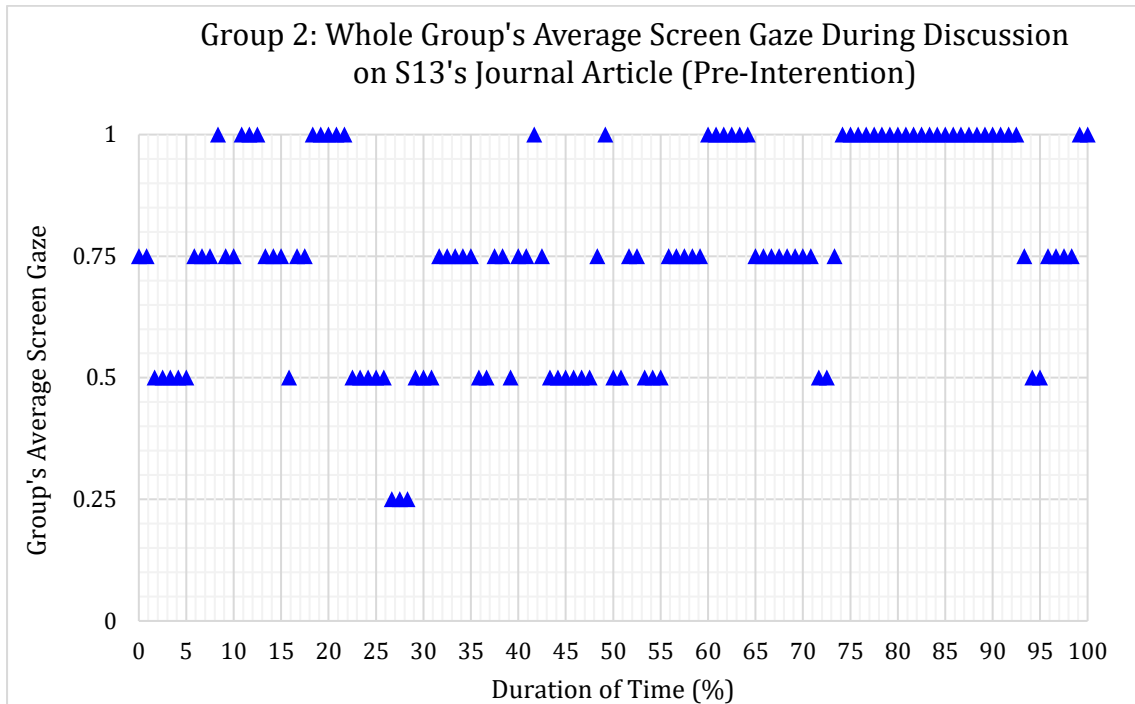


Figure B3.21: Whole Group's Screen Gaze During Group Discussion on S13's Journal Article (Pre-Intervention)

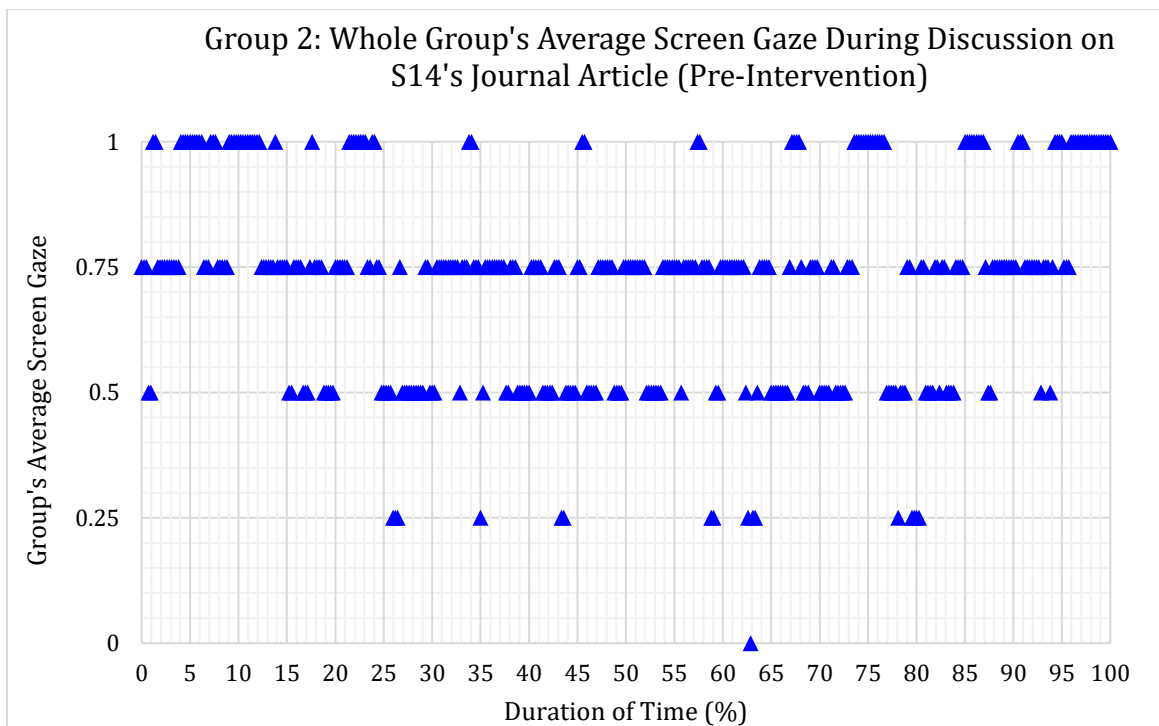


Figure B3.22: Whole Group's Screen Gaze During Group Discussion on S14's Journal Article (Pre-Intervention)

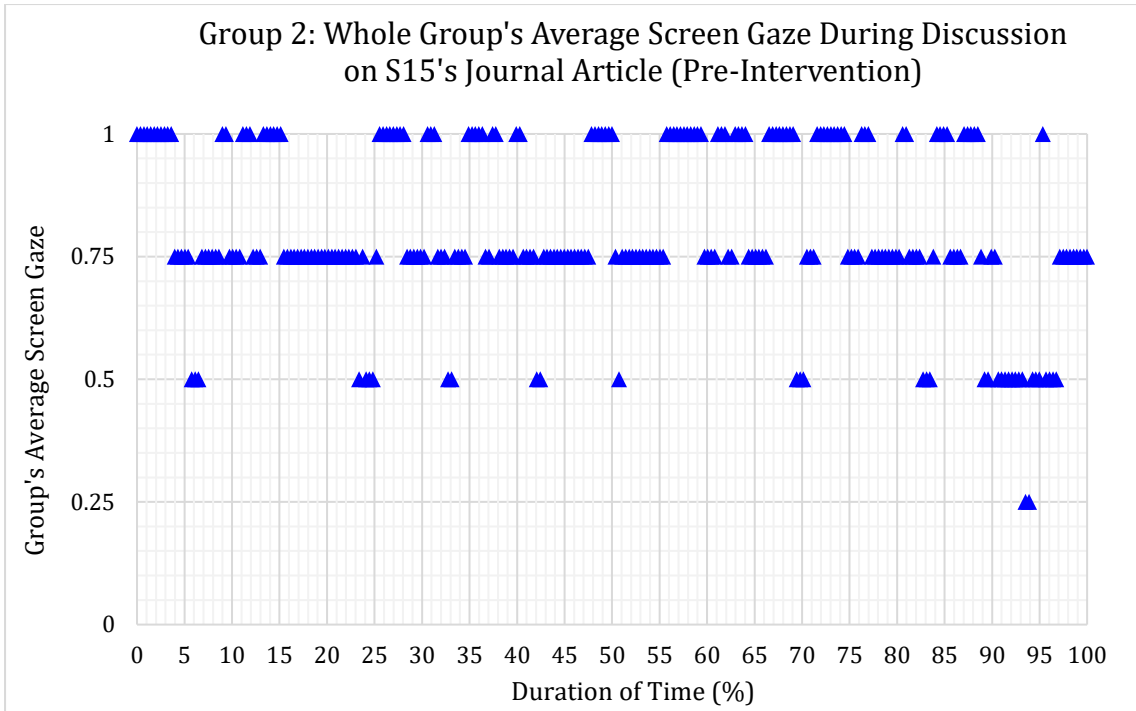


Figure B3.23: Whole Group's Screen Gaze During Group Discussion on S15's Journal Article (Pre-Intervention)

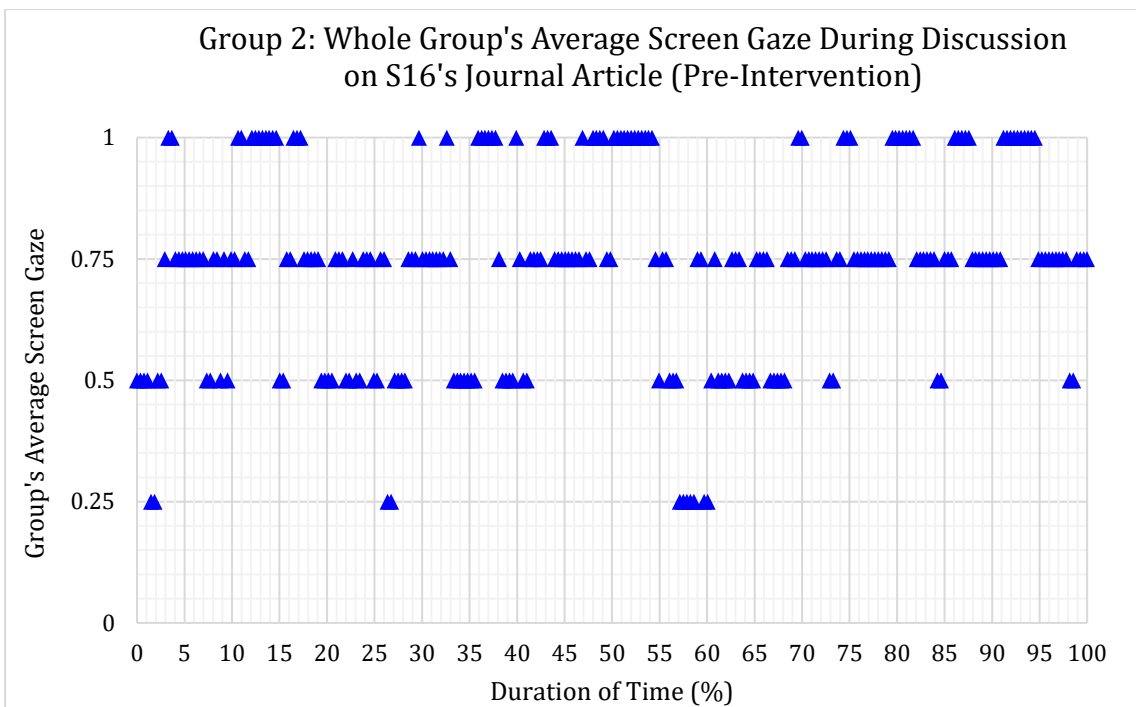


Figure B3.24: Whole Group's Screen Gaze During Group Discussion on S16's Journal Article (Pre-Intervention)

B.3.2.4. Group 2- Whole Group's Average Screen Gaze During Post-Intervention Discussions

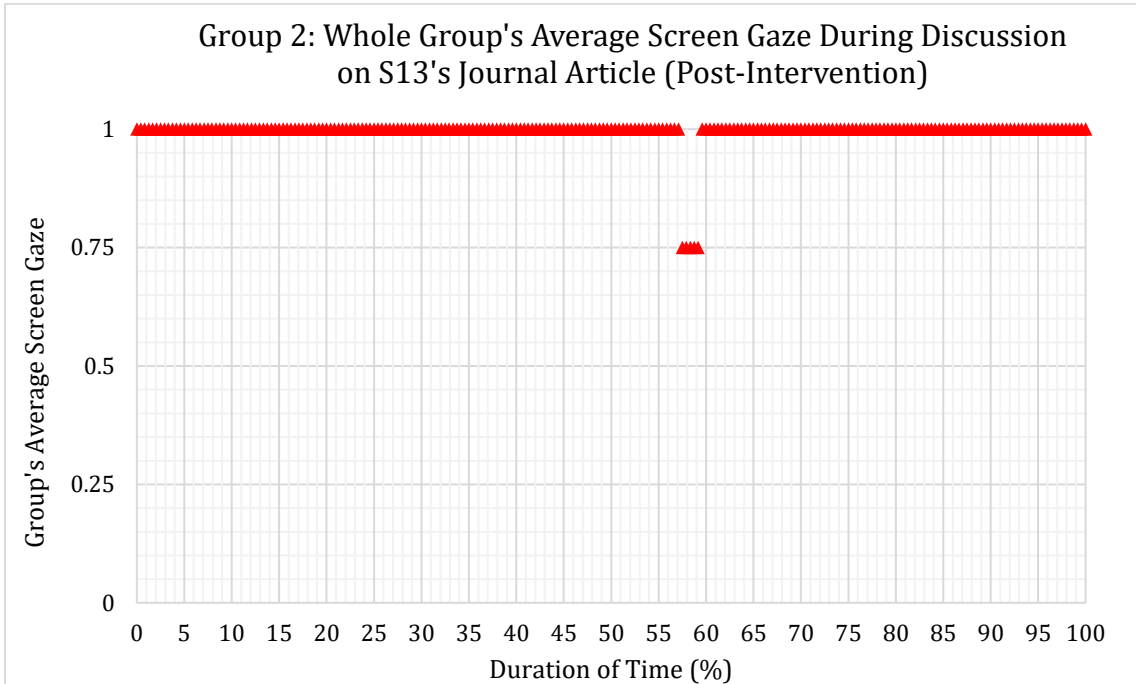


Figure B3.25: Whole Group's Screen Gaze During Group Discussion on S13's Journal Article (Post-Intervention)

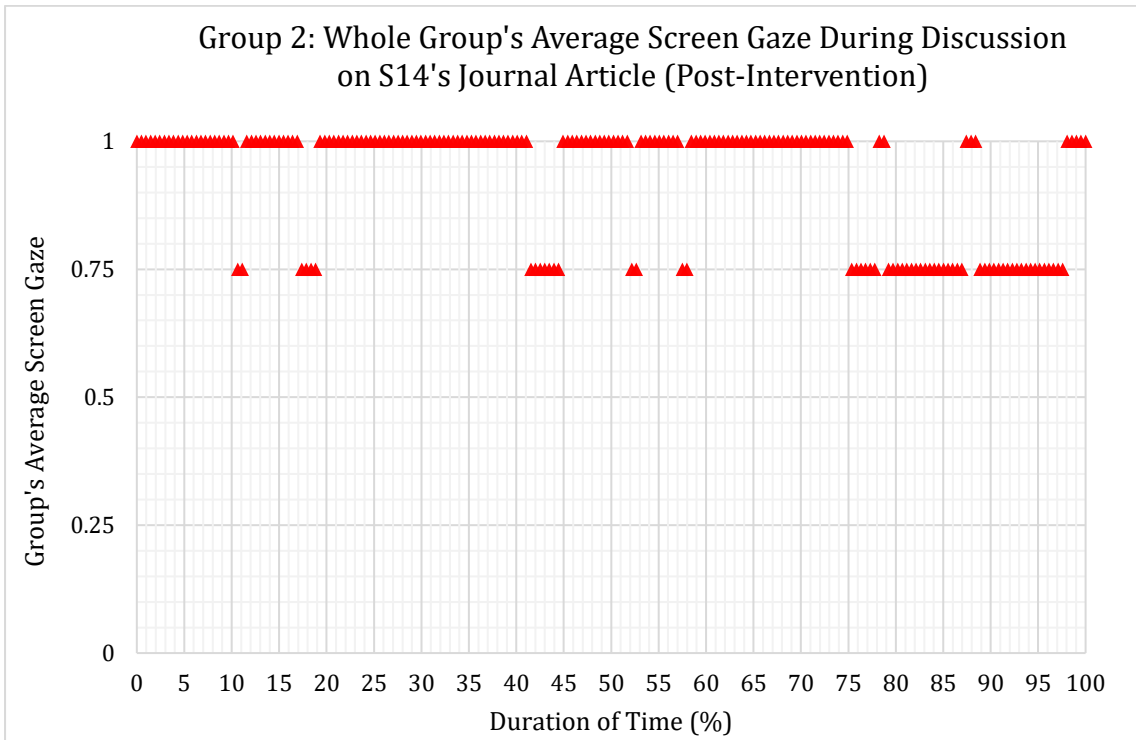


Figure B3.26: Whole Group's Screen Gaze During Group Discussion on S14's Journal Article (Post-Intervention)

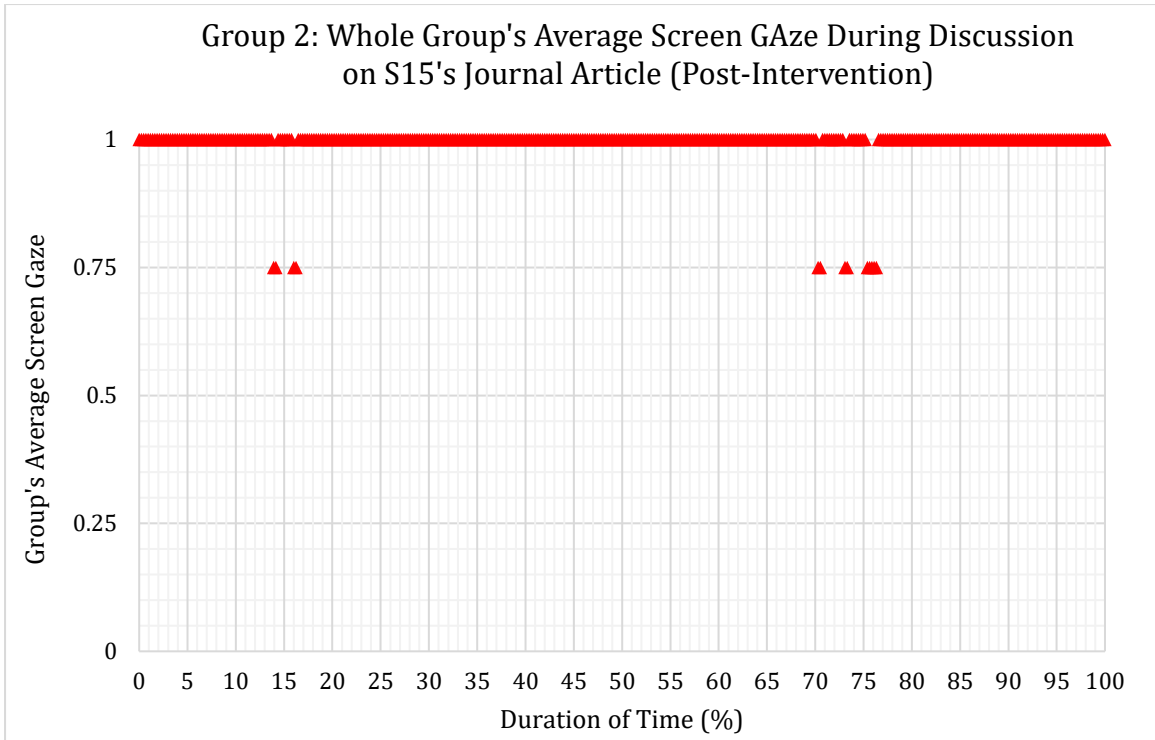


Figure B3.27: Whole Group's Screen Gaze During Group Discussion on S15's Journal Article (Post-Intervention)

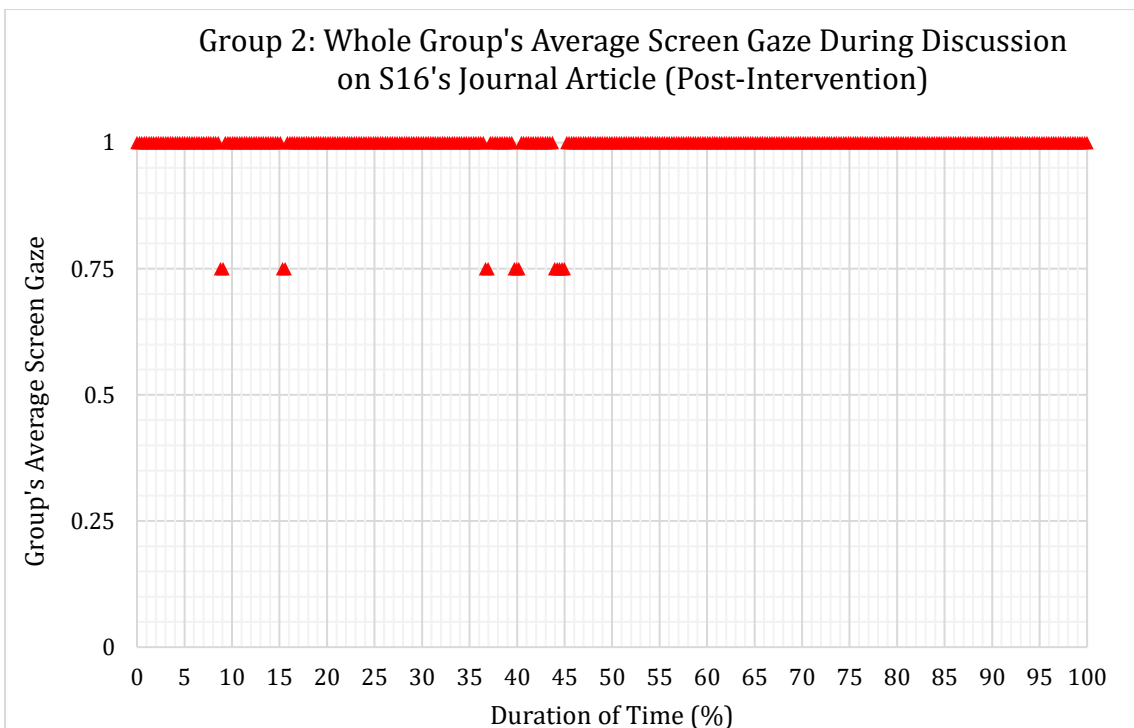


Figure B3.28: Whole Group's Screen Gaze During Group Discussion on S16's Journal Article (Post-Intervention)

B.3.3. Cycle 2: Group 3

B.3.3.1. Group 3- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

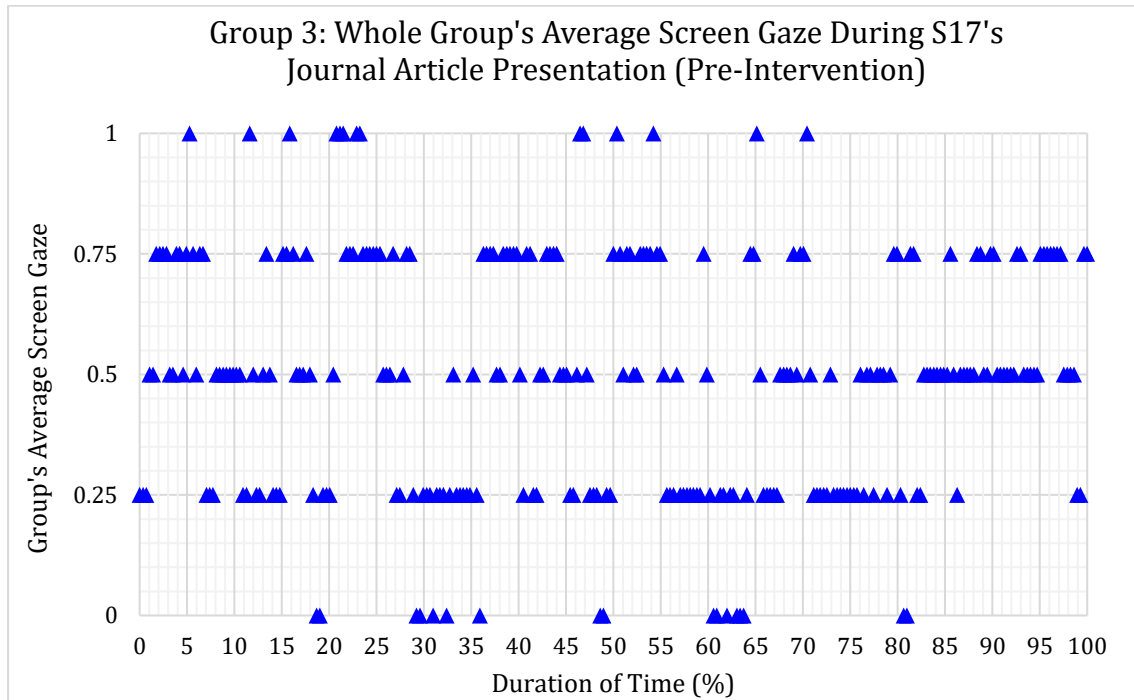


Figure B3.29: *Whole Group's Screen Gaze During S17's Journal Article Presentation (Pre-Intervention)*

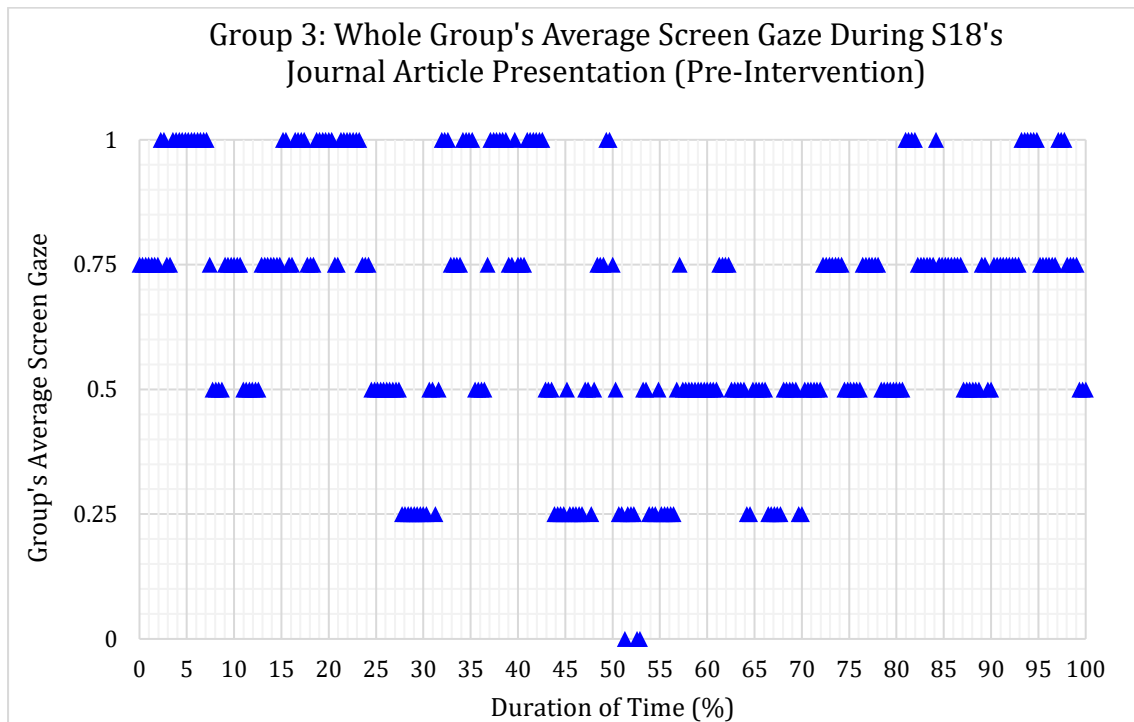


Figure B3.30: *Whole Group's Screen Gaze During S183's Journal Article Presentation (Pre-Intervention)*

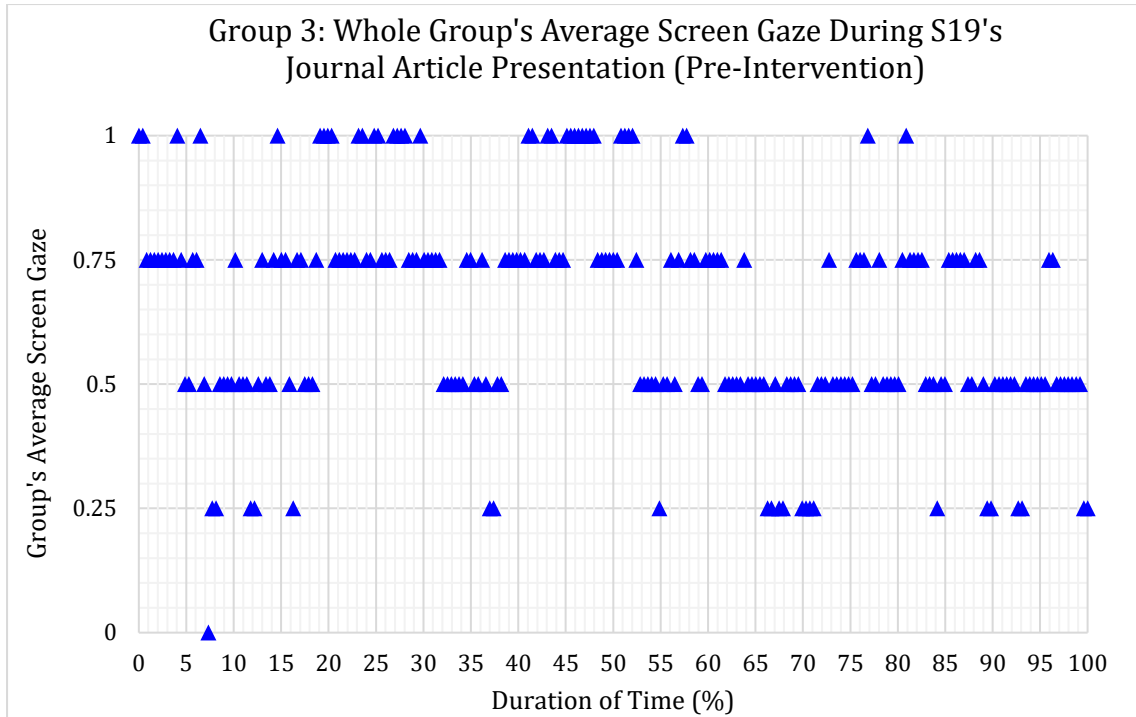


Figure B3.31: Whole Group's Screen Gaze During S19's Journal Article Presentation (Pre-Intervention)

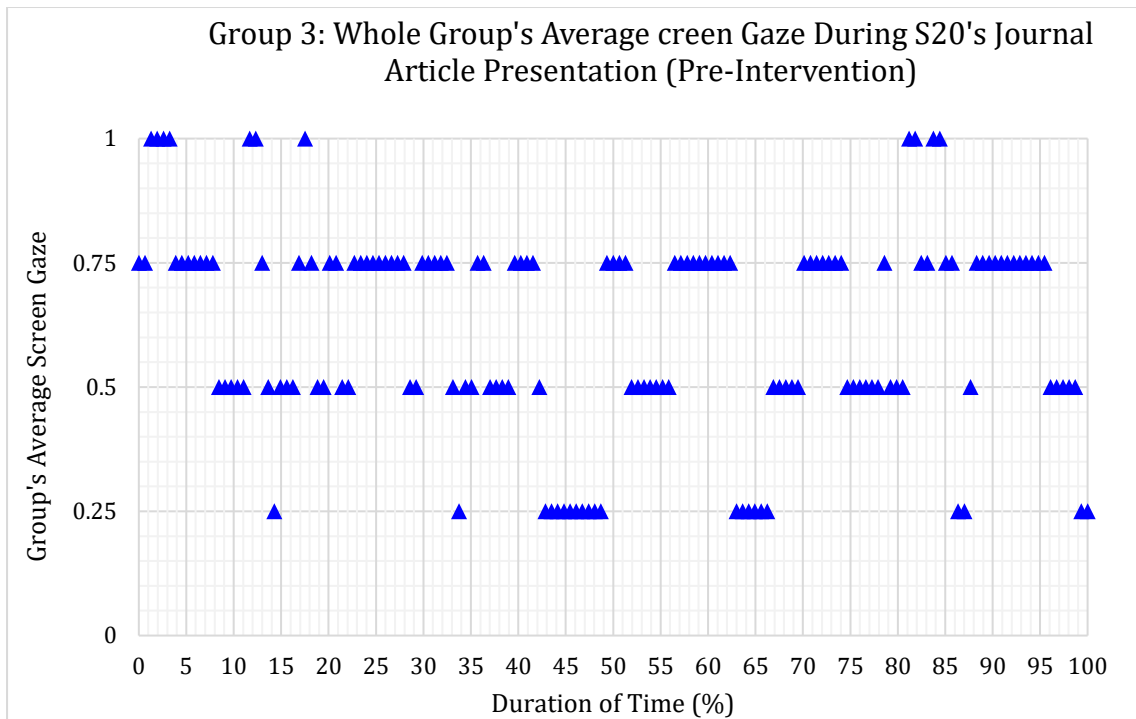


Figure B3.32: Whole Group's Screen Gaze During S20's Journal Article Presentation (Pre-Intervention)

B.3.3.2. *Group 3- Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations*

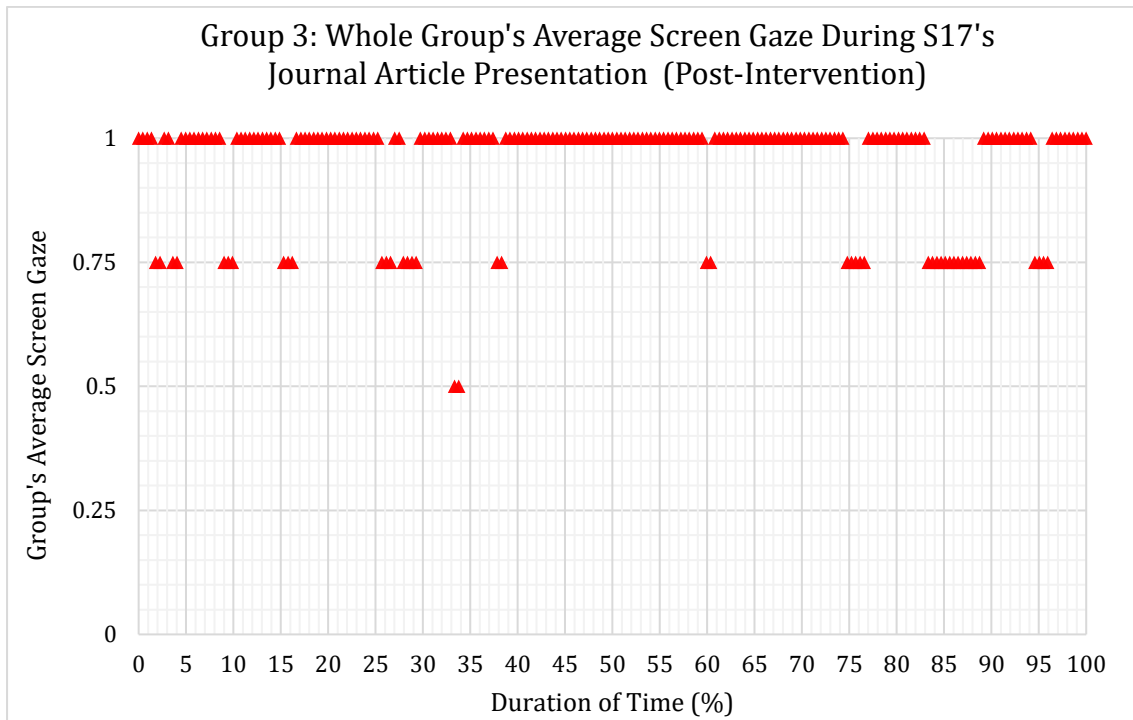


Figure B3.33: *Whole Group's Screen Gaze During S17's Journal Article Presentation (Post-Intervention)*

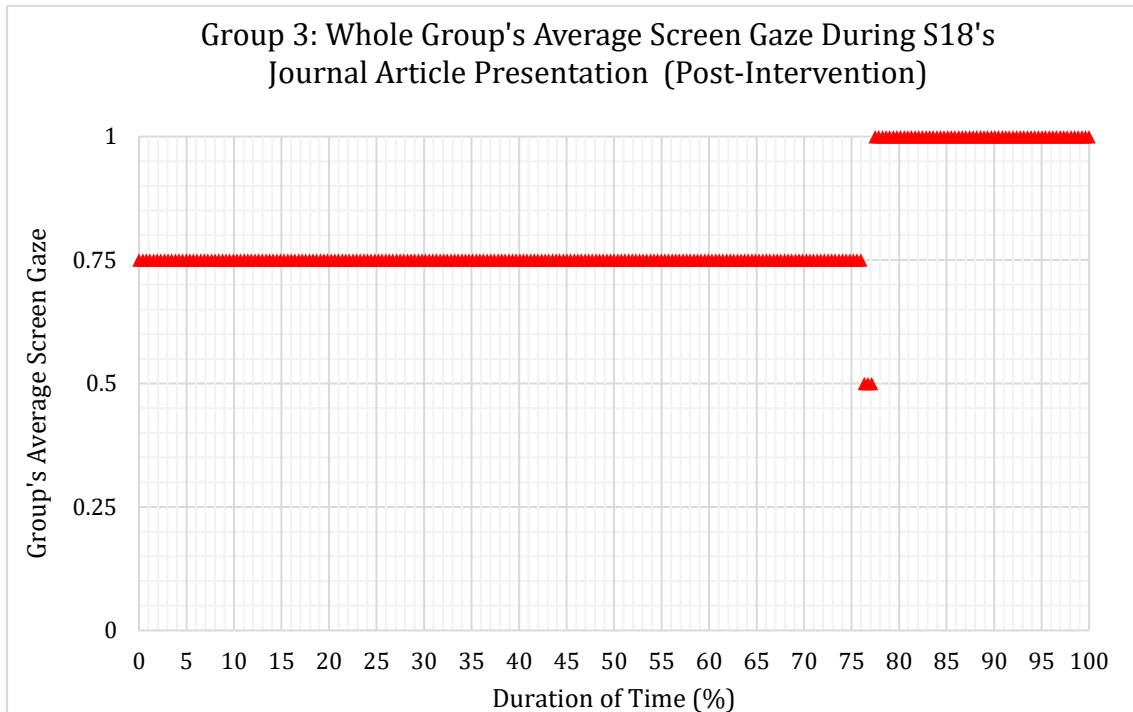


Figure B3.34: *Whole Group's Screen Gaze During S18's Journal Article Presentation (Post-Intervention)*

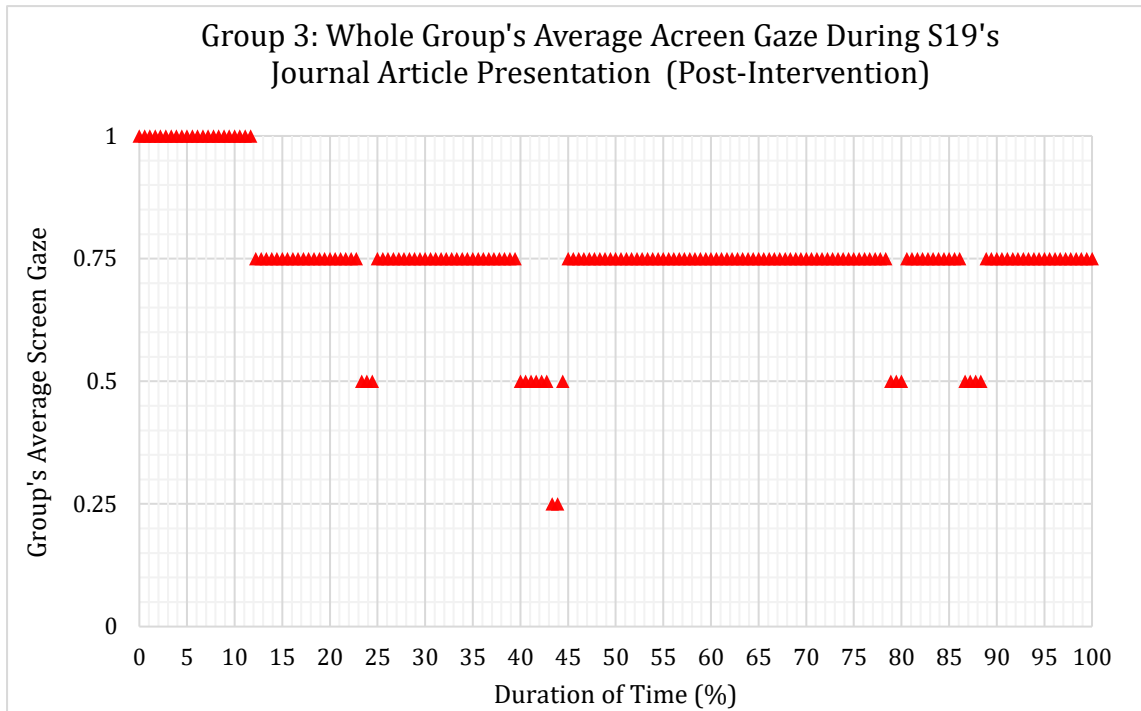


Figure B3.35: Whole Group's Screen Gaze During S19's Journal Article Presentation (Post-Intervention)

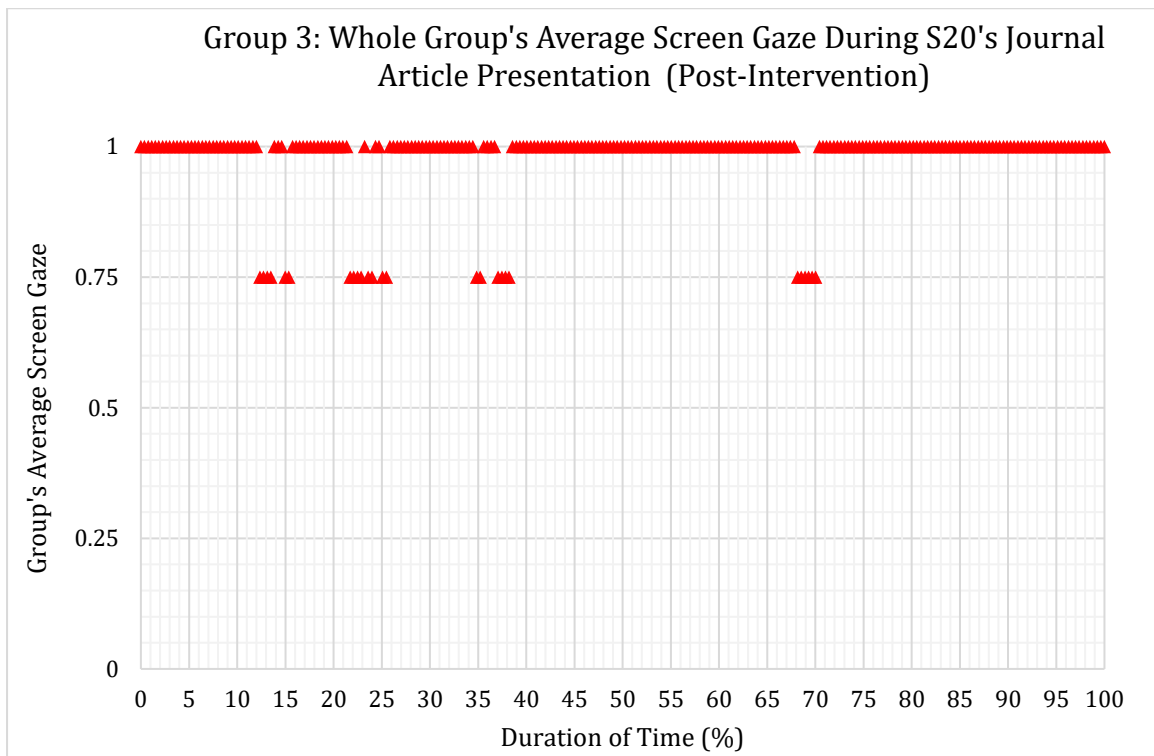


Figure B3.36: Whole Group's Screen Gaze During S20's Journal Article Presentation (Post-Intervention)

B.3.3.3. Group 3- Whole Group's Average Screen Gaze During Pre-Intervention Discussions

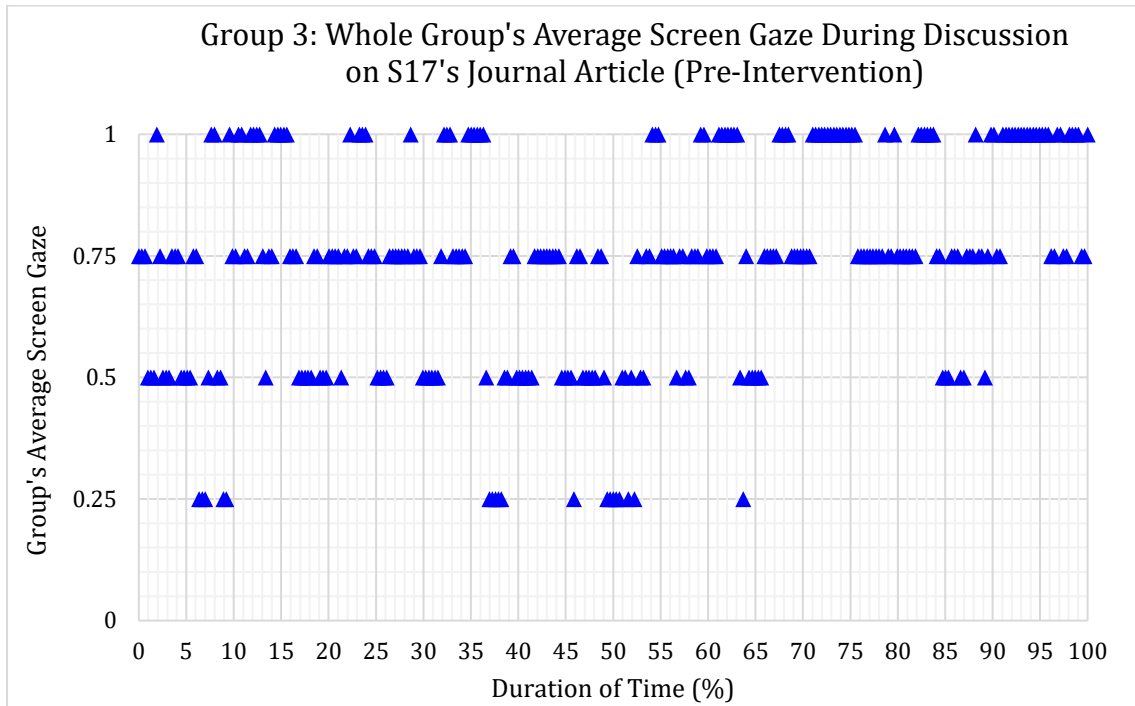


Figure B3.37: Whole Group's Screen Gaze During Group Discussion on S17's Journal Article (Pre-Intervention)

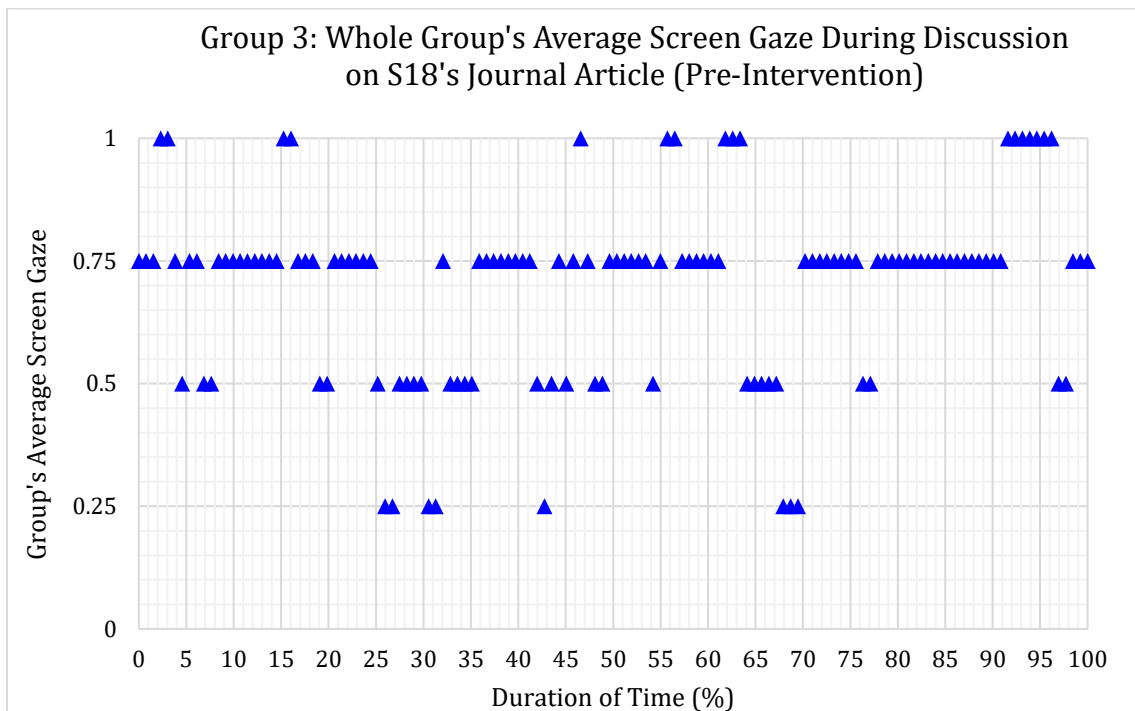


Figure B3.38: Whole Group's Screen Gaze During Group Discussion on S18's Journal Article (Pre-Intervention)

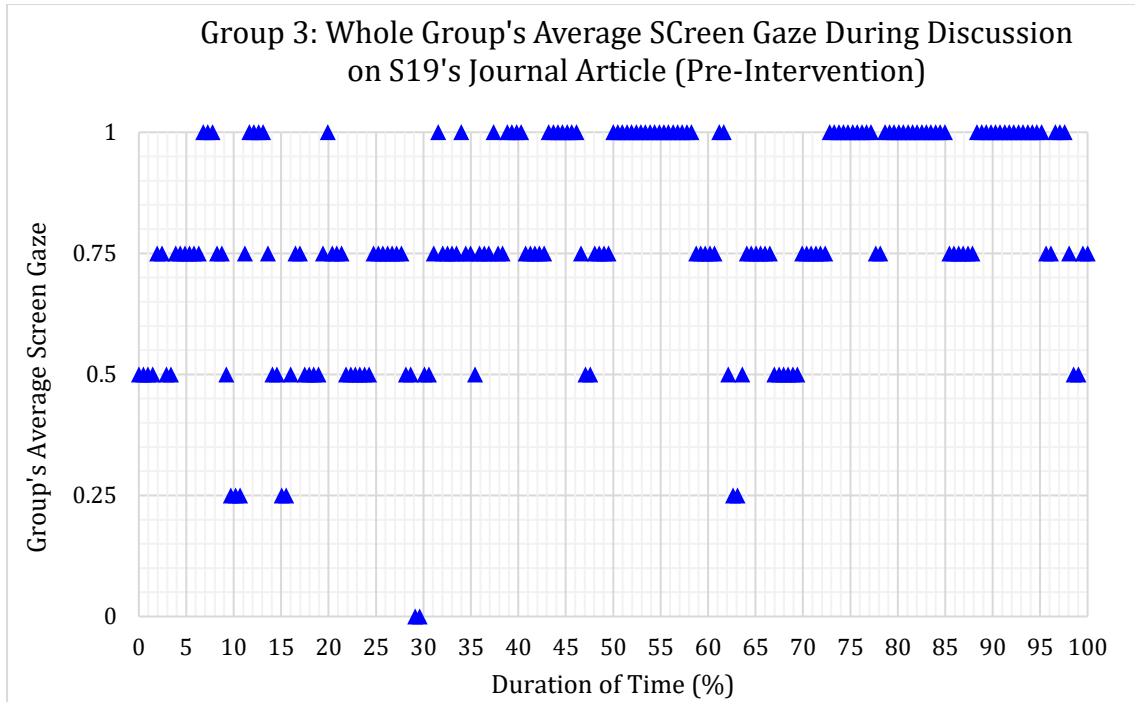


Figure B3.39: Whole Group's Screen Gaze During Group Discussion on S19's Journal Article (Pre-Intervention)

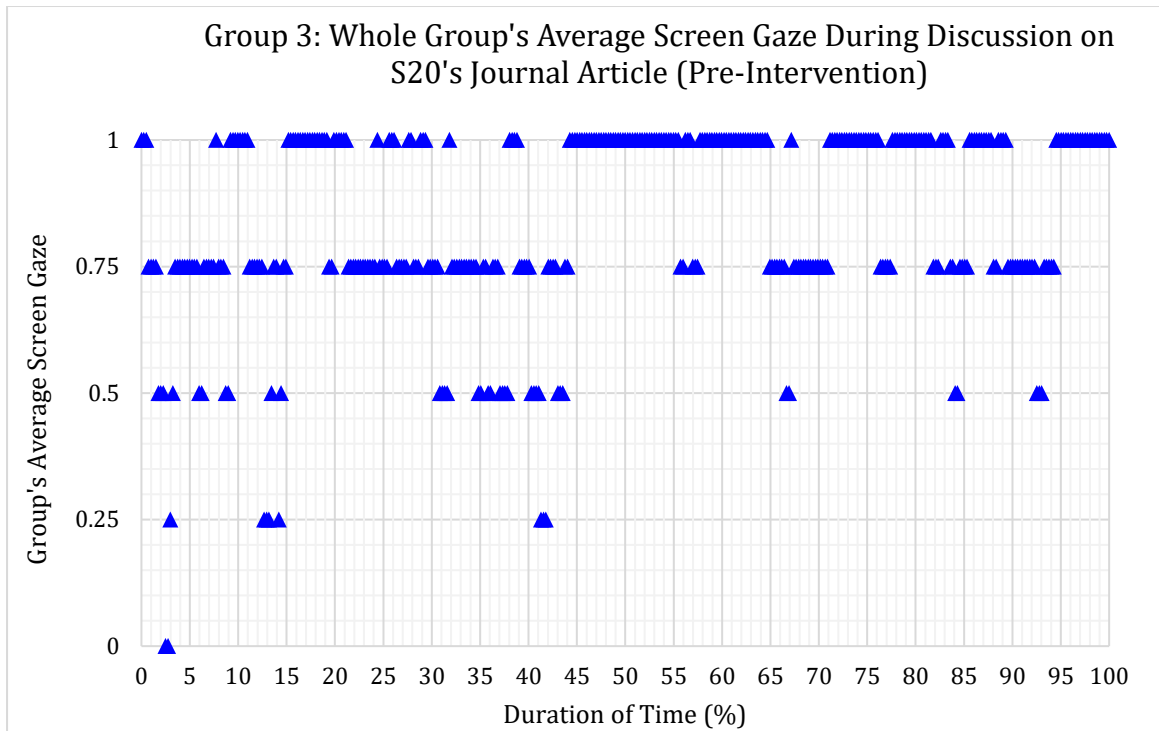


Figure B3.40: Whole Group's Screen Gaze During Group Discussion on S20's Journal Article (Pre-Intervention)

B.3.3.4. Group 3- Whole Group's Average Screen Gaze During Post-Intervention Discussions

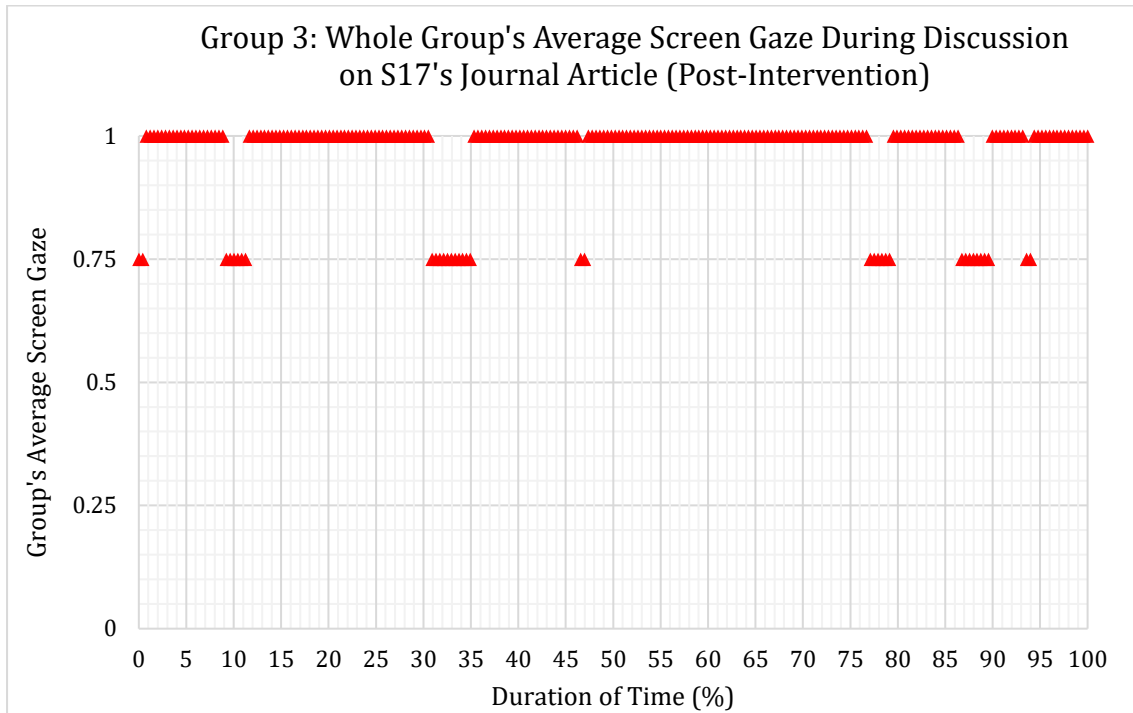


Figure B3.41: Whole Group's Screen Gaze During Group Discussion on S17's Journal Article (Post-Intervention)

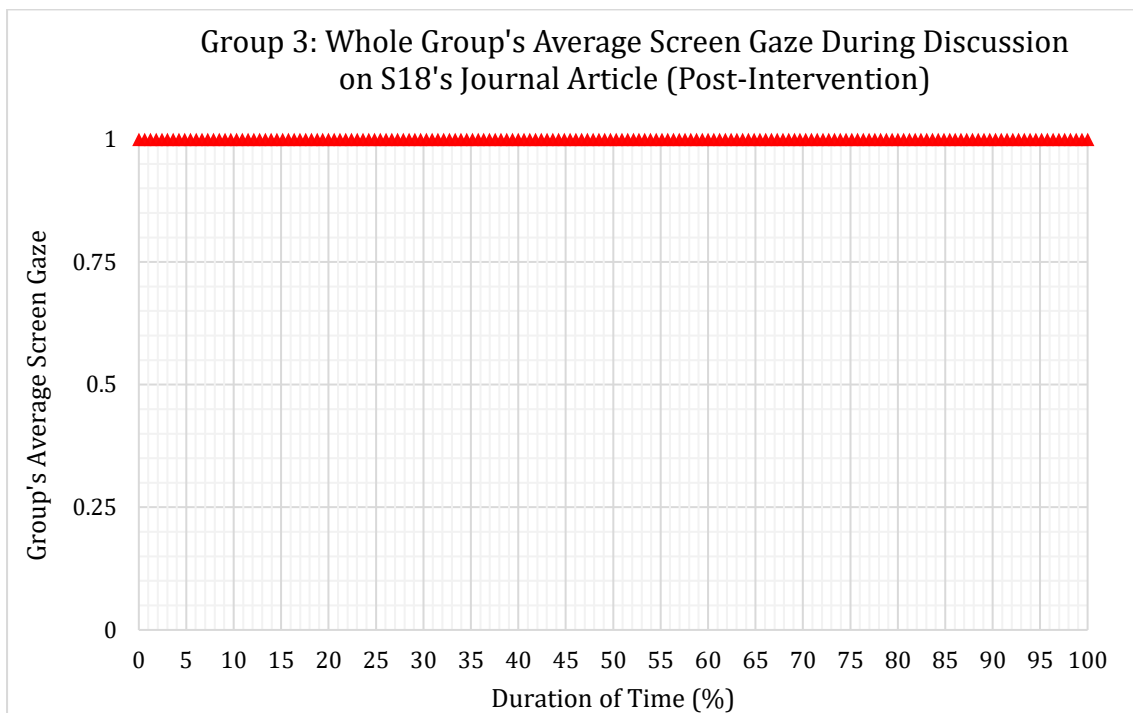


Figure B3.42: Whole Group's Screen Gaze During Group Discussion on S18's Journal Article (Post-Intervention)

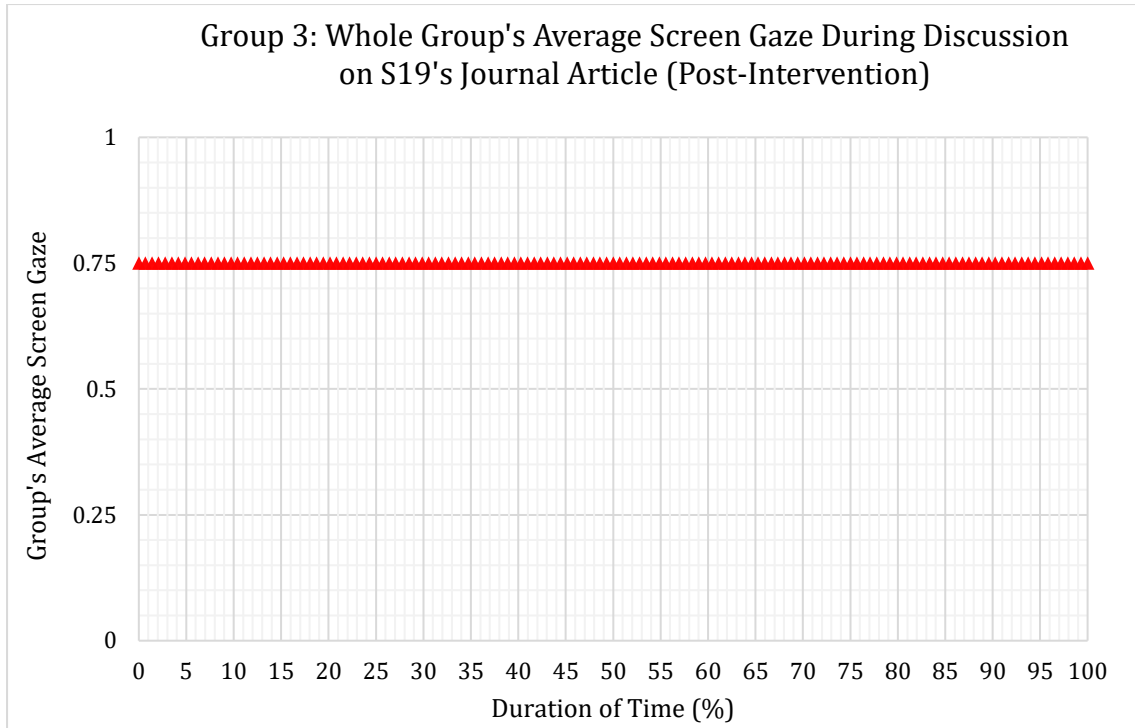


Figure B3.43: Whole Group's Screen Gaze During Group Discussion on S19's Journal Article (Post-Intervention)

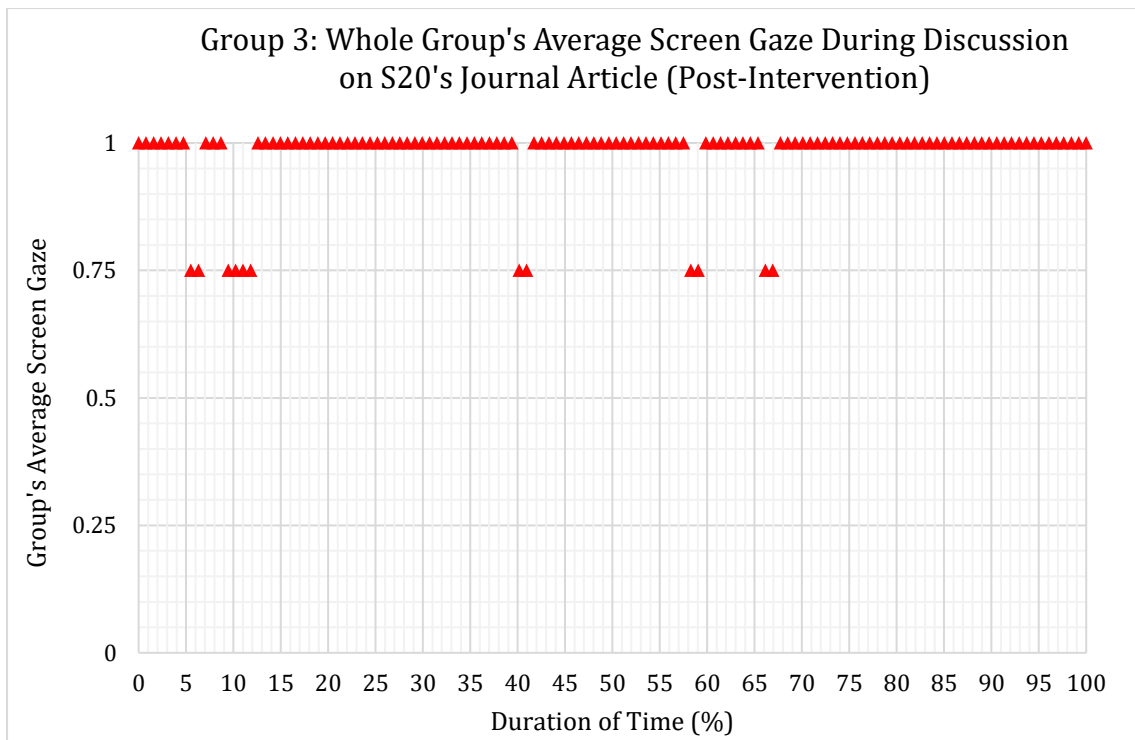


Figure B3.44: Whole Group's Screen Gaze During Group Discussion on S20's Journal Article (Post-Intervention)

Appendix B.4

B.4. Template Analysis of Focus Group Transcriptions – Cycle 2

Table B4.1: Example Student Statements on the Three Key Emergent Themes – Post-Intervention Focus Groups (Cycle 2)

Main Theme	Frequency	Cycle 2
		Students' Statements
Screen Gaze	14	<p>S11: <i>I feel like we all in the same place and talking more with eye contact. (TR PostIFG, G1)</i></p> <p>S13: <i>Yes, during the discussion we used eye contact and also really, I try to listen very well. (TR PostIFG, G2)</i></p> <p>S15: <i>In the previous one I had some issues with whether they are looking ... But today I got to know after that (CSCC training) session they are looking at us. Because when we are looking at the screen, I... try to give the eye contact all the places. Really a good experience ... we switched on the cameras. (TR, PostIFG, G2)</i></p> <p>S15: <i>They all are looking because on the screen may be on different places likewise, I imagine and try to give you the eye contact all the places. (TR, PostIFG, G2)</i></p> <p>S19: <i>Yes, I used to focus on others. (TR, PostIFG, G3)</i></p> <p>S20: <i>When we talk, when others talk, we observe others and also observe our facial reactions and, in our face, [facial] reactions we make comfortable, the group discussion we know how to attract or interact discussion with others. (TR, PostIFG, G3)</i></p> <p>S15: <i>When we use [CSCC], we are looking [at] others facial expressions. (TR, PostIFG, G2)</i></p>

-
- S15:** *...sometimes by looking at them, while they are presenting, looking at their face expressions, we know who have some doubts or anything or something we will get to know. (TR, PostIFG, G2)*
- S19:** *Their facial expressions and also they are comfortable. (TR, PostIFG, G3)*
- S18:** *While I am [was] continuing to present, the presentation, my other group members are [were] nodding head and appreciating, so I suppose, those supported continuing my presentation. (TR, PostIFG, G3)*
- S17:** *Yes ma'am, when we appreciate or thank someone, we can see that they feel happy and there comes smile on their face. (TR, PostIFG, G3)*
- S20:** *When they speak, we show our reactions to them to engage. (TR, PostIFG, G3)*
- S17:** *I think it helps learning because, when we see that from their reactions, like nodding of the heads, we know that they understood what we are saying. (TR, PostIFG, G3)*
- S19:** *..., like S20 said, that's also true we are focusing on others' faces, body. (TR, PostIFG, G3)*
-
- Silences** 08
- (Reduction)**
- S10:** *Yeah, here everyone is responding very well. (TR, PostIFG, G1)*
- S11:** *We want to know about their ideas, so that [inviting others if there were some observable silences] is encouraged. (TR, PostIFG, G1)*
- S15:** *.... we got the communication continuously because there is [are] no awkward silences, yeah, we don ' t have awkward silences. (TR, PostIFG, G2)*
- S16:** *... by calling their names with a warm tone, they will speak with us and make discussion with us. So, it will be very useful rather than not talking and not asking any questions. there's a silent, then quickly S16 or S13, S16 said that now I need to start the presentation, likewise the communication is improved. (TR, PostIFG, G2)*
- S15:** *... then there's a silent, then quickly S16 said that now I need to start the presentation, likewise the communication is improved. (TR, PostIFG, G2)*
- S19:** *And the important thing is when someone is silent, there they, mention their name to tell something or add something to the discussion likewise there are changes. (TR, PostIFG, G3)*
- S20:** *And [if there are observable silences] we change the hot potato [passing the hot potato]. (TR, PostIFG, G3)*
-

		S19: <i>When we discuss, we all four members in our group, so she also speaks here. She [is] also a part here. Therefore, we called her. (TR, PostIFG, G3)</i>
Nodding	10	<p>S09: <i>So, from here on I know that there is impact to others and so personally I will be more focused these things [nodding, asking for clarifications, attentive listening and telling thank you] from here on to other discussions. So, it will be easier to do group work. (TR, PostIFG, G1)</i></p> <p>S15: <i>... And also, continuously to convey that we are listening, we shake [nod] our heads. (TRM2 FG2). (TR, PostIFG, G2)</i></p> <p>S16: <i>... when I am discussing the details, they were moving their heads, nodding their heads. (TR, PostIFG, G2)</i></p> <p>S16: <i>So, it [nodding] helps me, that they are not neglecting me, and they are accepting my opinions. (TR, PostIFG, G2)</i></p> <p>S17: <i>I think it helps learning [to learn] because, when we see that from their reactions, like nodding of the heads, we know that they understood what we are saying. (TR, PostIFG, G3)</i></p> <p>S17: <i>And if they can understand, we can figure that out too by their nodding of the head or tipping the heads. (TR, PostIFG, G3)</i></p> <p>S18: <i>Using ..., nodding head, ... are used in this session. (TR, PostIFG, G3)</i></p> <p>S18: <i>... while I am [was] continuing to present, the presentation, my other group members are [were] nodding head ... (TR, PostIFG, G3)</i></p> <p>S18: <i>They were nodding [their] head and their active participation in my presentation, so I conducted my presentation and continued in a good way (TR, PostIFG, G3)</i></p> <p>S19: <i>Yes, I think there are lot of changes than before, now today when we are talking, they are nodding the heads, (TR, PostIFG, G3)</i></p>

Appendix B.5

B.5. Ethnographic Field Notes – Cycle 2

B.5.1. Cycle 2/ Group 1: Pre-Intervention

B.5.1.1. *Screen Gaze During Pre-Intervention Presentations of Journal Articles*

S9's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S9's presentation

Total presentation time: 3 m and 56 s.

1. S9 breaks screen gaze for a combined total of 49 s with others.
2. S10 breaks his screen gaze for a combined total of 1 m and 1 s.
3. S11 breaks screen gaze for a combined total of 1 m and 31 s.
4. S12 breaks screen gaze for a combined total of 2 m and 38 s.

S10's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S10's presentation

Total presentation time: 4 m and 33 s.

1. The presenter appears to be mainly reading, eyes down, at the disadvantage of maintaining optimal screen gaze. He looks at his notes and presents without sustaining screen gaze with other group members throughout most of his presentation. His screen gaze connection to others is occasional and transitory as he breaks screen gaze for a combined total of 4 m and 1 s.
2. S9 breaks screen gaze for a combined total of 1 m and 46 s.
3. S11 breaks screen gaze for a combined total of 2 m and 13 s.
4. S12 breaks screen gaze for a combined total of 2 m and 35 s.

S12's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S12's presentation

Total presentation time: 3 m and 1 s.

1. S12 breaks screen gaze for a combined total of 1 m and 52 s with other group members during her presentation.
2. S9 breaks screen gaze for a combined total of 1 m and 1 s during S12's presentation.
3. S10 breaks screen gaze for a combined total of 1 m and 8 s.
4. S11 breaks screen gaze for a combined total of 1 m and 25 s.

S11's Presentation

Micro Ethnographic field notes

Group 1/Pre-intervention screen gaze and related behaviours of group members during S11's presentation

Total Presentation Time: 1 m and 44 s.

1. S11 breaks screen gaze for a combined total of 1 m and 18 s.
2. S9 breaks screen gaze for a combined total of 22 s.
3. S10 breaks screen gaze for a combined total of 39 s (looks up and sides).
4. S12 breaks screen gaze for a combined total of 1 m and 11 s (looks downward).

B.5.1.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles

Discussion of S09's Journal Article

Group 1/Pre-intervention screen gaze during discussion on the journal article presented by S9.

Total presentation time: 4 m and 46 s

1. S9 breaks screen gaze for a combined total of 52 s.
2. S10 breaks screen gaze for a combined total of 1 m and 34 s.
3. S11 breaks screen gaze for a combined total of 2 m and 28 s.
4. S12 also breaks screen gaze for a combined total of 2 m and 7 s.

Discussion of S10's Journal Article

Group 1/Pre-intervention screen gaze during discussion on the journal article presented by S10.

Total presentation time: 4 m and 20 s.

1. S10 speaks without sustaining his screen gaze with other group members. S4 breaks screen gaze for a combined total of 52 s.
2. S9 breaks screen gaze for a combined total of 1 m and 59 s.
3. S11 breaks screen gaze for a combined total 2 m and 2 s.
4. S12 breaks screen gaze (looks downward) for a combined total of 2 m and 11 s during the discussion.

Discussion of S12's Journal Article

Group 1/Pre-intervention screen gaze during discussion on the journal article presented by S12.

Total Presentation Time: 1 m and 56 s.

1. S12 breaks screen gaze for a combined total of 37 s as she looks away during the discussion.
2. S9 breaks screen gaze for a combined total of 48 s.
3. S10 breaks screen gaze for a combined total of 46 s.
4. S11 breaks his screen gaze for a combined total of 1 m and 6 s.

Discussion of S11's Journal Article

Group 1/Pre-intervention screen gaze during discussion on the journal article presented by S11.

Total presentation time: 1 m and 31 s.

1. S11 breaks screen gaze for a combined total of 48 s.
2. S9 breaks screen gaze (looks downward) for a combined total of 53 s.
3. S10 breaks screen gaze for a combined total of 14 s.
4. S12 breaks screen gaze for a combined total of 46 s.

B.5.2. Cycle 2/ Group 1: Post-Intervention

B.5.2.1. Screen Gaze During Post-Intervention Presentations of Journal Articles

S9's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S9's presentation

Total presentation time: 6 m and 7 s.

1. S9 breaks screen gaze for a combined total of 3 s.
2. S10 breaks screen gaze for a combined total of 18 s.
3. S11 breaks screen gaze for 2 s.
4. S12 experiences poor network connection she tries several times to switch her camera on but finally has to continue with audio only.

S10's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S10's presentation

Total presentation time: 3 m and 4 s.

1. S10 breaks screen gaze for a combined total of 1 m and 54 s.
2. S9 continues to look at the screen without breaking screen gaze.
3. S11 breaks screen gaze for a combined total of 6 s.
4. S12 is unable to switch on her video camera due to network connection difficulty. [As soon as she switches on her camera, she losses her connection entirely, hence she connected only with audio].

S11's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S11's presentation

Total presentation time: 2 m and 4 s

1. S11 breaks screen gaze for a combined total of 3 s.
2. S9 sustains screen gaze throughout S11's presentation without breaking screen gaze.
3. S10 breaks screen gaze for a combined total of 6 s.
4. S12 is unable to switch her camera on due to poor network connection. [As soon as she switches on her camera, she losses her connection entirely, hence she connected only with audio].

S12's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S9's presentation

Total presentation time: 5 m and 12 s.

1. S12 is unable to switch her camera on due to poor network connection. [As soon as she switches on her camera, she loses her connection entirely, hence she connected only with audio].
2. S9 sustains screen gaze without breaking throughout S12's presentation.
3. S10 breaks screen gaze for a combined total of 1 m and 11 s.
4. S11 breaks screen gaze for a combined total of 9 s.

B.5.2.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S9's Journal Article

Group 1/Post-intervention screen gaze and related behaviours of group members during S9's presentation

Total presentation time: 6 m and 13 s

1. S9 breaks screen gaze for a combined total of 8 s.
2. S10 breaks screen gaze for a combined total of 6 s.
3. S11 breaks screen gaze for a combined total of 10 s.
4. S12 experiences poor network connection she tries several times to switch her camera on but finally has to continue with audio only.

Discussion of S10's Journal Article

Group 1/Post-intervention screen gaze during discussion on the article presented by S10.

Total presentation time: 2 m and 5 s.

1. S10 breaks screen gaze for a combined total of 5 s.
2. S9 breaks screen gaze for a combined total of 5 s.
3. S11 does not break screen gaze during the discussion of S10's journal article.
4. S12 is unable to switch her camera on due to poor network connection. [As soon as she switches on her camera, she loses her connection entirely, hence she connected only with audio].

Discussion of S1's Journal Article

Group 1/Post-intervention screen gaze during discussion on the article presented by S11.

Total presentation time: 54 s.

1. S11 does not break screen gaze during the whole discussion time.
2. S9 breaks screen gaze for a combined total of 4 s.
3. S10 does not break screen gaze during the discussion of S11's journal article.
4. S12 is unable to switch her camera on due to poor network connection. [As soon as she switches on her camera, she loses her connection entirely, hence she connected only with audio].

Discussion of S12's Journal Article

Group 1/Post-intervention screen gaze during discussion on the article presented by S12.

Total presentation time: 2 m and 43 s.

1. S12 is unable to switch her camera on due to poor network connection. [As soon as she switches on her camera, she loses her connection entirely, hence she connected only with audio].
2. S9 breaks screen gaze for a combined total of 2 s.
3. S10 breaks screen gaze for a combined total of 15 s.
4. S11 breaks screen gaze for a combined total of 12 s.

B.5.3. Cycle 2/ Group 2: Pre-Intervention*B.5.3.1. Screen Gaze During Pre-Intervention Presentations of Journal Articles*

S16's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S16's presentation

Total presentation time: 3 m and 56 s.

1. S16 breaks screen gaze for a combined total of 1 m and 2 s with others during her presentation.
2. S13 breaks screen gaze for a combined total of 1 m and 1 s during S16's presentation.
3. S14 breaks screen gaze for a combined total of 43 s.
4. S15 also breaks screen gaze for a combined total of 59 s.

S15's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S13's presentation

Total presentation time: 3 m and 20 s.

1. S13 breaks screen gaze for a combined total of 1 m and 11 s with other group members during her presentation.
2. S14 breaks screen gaze for a combined total of 37 s during S13's presentation.
3. S15 breaks screen gaze for a combined total of 2 m and 19 s.
4. S16 does not break screen gaze during S13's presentation.

S14's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S14's presentation

Total presentation time: 6 m and 1 s.

1. S14 breaks screen gaze for a combined total of 3 m and 11 s.
2. [00:28:10-00:28:26] long pause and [00:28:05-00:28:22] S14 looks down and gets stuck with presenting as he is nervous. *(Since S14 is not offered help by other group members to get rid of his nervousness, researcher has to intervene to ask him to continue his presentation, then, with researcher's words, S14 starts talking)*
3. S13 breaks screen gaze for combined total of 1 m and 44 s.
4. S15 breaks screen gaze for combined total of 1 m and 45 s (looks downward).
5. S16 breaks screen gaze for 4 s (looks downward).

B.5.3.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles

Discussion of S16's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S16.

Total discussion time: 4 m and 33 s.

1. S16 breaks screen gaze for a combined total of 16 s.
2. S13 breaks screen gaze (looks downward, left side, and looks away) for a combined total of 1 m and 20 s.
3. S14 breaks screen gaze for a combined total of 1 m and 1 s as he looks away.
4. S15 also breaks screen gaze for a combined total of 2 m and 11 s during this discussion as she looks downward.

Discussion of S15's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S15.

Total discussion time: 4 m and 38 s.

1. During the discussion, S15 speaks without sustaining his screen gaze with other group members. S4 breaks screen gaze for a combined total of 1 m and 2 s.
2. S13 breaks screen gaze for a combined total of 55 s.
3. S14 breaks screen gaze for a combined total of for 1 m and 34 s.
4. S16 breaks screen gaze (looks downward) for a combined total of 5 s during the discussion.

Discussion of S13's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S13.

Total discussion time: 2 m.

1. S13 breaks screen gaze for a combined total of 16 s as he looks away during the discussion.
2. S14 breaks screen gaze for a combined total of 29 s.
3. S15 breaks screen gaze for a combined total of 1 m and 3 s.
4. S16 breaks screen gaze for a combined total of 9 s and sustains screen gaze during most of the discussion.

Discussion of S14's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S14.

Total discussion time: 7 m.

1. S14 breaks screen gaze for a combined total of 2 m and 26 s.
2. S13 breaks screen gaze (looks downward) for a combined total of 3 m and 45 s.
3. S15 breaks screen gaze for a combined total of 1 m and 29 s.
4. S16 breaks screen gaze for a combined total of 8 s.

B.5.4. Cycle 2/ Group 2: Post-Intervention

B.5.4.1. Screen Gaze During Post-Intervention Presentations of Journal Articles

S16's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S16's presentation

Total presentation time: 4 m and 10 s.

1. S16 sustains screen gaze during most of his presentation. She breaks screen gaze for a combined total of 13 s.
2. S13 sustains his screen gaze during most of S16's presentation and for a combined total of 13 s, he breaks screen gaze.
3. S14 breaks screen gaze for a combined total of 4 s and all the other time he sustains screen gaze.
4. S15 breaks screen gaze for a combined total of 2 s during S16's presentation and all the other time he sustains screen gaze.

S15's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S15's presentation

Total presentation time: 4 m and 20 s.

1. S15 breaks screen gaze for a combined total of 15 s.
2. S13 continues to look at the screen during S15's presentation without breaking the screen gaze.
3. S14 sustains screen gaze during most of S15's presentation. He breaks screen gaze for a combined total of 42 s.
4. S16 sustains screen gaze throughout the whole presentation of S15.

S13's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S13's presentation

Total presentation time: 4 m and 51 s.

1. S13 sustains screen gaze throughout his presentation without breaking.
2. S14 sustains screen gaze during most of S13's presentation and he breaks screen gaze only for a combined total of 15 s.
3. S15 sustains screen gaze during most of S13's presentation and she breaks screen gaze for a combined total of 3 s.
4. S16 sustains screen gaze throughout S13's presentation.

S14's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S14's presentation

Total presentation time: 4 m and 44 s.

1. S14 sustains screen gaze throughout his presentation without breaking screen gaze.
2. S13 sustains screen gaze throughout S14's presentation and he breaks screen gaze for 2 s.
3. S15 sustains screen gaze during most of S14's presentation and she breaks screen gaze for 5 s.
4. S16 sustains screen gaze throughout S14's presentation.

B.5.4.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S16's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S16.

Total discussion time: 6 m and 38 s.

1. S16 sustains screen gaze throughout the whole discussion time.
2. S13 sustains screen gaze throughout the whole discussion time.
3. S14 sustains screen gaze during most of the discussion of S16's journal article. He breaks screen gaze for a combined total of 5 s.
4. S15 sustains screen gaze during most of the discussion of S16's journal article. She breaks screen gaze for a combined total of 9 s.

Discussion of S15's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S15.

Total discussion time: 7 m and 11 s.

1. S15 sustains screen gaze during most of the discussion time as she breaks screen gaze for a combined total of 13 s.
2. S13 sustains screen gaze throughout the discussion of S15's journal article.
3. S14 sustains screen gaze throughout the discussion of S15's journal article.
4. S16 sustains screen gaze throughout the discussion of S15's journal article.

Discussion of S13's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S13.

Total discussion time: 4 m.

1. S13 sustains screen gaze throughout the whole discussion time.
2. S14 sustains screen gaze throughout the discussion of S13's journal article.
3. S15 sustains screen gaze throughout the discussion of S13's journal article.
4. S16 sustains screen gaze during most of the discussion of S13's journal article. She breaks screen gaze for a combined total of 5 s.

Discussion of S14's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S14.

Total discussion time: 3 m and 27 s.

1. S14 sustains screen gaze most of the discussion time. He breaks screen gaze for a combined total of 17 s.
2. S13 sustains screen gaze throughout the whole discussion time of S14's journal article.
3. S15 sustains screen gaze during most of the discussion of S14's journal article. She breaks screen gaze for a combined total of 42 s.
4. S16 sustains her screen gaze throughout the whole discussion time.

B.5.5. Cycle 2/ Group 3: Pre-Intervention*B.5.5.1. Screen Gaze During Pre-Intervention Presentations of Journal Articles*

S17's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S17's presentation

Total time duration: 4 m and 44 s.

1. S17 breaks screen gaze for a combined total of 3 m and 13 s with the group during her presentation.
2. S18 breaks his screen gaze for a combined total of 1 m and 17 s during S17's presentation.
3. S19 breaks screen gaze for a combined total of 2 m and 26 s.
4. S20 breaks screen gaze for a combined total of 2 m and 46 s.

S18's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S18's presentation

Total presentation time: 5 m and 10 s.

1. S18 breaks screen gaze for a combined total of 1 m and 19 s.
2. S17 breaks screen gaze for a combined total of 1 m and 51 s.
3. S19 breaks screen gaze for a combined total of 1 m and 39 s.
4. S20 breaks screen gaze for a combined total of 4 m and 11 s.

S19's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S19's presentation

Total presentation time: 4 m and 6 s.

1. S19 breaks screen gaze for a combined total of 1 m and 19 s.
2. S17 breaks screen gaze for a combined total of 44 s.
3. S18 breaks screen gaze for a combined total of 2 m and 18 s.
4. S20 breaks screen gaze for a combined total of 1 m and 23 s.

S20's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S20's presentation

Total presentation time: 2 m and 34 s.

1. S20 breaks screen gaze for a combined total of 1 m and 36 s with other group members during her presentation.
2. S17 breaks screen gaze for a combined total of 54 s during S20's presentation.
3. S18 breaks screen gaze for a combined total of 51 s.
4. S19 breaks screen gaze for a combined total of 17 s.

B.5.5.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles

Discussion of S17's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S17.

Total discussion time: 5 m and 14 s.

1. S17 breaks screen gaze for a combined total of 22 s.
2. S18 breaks screen gaze (looks downward, left side, and looks away) for a combined total of 1 m and 50 s.
3. S19 breaks screen gaze for a combined total of 1 m and 53 s as he looks away.
4. S20 also breaks screen gaze for a combined total of 1 m and 15 s during this discussion as she looks downward.

Discussion of S18's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S18.

Total discussion time: 2 m and 11 s.

1. S18 breaks screen gaze for a combined total of 29 s.
2. S17 breaks screen gaze for a combined total of 30 s.
3. S19 breaks screen gaze for a combined total of 14 s.
4. S20 breaks screen gaze (looks downward) for a combined total of 1 m and 26 s during the discussion of S18's journal article.

Discussion of S19's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S19.

Total discussion time: 3 m and 26 s.

1. S19 breaks screen gaze for a combined total of 35 s.
2. S17 breaks screen gaze for a combined total of 30 s.
3. S18 breaks screen gaze for a combined total of 1 m and 4 s.
4. S20 breaks screen gaze for a combined total of 50 s.

Discussion of S20's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S20.

Total discussion time: 6 m and 42 s

1. S20 breaks screen gaze for a combined total of 33 s as she looks away during the discussion.
2. S17 breaks screen gaze for a combined total of 38 s.
3. S18 breaks screen gaze for a combined total of 59 s.
4. S19 breaks screen gaze for a combined total of 2 m and 4 s.

B.5.6. Cycle 2/ Group 3: Post-Intervention*B.5.6.1. Screen Gaze During Post-Intervention Presentations*

S17's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S17's presentation

Total presentation time: 3 m and 42 s.

1. S17 breaks screen gaze for a combined total of 17 s.
2. S18 breaks screen gaze for a combined total of 9 s.
3. S19 breaks screen gaze for a combined total of 13 s.
4. S20 breaks screen gaze for a combined total of 9 s during S17's presentation.

S18's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S18's presentation

Total presentation time: 4 m and 22 s.

1. S18 sustains screen gaze throughout her presentation.
2. S17 continues to look at the screen during S18's presentation and she breaks screen gaze for 3 s.
3. S19 sustains screen gaze during whole of S18's presentation.
4. S20 encounters network connectivity issues during S18's presentation and is unable to switch her camera on for most of S18's presentation.

S19's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S19's presentation

Total presentation time: 3 m.

1. S19 breaks screen gaze with the group for a combined total of 18 s.
2. S17 sustains screen gaze during most of S19's presentation and she breaks screen gaze for 3 s.
3. S18 sustains screen gaze throughout the whole presentation of S13 without breaking screen gaze.
4. S20 encounters network connectivity issues during S18's presentation and is unable to switch her camera on for most of S19's presentation.

S20's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S20's presentation

Total presentation time: 4 m and 27 s.

1. S20 breaks screen gaze for a combined total of 6 s.
2. S17 breaks screen gaze for 2 s.
3. S18 breaks screen gaze for a combined total of 18 s.
4. S19 sustains screen gaze throughout the whole presentation of S20 without breaking screen gaze.

B.5.6.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S17's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S17

Total discussion time: 4 m. and 9 s.

1. S17 breaks screen gaze only for 2 s.
2. S18 breaks screen gaze for a combined total of 8 s.
3. S19 breaks screen gaze only for a combined total of 11 s.
4. S20 breaks screen gaze for a combined total of 15 s.

Discussion of S18's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S18.

Total discussion time: 2 m and 45 s.

1. S18 sustains screen gaze throughout the whole discussion time.
2. S17 sustains screen gaze throughout the discussion of S18's journal article.
3. S18 sustains screen gaze throughout the discussion of S18's journal article.
4. S20 sustains screen gaze throughout the discussion of S18's journal article.

Discussion of S19's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S19.

Total discussion time: 2 m and 24 s.

1. S19 sustains screen gaze throughout the whole discussion time.
2. S17 sustains screen gaze throughout the discussion of S19's journal article.
3. S18 sustains screen gaze throughout the whole discussion of S19's journal article.
4. S20 encounters network issues during the discussion and cannot switch her camera on most of the time during the discussion.

Discussion of S20's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S20.

Total discussion time: 2 m and 7 s.

1. S20 breaks screen gaze for a combined total of 8 s.
2. S17 sustains screen gaze throughout the discussion of S20's journal article.
3. S18 breaks screen gaze for a combined total of 4 s.
4. S19 sustains screen gaze throughout the whole discussion of S20's journal article.

Appendix B.6

B.6. Template Analysis of PreIGMs and PostIGMs (Example Transcription Extracts) – Cycle 2

Table B6. 0.1: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycle 2)

Main Theme	Sub-theme	Examples of Students' Statements			
		Frequency	Pre-Intervention	Frequency	Post-Intervention
1. Social Experience		31		106	
Disruptions to Group Cohesion	Interruptions	17	<i>[At 00:10:55 S15 interrupts S16] (TR, PreIGM, G2)</i> <i>[At 00:12:29 S18 interrupts S17] (TR, PreIGM, G3)</i>	00	-- [Zero interruptions]
	Simultaneous talk	01		01	<i>[At 00:10:32 S15 and S16 talk simultaneously, then both of them stop talking and S15 gives the chance to S16].</i> S15: <i>Yeah, you go on. (TR, PostIGM, G2, C2)</i>
Validation	Validating others' expressions	00	--	08	S12: <i>Yeah, I heard very much about it. And also, I had a workshop of today about IOT... (TR, PreIGM, G1)</i> S17: <i>I too agree that the excessive use of smart phone... (TR, PreIGM, G3)</i> S18: <i>I believe it. I agree with the ... (TR, PreIGM, G3)</i>

Expressing gratitude	07	<p>S15: <i>Thank you.</i> (TR, PreIGM, G2) S16: <i>Thank you.</i> (TR, PreIGM, G2) S15: <i>Okay, now I got it thank you.</i> (TR, PreIGM, G2)</p>	36	<p>S9: <i>Yeah, thank you for talking about it. ...</i> (TR, PreIGM, G1) S11: <i>Yeah. Thank you Nowrin. ...</i> (TR, PreIGM, G1) S13: <i>Yes, Shivani, I got the point and thank you. ...</i> (TR, PreIGM, G2) S19: <i>Thank you Nadun for your information.</i> (TR, PreIGM, G3)</p>	
Inviting by name	00	--	11	<p>S12: <i>Madri, can you start?</i> (TR, PreIGM, G1) S15: <i>Shenab, will you start?</i> (TR, PreIGM, G2) S17: <i>I would like to invite Palavi to present her research article. Palavi, it's your time.</i> (TR, PreIGM, G3) S18: <i>Imasha, it's your time now.</i> (TR, PreIGM, G3)</p>	
Complementing	01	<p>S16: <i>Yes, it's understandable and it was really interesting.</i> (TR, PreIGM, G2, C2)</p>	08	<p>S10: <i>Yeah, Chamath, it's nice research article.</i> (TR, PreIGM, G1) S15: <i>Yes Shenab, it is a great topic.</i> (TR, PreIGM, G2) S17: <i>So, thank you for sharing this valuable information with us Palavi.</i> (TR, PreIGM, G3)</p>	
Social Connectedness	Apologizing	04	<p>S16: <i>Sorry, my connection is unstable...</i> (TR, PreIGM, G2) S20: <i>Sorry.</i> (TR, PreIGM, G3)</p>	11	<p>S10: <i>Sorry, I didn't notice.</i> (TR, PreIGM, G1) S13: <i>Shivani, I'm sorry unstable network connection really damaged.</i> (TR, PreIGM, G2)</p>

			S20: <i>Sorry?</i> (TR, PreIGM, G3)		S16: <i>Sorry.</i> (TR, PreIGM, G3)
Creating opportunities for others to speak	01		S15: <i>Dhanjan, do you have anything to ask from Shenab's one?</i> (TR, PreIGM, G2)	31	S9: <i>Aha, okey, what about you and Neja?</i> (TR, PreIGM, G1) S16: <i>Does anyone have anything to add?</i> (TR, PreIGM, G2) S19: <i>Anything you need to add to this discussion, Palavi?</i> (TR, PreIGM, G3)
2. Learning Experience	01			47	
Purposeful Facilitations	Keeping focus	01	S09: <i>... So, any thoughts?</i> [00:07:31-00:07:40 S11 looks at down]. [00:07:38-00:07:49 long pause] S09: <i>I hope uh, you can hear me.</i> (TR, PreIGM, G1, C2)	09	S16: <i>... Did you get it Shivani?</i> S15: <i>Yes Shenab, thank you.</i> (TR, PreIGM, G2) S16: <i>You are welcome. Does anyone have anything to add?</i> S14: <i>Drones are going to deliver...</i> (TR, PreIGM, G2) S19: <i>Anything you need to add to this discussion, Palavi?</i> S20: <i>Hello.</i> S17: <i>Can you hear us Palavi?</i> S20: <i>Okay.</i> (TR, PreIGM, G3)
Seeking clarification	00			14	S10: <i>Chamath, is this like a mobile shopping app or something?</i> (TR, PreIGM, G1) S15: <i>I think this is a good thing, but I have a doubt now...</i> (TR, PreIGM, G2) S19: <i>I want to ask, is it for launching the satellite the low-cost?</i> (TR, PreIGM, G3)

Productive Participation	Knowledge dissemination and critical perspective	00	--	24	<p>S13: <i>Shivani, you said about the T Level, .. It is three times more difficult than A Level I think, so is it possible launching in our country? (TR, PreIGM, G2)</i></p> <p>S16: <i>... okay thank you. Even we did some practices in chemical process one. ... those things I remembered when you discuss these things. (TR, PreIGM, G2)</i></p> <p>S17: <i>So, all in all, we can conclude that giving immediate constructive feedback on students' performance can boost the students' motivation to speak in English. (TR, PostIGM, G3)</i></p>
3. Social Experience Mediated Learning Experience		12		13	
Psychological Safety	Reported reduction of anxiety	00	--	06	<p>S9: <i>Yeah, in my imagination. I thought it'd be like same, [00:12:44 S09 laughs] but seems that it is not... (TR, PostIGM, G1)</i></p> <p>S10: <i>Yeah, Neja, I could not hear well. (TR, PostIGM, G1)</i></p> <p>S11: <i>No, I don't have any idea of it? (TR, PostIGM, G1)</i></p>
Notion of Equal Agency	Negative	12		00	<p>S13: <i>Any questions? (TR, PreIGM, G1)</i></p> <p>S14: <i>Any question about the article? (TR, PreIGM, G1)</i></p> <p>S15: <i>If you have any doubts, you can ask me. (TR, PreIGM, G2)</i></p> <p>S17: <i>Any opinions? (TR, PreIGM, G2)</i></p> <p>--</p> <p>[Zero problematic prompts]</p>

Positive	00		07	<p>S9: <i>Okey, what do you guys think about Smart City?</i> (TR, PostIGM, G1)</p> <p>S16: <i>Shall we discuss this?</i> (TR, PostIGM, G2)</p> <p>S19: <i>It's all about my presentation, you can add more things to this discussion.</i> (TR, PostIGM, G3)</p>
		<p>--</p> <p>[Zero positive prompts]</p>		

Appendix B.7

B.7. Template Analysis of Pre- and Post-Intervention Focus Groups (Example Transcription Extracts) – Cycle 2

Table B7.1: Template Analysis of PreIFGs and PostIFGs Example Transcription Extracts (Cycle 2)

Main Theme	Sub-theme	Examples of Students' Statements			
		Frequency	Pre-Intervention	Frequency	Post-Intervention
1. Social Experience		41		56	
Disruption to Group Cohesion (Previous Group Work Experiences – Outside Study)		41		00	
	Inequality of sharing time	20	<p>S11: <i>..., most probably not, we don't share equal time. (TR, PreIFG, G1)</i></p> <p>S16: <i>I feel like my colleagues, our colleagues, they don't share, they don't speak equally, So, it will affect the online group discussion ... (TR, PreIFG, G2)</i></p> <p>S18: <i>... I experienced that, some of them talk talk in many times not stopping that. (TR, PreIFG, G3)</i></p> <p>S20: <i>If a group have four members, one or two members talk more, talk about their area more. Some students are silent. So, discussion decisions is [are]</i></p>		--

			<i>taken by a few persons or one person. (TR, PreIFG, G3)</i>	
Non-contributing	12	<p>S10: <i>Some guys speak less. Sometimes, some guys are not speaking. (TR, PreIFG, G1)</i></p> <p>S17: <i>... they are genuinely bored, or they do not want to take part in it. (TR, PreIFG, G2)</i></p> <p>S20: <i>Some escaped from the discussion. (TR, PreIFG, G3)</i></p>		--
Feeling of being left out	05	<p>S10: <i>... sometimes it happens. (TR, PreIFG, G1)</i></p> <p>S15: <i>I felt that (I'm left out) because most of the times, students think that, I felt that I am away from these groups like that. (TR, PreIFG, G2)</i></p> <p>S17: <i>... I've seen that if you don't encourage the other person to talk right, he wouldn't be talking because everybody is not the same. ..., if you don't encourage that person to come forward and speak, he or she would not. (TR, PreIFG, G3)</i></p>		--
Cliques	04	<p>S12: <i>... others get chatter (TR, PreIFG, G1)</i></p> <p>S15: <i>They are from same school, friends, a friend circle and same to tutorise, likewise, so they all work together and at the time I felt that I'm alone like that. (TR, PreIFG, G2)</i></p>		--

Social Connectedness	00	--	19	<p>S9: <i>I can interact and get the interaction of other group members well. (TR, PostIFG, G1)</i></p> <p>S16: <i>... when I am discussing the details, they were moving their heads, Then I know that they are accepting my points and also they are agreeing with my points, So, it helps me, that they are not neglecting me, and they are accepting my opinions. (TR, PostIFG, G2)</i></p> <p>S20: <i>... the group discussion we know how to attract or interact discussion with others. (TR, PostIFG, G3)</i></p>
Building confidence	--	12	<p>S12: <i>I learnt from this, being motivated whatever it is, being confident. (TR, PostIFG, G1)</i></p> <p>S17: <i>We feel confident after knowing the strategies. (TR, PostIFG, G3)</i></p> <p>S20: <i>... we feel more confident. (TR, PostIFG, G3)</i></p>	
Increasing social comfort	--	11	<p>S9: <i>It helps to use them even not I mean for this situation or this discussion, but here on to although I don't know someone and I am addressing some group. For an example if I am assigned for a group and I don't know anyone, I can make them feel comfortable. (TR, PostIFG, G1)</i></p>	

			<p>S15: <i>Using the strategies, we felt comfort zone ... within the members. (TR, PostIFG, G2)</i></p> <p>S17: <i>Due to these compassionate strategies we feel comfortable when we are with the group members. (TR, PostIFG, G3)</i></p>
Enhancing team Spirit	--	05	<p>S18: <i>..., I can remember in our first day session we talk about taking our topics individually, but today we are very well organized. (TR, PostIFG, G3)</i></p> <p>S19: <i>Bond, friendship are increased and understanding others increased. It's helpful. (TR, PostIFG, G3)</i></p> <p>S20: <i>... it makes group bonding with other people and the discussion be a good with good understanding. (TR, PostIFG, G3)</i></p>
Improving listening	--	06	<p>S15: <i>Also, they also got impressed to listen to them. (TR, PostIFG, G2)</i></p>
Creating opportunities for others to speak	--	03	<p>S15: <i>... when we point out them, we can understand whether they are understood or not and also make them understood, then they won't feel that, we ask question and got ... 'I am not clear about anything'. We can get from whether they are clear or not. (TR, PostIFG, G2)</i></p> <p>S19: <i>... the time is given to us and [when] we are going to tell something or when we are going to present there is no any interrupting</i></p>

				<i>and the time is given to us from the group. (TR, PostIFG, G3)</i>
2. Learning Experience	00		23	
Productive Participation			09	
Knowledge dissemination and critical perspective	--		09	<p>S9: So, he will get to know them and get to know the topic and gained the knowledge. (TR, PostIFG, G1)</p> <p>S15: ... when we use these strategies, really understanding the topic is much better than the previous one. When we use [CSCC], we are looking [at] others' facial expressions. (TR, PostIFG, G2)</p> <p>S17: <i>I think it helps learning because, when we see that from their reactions, like nodding of the heads, we know that they understood what we are saying. So, from these compassionate strategies the group is using, increases learning.</i> (TR, PostIFG, G3)</p>
Purposeful Facilitation	--		14	
Keeping focus	--		05	<p>S15: ... when we are presenting we can get to know whether the ideas are given correctly to the others. (TR, PostIFG, G2)</p> <p>S17: <i>We have to be more attentive whether the group understand what you present rather than focusing on how you present or how better you do it.</i> (TR, PostIFG, G3)</p>

					S19: <i>If we want to present something and we need to wait till our time and tell our ideas and more thinking. (TR, PostIFG, G3)</i>
	Seeking clarification	--		09	<p>S9: <i>If I don't know anything about the topic I will eventually ask the questions and so from that I think I can gain knowledge. (TR, PostIFG, G1)</i></p> <p>S10: <i>After the presentation, they are asking doubts and clarifications. (TR, PostIFG, G1)</i></p> <p>S17: <i>... these compassionate strategies ... increases learning. Because if they cannot understand, they will be interrupting us in the middle and asking questions. And if they can understand, we can figure that out too by their nodding of the head or tipping the heads. (TR, PostIFG, G3)</i></p>
2. Social Experience Mediated Learning Experience	46			68	
Challenges to Psychological Safety	46			00	
	Social anxiety	06		00	--
					<p>S9: <i>... it was yeah as Neja said, it was bit nervous. (TR, PreIFG, G2)</i></p> <p>S14: <i>May be I in my presentation, I may be, did a wrong thing. They, may be they hate me or like that I'm thinking so that's am thinking. I'm thinking like may be I'm wasting others' time. (TR, PreIFG, G1)</i></p>

Difficulty in communicating in English as second language (ESL)	18	<p>S10: <i>It affects other group members. They get fear or uh shame feeling. (TR, PreIFG, G1)</i></p> <p>S15: <i>I'm really shy about going Infront and talk. (TR, PreIFG, G2)</i></p> <p>S19: <i>... but when we are talking, when we are starting to speak in English, some persons are giving their facial expressions like uh uh uh [sacasm]. So, it happened, we are not continuing any more in English. So, we are talking in our mother tongues. (TR, PreIFG, G3)</i></p> <p>S17: <i>I agree with what Nadun said, like if the group members motivative to talk in English, ..., use that language, but then, ... if he makes a mistake or something like if you make a face at him and then from that point onwards, even though he wants to express this idea, he wouldn't be doing it. (TR, PreIFG, G3)</i></p>	00	--
Reluctance to switch the camera on	22	<p>S12: <i>This is the first time for me. So, it was a bit of nervous... [to switch on the camera] (TR, PreIFG, G1)</i></p> <p>S10: <i>If we switch off the camera we can talk confidently more than switch on the camera. (TR, PreIFG, G1)</i></p> <p>S14: <i>... last group work ... So, we turned off the camera and we do [did] another work. (TR, PreIFG, G2)</i></p> <p>S15: <i>... they didn't switch on their cameras. (TR, PreIFG, G2)</i></p>	00	--

					<p>S17: <i>I prefer to switch off the camera and speak. (TR, PreIFG, G3)</i></p> <p>S19: <i>We did not switch on video, but we are just talking only in the group. (TR, PreIFG, G3)</i></p>	
Psychological Safety		00			38	
	Reported reduction of anxiety	00	--		10	<p>S10: <i>We are motivating to speak without fear. (TR, PostIFG, G1)</i></p> <p>S14: <i>So, now I'm not nervous so much ... today. (TR, PostIFG, G2)</i></p> <p>S15: <i>... asking questions and they got confident and they presented well. (TR, PostIFG, G2)</i></p>
	Improving communicating in English as a second language (ESL)	00	--		17	<p>S12: <i>So, in my view, if we use these strategies in our group activity, so we can encourage them to speak and ... we invite them to speak in English. (TR, PostIFG, G1)</i></p> <p>S13: <i>So, when we use such skills (CSCC), we can get the idea that the speaker going to say so we can minimize such kinds of (communicating) difficulties, through this kind of compassionate skills. (TR, PostIFG, G2)</i></p> <p>S17: <i>I think it [CSCC] is helpful in managing communicative difficulties ..., so I think it is helpful in this language barrier. (TR, PostIFG, G3)</i></p>
	Enhancing group communication	00	--		05	<p>S15: <i>... those changes, they are really important because ... our questions, and they answer, say thank you and all, that can</i></p>

really make pleasant ... time, I'm getting into it rather than just telling the answer. (TR, PostIFG, G2)

S15: *With the appreciation ..., we feel happy and ..., because that in that place we feel happy and ... we observe so much and also we stay pleasantly in the group discussion, in continue the discussion. (TR, PostIFG, G2)*

Willingness to switch on camera 00

--

06

S19: *When presenting, giving our facial expressions, the facial expressions motivate them [to switch on camera]. (TR, PostIFG, G3)*

S18: *... when Palavi is experiencing losing signal, we ask, "Palavi, can you hear us?" always we asked from her and we continued our discussion till she joined us [on video]. It's good for our group. (TR, PostIFG, G3)*

S20: *It's an important thing in online classes ... because my internet connection is poor ... But with these strategies, you found that I'm in the class. (TR, PostIFG, G3)*

The Notion of Equal Agency

00

17

S16: *... not asking 'Is there any questions?' like not pointing out others. It's like 'Shall we discuss?' using those phrases, it become most helpful and it's like building relationship with*

Community Building	00	19	<p><i>others, I used those strategies. (TR, PostIFG, G2)</i></p>
			<p>S17: <i>Changes in myself, the phrase that you should use at the end of the presentation, it's better for asking their opinions rather than challenging them to as any questions or test your knowledge. (TR, PostIFG, G3)</i></p>
			<p>S18: <i>... we worked as a group, so, when we work as a group, all our group members are same valid for me, then the group discussion is going on (TR, PostIFG, G3)</i></p>
			<p>S11: <i>... we are Sri Lankans, in universities, we are undergraduates, not dividing as Tamil, Muslim students, so if we apply those things it will be helpful. (TR, PostIFG, G1)</i></p>
			<p>S15: <i>if these compassionate skills are taught and if we practiced, some kind of threat, when it drive our mind, I think this will change the thought of us and think in a better way. That we will think about the issue and get some better knowledge and we will use a proper way of communicating with others, it's with my experience I'm telling. o, I think these strategies help in that. Because when communicating, if there's something wrong, it will affect many people so, these strategies will help many</i></p>

				<p><i>people's mental health. (TR, PostIFG, G2)</i></p> <p>S17: <i>I think these skills will have an impact on community building because it increases understanding between community and make it easier for us to communicate with each other even there is a language barrier. (TR, PostIFG, G3)</i></p> <p>S19: <i>... these skills in university group works we can build the community well with understanding others. As an example, I think this discussion also made us with a friendly manner. Because of that, I think it will be better that our degree programmes to use these strategies to build the community as these skills helpful to build community. (TR, PostIFG, G3)</i></p>
4. Group Management Strategies	12			62
Strategies Used to Enhance Engagement (Pre-Study)	12			00
Assigning task specific roles	05	<p>S10: <i>... in university group work, they may divide the group work into the members. (TR, PreIFG, G1)</i></p> <p>S9: <i>There are different members, so maybe they're good at different areas, so we can assign according to their preferences. (TR, PreIFG, G1)</i></p>		--

Communicating indirectly	04	<p>S17: ... always there's a person who can understand English and Tamil both, so he will be always helping in the group discussion, he will be taking that person's ideas and conveying it into us and our ideas to that person. (TR, PreIFG, G3)</p> <p>S17: I asked them what they want to say and then, if they can't say it, I say it to the group so, and if they want, if they want to say it, I write it down and give it to them so that they could say their idea out. (TR, PreIFG, G3)</p>	--	
Questioning	03	<p>S20: ... while a discussion is going on we can ask some questions. (TR, PreIFG, G3)</p>	--	
Strategies Used to Manage PostIFGs	00		62	
CSCC	00		46	
Inviting others by their names	--		04	<p>S10: We invite each other. (TR, PostIFG, G1)</p> <p>S11: Yeah. (TR, PostIFG, G1)</p>
Expressing gratitude	--		03	<p>S19: I used to focus on others. And normally in discussions, thanking, ..., they were not there [previously]..., but today, I used them. (TR, PostIFG, G3)</p>
Warm tone	--		07	<p>S15: But now I try to name in a warm manner or when we are going to a new group we need to have that ability. (TR, PostIFG, G2)</p> <p>S16: ... by calling their names with a warm tone. (TR, PostIFG, G2)</p>

				<p>S16: <i>If we communicate with other students, other friends, the way of communicating with a warm tone. (TR, PostIFG, G2)</i></p>
Sustaining screen gaze	--	13	<p>S11: <i>I feel like we all in the same place and talking more with eye contact (TR, PostIFG, G1)</i></p> <p>S15: <i>... while they are presenting, looking at their face expressions, we know who have some doubts. (TR, PostIFG, G2)</i></p> <p>S17: <i>... when we appreciate or thank someone, we can see that they feel happy and there comes smile on their face. (TR, PostIFG, G3)</i></p>	
Nodding	--	10	<p>S16: <i>So, it [nodding] helps me, that they are not neglecting me, and they are accepting my opinions. (TR, PostIFG, G2)</i></p> <p>S17: <i>I think it helps learning because, when we see that from their reactions, like nodding of the heads, we know that they understood what we are saying. (TR, PostIFG, G3)</i></p> <p>S19: <i>... I think there are lot of changes than before, now today when we are talking, they are nodding the heads, (TR, PostIFG, G3)</i></p>	
Reduction of long silences	--	08	<p>S10: <i>Yeah, here everyone is responding very well. (TR, PostIFG, G1)</i></p> <p>S15: <i>... we got the communication continuously because there is no awkward silences, yeah we don't have awkward silences now (TR, PostIFG, G2).</i></p> <p>S19: <i>And the important thing is when someone is silent, there they, invited by their name to</i></p>	

				<i>tell something or add something to the discussion ...</i>
Using chat box		--	01	S18: Using chat box. (TR, PostIFG, G3)
Student Developed	00		16	
Observing others' faces	00	--	07	<p>S15: ... while they are presenting, looking at their face expressions, we know who have some doubts. (TR, PostIFG, G2)</p> <p>S18: ... today, they were helpful to continue the presentation and others' facial expressions were good. (TR, PostIFG, G3)</p> <p>S19: Yes, like Palavi said, that's also true we are focusing on others' faces. (TR, PostIFG, G3)</p>
Raising/waving hands to signal interest in speaking (without interrupting)	00	--	06	<p>S15: Waving hand, if we have questions, just waved hand and asked. (TR, PostIFG, G2)</p> <p>S16: I do agree with Shivani, I also used this waving hand. (TR, PostIFG, G2)</p> <p>S19: ... when we are in online, as an example, I want to tell something, not interrupting others, hands up like this [00:46:46 S19 raises his right hand]. (TR, PostIFG, G3)</p>
5. Students' views on Task Design for Attention to Compassion	13		20	
Negative	00		00	

Positive	13	<p>S9: ... talking about different fields, it's a different experience, talking to colleagues in different universities about something interesting. Yeah, it's a new kind of experience. (TR, PreIFG, G1)</p> <p>S14: So, but I need now, I need to do more to improve my spoken skills. Thank you. (TR, PreIFG, G2)</p> <p>S15: ... talking to strangers really strangers, because I never know them, but the discussion went well. (TR, PreIFG, G1)</p> <p>S13: I think this is a real discussion. So, in here all my all my friends are from various cultures. So, I got good social advantages from this ... I think rather than the previous Zoom lectures, this discussion, I think more beneficial for our social development. (TR, PreIFG, G2)</p>	20	<p>S14: ... in this discussion I learnt from others, other research things ... it's better than previous discussion. (TR, PostIFG, G2)</p> <p>S15: ..., those changes are connected with this compassionate training. Because previously, I had some strategies, but I didn't have this much deep idea about how to keep going on group discussion in a healthy way, because sometimes I too get irritated by no one answering or these things are happening. But now ..., I got to know that we can try some different methods to overcome these issues, how to grab others' [attention]. ... need to do it as a group, and how to make it possible, I got the idea. (TR, PostIFG, G2)</p> <p>S20: ... in future, any group work or any group discussion, ... we will make good decision because of the lessons learnt from this [Cognitive Skills of Compassionate Communications training]. (TR, PostIFG, G3)</p>
6. Shared Virtual Background	00	--	22	<p>S11: I feel like we all in the same place and talking more with eye contact like that. (TR, PostIFG, G1)</p> <p>S13: It [Shared Background] motivates me to present in the group whole time without getting distracted. (TR, PostIFG, G2)</p> <p>S18: ... we were in same location and same background we feel that all of our group members are in same level. I feel that. (TR, PostIFG, G3)</p>

Appendix B.8

B.8. SPSS Analysis of Questionnaire 1 on Group Work Behaviours – Cycle 2

Table B8.1: Wilcoxon Signed-Rank Test Statistics - Questionnaire on Group Work Behaviours

	Z	Asymp.Sig. (2-tailed)
AELevel - EngLevel	-3.000 ^b	0.003
AQ4.1 - BQ4.1	-2.060 ^b	0.039
AQ4.2 - BQ4.2	-2.200 ^b	0.028
AQ4.3 - BQ4.3	-0.351 ^c	0.725
AQ4.4 - BQ4.4	-0.962 ^b	0.336
AQ4.5 - BQ4.5	-1.289 ^b	0.197
AQ4.6 - BQ4.6	-0.135 ^b	0.892
AQ4.7 - BQ4.7	-2.232 ^b	0.026
AQ4.8 - BQ4.8	-0.137 ^c	0.891
AQ4.9 - BQ4.9	-0.638 ^b	0.524
AQ4.10 - BQ4.10	-0.541 ^b	0.589
AQ4.11 - BQ4.11	-0.812 ^b	0.417
AQ4.12 - BQ4.12	-1.903 ^b	0.057
AQ4.13 - BQ4.13	-1.414 ^b	0.157
AQ4.14 - BQ4.14	-0.365 ^c	0.715
AQ5.1 - BQ5.1	-2.980 ^b	0.003
AQ5.2 - BQ5.2	-2.381 ^b	0.017
AQ5.3 - BQ5.3	-1.674 ^b	0.094
AQ5.4 - BQ5.4	-2.584 ^b	0.010
AQ5.5 - BQ5.5	-2.599 ^b	0.009
AQ5.6 - BQ5.6	-3.002 ^b	0.003
AQ5.7 - BQ5.7	-3.002 ^b	0.003
AQ5.8 - BQ5.8	-2.565 ^b	0.010
AQ5.9 - BQ5.9	-1.897 ^b	0.058
AQ5.10 - BQ5.10	-2.547 ^b	0.011
AQ5.11 - BQ5.11	-2.321 ^b	0.020
AQ5.12 - BQ5.12	-2.165 ^b	0.030
AQ5.13 - BQ5.13	-1.930 ^b	0.054
AQ5.14 - BQ5.14	-1.480 ^b	0.139
AQ6.1 - BQ6.1	-1.342 ^b	0.180
AQ6.2 - BQ6.2	-2.530 ^b	0.011
AQ6.3 - BQ6.3	-0.905 ^b	0.366
AQ6.4 - BQ6.4	-1.414 ^b	0.157
AQ7.1 - BQ7.1	-0.707 ^b	0.480
AQ7.2 - BQ7.2	0.000 ^d	1.000
AQ7.3 - BQ7.3	-0.412 ^c	0.680

* a. Wilcoxon Signed-Rank Test, b. Based on positive ranks, c. Based on negative ranks, d. The sum of negative ranks equals the sum of positive ranks.

Appendix B.9

B.9. SPSS Analysis of Questionnaire 2 on Compassionate Engagement and Action Scale – Cycle 2

Table B9.1: Wilcoxon Signed-Rank Test Statistics - Questionnaire on Compassionate Engagement and Action Scale

	Z	Asymp.Sig. (2-tailed)		Z	Asymp.Sig. (2-tailed)
AQ1 - BQ1	-2.684 ^b	0.007	AQ35 - BQ35	-1.144 ^b	0.253
AQ2 - BQ2	-0.641 ^b	0.521	AQ36 - BQ36	-1.963 ^b	0.050
AQ3 - BQ3	-1.389 ^b	0.165	AQ37 - BQ37	-0.494 ^b	0.621
AQ4 - BQ4	-0.241 ^c	0.809	AQ38 - BQ38	-0.857 ^b	0.391
AQ5 - BQ5	-1.127 ^b	0.260	AQ39 - BQ39	-0.689 ^b	0.491
AQ6 - BQ6	-1.706 ^b	0.088			
AQ7 - BQ7	-0.996 ^b	0.319	a. Wilcoxon Signed-Ranks Test		
AQ8 - BQ8	-1.147 ^b	0.251	b. Based on negative ranks.		
AQ9 - BQ9	-1.697 ^b	0.090	d. The sum of negative ranks equals the sum of positive ranks.		
AQ10 - BQ10	-2.719 ^b	0.007			
AQ11 - BQ11	-0.318 ^b	0.751			
AQ12 - BQ12	-0.144 ^c	0.886			
AQ13 - BQ13	-1.852 ^b	0.064			
AQ14 - BQ14	-2.071 ^b	0.038			
AQ15 - BQ15	-1.812 ^b	0.070			
AQ16 - BQ16	-1.065 ^b	0.287			
AQ17 - BQ17	-1.643 ^b	0.100			
AQ18 - BQ18	-1.746 ^b	0.081			
AQ19 - BQ19	-0.942 ^b	0.346			
AQ20 - BQ20	-0.492 ^c	0.623			
AQ21 - BQ21	-1.136 ^b	0.256			
AQ22 - BQ22	-0.419 ^b	0.675			
AQ23 - BQ23	-1.546 ^b	0.122			
AQ24 - BQ24	-1.201 ^b	0.230			
AQ25 - BQ25	-0.782 ^c	0.434			
AQ26 - BQ26	-0.422 ^b	0.673			
AQ27 - BQ27	-1.409 ^b	0.159			
AQ28 - BQ28	-0.586 ^b	0.558			
AQ29 - BQ29	-0.574 ^b	0.566			
AQ30 - BQ30	-0.715 ^b	0.475			
AQ31 - BQ31	-0.723 ^b	0.470			
AQ32 - BQ32	-0.513 ^b	0.608			
AQ33 - BQ33	0.000 ^d	1.000			
AQ34 - BQ34	-1.253 ^b	0.210			

APPENDIX C

Appendix C

Cycle 3

Supplementary Materials and Results

Appendix C.1

C.1. Wilcoxon Signed-Rank Test Results – Cycle 3

C.1.1. Cycle 3: Group 1

```
> O3 <- dat3[(dat3$Cycle == "3"),]  
> O3 <- O3[!(O3$af_gazeTimePER == 0),]
```

C.1.1.1. Presenters

```
> s4 <- O3[(O3$role == "S" & O3$group == "6"),]  
> wilcox.test(s4$af_gazeTimePER, s4$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: s4\$af_gazeTimePER and s4\$bf_gazeTimePER

p-value = 0.125

alternative hypothesis: true location shift is greater than 0

C.1.1.2. Presenter's Audience Members/Listeners

```
> l4 <- O3[(O3$role == "L" & O3$group == "6"),]  
> wilcox.test(l4$af_gazeTimePER, l4$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: l4\$af_gazeTimePER and l4\$bf_gazeTimePER

p-value = 0.0002441

alternative hypothesis: true location shift is greater than 0

C.1.1.3. Discussants

```
> m4 <- O3[(O3$role == "M" & O3$group == "6"),]  
> wilcox.test(m4$af_gazeTimePER, m4$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: m4\$af_gazeTimePER and m4\$bf_gazeTimePER

p-value = 1.526e-05

alternative hypothesis: true location shift is greater than 0

C.1.2. Cycle 3: Group 2

C.1.2.1. Presenters

```
> s5 <- O3[(O3$role == "S" & O3$group == "7"),]
> wilcox.test(s5$af_gazeTimePER, s5$bf_gazeTimePER, paired = TRUE, alternative = "greater")
Wilcoxon signed rank exact test
data: s5$af_gazeTimePER and s5$bf_gazeTimePER
p-value = 0.1875
alternative hypothesis: true location shift is greater than 0
```

C.1.2.2. Presenters' Audience Members/Listeners

```
l5 <- O3[(O3$role == "L" & O3$group == "7"),]
wilcox.test(l5$af_gazeTimePER, l5$bf_gazeTimePER, paired = TRUE, alternative = "greater")
Wilcoxon signed rank exact test
data: l5$af_gazeTimePER and l5$bf_gazeTimePER
p-value = 0.001709
alternative hypothesis: true location shift is greater than 0
```

C.1.2.3. Discussants

```
> m5 <- O3[(O3$role == "M" & O3$group == "7"),]
> wilcox.test(m5$af_gazeTimePER, m5$bf_gazeTimePER, paired = TRUE, alternative = "greater")
Wilcoxon signed rank exact test
data: m5$af_gazeTimePER and m5$bf_gazeTimePER
p-value = 0.0001526
alternative hypothesis: true location shift is greater than 0
```

C.1.3. Cycle 3: Group 3

C.1.3.1. Presenters

```
> s6 <- O3[(O3$role == "S" & O3$group == "8"),]
> wilcox.test(s6$af_gazeTimePER, s6$bf_gazeTimePER, paired = TRUE, alternative = "greater")
Wilcoxon signed rank exact test
data: s6$af_gazeTimePER and s6$bf_gazeTimePER
p-value = 0.0625
alternative hypothesis: true location shift is greater than 0
```

C.1.3.2. Presenter's Audience Members/Listeners

```
> l6 <- O3[(O3$role == "L" & O3$group == "8"),]
> wilcox.test(l6$af_gazeTimePER, l6$bf_gazeTimePER, paired = TRUE, alternative = "greater")
Wilcoxon signed rank exact test
data: l6$af_gazeTimePER and l6$bf_gazeTimePER
p-value = 0.0002441
alternative hypothesis: true location shift is greater than 0
```

C.1.3.3. Discussants

```
> m6 <- O3[(O3$role == "M" & O3$group == "8"),]
> wilcox.test(m6$af_gazeTimePER, m6$bf_gazeTimePER, paired = TRUE, alternative =
"greater")
Wilcoxon signed rank test
data: m6$af_gazeTimePER and m6$bf_gazeTimePER
p-value = 0.0002407
alternative hypothesis: true location shift is greater than 0
```

C.1.4. Cycle 3: Groups 1, 2 & 3 - Presenters, Presenters' Audience Members and Discussants

C.1.4.1. Presenters

```
> sc3 <- O3[(O3$role == "S" & O3$Cycle == "3"),]
> wilcox.test(sc3$af_gazeTimePER, sc3$bf_gazeTimePER, paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: sc3\$af_gazeTimePER and sc3\$bf_gazeTimePER

p-value = 0.003418

alternative hypothesis: true location shift is greater than 0

C.1.4.2. Presenter's Audience Members/Listeners

```
> lc3 <- O3[(O3$role == "L" & O3$Cycle == "3"),]
> wilcox.test(lc3$af_gazeTimePER, jitter(lc3$bf_gazeTimePER), paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: lc3\$af_gazeTimePER and jitter(lc3\$bf_gazeTimePER)

p-value = 2.459e-09

alternative hypothesis: true location shift is greater than 0

C.1.4.3. Discussants

```
> mc3 <- O3[(O3$role == "M" & O3$Cycle == "3"),]
> wilcox.test(mc3$af_gazeTimePER, jitter(mc3$bf_gazeTimePER), paired = TRUE, alternative = "greater")
```

Wilcoxon signed rank exact test

data: mc3\$af_gazeTimePER and jitter(mc3\$bf_gazeTimePER)

p-value = 1.172e-13

alternative hypothesis: true location shift is greater than 0

Appendix C.2

C.2. R Plots – Cycle 3

C.2.1. Cycle 3: Group 1

C.2.1.1. Cycle 3: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

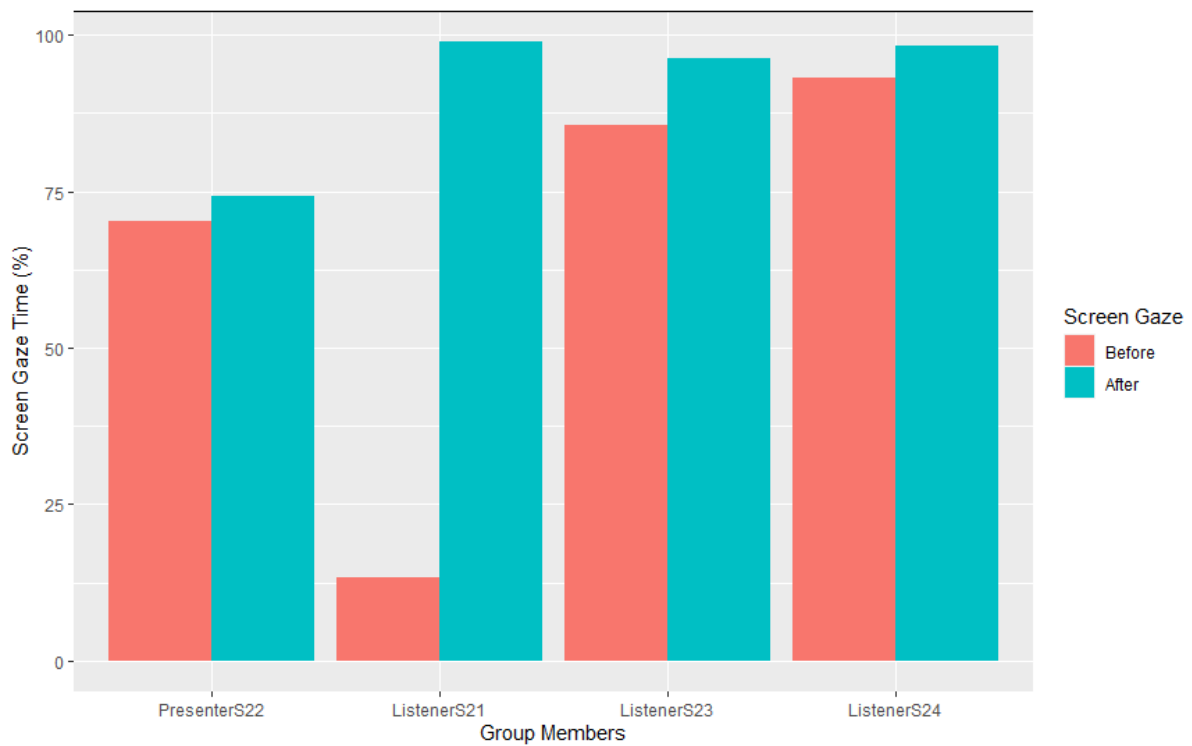


Figure C2.1: Cycle 3, Group 1 Members' Screen Gaze during S22's Pre- Vs Post-Intervention Journal Article Presentations

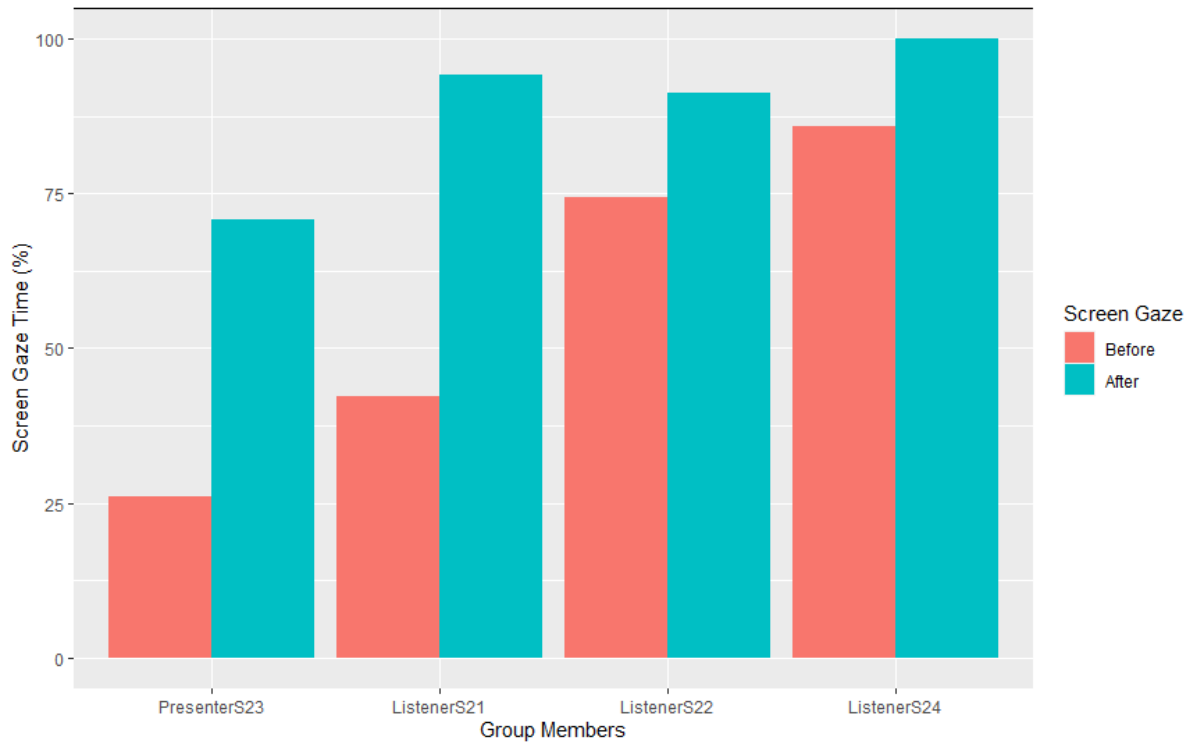


Figure C2.2: Cycle 3, Group 1 Members' Screen Gaze During S23's Pre- Vs Post-Intervention Journal Article Presentations

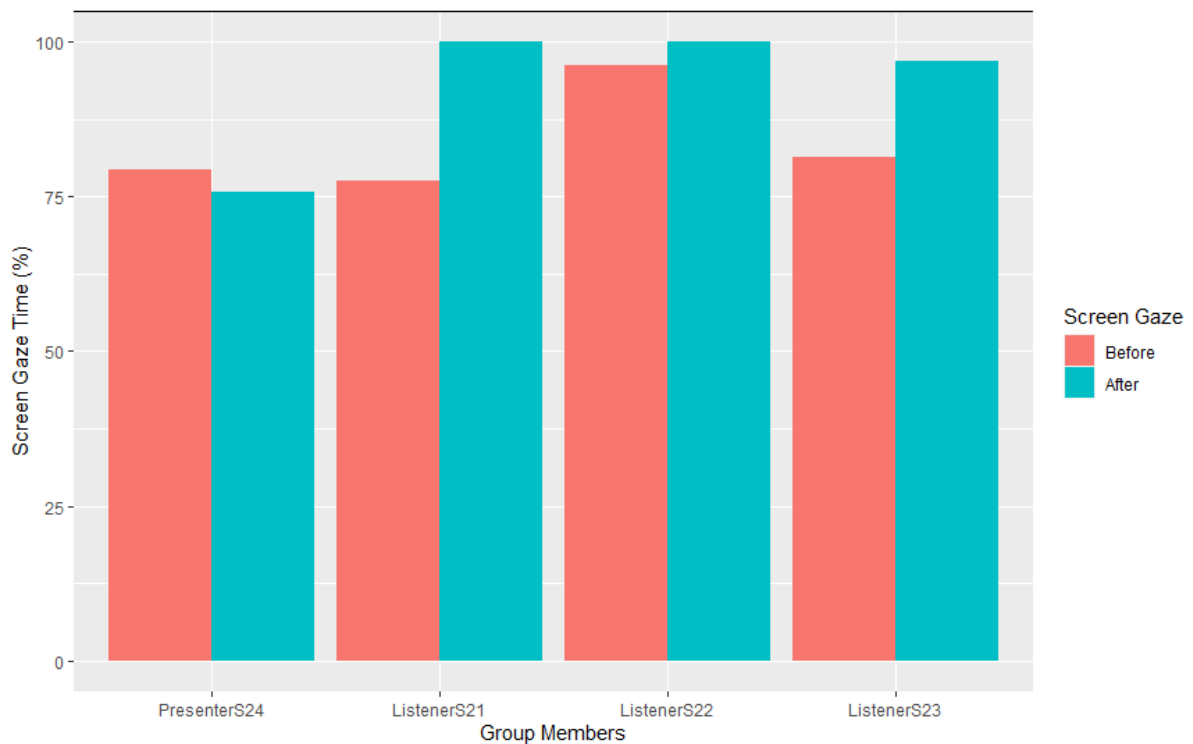


Figure C2.3: Cycle 3, Group 1 Members' Screen Gaze during S24's Pre- Vs Post-Intervention Journal Article Presentations

C.2.1.2. Cycle 3: Group 1 - Members' Screen Gaze During Pre- Vs Post-Intervention Discussions on Journal Articles

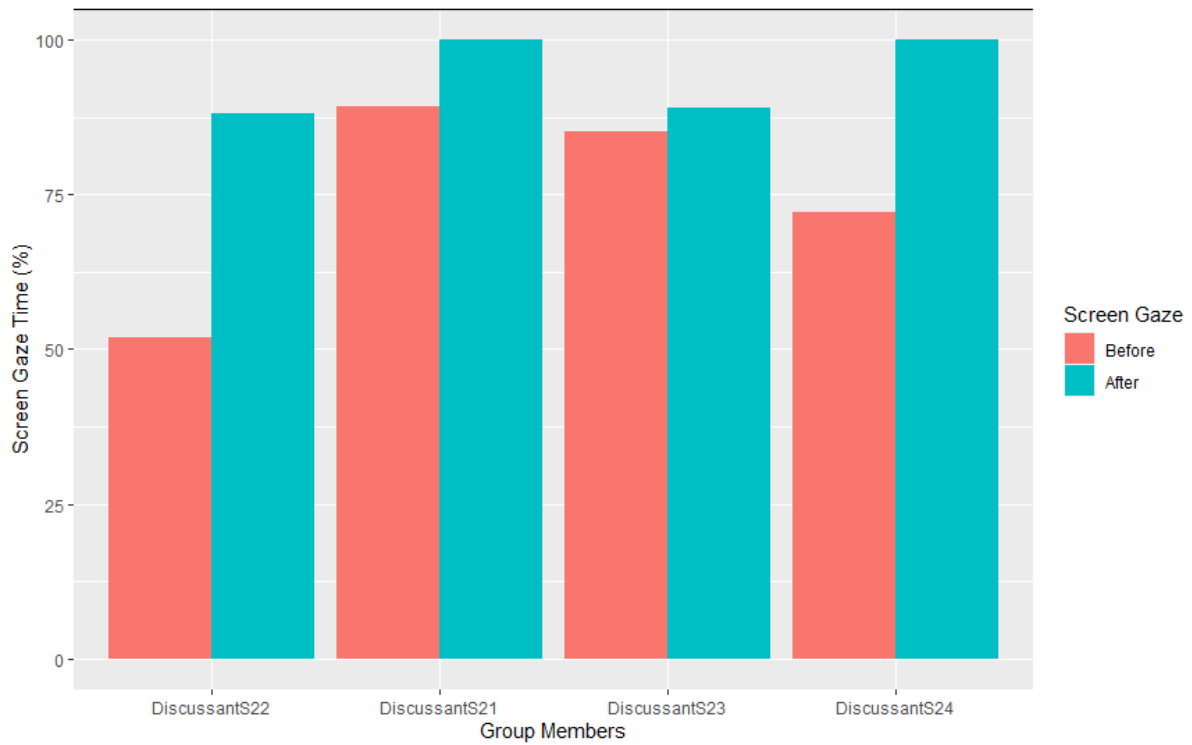


Figure C2.4: Cycle 3, Group 1 Members' Screen Gaze during Pre- Vs Post-Intervention Group Discussions on S22's Journal Articles

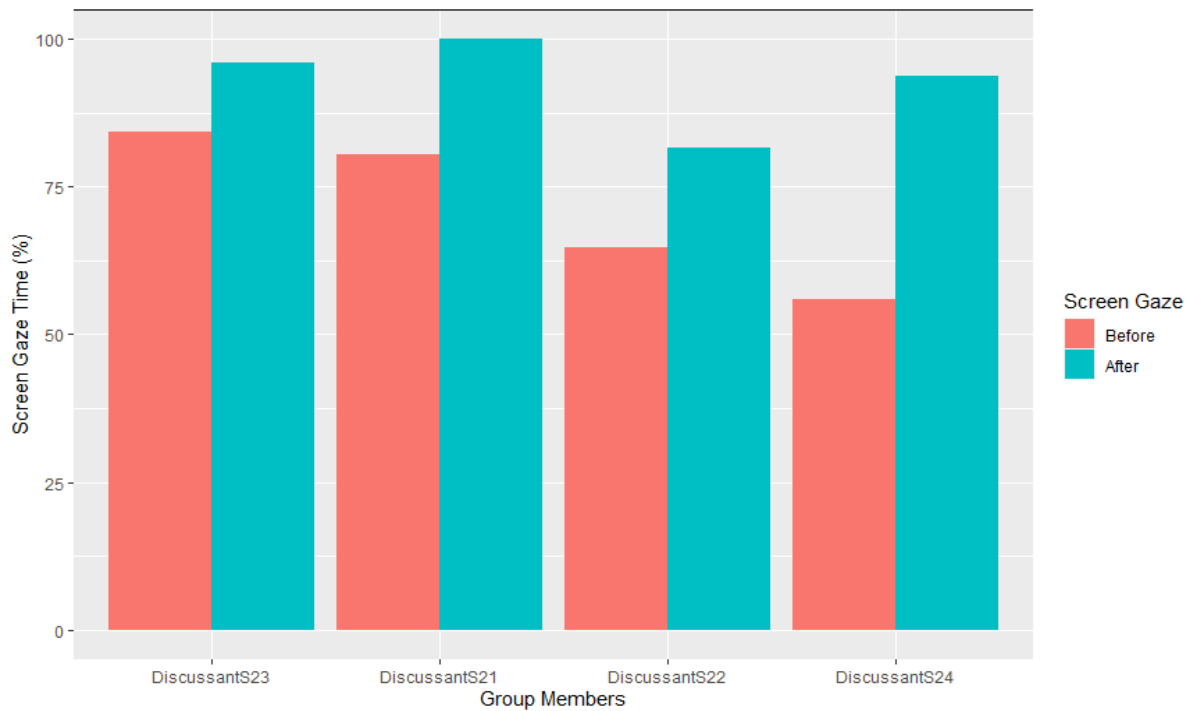


Figure C2.5: Cycle 3, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S23's Journal Articles

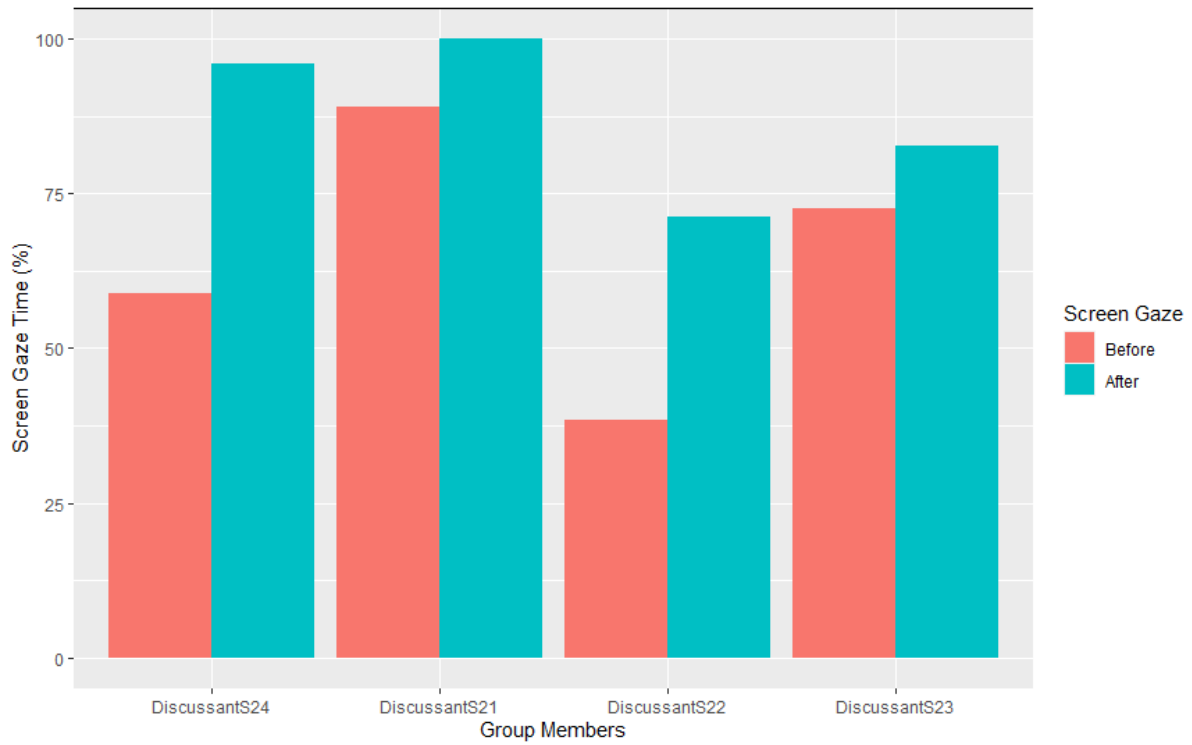


Figure C2.6: Cycle 3, Group 1 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S24's Journal Articles

C.2.2. Cycle 3: Group 2

C.2.2.1. Cycle 3: Group 2 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

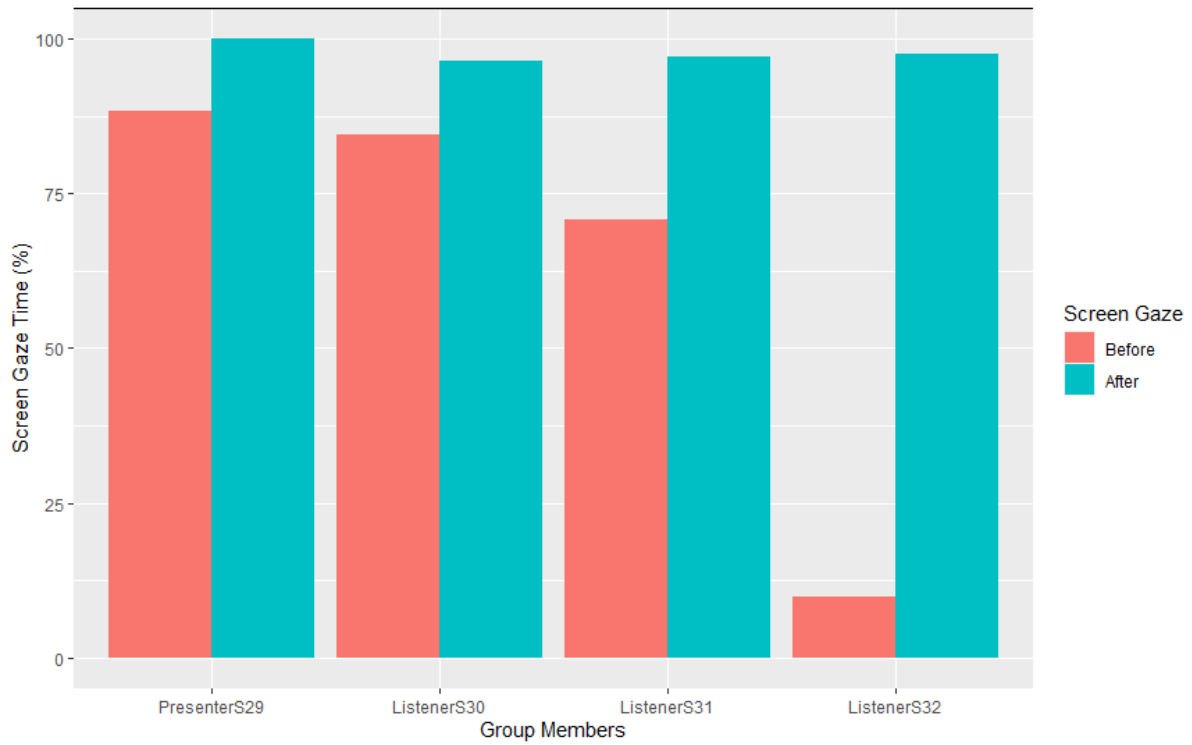


Figure C2.7: Cycle 3, Group 2 Members' Screen Gaze During S29's Pre- Vs Post-Intervention Journal Article Presentations

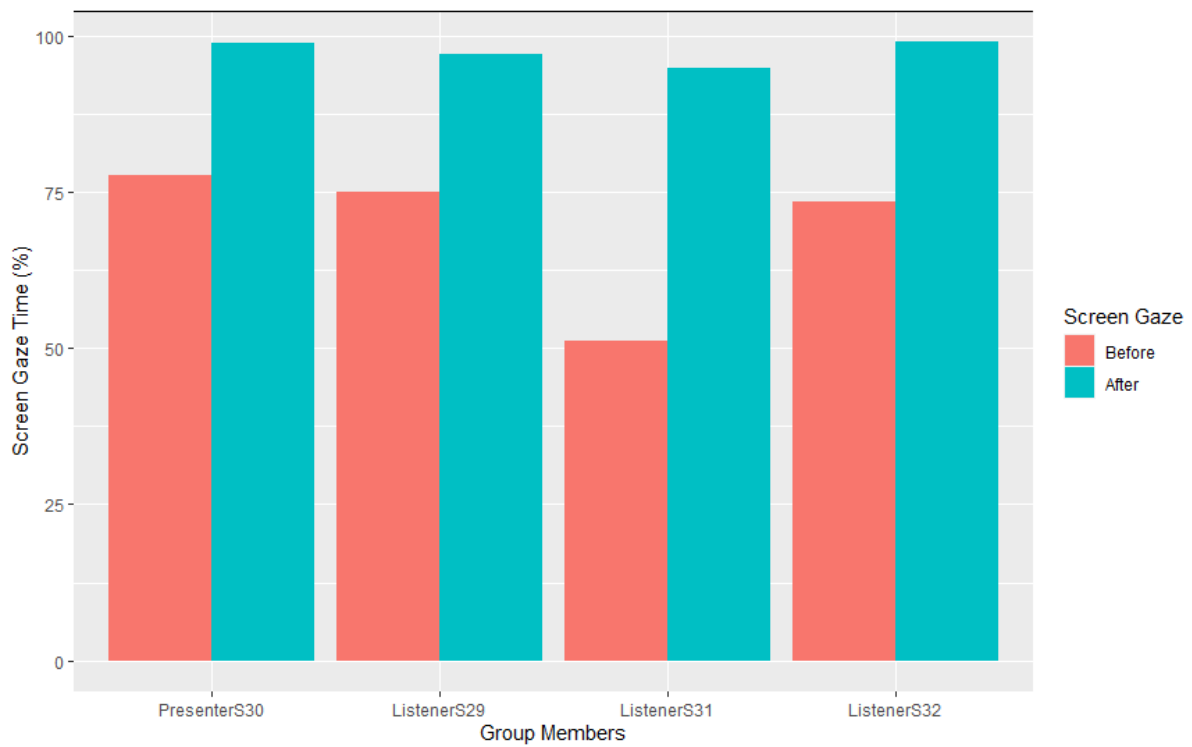


Figure C2.8: Cycle 3, Group 2 Members' Screen Gaze During S30's Pre- Vs Post-Intervention Journal Article Presentations

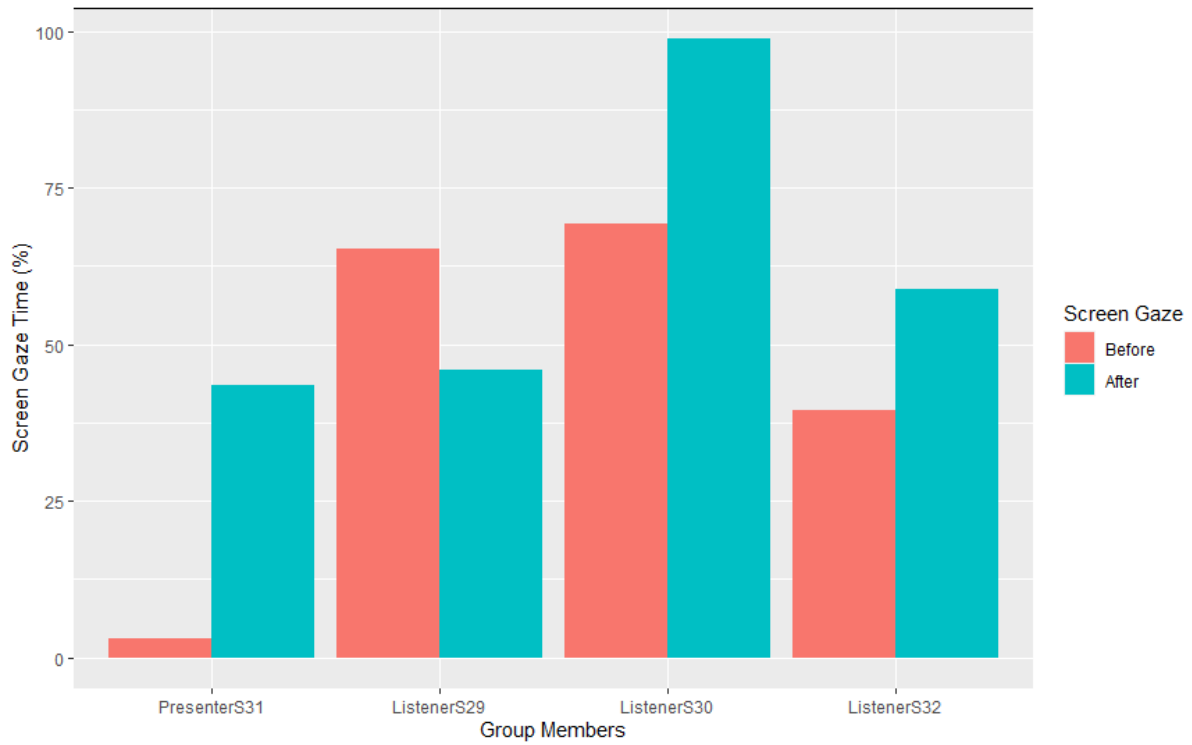


Figure C2.9: Cycle 3, Group 2 Members' Screen Gaze During S31's Pre- Vs Post-Intervention Journal Article Presentations

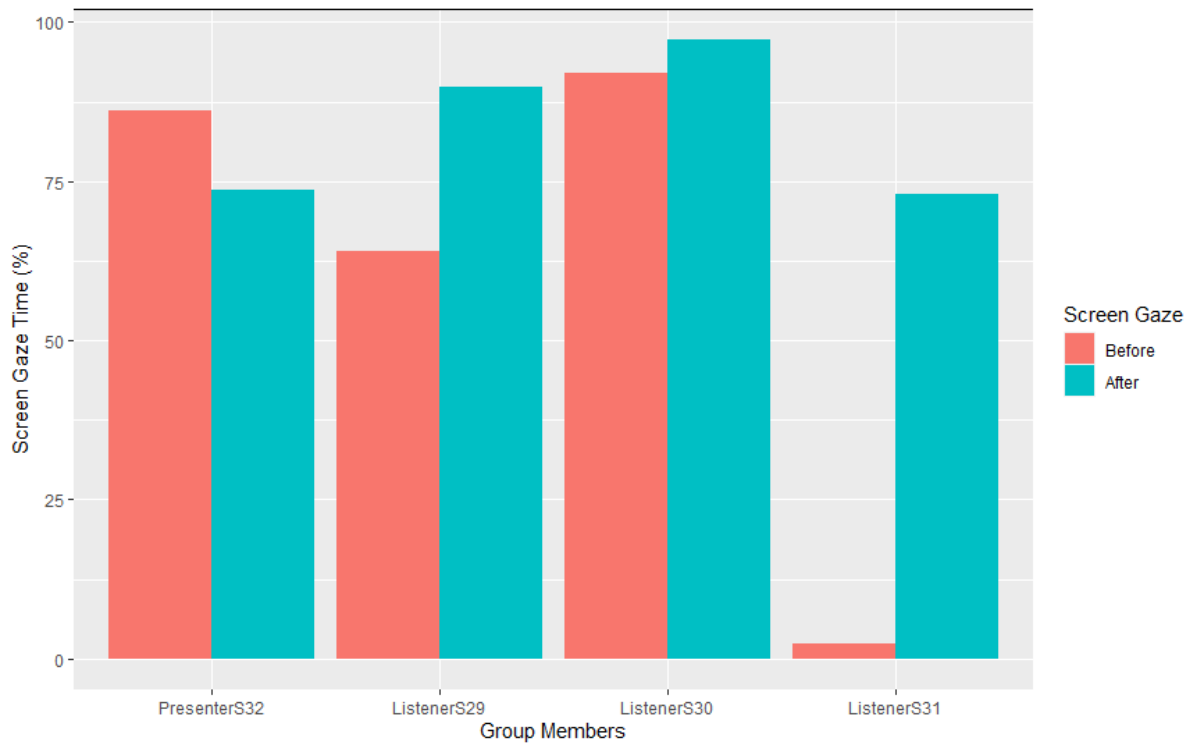


Figure C2.10: Cycle 3, Group 2 Members' Screen Gaze During S32's Pre- Vs Post-Intervention Journal Article Presentations

C.2.2.2. Cycle 3: Group 2 - Members' Screen Gaze During Pre- Vs Post-Intervention Discussions on Journal Articles

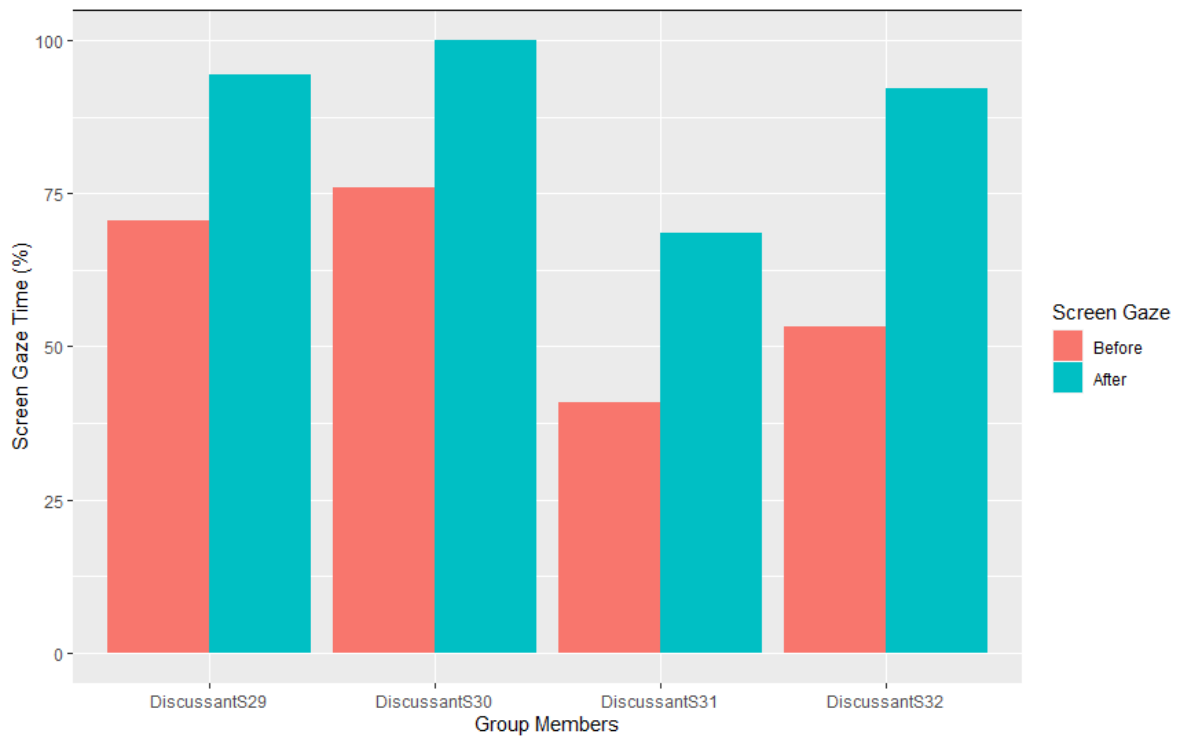


Figure C2.11: Cycle 3, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S29's Journal Articles

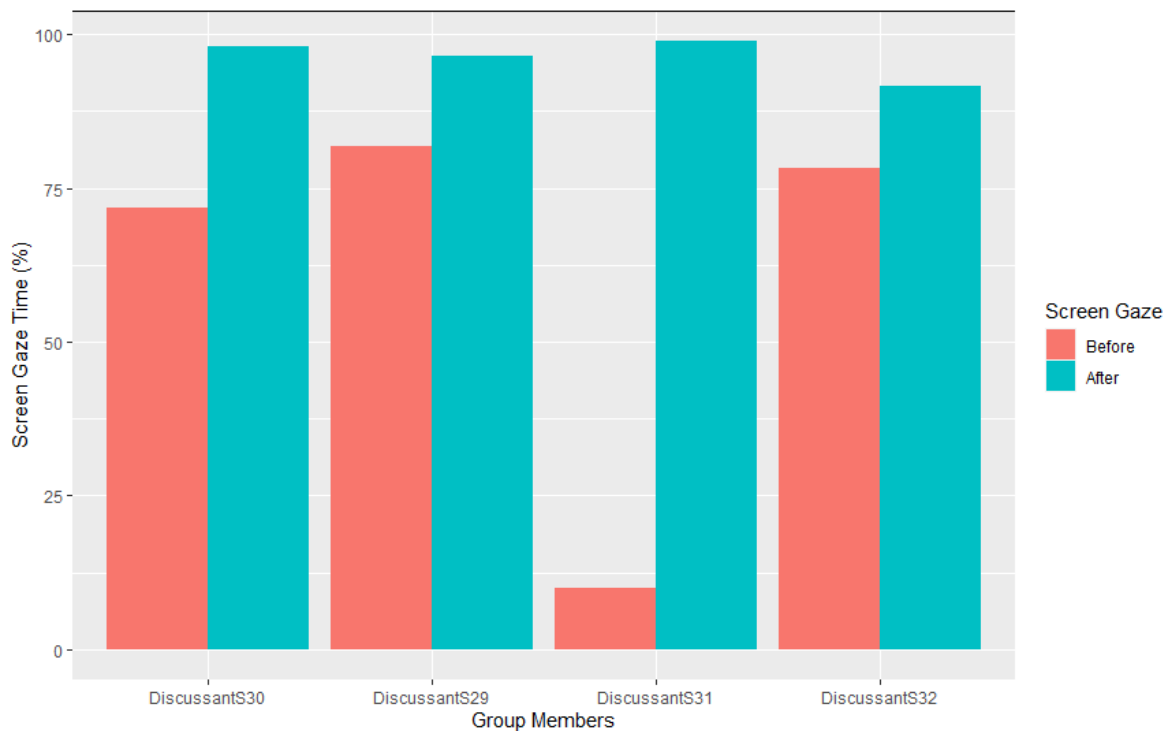


Figure C2.12: Cycle 3, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S30's Journal Articles

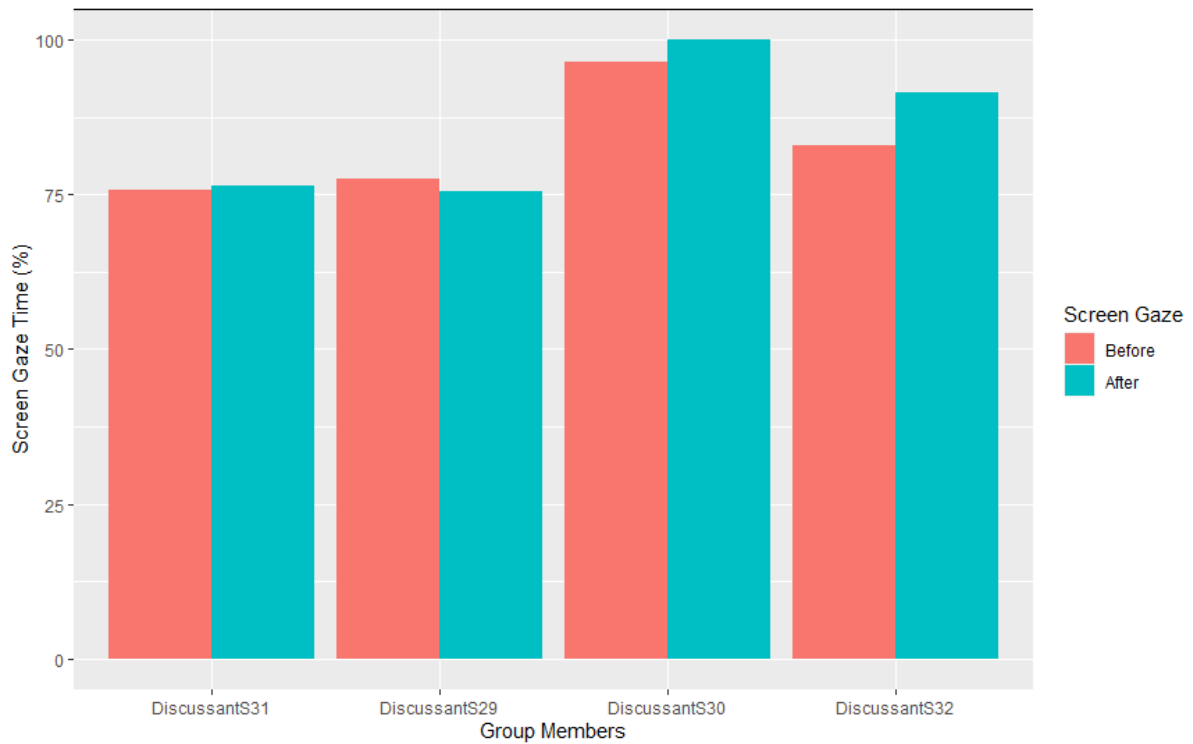


Figure C2.13: Cycle 3, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S31's Journal Articles

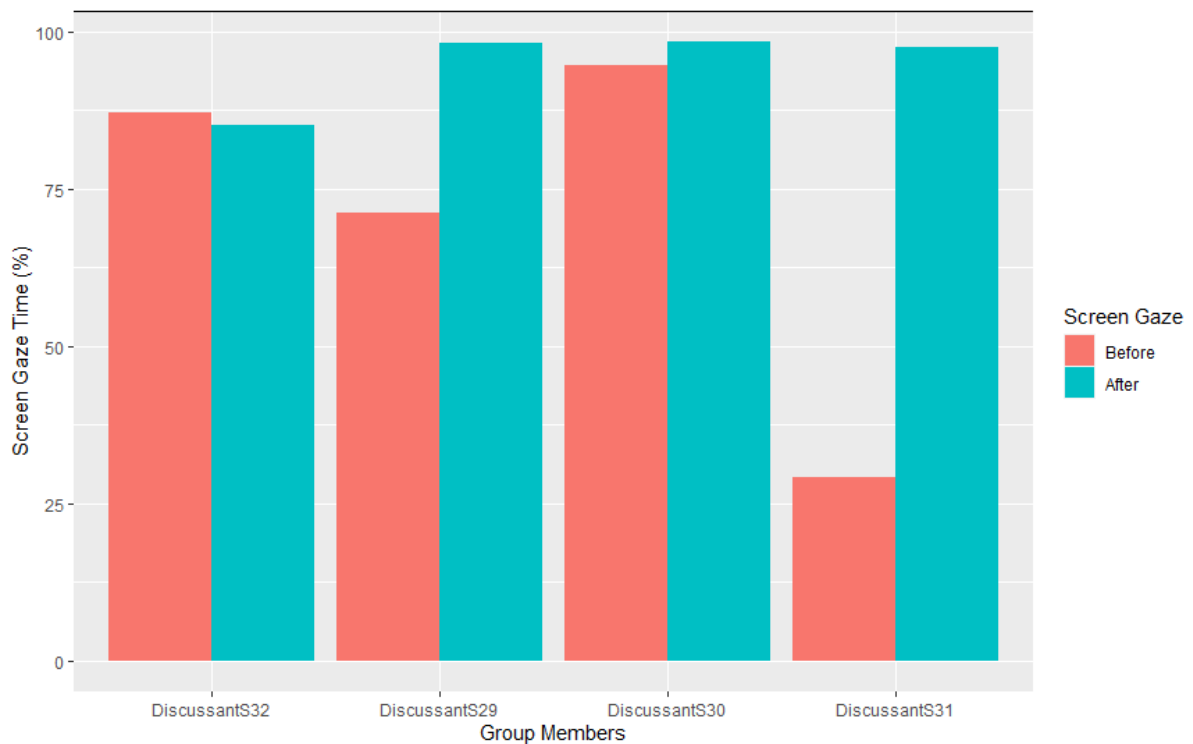


Figure C2.14: Cycle 3, Group 2 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S32's Journal Articles

C.2.3. Cycle 3: Group 3

C.2.3.1. Cycle 3: Group 3 - Members' Screen Gaze During Pre- Vs Post-Intervention Journal Article Presentations

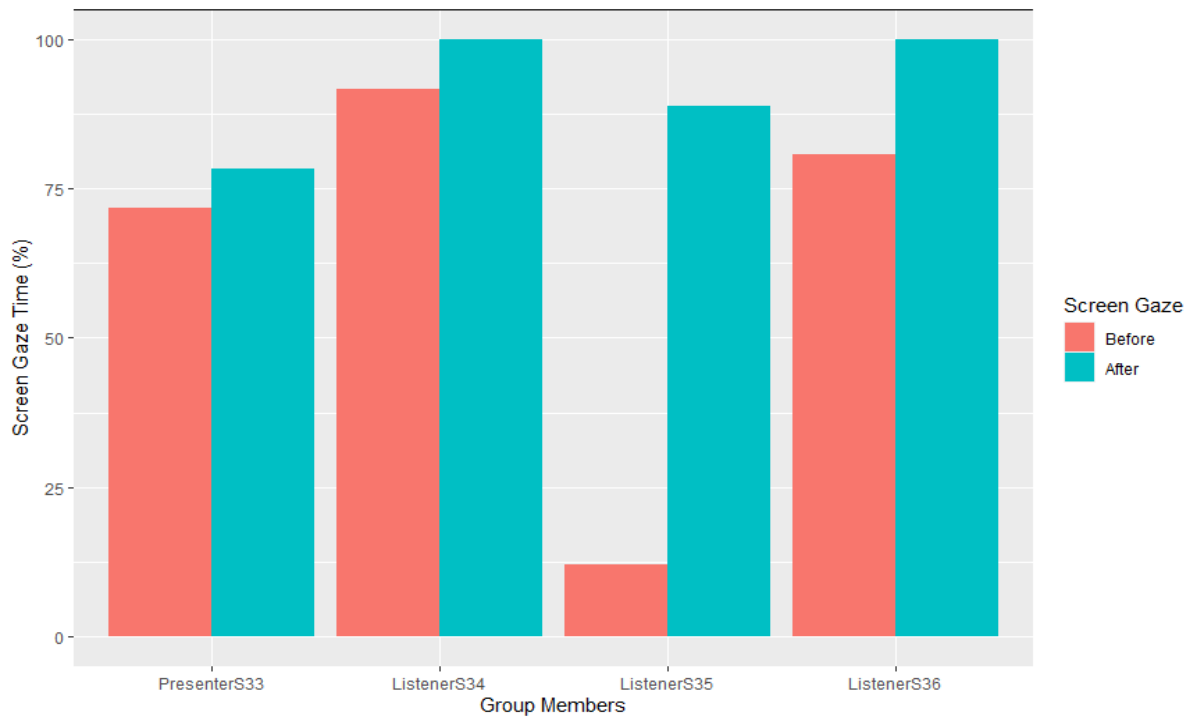


Figure C2.15: Cycle 3, Group 3 Members' Screen Gaze During S33's Pre- Vs Post-Intervention Journal Article Presentations

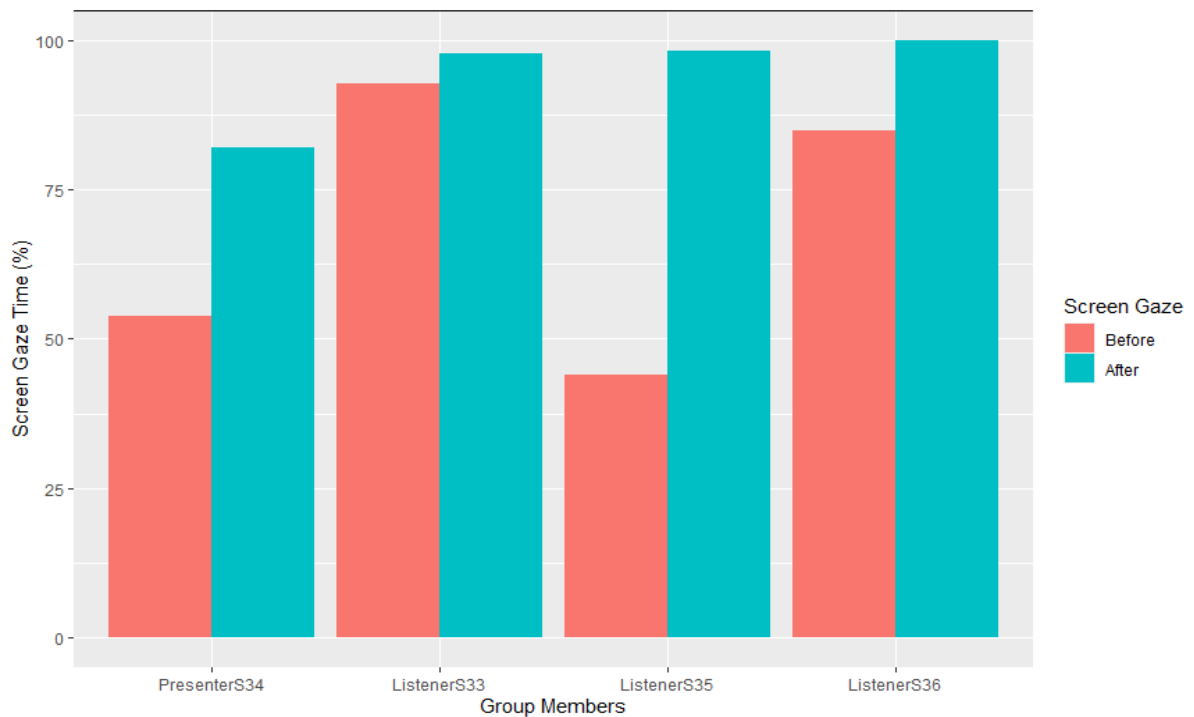


Figure C2.16: Cycle 3, Group 3 Members' Screen Gaze During S34's Pre- Vs Post-Intervention Journal Article Presentations

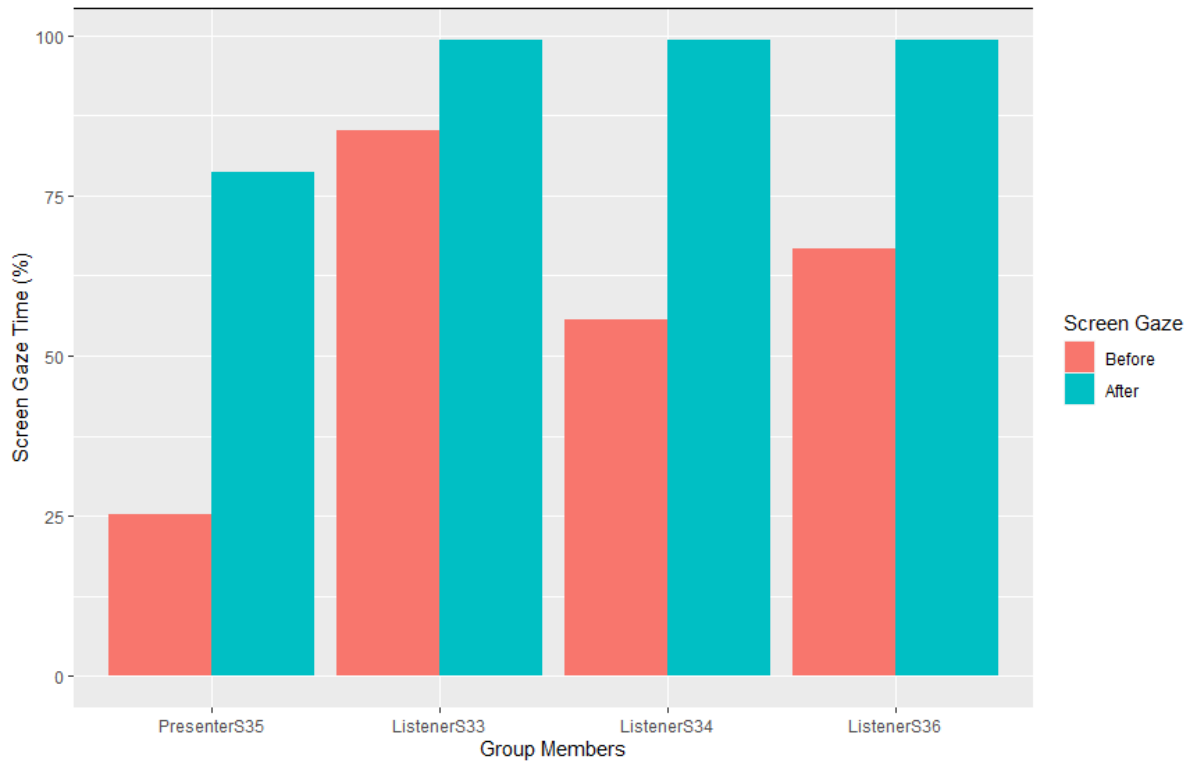


Figure C2.17: Cycle 3, Group 3 Members' Screen Gaze During S35's Pre- Vs Post-Intervention Journal Article Presentations

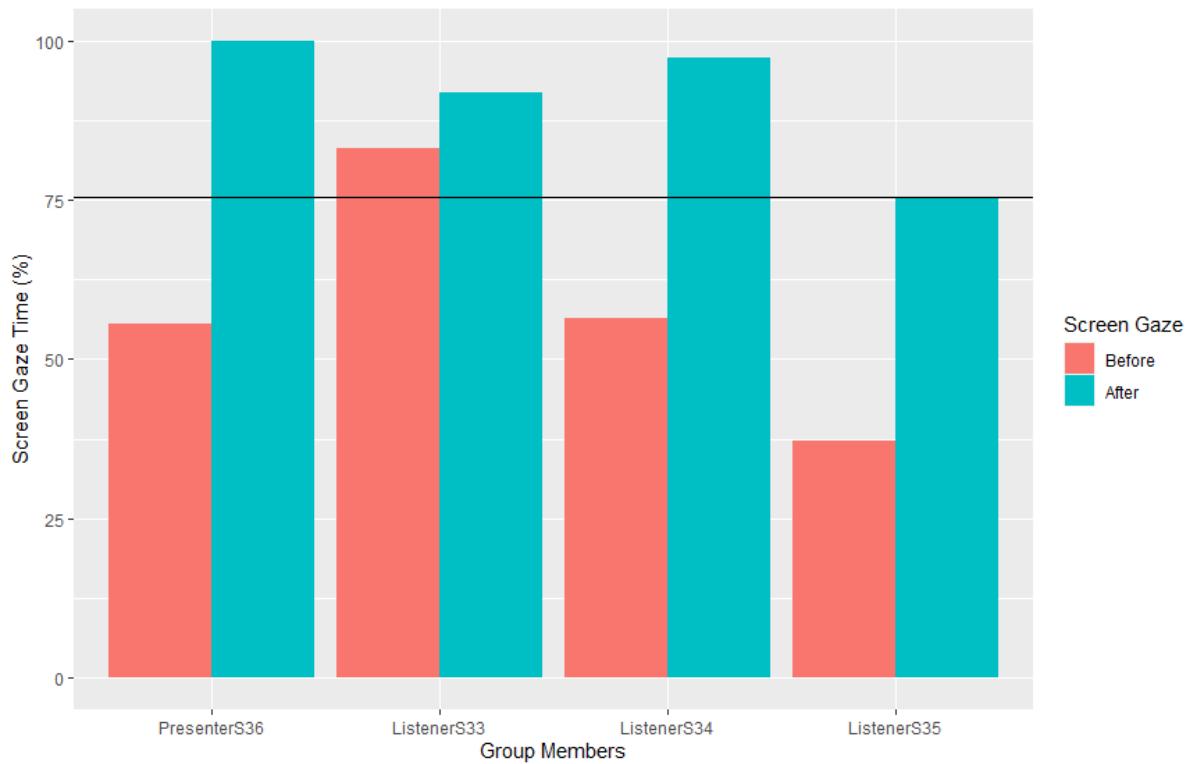


Figure C2.18: Cycle 3, Group 3 Members' Screen Gaze During S36's Pre- Vs Post-Intervention Journal Article Presentations

C.2.3.2. Cycle 3: Group 3 - Members' Screen Gaze During Pre- Vs Post-Intervention Discussions on Journal Articles

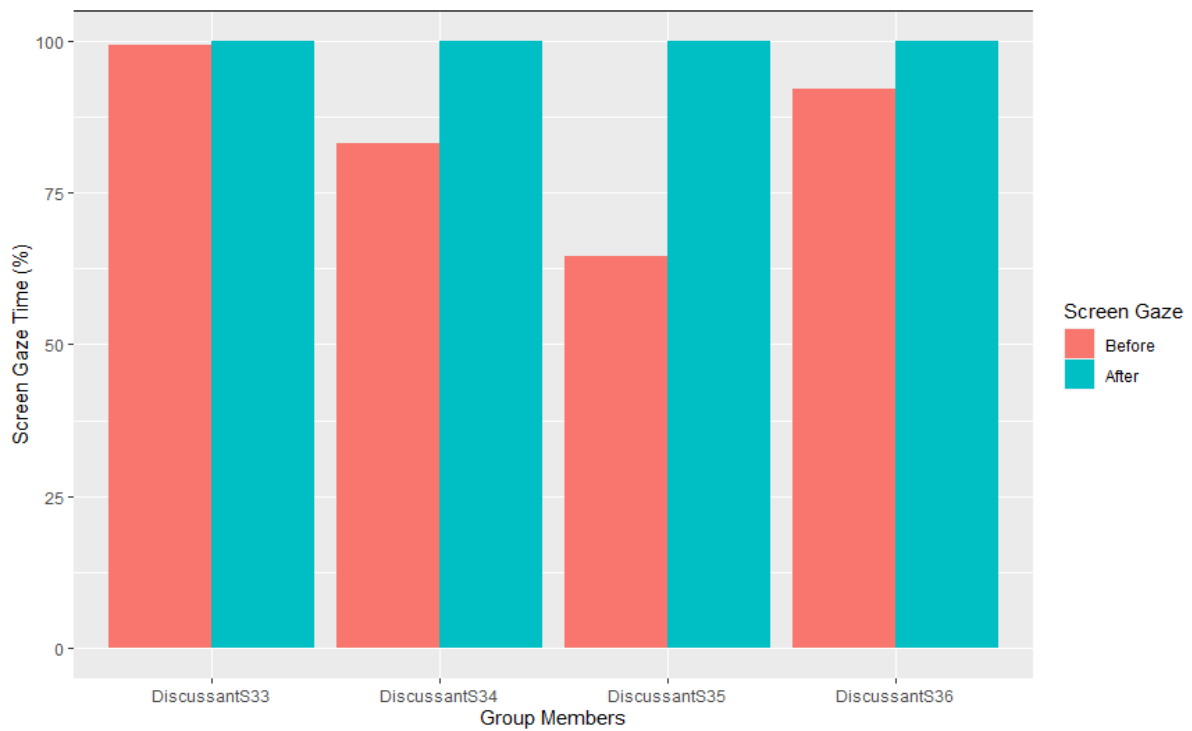


Figure C2.19: Cycle 3, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S33's Journal Articles

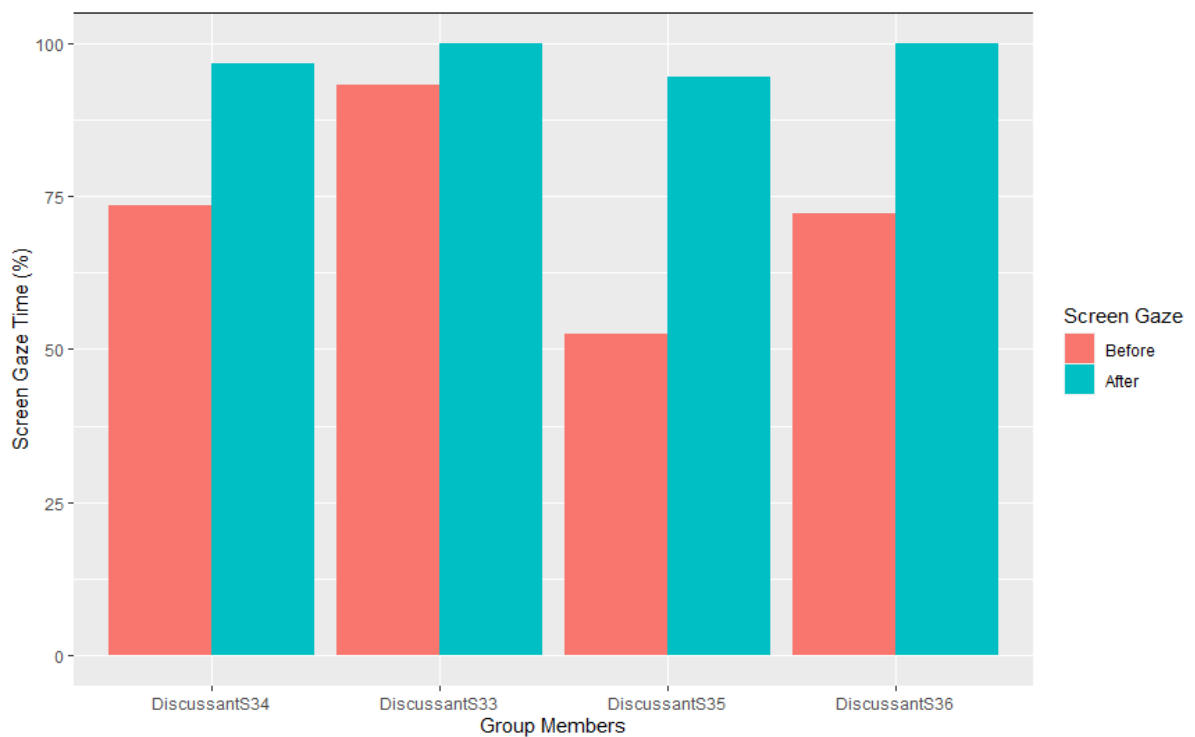


Figure C2.20: Cycle 3, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S34's Journal Articles

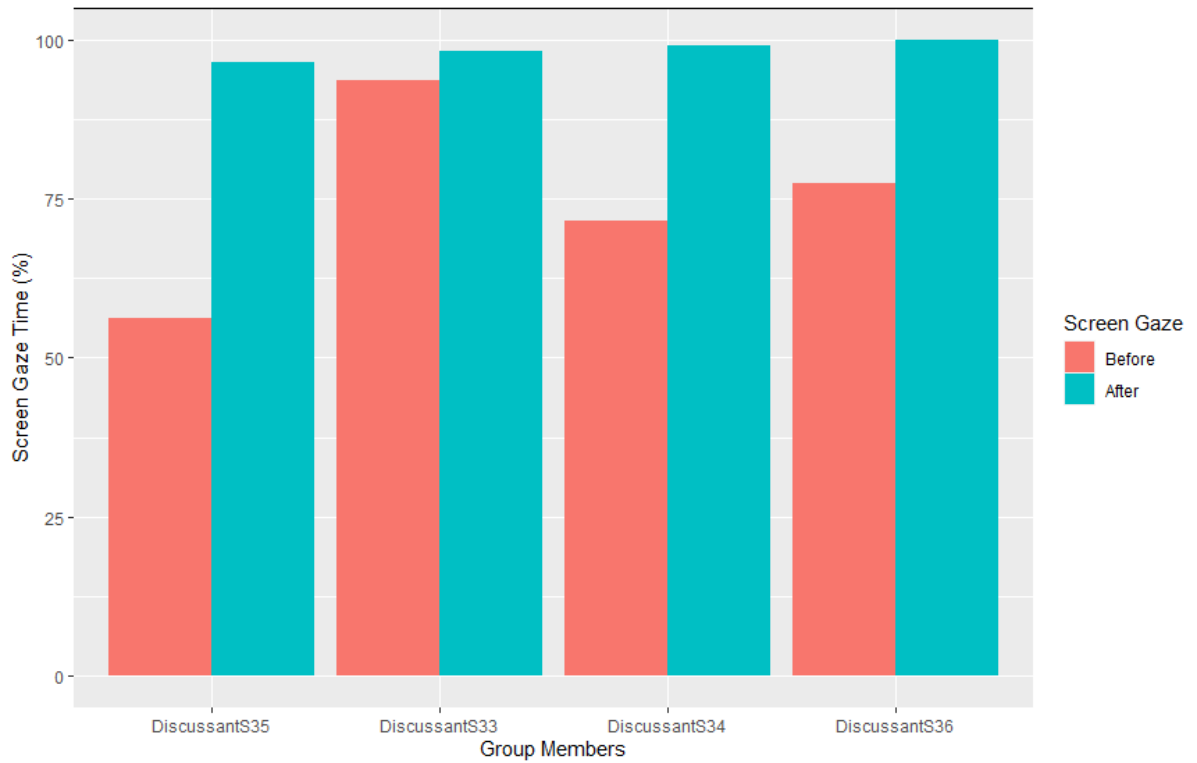


Figure C2.21: Cycle 3, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S35's Journal Articles

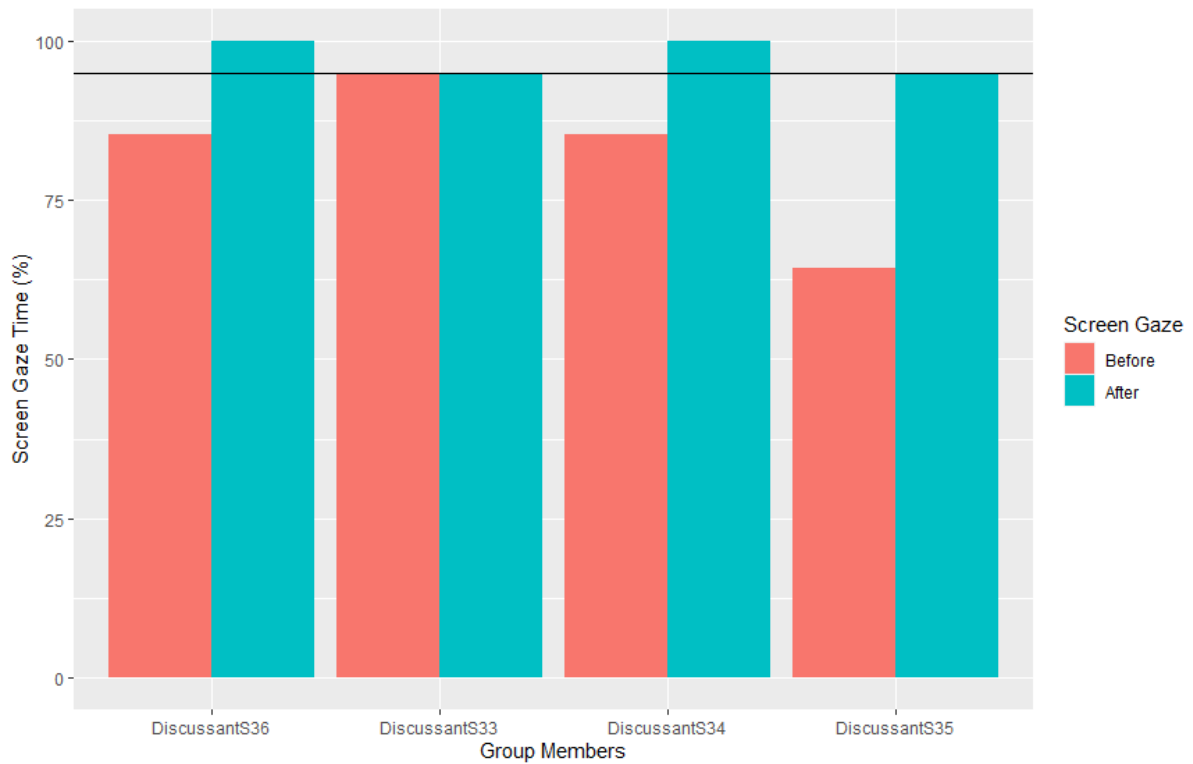


Figure C2.22: Cycle 3, Group 3 Members' Screen Gaze During Pre- Vs Post-Intervention Group Discussions on S36's Journal Articles

Appendix C.3

C.3. Results of Microsoft Excel Analysis – Cycle 3

MS Excel Graphs Showing Each Group's (Average) Screen Gaze Behaviours During Each Presentation and Follow-up Discussion

Each six-graph set [x (n=24)] is divided as follows:

The first three graphs show the average screen gaze of whole group during each group member's pre-intervention presentations. The second three graphs demonstrate the average screen gaze of whole group during each group member's post-intervention presentations.

The third three graphs in the set present the average screen gaze of whole group during the follow-up discussion after each group member's presentation in order to show pre-intervention. The fourth three graphs in the set exhibit the average screen gaze of whole group during the post-intervention follow-up discussion after each group member's presentation.

For a full explanation of what each graph is showing, please see Section 6.1.1.3 in Chapter 6.

C.3.1. Cycle 3: Group 1

C.3.1.1. Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

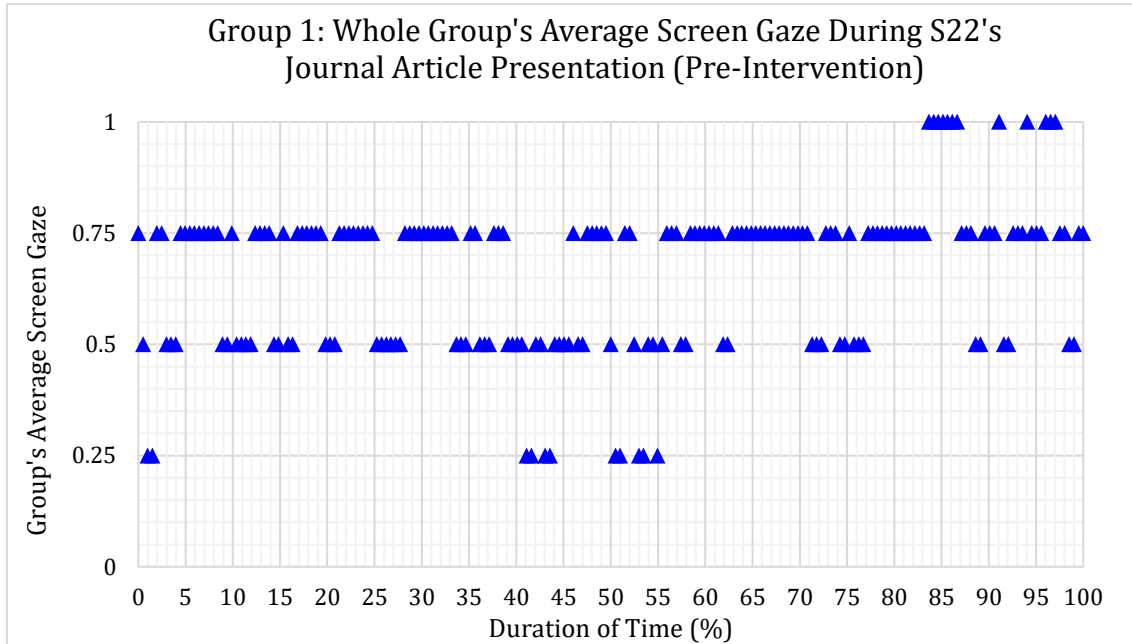


Figure C3.1: *Whole Group's Screen Gaze During S22's Journal Article Presentation (Pre-Intervention)*

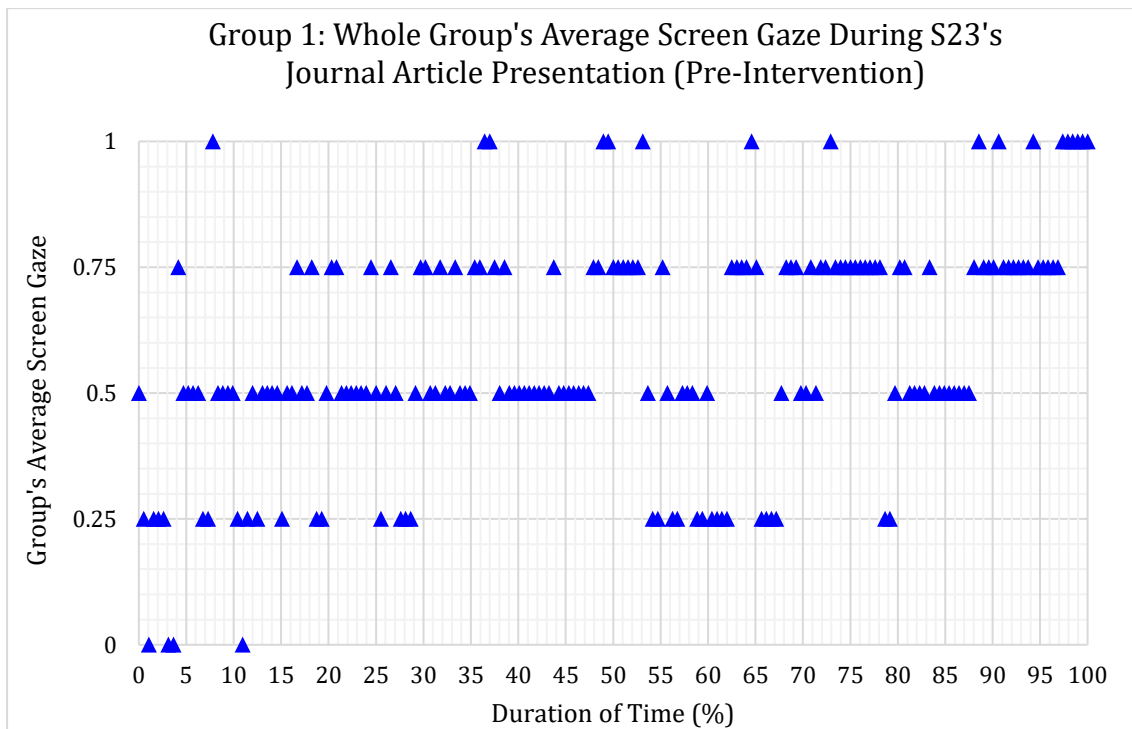


Figure C3.2: *Whole Group's Screen Gaze During S23's Journal Article Presentation (Pre-Intervention)*

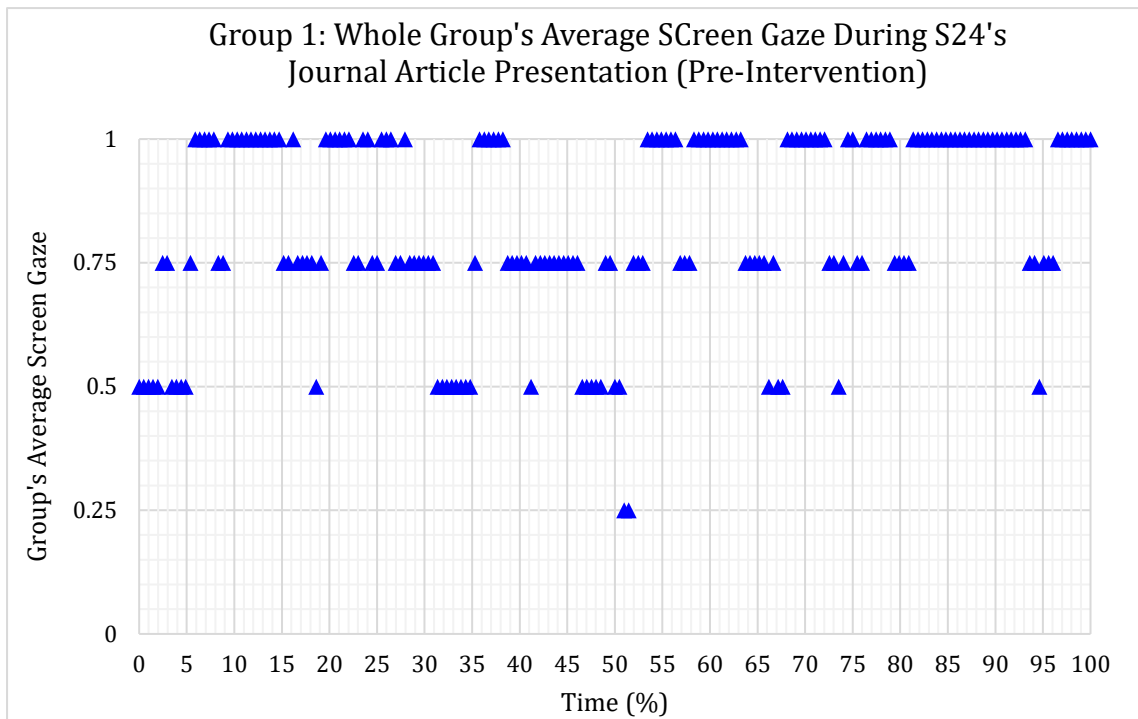


Figure C3.3: Whole Group's Screen Gaze During S24's Journal Article Presentation (Pre-Intervention)

C.3.1.2. Group 1 Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations

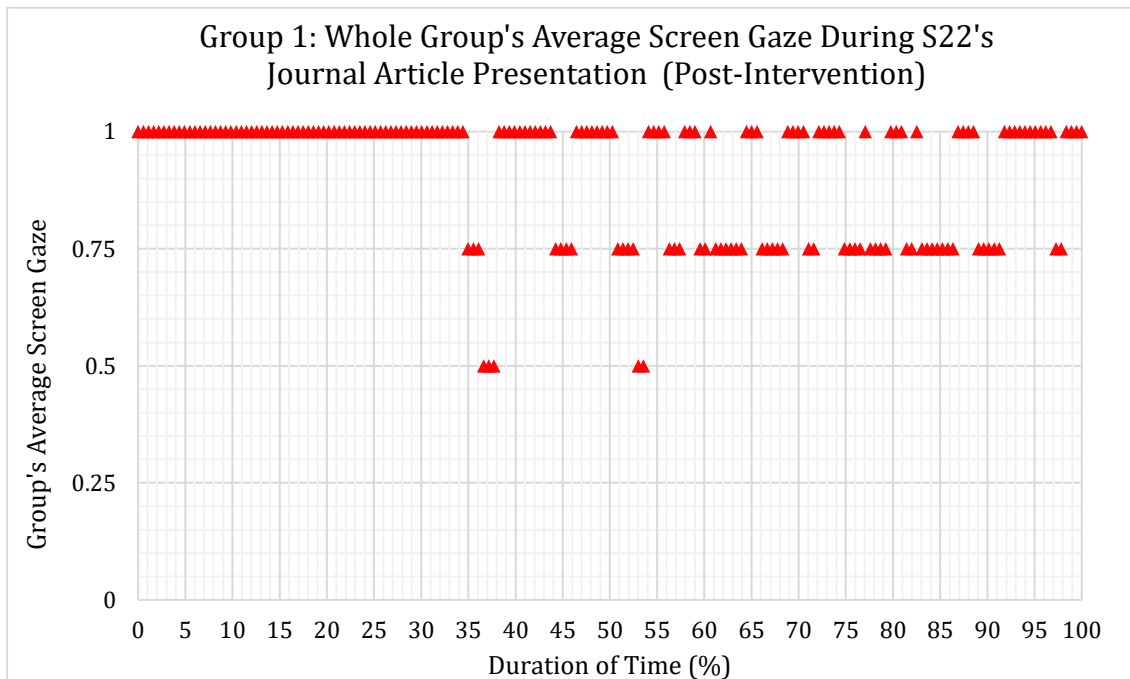


Figure C3.4: Whole Group's Screen Gaze During S22's Journal Article Presentation (Post-Intervention)

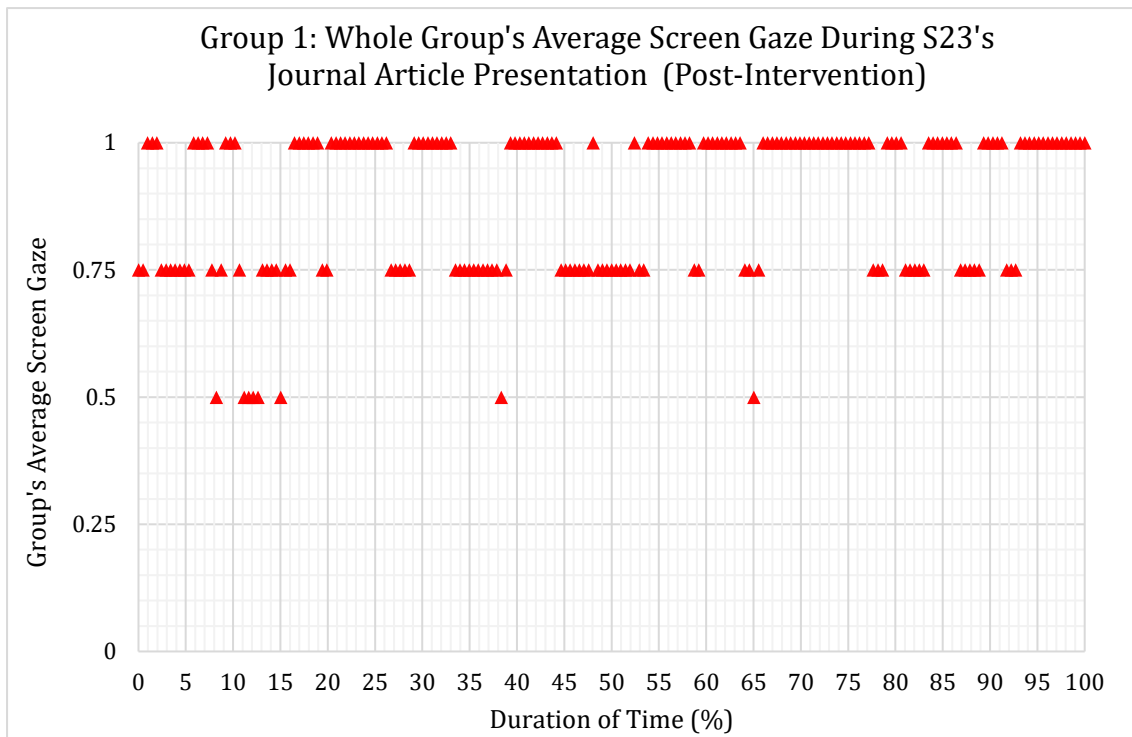


Figure C3.5: Whole Group's Screen Gaze During S23's Journal Article Presentation (Post-Intervention)

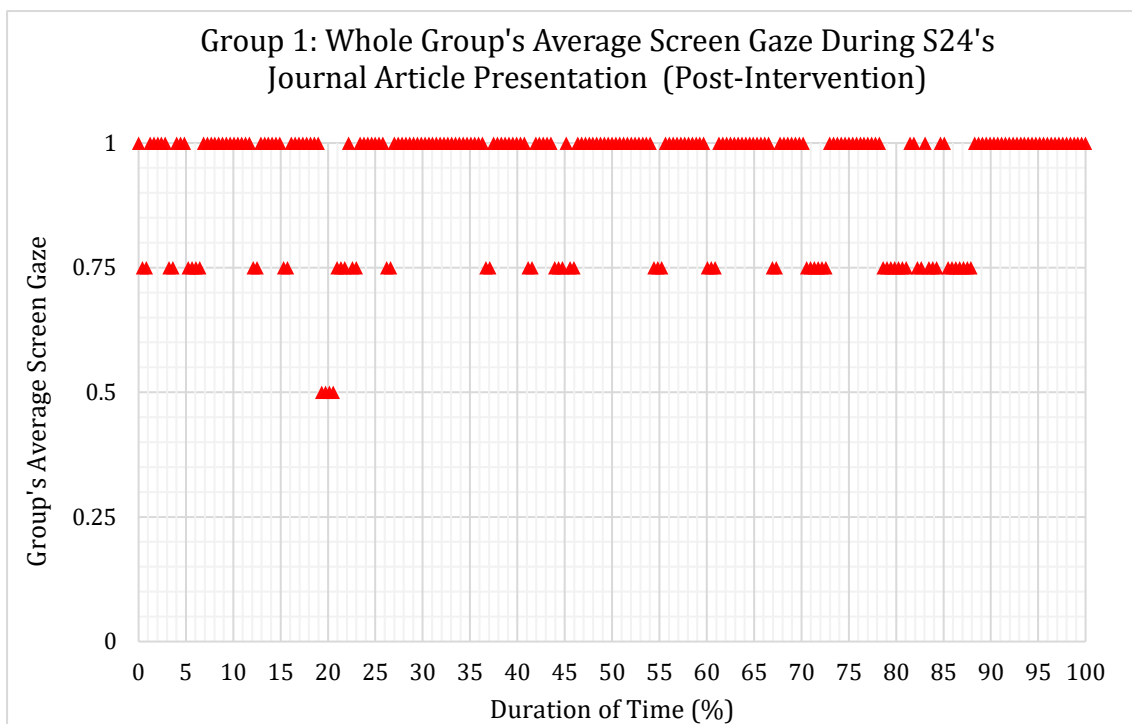


Figure C3.6: Whole Group's Screen Gaze During S24's Journal Article Presentation (Post-Intervention)

C.3.1.3. Group 1- Whole Group's Average Screen Gaze During Pre-Intervention Discussions

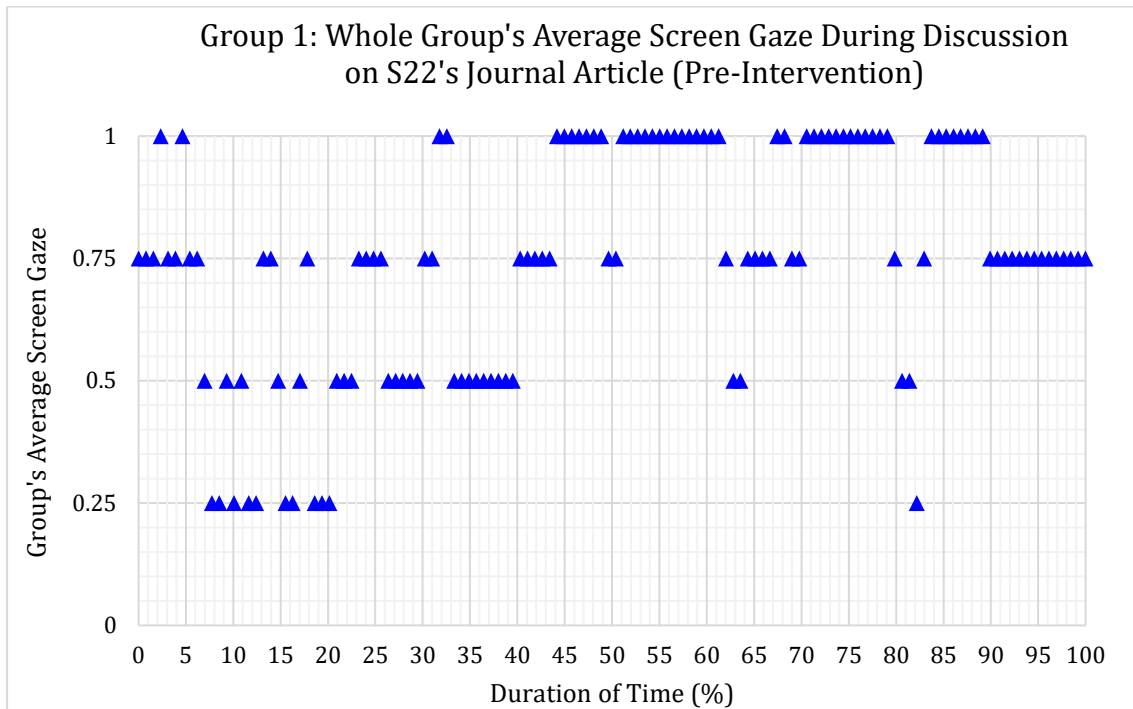


Figure C3.7: Whole Group's Screen Gaze During Group Discussion on S22's Journal Article Presentation (Pre-Intervention)

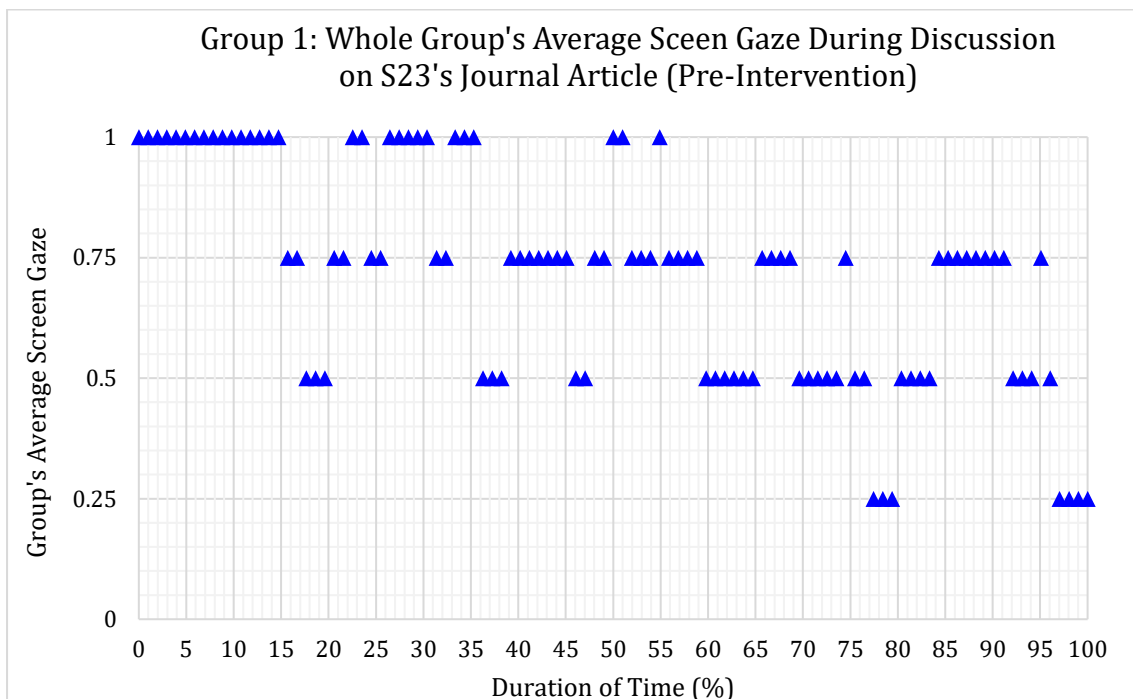


Figure C3.8: Whole Group's Screen Gaze During Group Discussion on S23's Journal Article Presentation (Pre-Intervention)

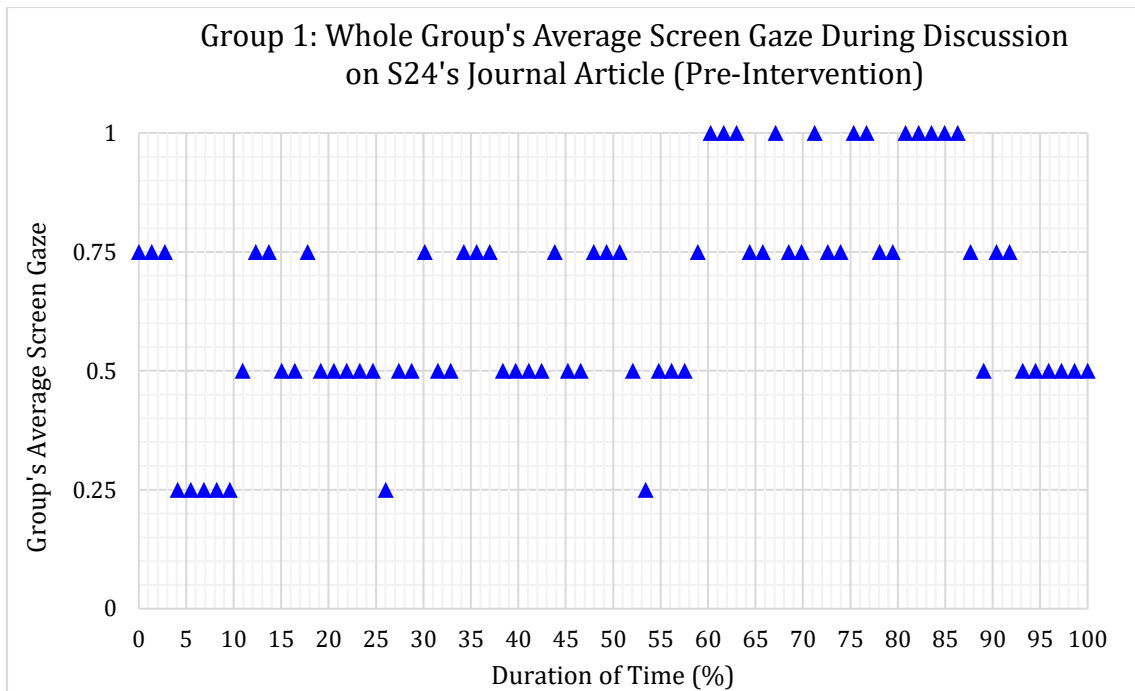


Figure C3.9: Whole Group's Screen Gaze During Group Discussion on S24's Journal Article Presentation (Pre-Intervention)

C.3.1.4. Group 1- Whole Group's Average Screen Gaze During Post-Intervention Discussions

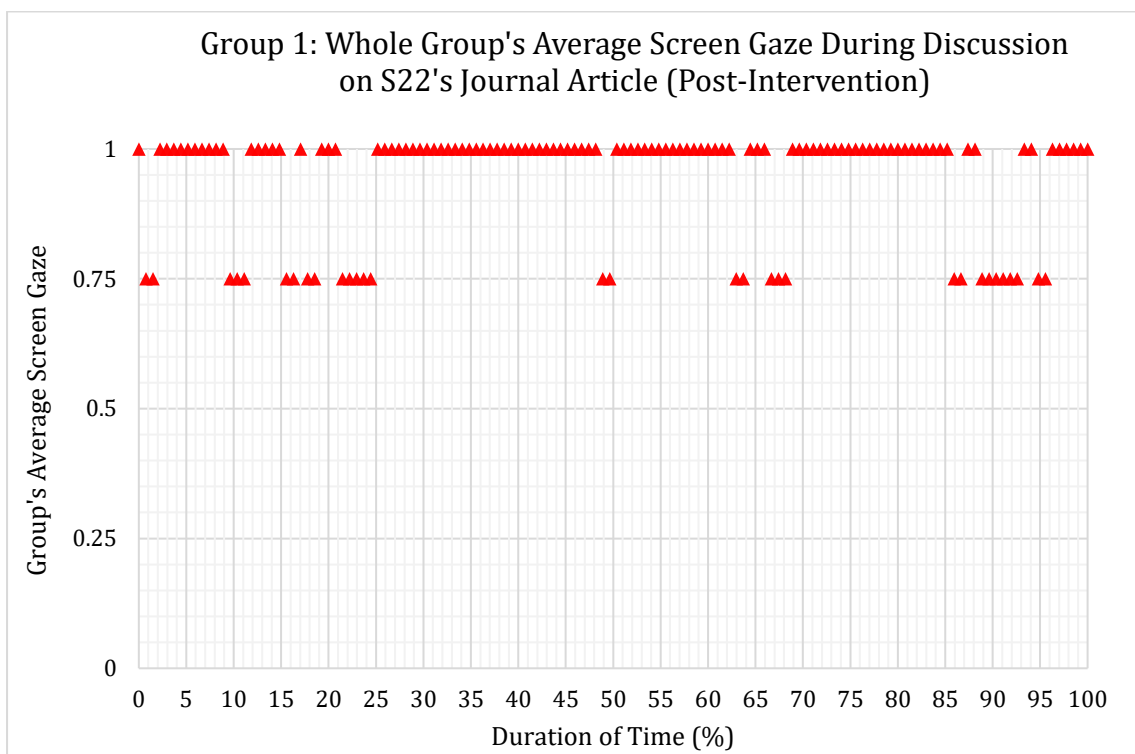


Figure C3.10: Whole Group's Screen Gaze During Group Discussion on S22's Journal Article Presentation (Post-Intervention)

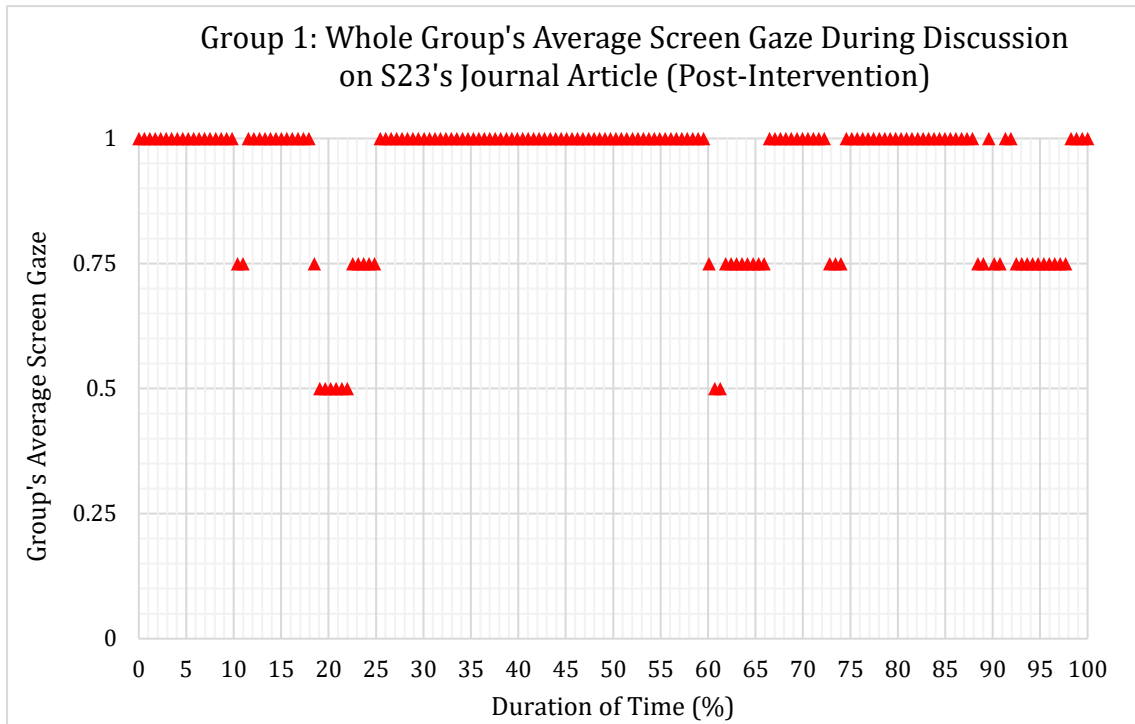


Figure C3.11: Whole Group's Screen Gaze During Group Discussion on S23's Journal Article Presentation (Post-Intervention)

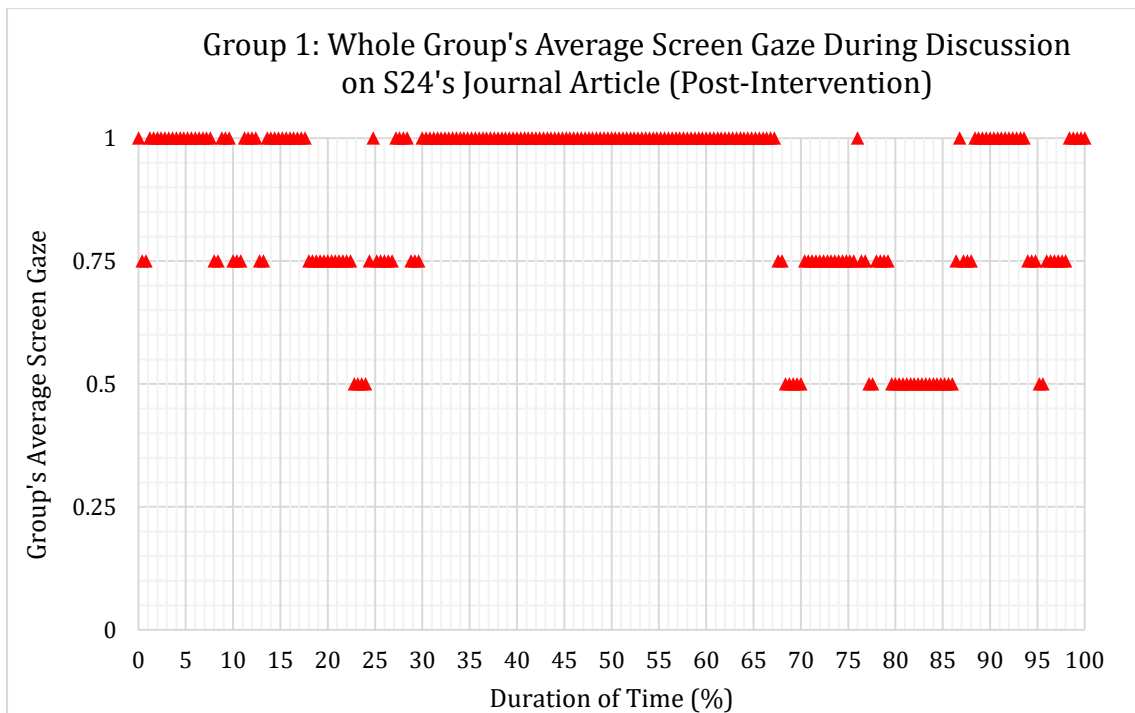


Figure C3.12: Whole Group's Screen Gaze During Group Discussion on S24's Journal Article Presentation (Post-Intervention)

C.3.2. Cycle 3: Group 2

C.3.2.1. Group 2- Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

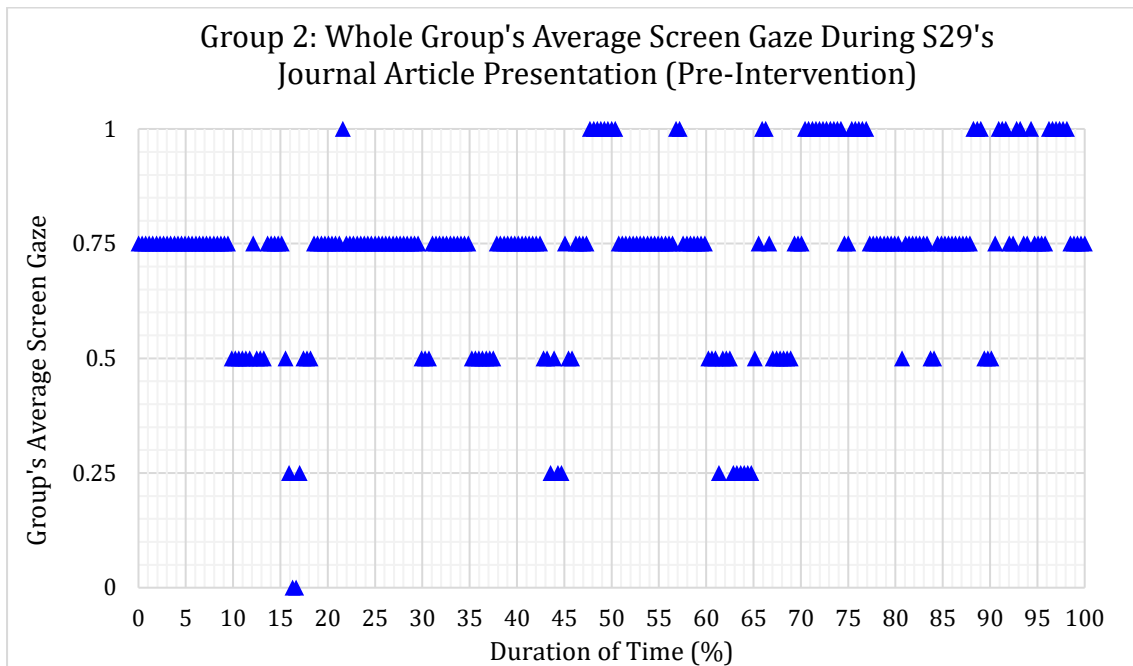


Figure C3.13: Whole Group's Screen Gaze During S29's Journal Article Presentation (Pre-Intervention)

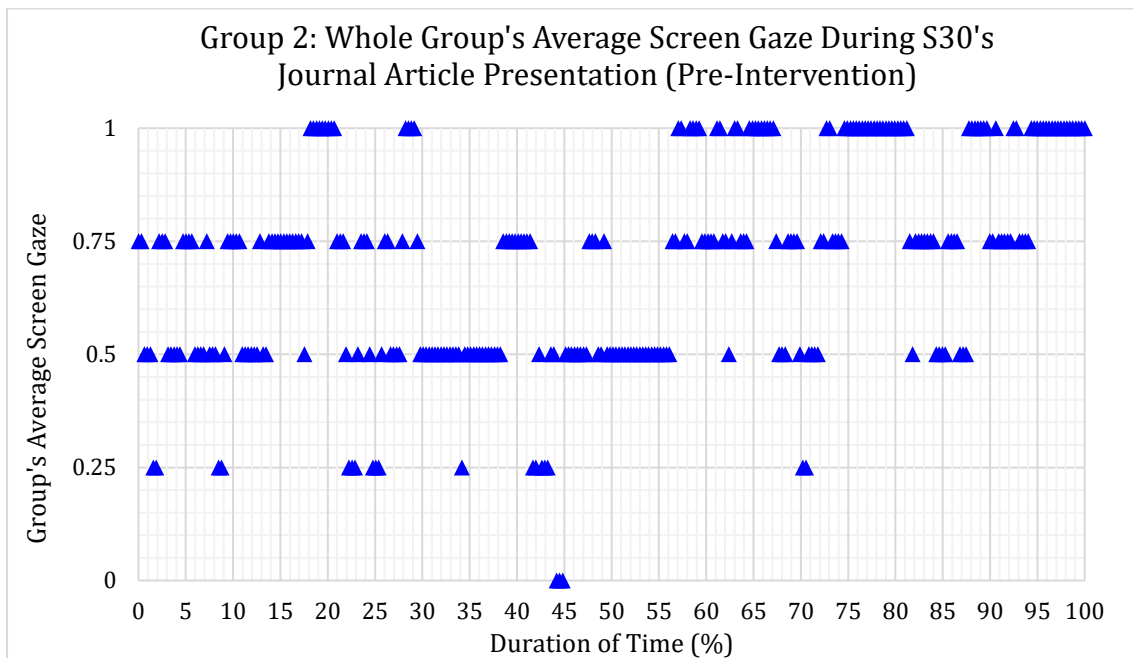


Figure C3.14: Whole Group's Screen Gaze During S30's Journal Article Presentation (Pre-Intervention)

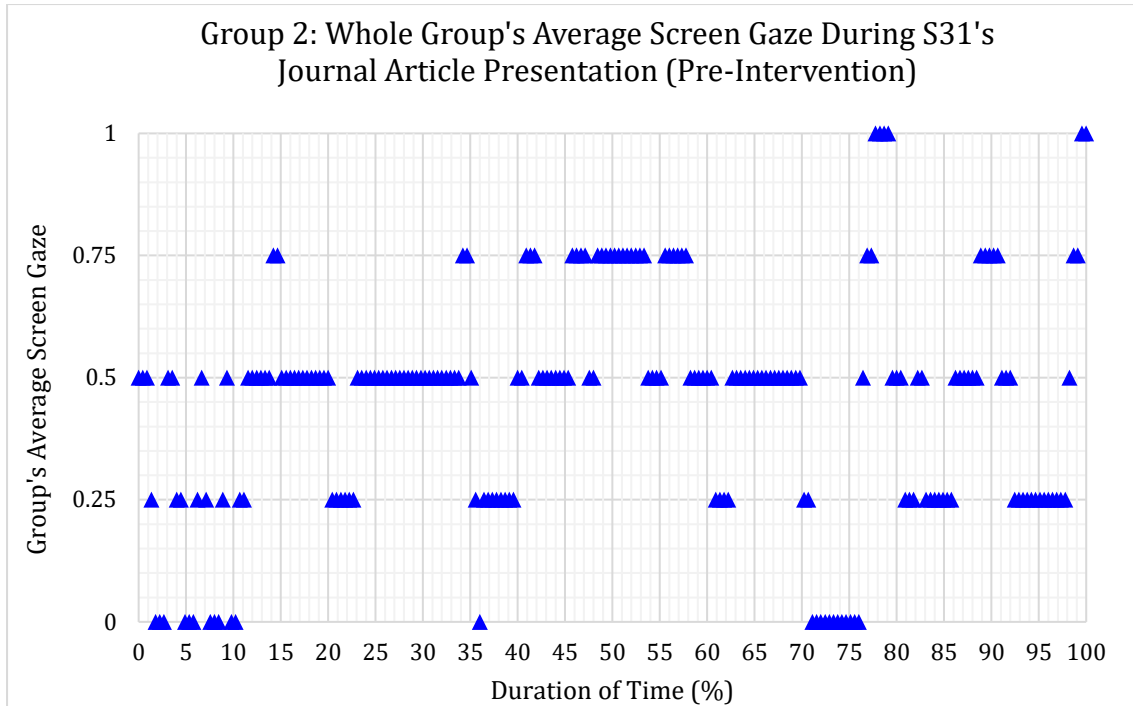


Figure C3.15: Whole Group's Screen Gaze During S31's Journal Article Presentation (Pre-Intervention)

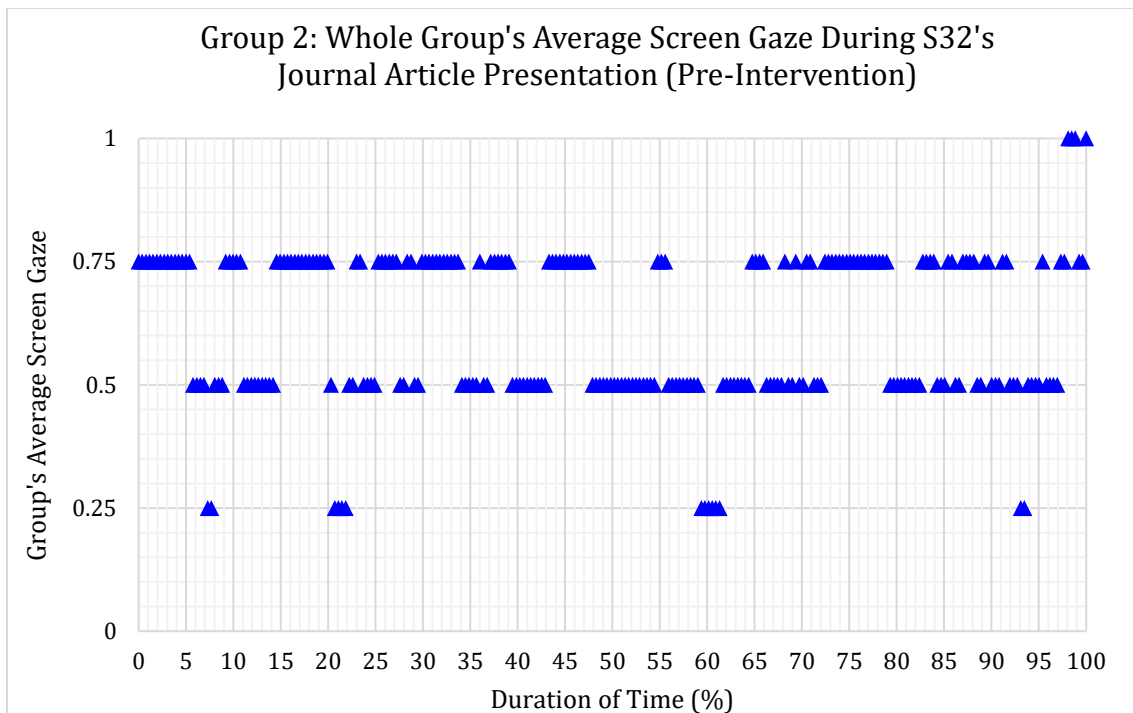


Figure C3.16: Whole Group's Screen Gaze During S32's Journal Article Presentation (Post-Intervention)

C.3.2.2. Group 2 - Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations

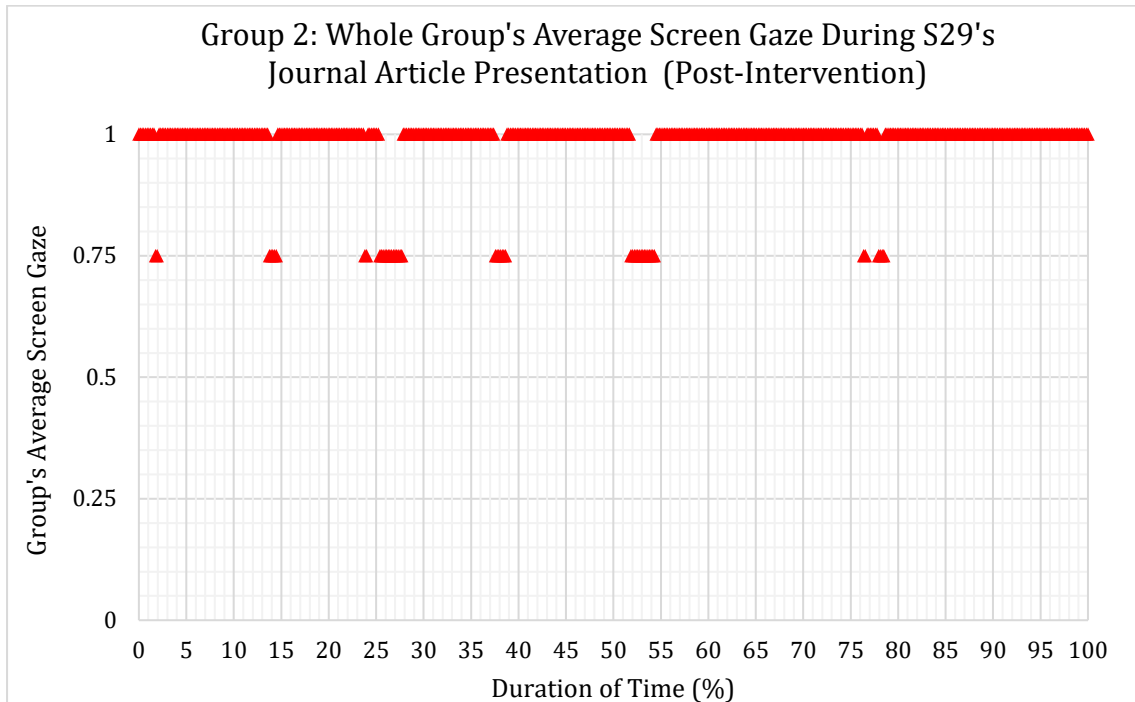


Figure C3.17: Whole Group's Screen Gaze During S29's Journal Article Presentation (Post-Intervention)

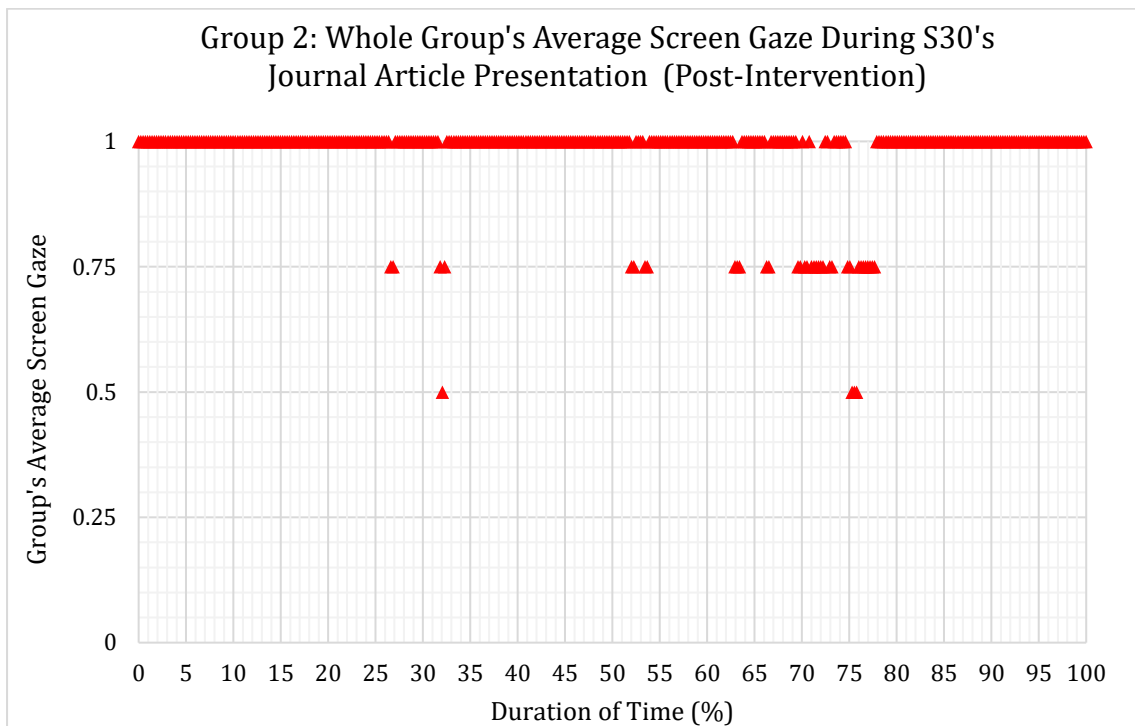


Figure C3.18: Whole Group's Screen Gaze During S30's Journal Article Presentation (Post-Intervention)

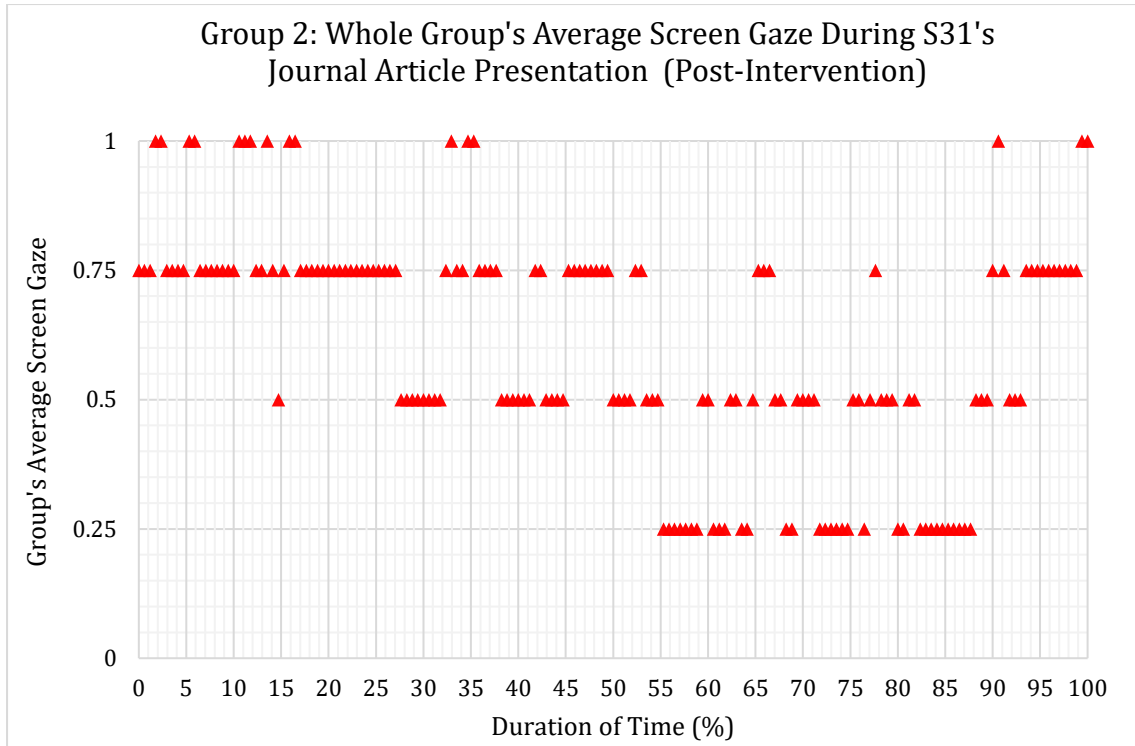


Figure C3.19: Whole Group's Screen Gaze During S31's Journal Article Presentation (Post-Intervention)

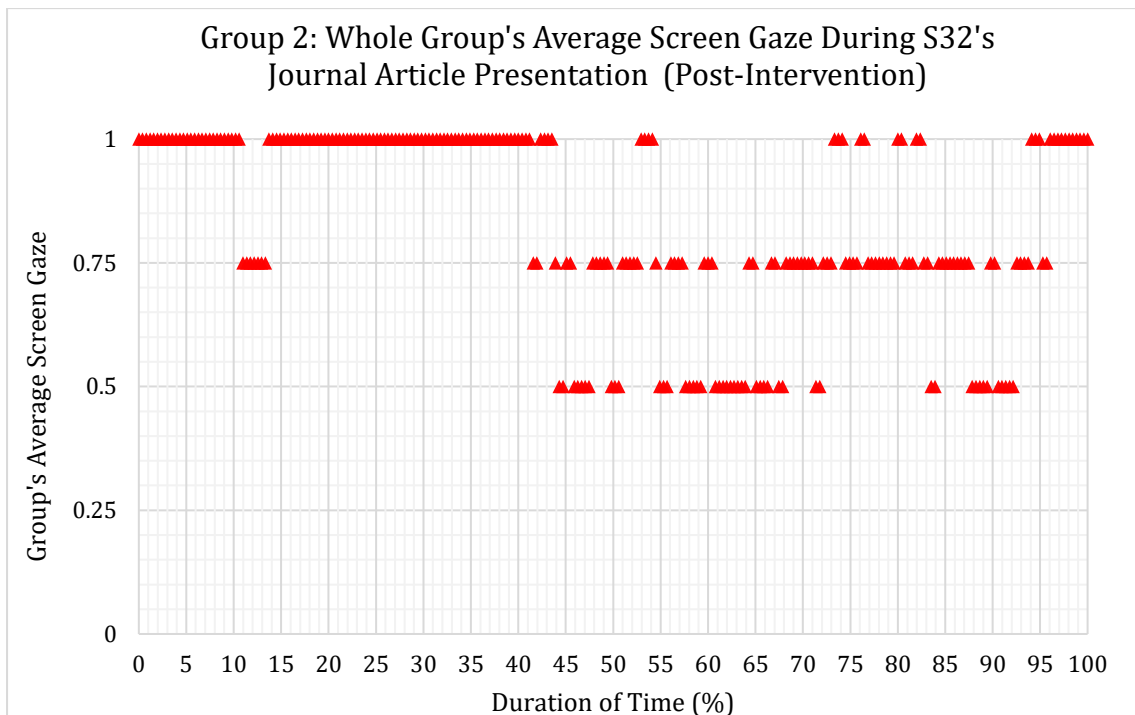


Figure C3.20: Whole Group's Screen Gaze During S32's Journal Article Presentation (Post-Intervention)

C.3.2.3. Group 2 - Whole Group's Average Screen Gaze During Pre-Intervention Discussions

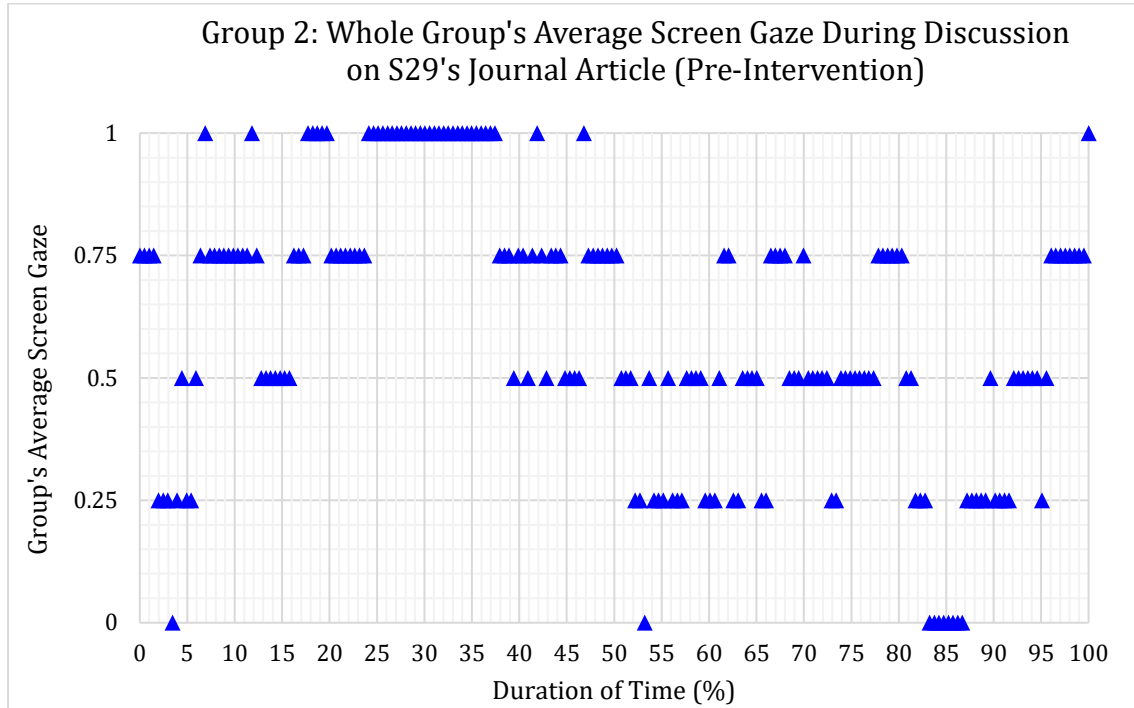


Figure C3.21: Whole Group's Screen Gaze During Group Discussion on S29's Journal Article Presentation (Pre-Intervention)

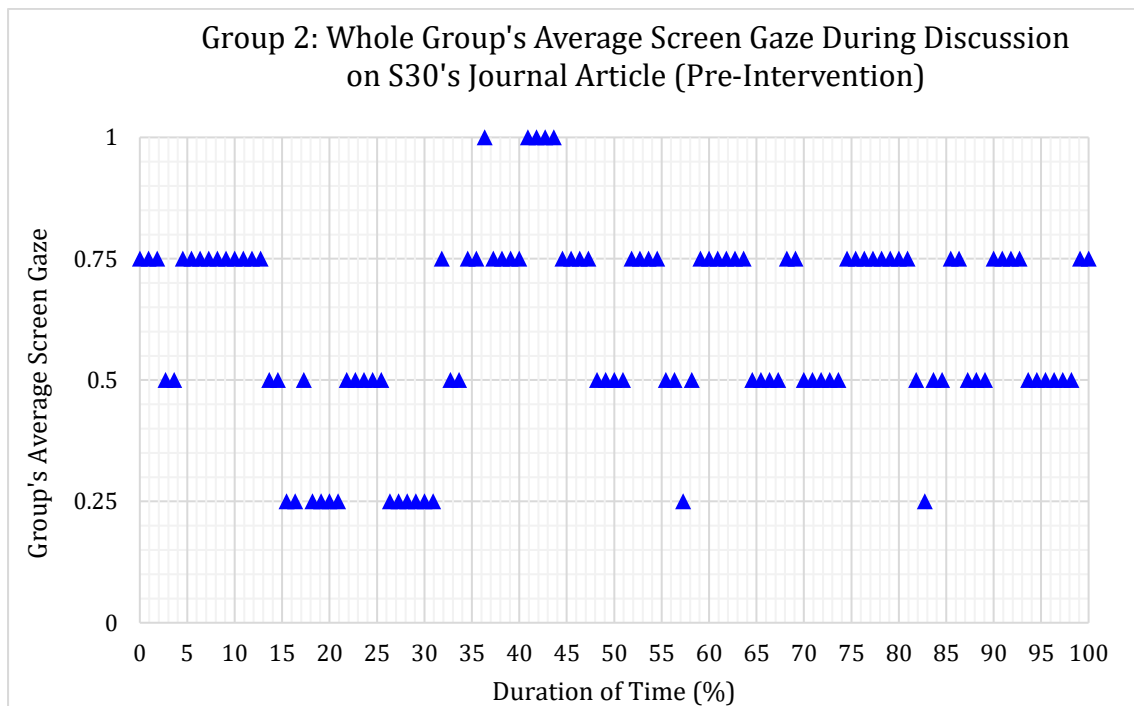


Figure C3.22: Whole Group's Screen Gaze During Group Discussion on S30's Journal Article Presentation (Pre-Intervention)

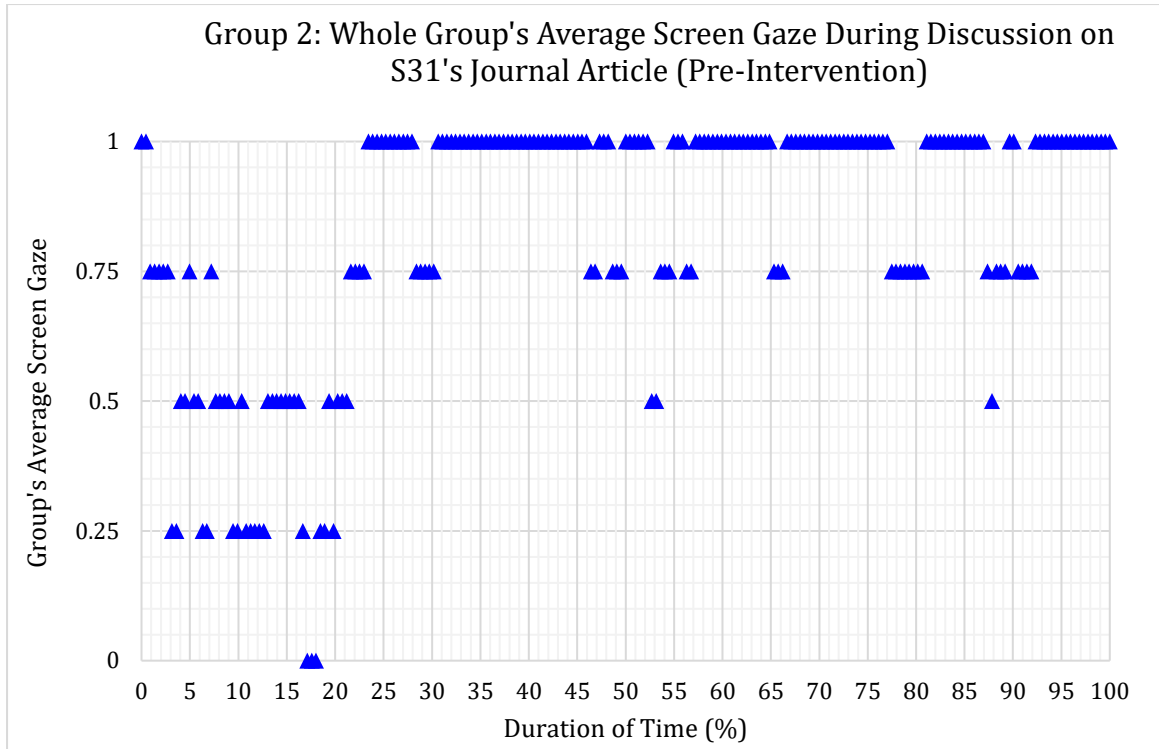


Figure C3.23: Whole Group's Screen Gaze During Group Discussion on S31's Journal Article Presentation (Pre-Intervention)

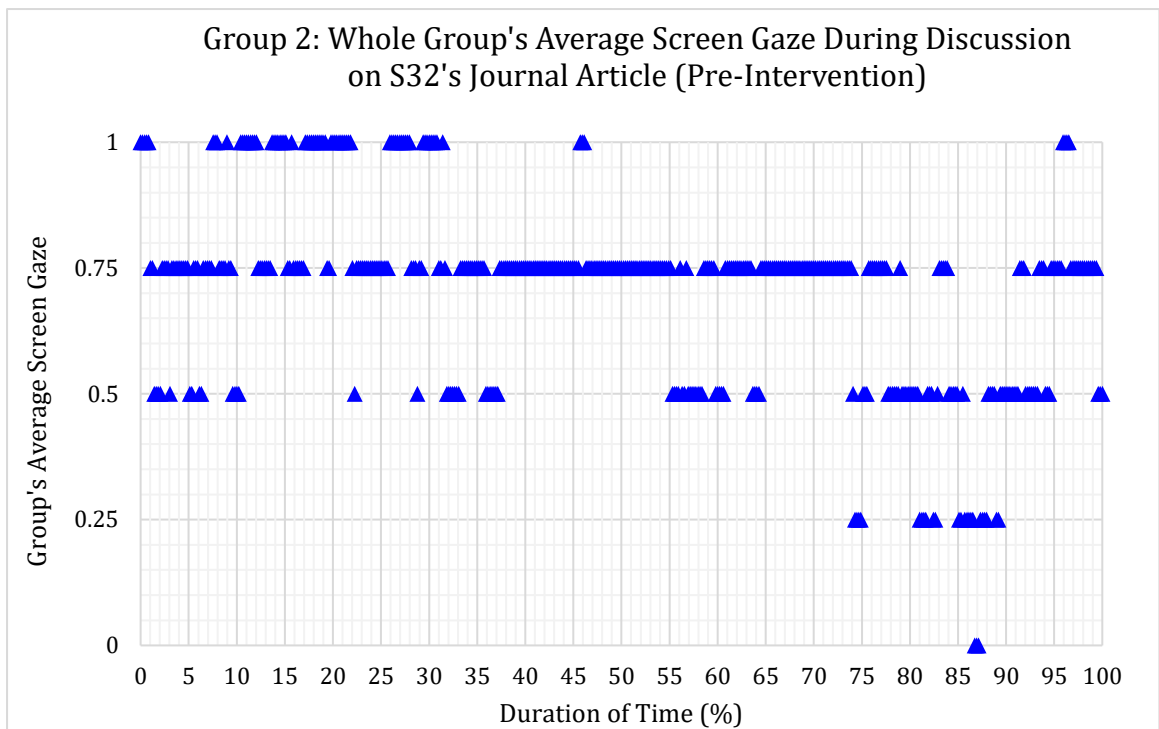


Figure C3.24: Whole Group's Screen Gaze During Group Discussion on S32's Journal Article Presentation (Pre-Intervention)

C.3.2.4. Group 2 - Whole Group's Average Screen Gaze During Post-Intervention Discussions

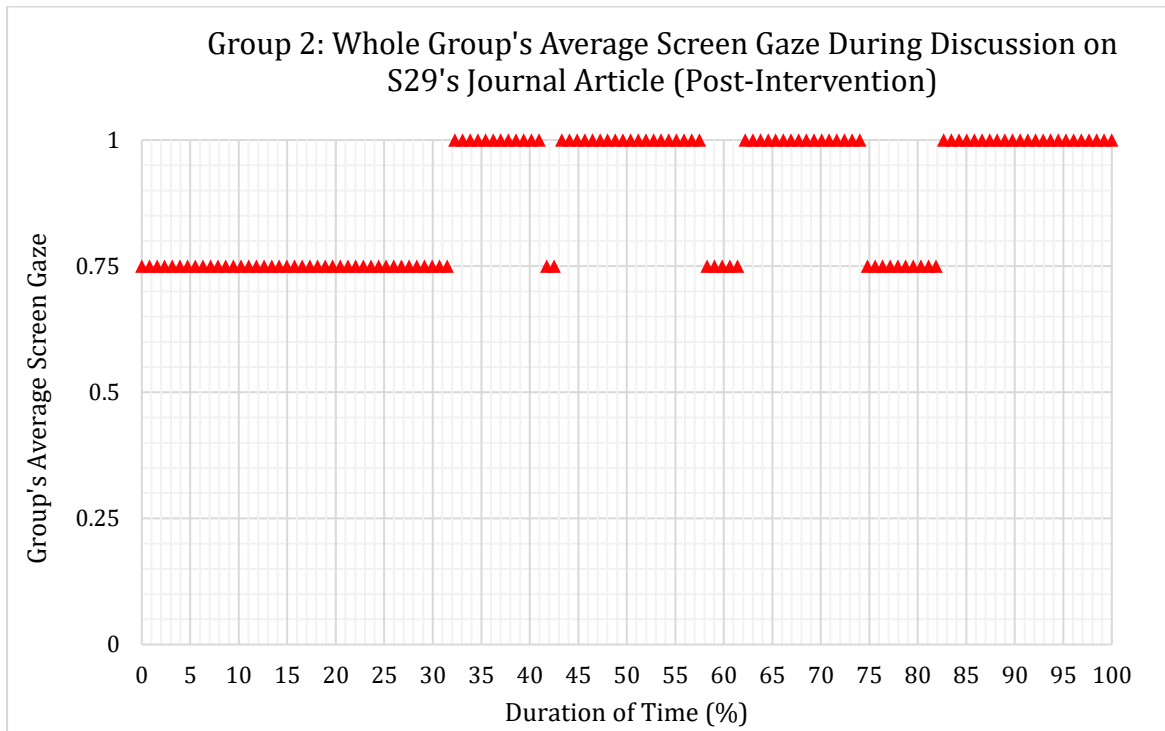


Figure C3.25: Whole Group's Screen Gaze During Group Discussion on S29's Journal Article Presentation (Post-Intervention)

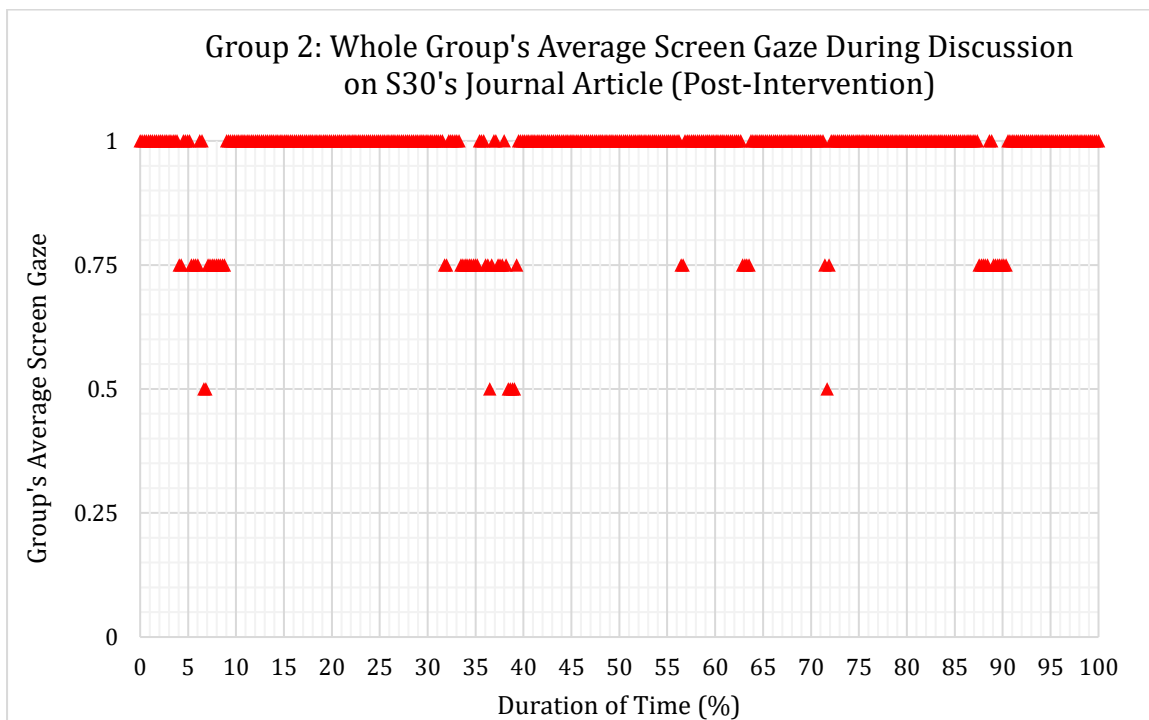


Figure C3.26: Whole Group's Screen Gaze During Group Discussion on S30's Journal Article Presentation (Post-Intervention)

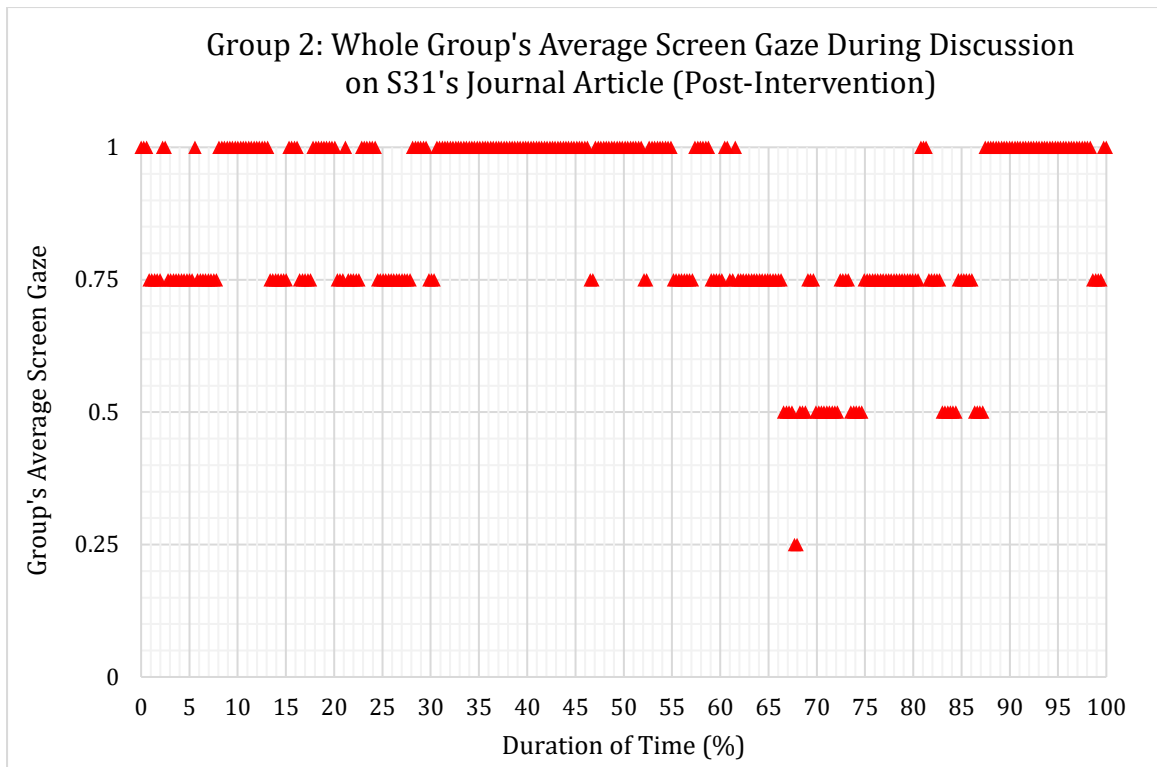


Figure C3.27: Whole Group's Screen Gaze During Group Discussion on S31's Journal Article Presentation (Post-Intervention)

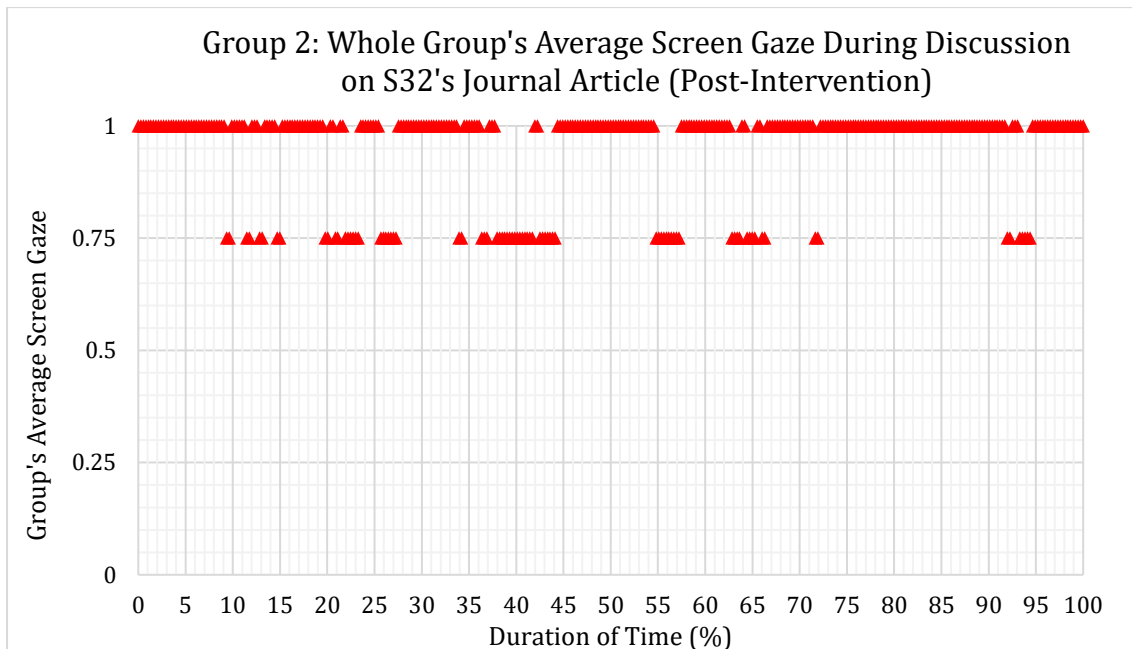


Figure C3.28: Whole Group's Screen Gaze During Group Discussion on S32's Journal Article Presentation (Post-Intervention)

C.3.3. Cycle 3: Group 3

C.3.3.1. Group 3 - Whole Group's Average Screen Gaze During Pre-Intervention Journal Article Presentations

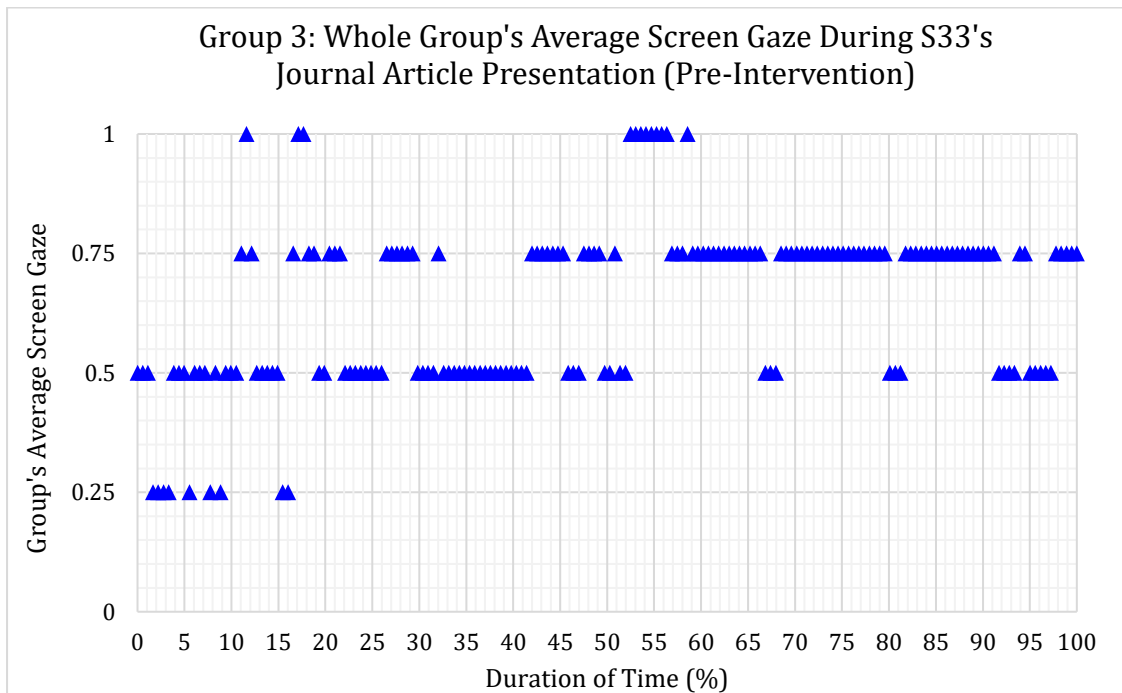


Figure C3.29: *Whole Group's Screen Gaze During S33's Journal Article Presentation (Pre-Intervention)*

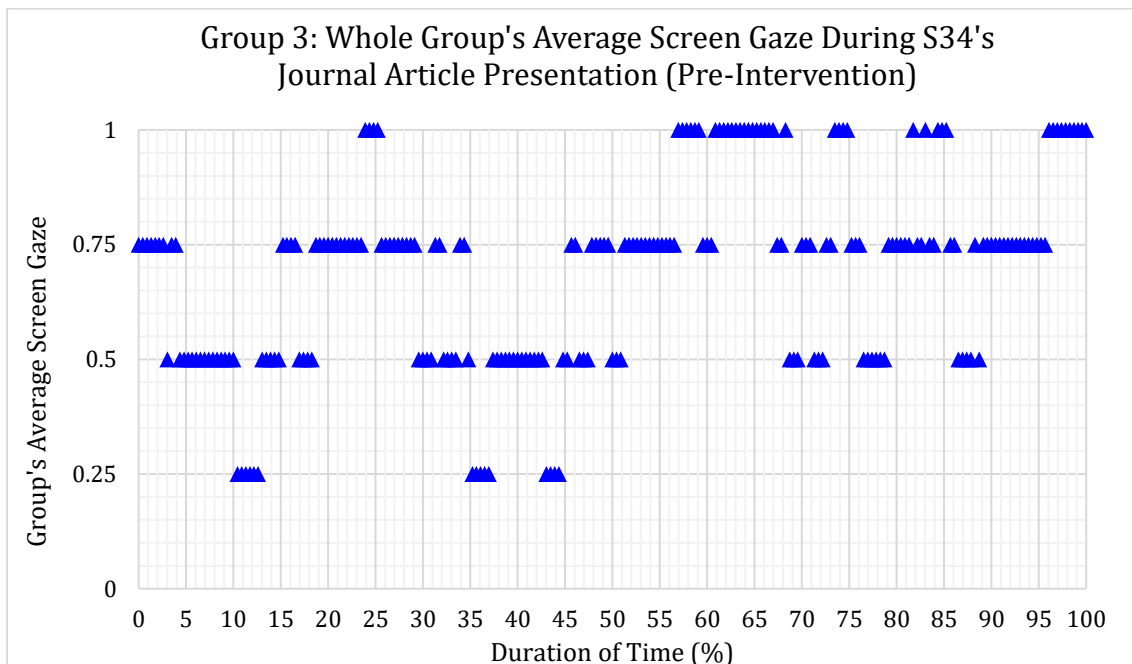


Figure C3.30: *Whole Group's Screen Gaze During S34's Journal Article Presentation (Pre-Intervention)*

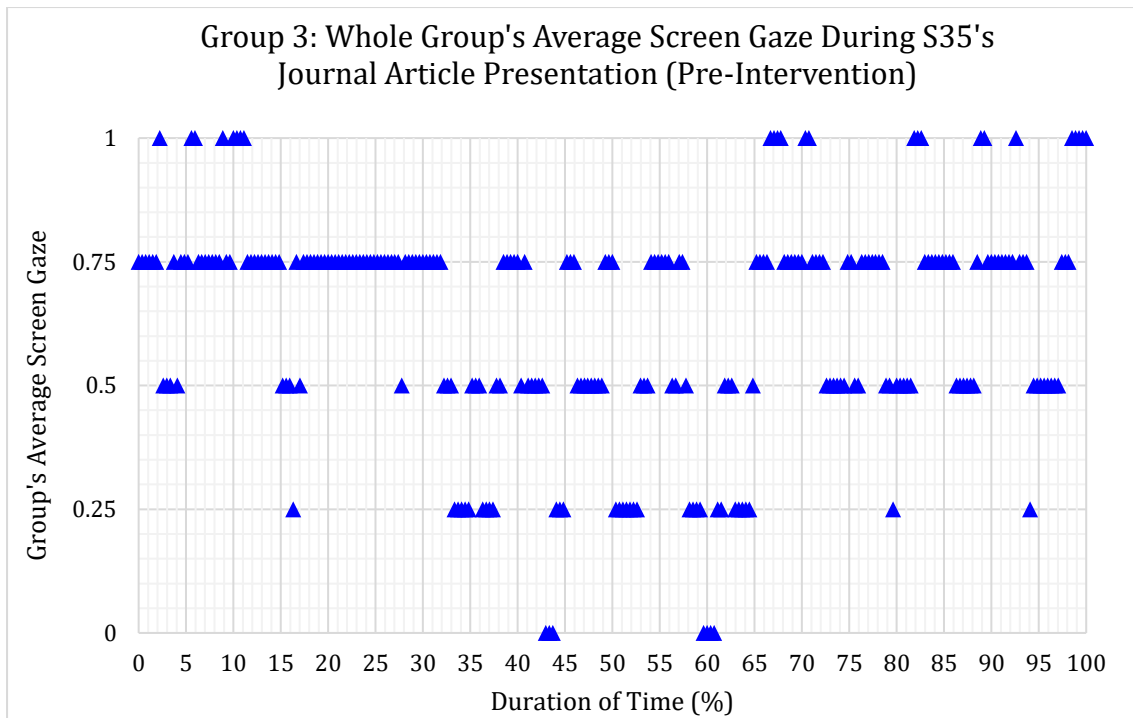


Figure C3.31: Whole Group's Screen Gaze During S35's Journal Article Presentation (Pre-Intervention)

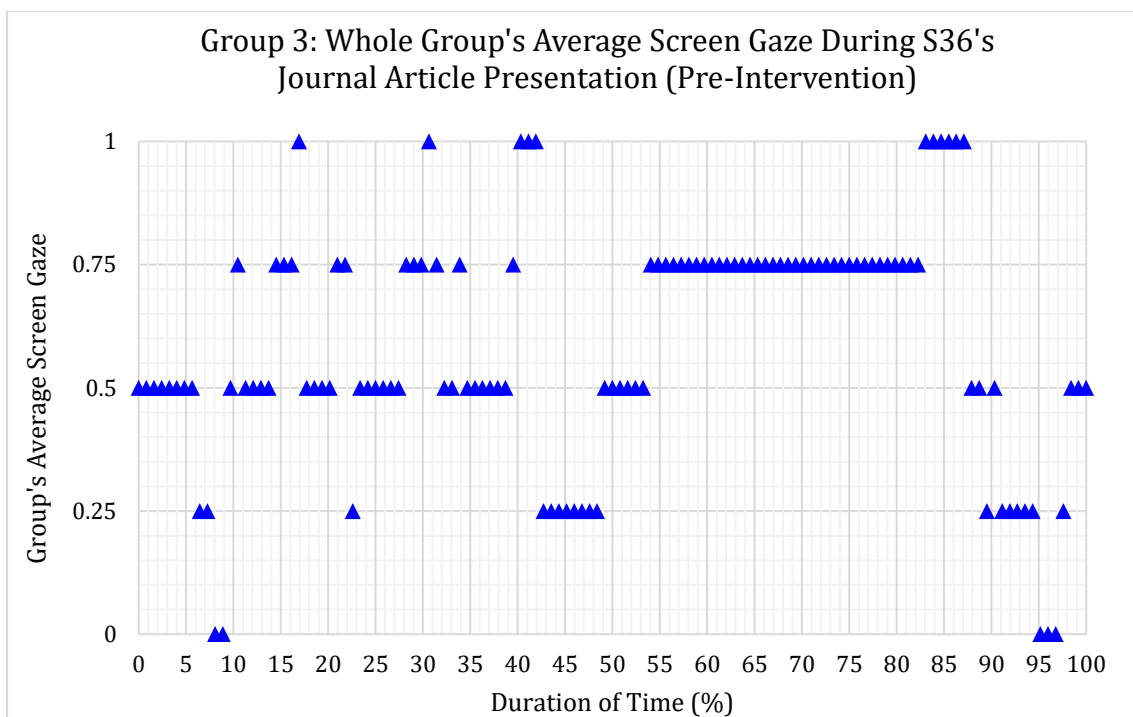


Figure C3.32: Whole Group's Screen Gaze During S36's Journal Article Presentation (Pre-Intervention)

C.3.3.2. Group 3 - Whole Group's Average Screen Gaze During Post-Intervention Journal Article Presentations

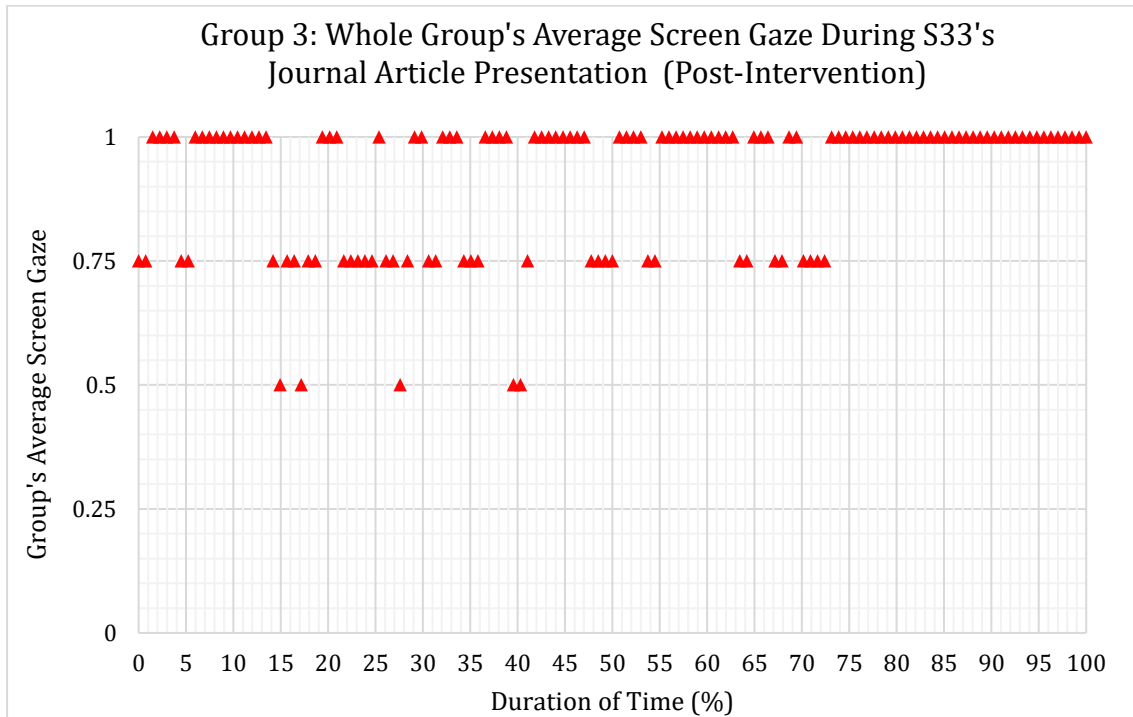


Figure C3.33: Whole Group's Screen Gaze During S33's Journal Article Presentation (Post-Intervention)

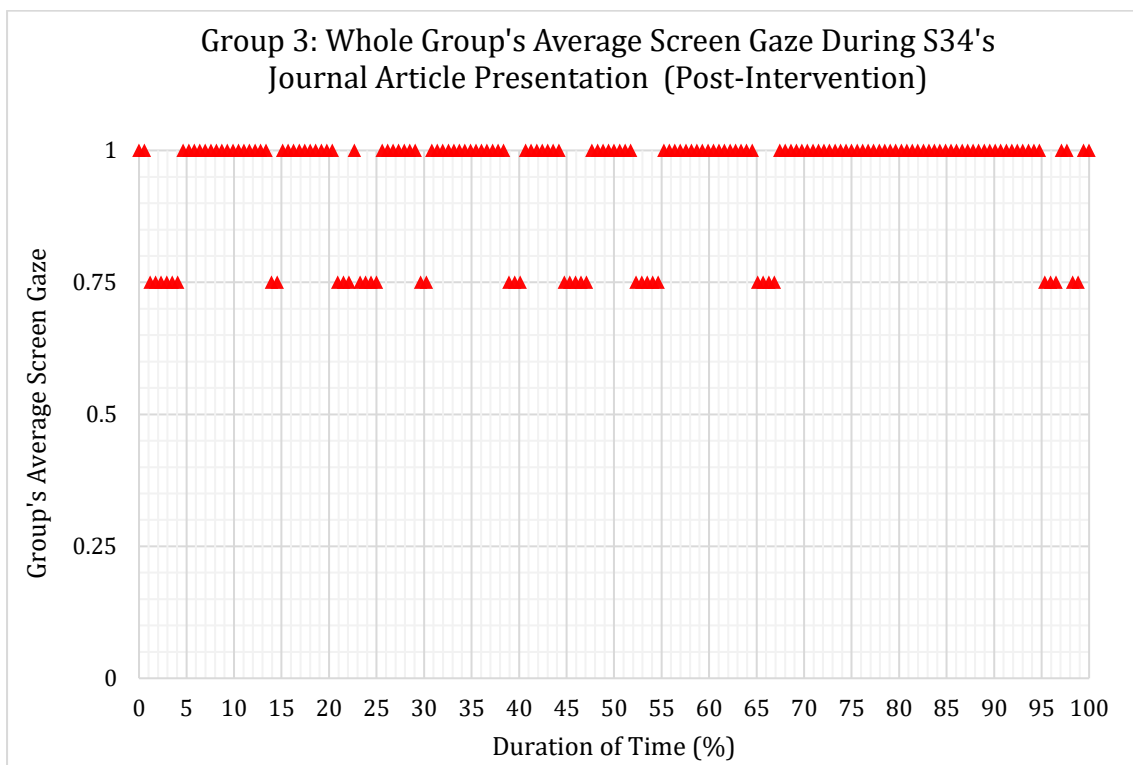


Figure C3.34: Whole Group's Screen Gaze During S34's Journal Article Presentation (Post-Intervention)

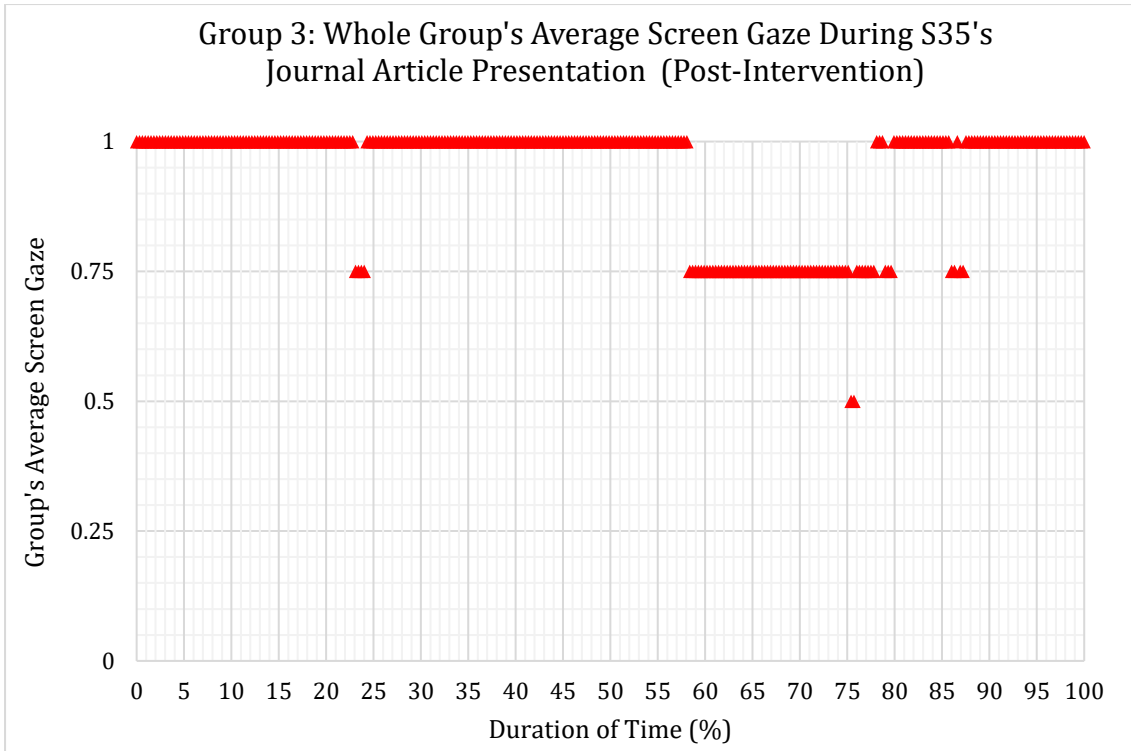


Figure C3.35: Whole Group's Screen Gaze During S35's Journal Article Presentation (Post-Intervention)

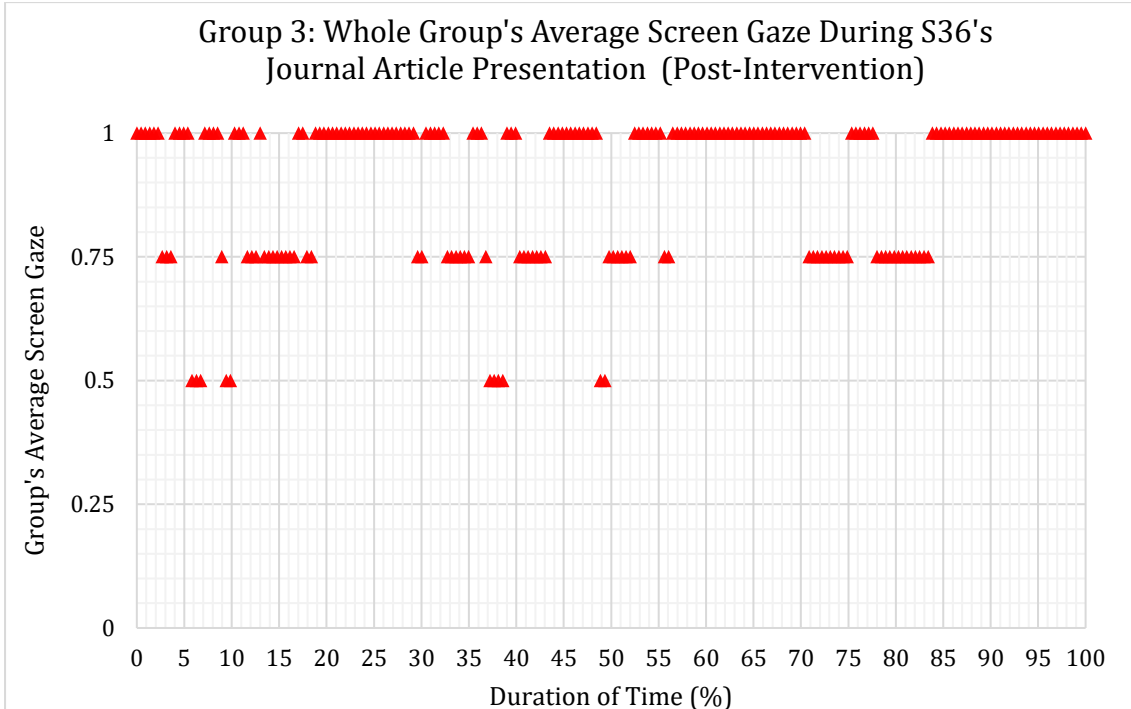


Figure C3.36: Whole Group's Screen Gaze During S36's Journal Article Presentation (Post-Intervention)

C.3.3.3. Group 3 - Whole Group's Average Screen Gaze During Pre-Intervention Discussions

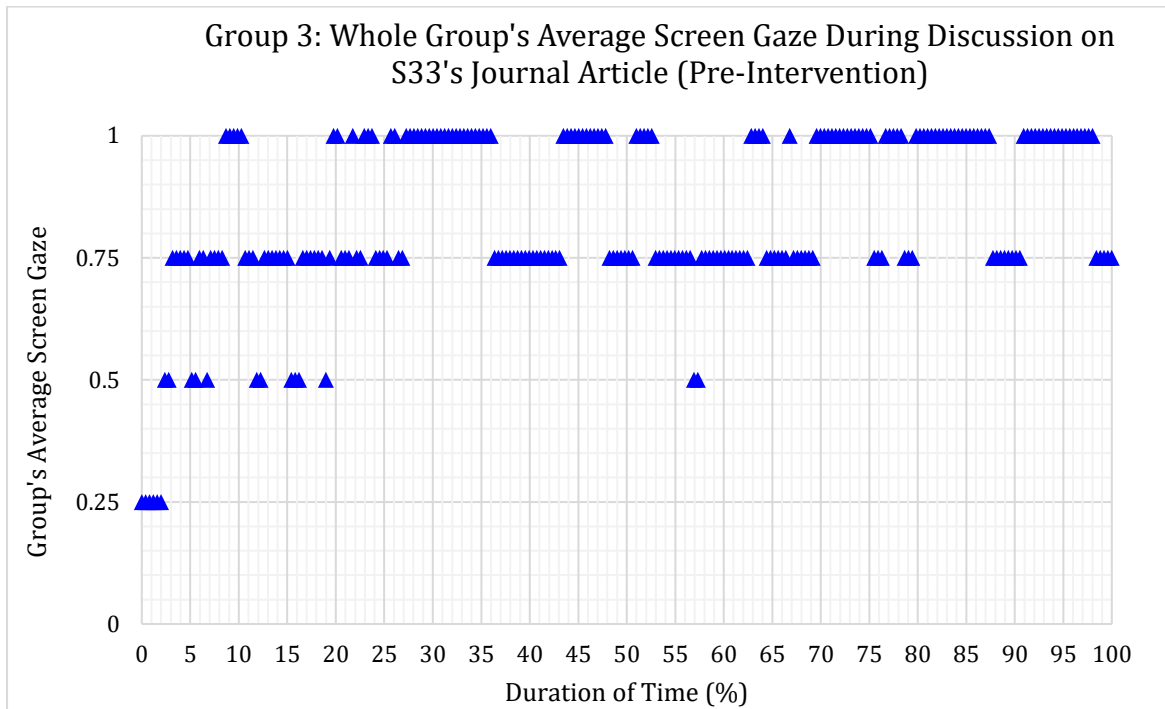


Figure C3.37: Whole Group's Screen Gaze During Group Discussion on S33's Journal Article Presentation (Pre-Intervention)

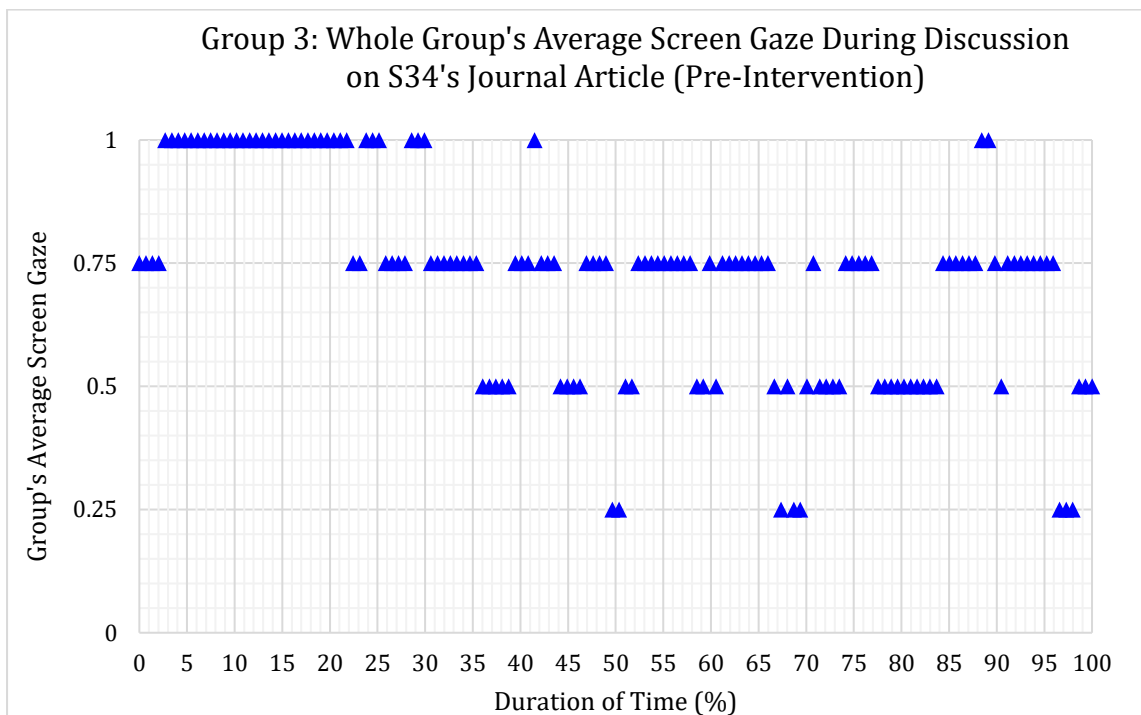


Figure C3.38: Whole Group's Screen Gaze During Group Discussion on S34's Journal Article Presentation (Pre-Intervention)

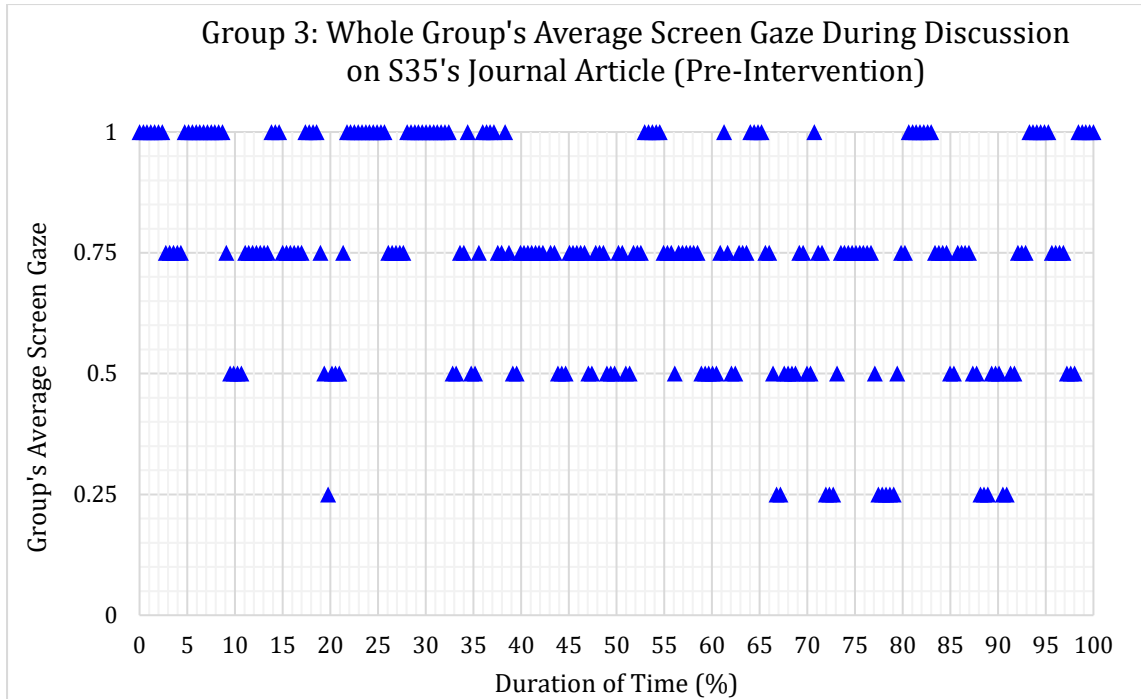


Figure C3.39: Whole Group's Screen Gaze During Group Discussion on S35's Journal Article Presentation (Pre-Intervention)

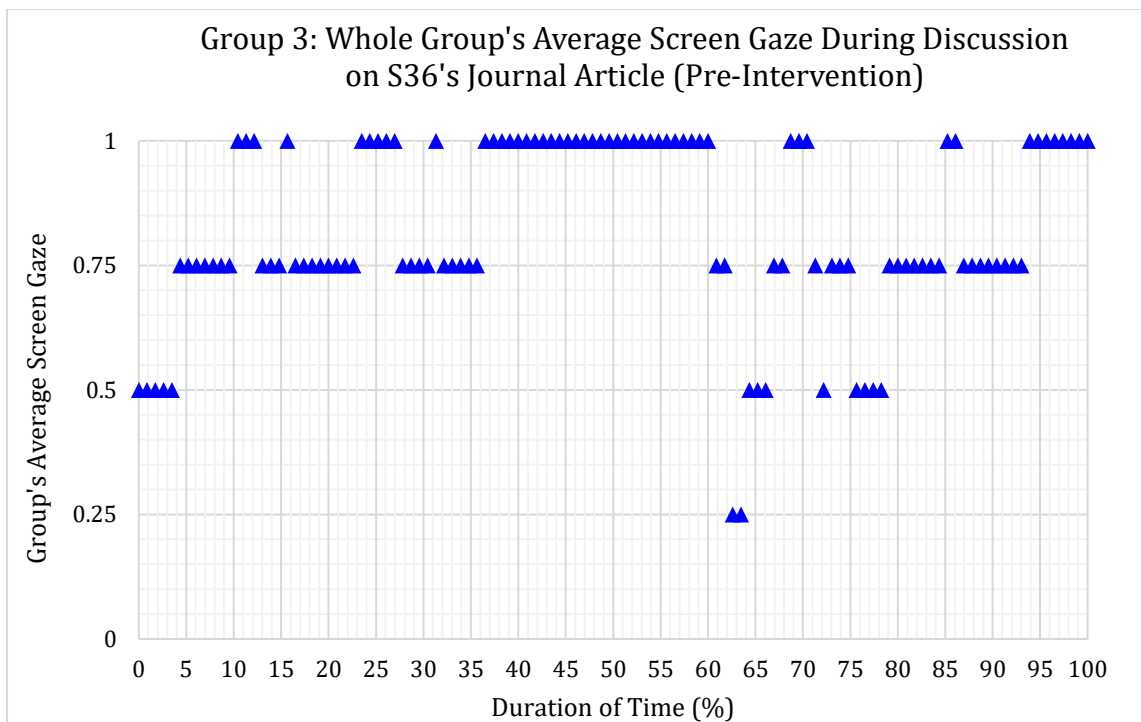


Figure C3.40: Whole Group's Screen Gaze During Group Discussion on S36's Journal Article Presentation (Pre-Intervention)

C.3.3.4. Group 3 - Whole Group's Average Screen Gaze During Post-Discussions

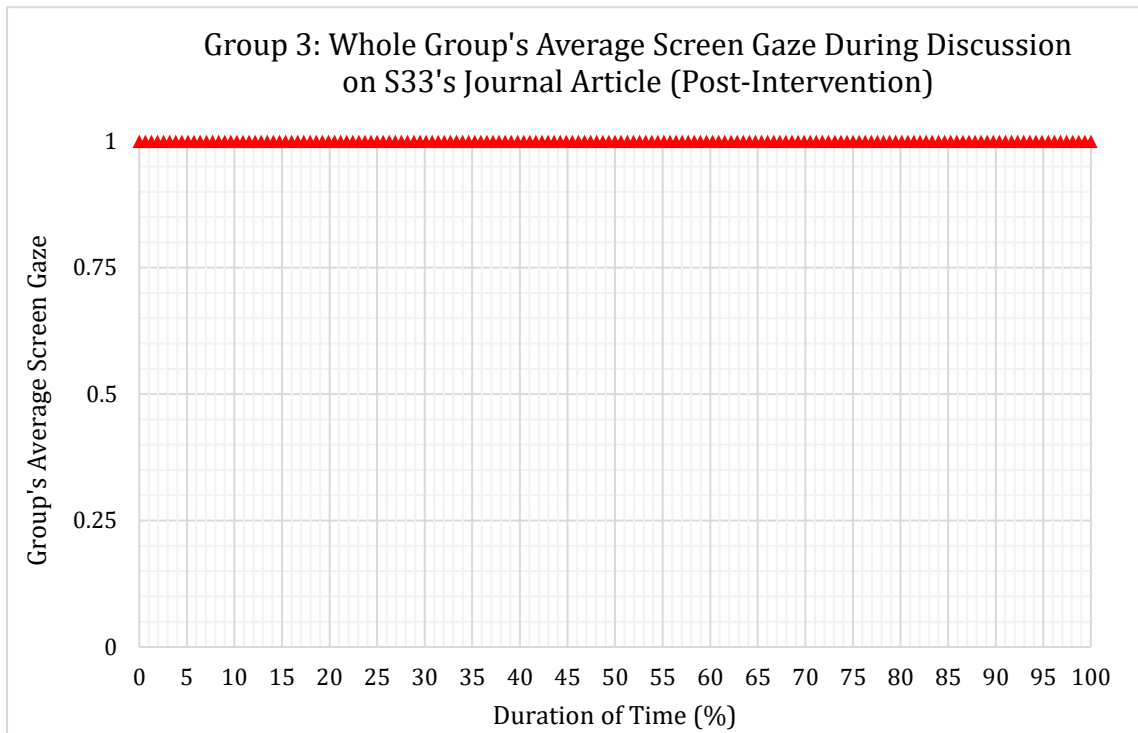


Figure C3.41: Whole Group's Screen Gaze During Group Discussion on S33's Journal Article Presentation (Post-Intervention)

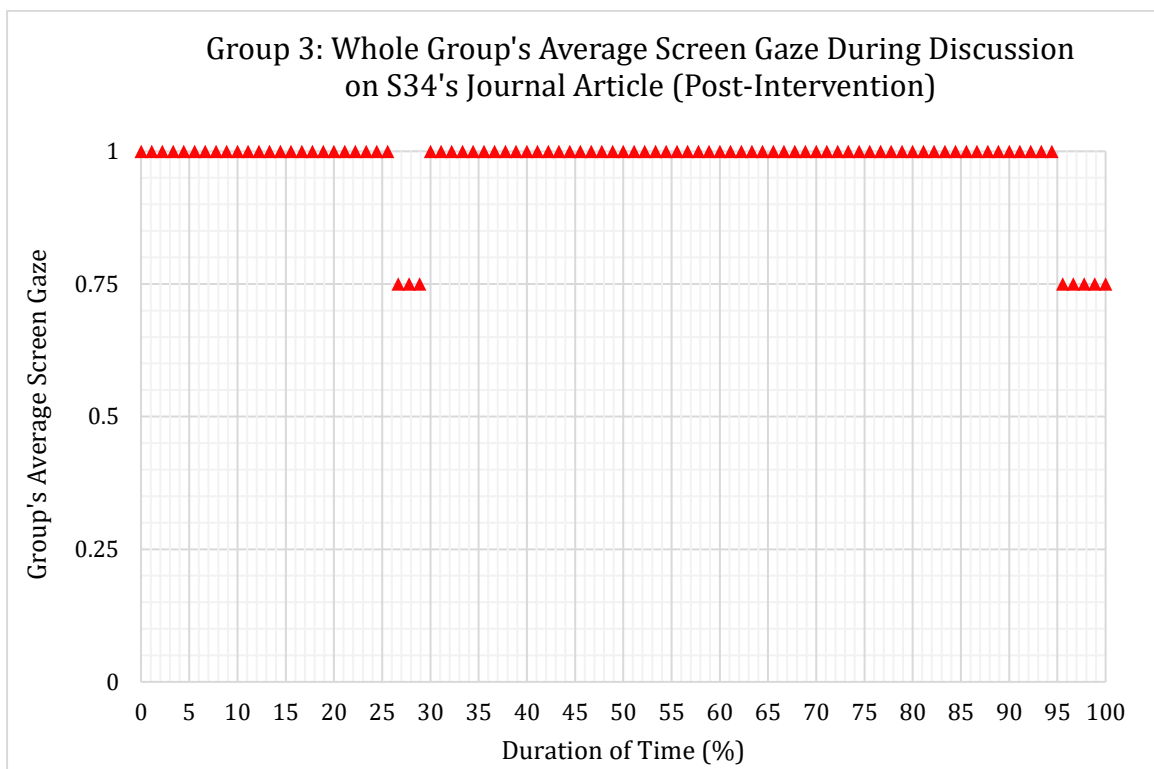


Figure C3.42: Whole Group's Screen Gaze During Group Discussion on S34's Journal Article Presentation (Post-Intervention)

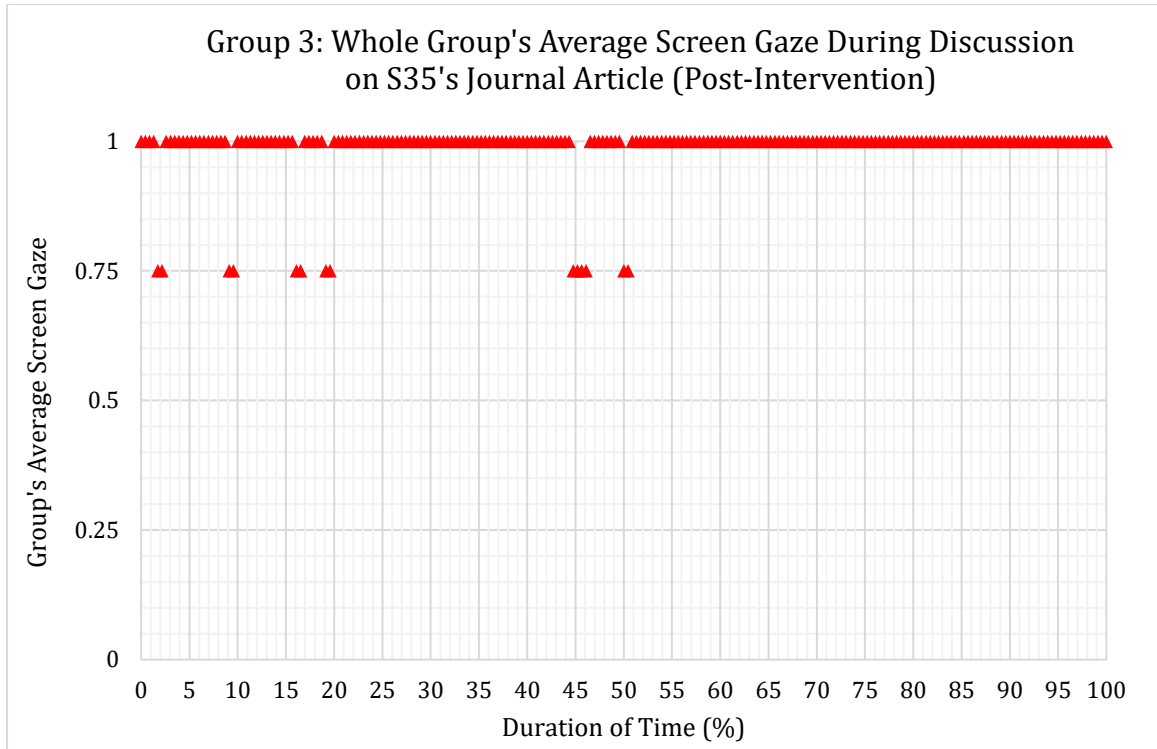


Figure C3.43: Whole Group's Screen Gaze During Group Discussion on S35's Journal Article Presentation (Post-Intervention)

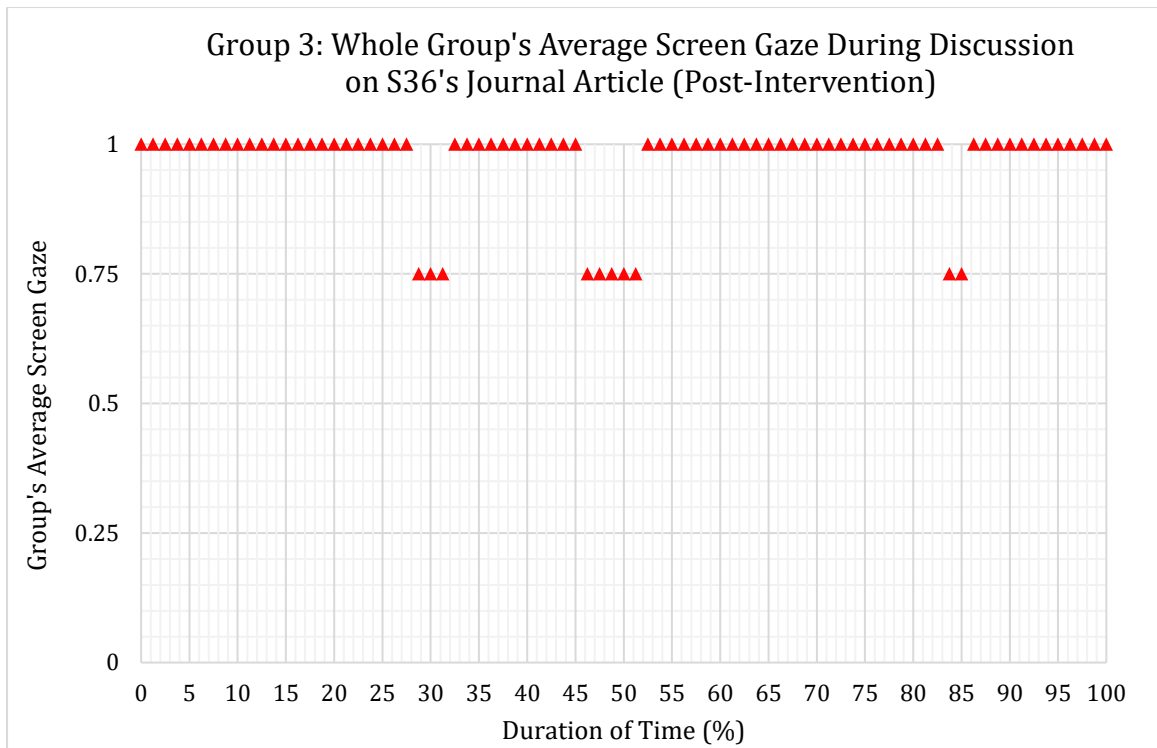


Figure C3.44: Whole Group's Screen Gaze During Group Discussion on S36's Journal Article Presentation (Post-Intervention)

Appendix C.4

C.4. Template Analysis of Focus Group Transcriptions – Cycle 3

Table C4.1: Example Student Statements on the Three Key Emergent Themes – Post-Intervention Focus Groups (Cycles 3)

Main Theme	Frequency	Cycle 3
		Pertinent Statements
Screen Gaze	24	<p>S24: <i>I read read read. I always read I don't [didn't] really look at their faces and asking the questions, so they are [were] boring, and I am [was] also boring. So, it collapsed everything, I think. But when we, when I use these compassionate strategies, it will bound together, bond together and give very knowledgeable and I think very beautiful group discussion. (TR, PostIFG, G1)</i></p> <p>S36: <i>I also try to understand the thing, what they came to say and in the same time I watched others that, is there any reactions in their faces that they are feeling that they are not understanding the thing, so I watched I watched for that also, but I think everyone is okay, with the articles because there's no such reactions in their faces while one is presenting. (TR, PostIFG, G3)</i></p> <p>S35: <i>When everyone [is] presenting today we don't have nervousness. Everyone did it in a very friendly manner. I can see smiling faces today. (TR, PostIFG, G3)</i></p> <p>S34: <i>But today I noticed everyone's face because before I've noticed only that mostly the presenter 's face, but here I noticed everyone's face. (TR, PostIFG, G3)</i></p> <p>S33: <i>They were happy and they smiling. (TR, PostIFG, G3)</i></p>

S34: *Yeah. I was able to see whether they understood, ... and we can understand ... by the reaction of others, whether they understood or not. (TR, PostIFG, G3)*

S34: *In here, I focused everyone's face. (TR, PostIFG, G3)*

S34: *they are just not focusing only and they are thinking about [what] they are presenting. (TR, PostIFG, G3)*

S35: *it's motivating and for the eye contact also making the compassionate activities further. Because when we see each other's eye contact, we don't think to go other side, we will more focusfully give that attention. (TR, PostIFG, G3)*

S36: *... while I'm [was] presenting, I noticed everyone's faces. (TR, PostIFG, G3)*

S33: *Yes, I also fully focused while listening. (TR, PostIFG, G3)*

S34: *For that we noticed each and everyone's facial expressions. (TR, PostIFG, G3)*

S36: *... but today, they expressed that they are listening to my presentation, or the others. (TR, PostIFG, G3)*

S35: *In the previous session everyone not focused [didn't focus] on the camera and [didn't] hear very carefully, but today, everyone focused on the camera ... more than that day. (TR, PostIFG, G3)*

S36: *in the previous sessions and the before, I'm not [didn't] notice the faces of others, while presenting. So, after this training program only, I tried to notice others face like, what the expressions, they are having, how they are showing that, it's clear about my point. So, I think it's because of this training. (TR, PostIFG, G3)*

S34: *Last week, it is difficult to focus on the presenter, but I think I have changed a bit because we are focusing [on] everyone's face while presenting and also when a person presents also, we are focusing [on] him, and I think that things changed. (TR, PostIFG, G3)*

S34: *So, by their facial expression, we can understand whether they understood or not. So, it was a change we saw today. (TR, PostIFG, G3)*

S36: *while I'm [was] presenting, I noticed everyone's faces. (TR, PostIFG, G3)*

		<p>S36: <i>So, the in the same like the eye contact, while I'm [was] presenting, I tried to notice everyone ' s face. (TR, PostIFG, G3)</i></p> <p>S36: <i>So, it's like everyone is seeing the camera. (TR, PostIFG, G3)</i></p>
Silences (Reduction)	16	<p>S24: <i>When our group discussion is ongoing, ... when we are silent, when S23 ' s performance is somewhat low, ... they encouraged S23. (TR, PostIFG, G1)</i></p> <p>S23: <i>Yeah ... thank you S24, otherwise I may not speak [00:49:26 S23 laughs] because of his help I can continue it. (TR, PostIFG, G1)</i></p> <p>S32: <i>Yeah, at the first session, ... That time it went with silence, but this time, there are different things, we said, 'thank you ' and ... they did appreciate, those things are different than the first session. (TR, PostIFG, G2)</i></p> <p>S22: <i>Yeah, it [CSCC] boosts ourselves to give more like asking, calling by someone, or asking the questions by someone [if there is a long silence], it will boost us. So, it will motivate me then it will surely motivate the others too. (TR, PostIFG, G1)</i></p> <p>S24: <i>Yes, of course I have noticed in many times, our group was silent inside because, sometimes we are thinking, ... how can I pick up my question. So likewise, I make up that questions in my mind. (TR, PostIFG, G1)</i></p> <p>S23: <i>Yeah, if you stuck, without any help we can't continue. We feel like when we stuck, so with the help of that question, we can continue means we can move on. (TR, PostIFG, G1)</i></p> <p>S29: <i>And also, we had lesser silences than the first session. I think all of you agree with me. Really lesser silences within the breaks than the first session. (TR, PostIFG, G2)</i></p> <p>S30: <i>For me it's like when someone is silent, probably because that person is stuck sometimes so when that comes to my mind, I really want to help that person. So, that's it all comes to my mind, I should help that person before it becomes awkward. So, I ' m going to casually invite the other person. For that's the kind of thought pattern that I did [in this session]. (TR, PostIFG, G2)</i></p> <p>S29: <i>I also really agree with S30. ...; that ' s the reason. (TR, PostIFG, G2)</i></p>

S36: ... actually, after one of our presenter[s] presented, I did not notice any silence, because everyone asked questions. (TR, PostIFG, G3)

S36: ...after S35 ' s network was dropped out, so I tried to put a message on the chat box ...So, I think on that case, I tried to invite S35 to back to present. (TR, PostIFG, G3)

S36: I think no one is [was] being silent throughout the session because they also tried to use the compassionate strategies. So, no one is being silent on this session. (TR, PostIFG, G3)

S34: ... as S36 said, everyone after presenting, everyone they were asking questions. So, we never noticed any silences. (TR, PostIFG, G3)

S33: I also not [didn ' t] notice any silences, all spoke and asked their questions and doubts. And we also gave our ideas. (TR, PostIFG, G3)

S36: ... after I finished the presenting, everyone tried to ask me questions, but S33 was silent. So, that's why I asked. So, I have, I have a small track that she understands [understood] what I said, because while I ' m [was] presenting, I noticed her face, but to clear that only, I asked S33, 'Do you have any questions?' like that. (TR, PostIFG, G3)

Nodding

26

S21: When they are responding to my research, nodding heads ...I feel happy because they have listened to my research carefully. (TR, PostIFG, G1)

S35: As S36 said, in the previous Monday session we rarely used nodding the head. But today, most of them did that. ... today, everyone focused on the camera and also nodded their heads more than that day. (TR, PostIFG, G3)

S36: I noticed that everyone is nodding their faces. But in the previous session, they are [were] not ..., but today, they expressed that they are listening to my presentation. (TR, PostIFG, G3)

S32: They were nodding like this. [S32 nods his head showing the reaction]. (TR, PostIFG, G2)

S34: Yeah, as S36 said, I also used nodding face. (TR, PostIFG, G3)

S33: Yes, I also nod my head. (TR, PostIFG, G3)

S35: *They were nodding their heads, it motivated to present. (TR, PostIFG, G3)*

S34: *Yeah. I was able to see whether they understood, by nodding the head they are trying to say they understood. (TR, PostIFG, G3)*

S36: *Definitely, like S34 and S33 said, while, if someone is presenting if we nod the head or if we see like if we see, if he expressed like we are listening to them, they will feel more more confident to present. (TR, PostIFG, G3)*

S36: *... nodding the face [head]. (TR, PostIFG, G3)*

S36: *... nodding the face nodding heads so on that, while using the strategies, the presenter will feel confident very confident and feel motivated to present. (TR, PostIFG, G3)*

S36: *If we don't use those kinds of strategies; like nodding the head or calling the name, he or she also feel like, 'They are not listening to me ' so they definitely feel demotivated and they will not tell the thing what they came to say. (TR, PostIFG, G3)*

S35: *By nodding the head, our mind will say, he's hearing something and taking some summary from my presentation, like that it's motivating and for the eye contact also making the compassionate activities further. (TR, PostIFG, G3)*

S36: *So, while presenting I tried to notice the other things also, their facial expressions are there nodding, are they listening, are there any changes in their face like they're having the doubt, so I that's not that's not I did in the last session, like in the Monday session, but after that compassionate training, I tried to use these strategies. (TR, PostIFG, G3)*

S36: *nodding their heads, (TR, PostIFG, G3)*

S35: *... but today, everyone focused on the camera and also nodding their heads more than that day. (TR, PostIFG, G3)*

S33: *Yes, after the previous session I also felt that all are nodding. (TR, PostIFG, G3)*

S34: *Yeah, as all said, we used nodding heads. (TR, PostIFG, G3)*

S33: *If we are nodding the heads, they have motivation and they have self-confidence to tell all these things. (TR, PostIFG, G3)*

S33: *If they're nodding the heads, we can tell, we have self-confidence and all these things. (TR, PostIFG, G3)*

S35: *There is no detachment because when they are nodding their heads. (TR, PostIFG, G3)*

S36: *nodding the face. (TR, PostIFG, G3)*

S33: *Yes, I also think that we have a change because of the compassionate strategies. Because we didn't do them in previous session, we didn't nod our heads. (TR, PostIFG, G3)*

S36: *Yes, it's definitely worth but I think in the online sessions, we have to use some like specific strategies like nodding the face and moving the hands and, like those kinds of special strategies we want. (TR, PostIFG, G3)*

S36: *On that case, if you use compression strategies if someone is presenting, he's not familiar with me like I'm listening to him, I expressed that I am listening to him and I nod the face, so while presenting he feels like 'okay he's listening to me'. (TR, PostIFG, G3)*

S36: *if we use those ... and like nodding the face and ... he will feel like, 'Okay, we want to maintain a good relationship with him.' (TR, PostIFG, G3)*

Appendix C.5

C.5. Ethnographic Field Notes – Cycle 3

C.5.1. Cycle 3/ Group 1: Pre-Intervention

C.5.1.1. Screen Gaze During Pre-Intervention Presentations of Journal Articles

S21's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S21's presentation

Total presentation time: 2 m and 48 s.

1. S21 breaks screen gaze with the group for a combined total of 2 m and 40 s as she switches off her video camera when she starts presenting.
2. S22 breaks screen gaze for a combined total of 1 m and 19 s.
3. S23 breaks screen gaze for a combined total of 1 m and 22 s.
4. S24 breaks screen gaze for a combined total of 1 m and 58 s.

S22's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S22's presentation

Total presentation time: 3 m and 22 s.

- 1.S22 breaks screen gaze with the group for a combined total of 1 m.
- 2.S21's screen gaze is mostly erratic as she breaks screen gaze for a combined total of 2 m and 55 s.
- 3.S23 breaks screen gaze for a combined total of 29 s.
- 4.S24 breaks screen gaze for a combined total of 14 s.

S23's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S23's presentation

Total presentation time: 3 m and 12 s.

1. S23 breaks screen gaze for a combined total of 2 m and 22 s with other group members during his presentation. The presenter appears to be mainly reading, eyes down, at the disadvantage of maintaining optimal screen gaze. He looks at his notes and presents without sustaining the screen gaze with the group throughout most of his presentation. His screen gaze connection to others is occasional and transitory.
2. S21 breaks screen gaze for a combined total of 1 m and 51 s.
3. S22 breaks screen gaze for a combined total of 49 s.
4. S24 also breaks screen gaze for a combined total of 27 s.

S24's Presentation

Group 1/Pre-intervention screen gaze and related behaviours of group members during S24's presentation

Total presentation time: 3 m and 24 s.

1. S24 breaks screen gaze for a combined total of 42 s.
2. S21 breaks screen gaze for a combined total of 46 s.
3. S22 breaks screen gaze for a combined total of 8 s.
4. S23 breaks screen gaze for a combined total of 38 s as he looks downward.

C.5.1.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles

Discussion of S21's Journal Article

Cycle 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S21.

Total discussion time: 2m and 15 s.

1. S21 breaks screen gaze for a combined total of 39 s.
2. S22 breaks screen gaze for a combined total of 43 s.
3. S23 breaks screen gaze for a combined total of 30 s as he looks away.
4. S24 also breaks screen gaze for a combined total of 45 s.

Discussion of S22's Journal Article

Group 1/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S22.

Total discussion time: 2 m and 9 s.

1. S22 breaks screen gaze for a combined total of 1 m and 2 s.
2. S21 breaks screen gaze for a combined total of 14 s.
3. S23 breaks screen gaze for a combined total of 19 s.
4. S24 breaks screen gaze for a combined total of 36 s.

Discussion of S23's Journal Article

Group 1/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S23.

Total discussion time: 1 m and 42 s.

1. S23 breaks screen gaze for a combined total of 16 s as he looks away during the discussion.
2. S21 breaks screen gaze for a combined total of 20 s.
3. S22 breaks screen gaze for a combined total of 36 s.
4. S24 breaks his screen gaze for a combined total of 45 s.

Discussion of S24's Journal Article

Group 1/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S24.

Total discussion time: 1 m and 13 s.

1. S24 breaks screen gaze for a combined total of 30 s.
2. S21 breaks screen gaze for a combined total of 8 s.
3. S22 breaks screen gaze for a combined total of 45 s.
4. S23 breaks screen gaze for a combined total of 20 s.

C.5.2. Cycle 3/ Group 1: Post-Intervention

C.5.2.1. Screen Gaze During Post-Intervention Presentations of Journal Articles

S21's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S21's presentation

Total presentation time: 4 m and 10 s.

1. S21 does not break screen gaze throughout her presentation.
2. S22 breaks screen gaze for a combined total of 16 s.
3. S23 breaks screen gaze for a combined total of 6 s but all the other time he sustains screen gaze.
4. S24 does not break screen gaze throughout during S21's presentation.

S22's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S22's presentation

Total presentation time: 3 m and 3 s.

1. S22 breaks screen gaze for a combined total of 47 s with the group during her presentation.
2. S21 breaks screen gaze for a combined total of 2 s.
3. S23 breaks screen gaze for a combined total of 7 s.
4. S24 breaks screen gaze for a combined total of 3 s.

S23's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S23's presentation

Total presentation time: 3 m and 26 s.

1. S23 breaks screen gaze for a combined total of 1 m.
2. S21 breaks screen gaze for a combined total of 12 s.
3. S22 breaks screen gaze for a combined total of 18 s.
4. S24 does not break screen gaze with the group without breaking screen gaze.

S24's Presentation

Group 1/Post-intervention screen gaze and related behaviours of group members during S24's presentation

Total presentation time: 4 m and 8 s.

1. S24 breaks screen gaze for a combined total of 1 m.
2. S21 does not break screen gaze during S24's presentation.
3. S22 does not break screen gaze during S24's presentation.
4. S23 breaks screen gaze for a combined total of 8 s.

C.5.2.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S21's Journal Article

Group 1/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S21.

Total discussion time: 5 m and 26 s.

1. S21 breaks screen gaze for a combined total of 3 s.
2. S22 breaks screen gaze for a combined total of 55 s.
3. S23 breaks screen gaze for a combined total of 45 s.
4. S24 breaks screen gaze for a combined total of 2 s.

Discussion of S22's Journal Article

Group 1/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S22.

Total discussion time: 2 m and 15 s.

1. S22 breaks screen gaze for a combined total of 16 s.
2. S21 does not break screen gaze with the group during the whole of discussion time.
3. S23 breaks screen gaze for a combined total of 15 s.
4. S24 does not break screen gaze during the whole discussion of S22's journal article.

Discussion of S23's Journal Article

Group 1/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S23.

Total discussion time: 2 m and 53 s.

1. S23 breaks screen gaze for a combined total of 7 s.
2. S21 does not break screen gaze during the whole discussion time of S23's journal article.
3. S22 breaks screen gaze for a combined total of 32 s.
4. S24 breaks screen gaze for a combined total of 11 s.

Discussion of S24's Journal Article

Group 1/Post-intervention screen gaze and related behaviours of group members during the discussion on the article presented by S24.

Total presentation time: 4 m and 10 s.

1. S24 breaks screen gaze for a combined total of 10 s.
2. S21 does not break screen gaze during the whole discussion of S24's journal article.
3. S22 breaks screen gaze for a combined total of 1 m and 12 s.
4. S23 breaks screen gaze for a combined total of 43 s.

C.5.3. Cycle 3/ Group 2: Pre-Intervention*C.5.3.1. Screen Gaze During Pre-Intervention Presentations of Journal Articles*

S29's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S29's presentation

Total presentation time: 4 m and 24 s.

1. S29 breaks screen gaze for a combined total of 31 s with the group during his presentation.
2. S30 breaks screen gaze for a combined total of 41 s during S29's presentation.
3. S31 breaks screen gaze for a combined total of 1 m and 17 s.
4. S32 also breaks screen gaze for a combined total of 2 m and 18 s.

S30's Presentation

Cycle 3/Pre-intervention screen gaze and related behaviours of group members during S30's presentation

Total presentation time: 5 m and 19 s.

1. S30 breaks screen gaze for a combined total of 1 m and 11 s.
2. S29 breaks screen gaze for a combined total of 1 m and 20 s.
3. S31 breaks screen gaze for a combined total of 2 m and 36 s.
4. S32 breaks screen gaze with the group for a combined total of 1 m and 25 s during S30's presentation.

S31's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S31's presentation

Total presentation time: 3 m and 45 s.

1. S31 breaks screen gaze for a combined total of 3 m and 38 s with other group members during her presentation.
2. S29 breaks screen gaze for a combined total of 1 m and 18 s during S31's presentation.
3. S30 breaks screen gaze for a combined total of 1 m and 9 s.
4. S32 breaks screen gaze for a combined total of 2 m and 16 s during S31's presentation.

S32's Presentation

Group 2/Pre-intervention screen gaze and related behaviours of group members during S32's presentation

Total presentation time: 4 m and 21 s.

1. S32 breaks screen gaze for a combined total of 36 s.
2. S29 breaks screen gaze for a combined total of 1 m and 34 s.
3. S30 breaks screen gaze for a combined total of 21 s.
4. S31 breaks screen gaze for a combined total of 4 m and 15 s (looks away).

C.5.3.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles

Discussion of S29's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S29.

Total discussion time: 3 m and 23 s.

1. S29 breaks screen gaze for a combined total of 1 m.
2. S30 breaks screen gaze for a combined total of 49 s.
3. S31 breaks screen gaze for a combined total of 2 m as she looks away.
4. S32 also breaks screen gaze for a combined total of 1 m and 35 s during this discussion as he looks downward.

Discussion of S30's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S30.

Total discussion time: 1 m and 50 s.

1. S30 breaks screen gaze for a combined total of 31 s during her presentation.
2. S29 breaks screen gaze for a combined total of 20 s.
3. S31 breaks screen gaze for a combined total of 1 m and 39 s.
4. S32 breaks screen gaze (looks away) for a combined total of 24 s during the discussion.

Discussion of S31's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S31.

Total discussion time: 3 m and 42 s

1. S31 breaks screen gaze for a combined total of 54 s as she looks away during the discussion.
2. S29 breaks screen gaze for a combined total of 50 s.
3. S30 breaks screen gaze for a combined total of 8 s.
4. S32 breaks screen gaze for a combined total of 38 s during the discussion.

Discussion of S32's Journal Article

Group 2/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S32.

Total discussion time: 8 m and 10 s.

1. S32 breaks screen gaze for a combined total of 1 m and 3 s.
2. S29 breaks screen gaze (looks downward) for a combined total of 2 m and 21 s.
3. S30 breaks screen gaze for a combined total of 1 m and 26 s.
4. S31 breaks screen gaze for a combined total of 5 m and 47 s.

C.5.4. Cycle 3/ Group 2: Post-Intervention*C.5.4.1. Screen Gaze During Post-Intervention Presentations of Journal Articles*

S29's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S29's presentation

Total presentation time: 9 m and 27 s

1. S29 sustains screen gaze throughout the whole presentation.
2. S30 breaks screen gaze for a combined total of 20 s and she sustains screen gaze during most of S29's presentation.
3. S31 breaks screen gaze for a combined total of 17 s and all the other times she sustains screen gaze.
4. S32 breaks screen gaze only for a combined total of 14 s during S29's presentation and all the other times he sustains screen gaze.

S30's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S30's presentation

Total presentation time: 7 m and 1 s.

1. S30 breaks screen gaze for a combined total of 5 s.
2. S29 breaks screen gaze for a combined total of 12 s and he continues to look at the screen during most of S30's presentation.
3. S31 breaks screen gaze for a combined total of 22 s and she sustains screen gaze during most of S30's presentation.
4. S32 breaks screen gaze for a combined total of 4 s and he sustains screen gaze during most of S30's presentation.

S31's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S31's presentation

Total presentation time: 2 m and 50 s.

1. S31 encounters technical difficulty during her presentation as she is disconnected numbers of times. Hence, her screen gaze throughout her presentation is unstable for a combined total of 1 m and 36 s. However, she sustains screen gaze at every time when she is technically connected with the group.
2. S29 breaks screen gaze for a combined total of 1 m and 32 s and he sustains screen gaze during S31's presentation for a combined total of 1 m and 18 s.
3. S30 breaks screen gaze only for 2 s and she sustains screen gaze during most of S31's presentation.
4. S32 breaks screen gaze for a combined total of 1 m and 10 s and he sustains screen gaze during most of S31's presentation.

S32's Presentation

Group 2/Post-intervention screen gaze and related behaviours of group members during S32's presentation

Total presentation time: 4 m and 15 s.

1. S32 breaks screen gaze for a combined total of 1 m and 7 s.
2. S29 breaks screen gaze for a combined total of 26 s.
3. S30 breaks screen gaze for a combined total of 7 s.
4. S31 breaks screen gaze only for a combined total of 1 m and 9 s.

C.5.4.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S29's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S29.

Total discussion time: 2 m and 7 s

1. S29 breaks screen gaze for a combined total of 7 s and he sustains screen gaze during most of this discussion.
2. S30 sustains screen gaze throughout the whole discussion time.
3. S31 breaks screen gaze for a combined total of 40 s and she sustains screen gaze during most of the discussion of S29's journal article.
4. S32 breaks screen gaze for a combined total of 10 s and he sustains screen gaze during most of the discussion of S29's journal article.

Discussion of S30's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S30.

Total discussion time: 7 m and 46 s

1. S30 breaks screen gaze for a combined total of 9 s as she sustains screen gaze during most of the discussion time.
2. S29 breaks screen gaze for a combined total of 16 s and he sustains screen gaze during most of the discussion of S30's journal article.
3. S31 breaks screen gaze for a combined total of 5 s and sustains screen gaze throughout the discussion of S30's journal article. She.
4. S32 breaks screen gaze for a combined total of 39 s and he sustains screen gaze for most of the discussion of S30's journal article.

Discussion of S31's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S31.

Total discussion time: 5 m and 59 s

1. S31 breaks screen gaze for a combined total of 1 m and 15 s, and he sustains screen gaze during most of the discussion.
2. S29 breaks screen gaze for a combined total of 1 m and 28 s and he sustains screen gaze during most of the discussion of S31's journal article.
3. S30 sustains screen gaze throughout the discussion of S31's journal article.
4. S32 breaks screen gaze for a combined total of 31 s and he sustains screen gaze during most of the discussion of S32's journal article.

Discussion of S32's Journal Article

Group 2/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S32.

Total discussion time: 6 m and 14 s

1. S32 breaks screen gaze for a combined total of 56 s and he sustains screen gaze during most of the discussion time.
2. S29 breaks screen gaze for a combined total of 7 s and he sustains screen gaze during most of the discussion time of S32's journal article.
3. S30 breaks screen gaze only for a combined total of 6 s and she sustains screen gaze during most of the discussion of S32's journal article.
4. S31 breaks screen gaze for a combined total of 9 s and she sustains screen gaze during most of the discussion time.

C.5.5. Cycle 3/ Group 3: Pre-Intervention*C.5.5.1. Screen Gaze During Pre-Intervention Presentations of Journal Articles*

S33's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S33's presentation

Total presentation time: 3 m and 1 s

1. S33 breaks screen gaze for a combined total of 51 s during her presentation.
2. S34 breaks his screen gaze for a combined total of 15 s during S33's presentation.
3. S35 breaks screen gaze for a combined total of 2 m and 39 s.
4. S36 also breaks screen gaze for a combined total of 35 s.

S34's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S34's presentation

Total presentation time: 3 m and 50 s

1. S34 breaks screen gaze for a combined total of 1 m and 46 s.
2. S33 breaks screen gaze for a combined total of 17 s.
3. S35 breaks screen gaze for a combined total of 2 m and 9 s.
4. S36 breaks screen gaze for a combined total of 35 s.

S35's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S35's presentation

Total presentation time: 4 m and 30 s

1. S35 breaks screen gaze for a combined total of 3 m and 22 s with other group members during his presentation. Only after he finishes presenting the journal article S35 looks at the screen as most of his presentation time he looks at his paper, eyes were down.
2. S33 breaks screen gaze for a combined total of 40s during S35's presentation.
3. S34 breaks screen gaze for a combined total of 2 m.
4. S36 breaks screen gaze for a combined total of 1 m and 30 s.

S36's Presentation

Group 3/Pre-intervention screen gaze and related behaviours of group members during S36's presentation

Total presentation time: 2 m and 4 s

1. S36 breaks screen gaze for a combined total of 55 s.
2. S33 breaks screen gaze for a combined total of 21 s.
3. S34 breaks screen gaze for a combined total of 54 s.
4. S35 breaks screen gaze for a combined total of 1 m and 18 s.

C.5.5.2. Screen Gaze During Pre-Intervention Discussions of Journal Articles

Discussion of S33's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S33.

Total discussion time: 4 m and 13 s.

1. During the discussion of the journal article presented by S33 for 4 m and 13 s, S33 breaks screen gaze for 2 s.
2. S34 breaks screen gaze for a combined total of 43 s.
3. S35 breaks screen gaze for a combined total of 1 m and 30 s as he looks away.
4. S36 also breaks screen gaze for a combined total of 20 s during this discussion as he looks downward.

Discussion of S34's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S34.

Total discussion time: 2 m and 27 s.

1. S34 breaks screen gaze for 39 s with other group members. S34 breaks screen gaze for a combined total of 18 s.
2. S33 breaks screen gaze for a combined total of 10 s.
3. S35 breaks screen gaze for a combined total of 1 m and 10 s.
4. S36 breaks screen gaze for a combined total of 41 s during the discussion.

Discussion of S35's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the journal article presented by S35.

Total discussion time: 4 m and 13 s.

1. S35 breaks screen gaze for a combined total of 1 m and 51 s as he looks away during the discussion.
2. S33 breaks screen gaze for a combined total of 16 s.
3. S34 breaks screen gaze for a combined total of 1 m and 12 s.
4. S36 breaks screen gaze for a combined total of 57 s.

Discussion of S36's Journal Article

Group 3/Pre-intervention screen gaze and related behaviours of group members during discussion on the article presented by S36.

Total discussion time: 1 m and 55 s.

1. S36 breaks screen gaze for a combined total of 17 s.
2. S33 breaks screen gaze for a combined total of 6 s.
3. S34 breaks screen gaze for a combined total of 17 s.
4. S35 breaks screen gaze for a combined total of 41 s.

C.5.6. Cycle 3/ Group 3: Post-Intervention*C.5.6.1. Screen Gaze During Post-Intervention Presentations of Journal Articles*

S33's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S33's presentation

Total presentation time: 2 m and 14 s.

1. S33 breaks screen gaze for a combined total of 29 s.
2. S34 sustains screen gaze throughout whole of S33's presentation.
3. S35 breaks screen gaze for a combined total of 15 s.
4. S6 sustains screen gaze throughout the whole presentation of S33.

S34's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S34's presentation

Total presentation time: 2 m and 52 s.

1. S34 breaks screen gaze for a combined total of 31 s.
2. S33 breaks screen gaze for 4 s.
3. S35 breaks the screen gaze for 3 s.
4. S36 sustains screen gaze throughout the whole presentation of S34.

S35's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S35's presentation

Total presentation time: 5 m and 29 s.

1. S35 breaks screen gaze for a combined total of 1 m and 10 s.
2. S33 breaks screen gaze for 2 s.
3. S34 breaks screen gaze for 2 s.
4. S36 breaks screen gaze for 2 s.

S36's Presentation

Group 3/Post-intervention screen gaze and related behaviours of group members during S36's presentation

Total presentation time: 3 m and 43 s

1. S36 sustains screen gaze throughout his presentation.
2. S33 breaks screen gaze only for 18 s.
3. S34 breaks screen gaze only for 6 s.
4. S35 breaks screen gaze for a combined total of 55 s.

C.5.6.2. Screen Gaze During Post-Intervention Discussions of Journal Articles

Discussion of S33's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S33.

Total discussion time: 2 m and 36 s.

1. S33 sustains screen gaze throughout the whole discussion time.
2. S34 sustains screen gaze throughout the whole discussion time.
3. S35 breaks screen gaze only for 4 s.
4. S36 sustains screen gaze throughout the whole discussion time of S35's journal article.

Discussion of S34's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S34.

Total discussion time: 1 m and 30 s.

1. S34 breaks screen gaze for 3 s.
2. S33 sustains screen gaze throughout the whole discussion.
3. S35 breaks screen gaze for 5 s.
4. S36 sustains screen gaze throughout the whole discussion of S35's journal article.

Discussion of S35's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S35.

Total discussion time: 3 m and 50 s.

1. S35 breaks screen gaze for a combined total of 8 s.
2. S33 breaks the screen gaze for 4 s.
3. S34 breaks screen gaze for 2 s.
4. S36 sustains screen gaze throughout the discussion of S35's journal article.

Discussion of S36's Journal Article

Group 3/Post-intervention screen gaze and related behaviours of group members during discussion on the article presented by S36.

Total discussion time: 1 m and 20 s.

1. S36 sustains screen gaze throughout the whole discussion time.
2. S33 sustains screen gaze during most of the discussion time of S36's journal article. She breaks screen gaze for 4 s.
3. S34 sustains screen gaze throughout the whole discussion of S36's journal article.
4. S35 sustains screen gaze during most of the discussion time of S36's journal article. He breaks the screen gaze for 4 s.

Appendix C.6

C.6. Template Analysis of PreIGMs and PostIGMs (Example Transcription Extracts) – Cycle 3

Table C6.1: Template Analysis of PreIGMs and PostIGMs – Example Transcription Extracts on Verbal Communication (Cycle 3)

Main Theme	Sub-theme	Examples of Students' Statements			
		Frequency	Pre-Intervention	Frequency	Post-Intervention
1. Social Experience		26		06	
Disruptions to Group Cohesion	Interruptions	12	[At 00:27:00 S29 interrupts S32] (TR, PreIGM, G2) [00:21:39 S34 interrupts S33] (TR, PreIGM, G3) At 00:11:08 S35 interrupts S36] (TR, PreIGM, G3)	00	--
	Simultaneous Talk	01		00	--
	Competitive Individualism	02	(S35 wants to present his journal article before the discussion of the article presented by S36). S35: <i>Okay, I will present the article the NASSA's mission is go to Venus those solar system, that article is published in 2020 and-</i> (TR, PreIGM, G2)		--
Validation		08		108	
	Validating others' expressions	00	--	23	S23: <i>Yeah, yeah. yeah, we can also experience last rainy days too.</i> (TR, PostIGM, G1)

				<p>S30: <i>Yeah, I think that's like a really good question as it related to what's going on right now. (TR, PostIGM, G2)</i></p> <p>S34: <i>Yeah, scholarship students on their starting, they are not caring about the food and all. Parents are motivating students to work hard, so we have to give idea about foods, health... carefully. (TR, PostIGM, G3)</i></p>
Expressing Gratitude	04	<p>S29: <i>I got it, thank you. (TR, PreIGM, G2)</i></p> <p>S30: <i>Yes, I got it, thank you. (TR, PreIGM, G2)</i></p> <p>S31: <i>Thank you. (TR, PreIGM, G2)</i></p>	54	<p>S22: <i>Thank you so much for hearing [listening to]... (TR, PostIGM, G1)</i></p> <p>S30: <i>Thank you so much for clarifying it. (TR, PostIGM, G2)</i></p> <p>S33: <i>Thank you for all your ideas. (TR, PostIGM, G3)</i></p>
Complimenting	03	<p>S29: <i>Rizmi, very good. (TR, PreIGM, G2)</i></p> <p>S29: <i>You got a really nice pronunciation. (TR, PreIGM, G2)</i></p> <p>S36: <i>Yeah, actually that article is containing very interesting, ... very good points. (TR, PreIGM, G3)</i></p>	20	<p>S24: <i>I think this is an important article for me for us. (TR, PostIGM, G1)</i></p> <p>S32: <i>Such a nice presentation. (TR, PostIGM, G2)</i></p> <p>S35: <i>Yes, it's interesting, related to the new technologies. (TR, PostIGM, G3)</i></p>
Inviting by their names	01		11	<p>S23: <i>Can you present it Saheed? (TR, PostIGM, G1)</i></p> <p>S30: <i>Yes, Siva, this is your time to shine. (TR, PostIGM, G2)</i></p> <p>S36: <i>I think Asim is ready, yeah. (TR, PostIGM, G3)</i></p>
Social Connectedness	03		26	
Apologizing	03	<p>S31: <i>Sorry, connection issue ekak une. [kən'ekʃən 'ɪʃu: 'ekæk j'u:n/ there was a connection issue] (TR, PreIGM, G2)</i></p>	06	<p>S24: <i>Yes, Dehemi, sorry while you are presenting... I've been feeling some connection issues. But sorry for that. (TR, PostIGM, G1)</i></p>

		S34: <i>Sorry to interrupt, your voice, it's not clear that much.</i>		S30: <i>Because right now I don't have the knowledge to answer that question. So sorry about that.</i> (TR, PostIGM, G3)
				S35: <i>Sorry for the inconvenience.</i> (TR, PostIGM, G3)
Creating opportunities for others to talk	00	--	14	S24: <i>Kavith, we expect from you something.</i> (TR, PostIGM, G1)
				S29: Rizmi, <i>Oyata monahari thiyenavada ahanna Inuthi gen?</i> [ɔ̃'ɑ:ɾə m,ɑ:nəh'ɑ̃ɹi θ,jənev'ɑ:də æh'ænə m'ʌθɑ̃ d̃z'en?/ do you have anything to ask from Inuthi?] (TR, PostIGM, G2)
				S36: <i>Dedunu, do you need to ask anything?</i> (TR, PostIGM, G3)
Avoiding competitive individualism	00	--	06	S23: <i>who will be the first?</i> (TR, PostIGM, G1)
				S32: <i>Shall we put the order like before?</i> (TR, PostIGM, G2)
				S36: <i>Yes, I can start. Is there anyone would like to start first?</i> (TR, PostIGM, G3)
2. Learning Experience	03		31	
Purposeful Facilitation	03		18	
Keeping focus	03	S21: <i>Did you get an idea about pandemic? [pause]. How was your mental health in this experience? very down?</i> [00:22:58-00:23:07 long pause](TR, PreIGM, G1)	08	S30: <i>I think there will be a shortage of job market, that is what I think. I wonder what others are thinking.</i> (TR, PostIGM, G2)
		S32: <i>Rizmi, do you have any questions?</i> [No answer from Rizmi]. (TR, PreIGM, G2)		S36: <i>Dedunu, do you have any doubts, or did you get my point?</i>
				S33: <i>Yes, I got the point.</i> (TR, PostIGM, G3)
				S35: <i>Okay, any further clarifications?</i> (TR, PostIGM, G3)

	Seeking Clarification	00	--	10	<p>S24: <i>Excuse me could you please tell me, what is the thermal energy? (TR, PostIGM, G1)</i></p> <p>S30: <i>Yeah, so I have a question regarding that. (TR, PostIGM, G2)</i></p> <p>S34: <i>Asim, can you tell me the last point, what did you say? (TR, PostIGM, G3)</i></p>
Productive Participation	Knowledge Dissemination and Critical Perspective	00	--	13	<p>S22: <i>Yeah, ... they had gone through the students who are using mobile phones and they are getting stress, depression, or whatever, do they get any impact means do they give any other solution for that? (TR, PostIGM, G1)</i></p> <p>S30: <i>Rizmi, mata prashnayak thiyenava. Anuhas ahapu prashne ma thamai. Oya lecturer kenek nam, oya mokada karanne? Oya monavada hithanne e gena? [ɹ'izmi,, m'a:rə pɹ'æsnɛi.æk θ,ijən'a:və. 'ænu:həz æh'a:pu: pɹ'æfn m'a: θ'æmāi. 'ɔ̃iə l'ektʃə.ɹə k'ɛnɛk n'æm, 'ɔ̃iə mək'a:də k'æ.ɹən? 'ɔ̃iə m,a:nɛv'a:də h'iθæn 'i: d̃z'i:nə?/ I have a question. This is similar to what was asked by Anuhas if you are a lecturer, what do you do, what do you think about it?] (TR, PostIGM, G2)</i></p> <p>S33: <i>Thank you for choosing that article today, because we got I got new information. (TR, PostIGM, G3)</i></p>
3. Social Experience Mediated Learning Experience		05		23	
Psychological Safety	Reported Reduction of Anxiety	00	--	03	<p>S31: <i>E prashne mata chuttak sinhalaen kiyanna puluvanda? [i: pɹ'æfn m'a:rə tʃ'ɹæk s'inhɛilən kij'ænə pj,ɹu:v'ændə?/ Can you please tell me that question in Sinhala?). (TR, PostIGM, G2)</i></p>

						S32: <i>I couldn't understand. [00:35:51 S32 laughs]. Tamilla sollingala? (Can you tell it in Tamil?)</i>
Notion of Equal Agency	Negative	05	S24: <i>Any questions?</i> (TR, PreIGM, G1)	00		
			S30: <i>Any questions, guys?</i> (TR, PreIGM, G2)		--	
			S36: <i>So, if there are any questions?</i> (TR, PreIGM, G3)			
	Positive	00	--	08		S22: <i>So, this is the main part of this article. Shall we discuss about this?</i> (TR, PostIGM, G1)
						S30: <i>So that's the end of the research article so guys shall we discuss more about it?</i> (TR, PostIGM, G2)
						S33: <i>That's my idea, what is your idea?</i> (TR, PostIGM, G3)
Circumlocution (Using Mother Tongue)	Filling the Gaps of Communication Flaw/ Avoiding being Stuck/ awkward Silences	00	--	08		S24: <i>Mobilizing mean I tell in Sinhala, εκαθουκίρι:μα (ekathukirima). e:kijanne: ape: ængɹ æθule θijana me mɒnɒnɒɒɒ, πρᾱθικῆς κᾱρᾱη ἁρᾱ sistam eka εκαθουκίρι:μα gæna θijana me kɒnsept eka gæna θɒmɒi meθɒna κᾱθᾱκᾱρᾱne, okay?</i> (TR, PostIGM, G1)
						S31: Recognition kiyanne Sinhale, adunagenima neda? Automatic recognition kiyanne swyankriyava handunaganava. Den othana topic eken kiyanne, lectures inna sudents lage mune thiyena expressens automatically handunagannava [/,ɛkəgn'ɪfən/ kiyanne Sinhale, hadunagenima neda? /,ɔ:təm'ætɪk/ /ɛkəgn'ɪfən/ kiyanne swyankriyava handunaganava. /d'en/ othana /t'ɒpɪk/ eken kiyanne, /l'ektʃəz/ inna sudents lage mune thiyena expressens /,ɔ:təm'ætɪkli/ handunagannava]. (In

				Sinhala, recognition means identifying, 'automatic recognition' means identifying automatically, as to the topic, it says identifying the facial expressions of the students automatically during the lectures. (TR, PostIGM, G2)
Requesting Support from Group Member/s	00	--	04	<p>S24: <i>'θιντρανα' do you know? [00:22:37 everyone laughs] I don't know, I mean micro-organism live in outside of the human body. Some of the micro-organism live are living in our θιννα, how can we call the intestinal in Sinhala?</i></p> <p>S31: <i>Meke mama read karanakota heading automatic recognition of student emotion from facial expression during a lecture. Recognition kiyanne mokakda kiyala chuttak mata kiyanna puluvanda? Eka Demelen thiyenne 'Angiharam' kiyala. Siva, [00:41:20 S32 nods his head signalling attentive listening] recognition endal tamilla angiharam endei solliyapada, In adaththuda meaning endai maywarum? Automatic recognition kiyana eka? [When I read this, it is' Automatic recognition of students' emotions' from facial expression during a lecture, can you please explain what does it mean by 'recognition'? In Tamil, it is called 'Angiharam'. Siva, can you please explain it what does it mean in English which is known as 'Angiharam' in Tamil?] (TR, PostIGM, G2)</i></p>

Appendix C.7

C.7. Template Analysis of Pre-Intervention Focus Groups (Example Transcription Extracts) – Cycle 3

Table C7.1: Template Analysis of Pre-Intervention Focus Groups - Outside Study & During Study Example Transcription Extracts (Cycle 3)

Main Theme	Sub-theme	Examples of Students' Statements			
		Frequency	Pre-Intervention	Frequency	Post-Intervention
1. Social Experience		54		61	
Disruption to Group Cohesion [Common Group Work Behaviours (Pre-Study)]	Inequality of sharing time	25	<p>S24: <i>I think when we compare the other lecture sessions and ongoing sessions, this is better because we can share ideas, share our thoughts and share our knowledge. So, when uh I felt when I when I was in some sessions, there is [was] no opportunity to ask, opportunity to ask question or, how can I say, express our ideas or express our questions... . (TR, PreIFG, G1)</i></p> <p>S29: <i>So far, we didn't have, I didn't have any like that [sharing time equally]. (TR, PreIFG, G2)</i></p> <p>S36: <i>Normally, in the group activities, everyone don't share time equally because for a small task somebody takes big [longer] time, somebody take very small time. (TR, PreIFG, G3, C3)</i></p>		—
	Non-contribution	20	S23: <i>Most of the time, in our groups only one or two people are speaking, others are</i>		--

		<i>staying backward in silent. I am also in the backward, silent. (TR, PreIFG, G1, C3)</i>	
		S29: <i>They were, most of the time they were lined and are not interested and not doing the project, ... Uh uh Api godak ivasuva. (We were more patient). ... our limits were really gone out We went for a fight, ... (TR, PreIFG, G2)</i>	
		S35: <i>In the groups, ... sometime our colleagues will [do] not give 100% engagement in the discussion because they have phones, they go googling, I will do googling and other things. In the university that was happened. (TR, PreIFG, G3)</i>	
Feeling of being left out	07	S22: <i>... if there's only 10 minutes left and you have to do it in that 10 minutes, ... only three or four can do, and that one or several have to be left out. (TR, PreIFG, G1)</i>	—
		S29: <i>Left out things are usually happening but not for me but with others. That argument thing also happened due to some left out matter. That kind of issues are happening. (TR, PreIFG, G2)</i>	
		S34: <i>Usually, while discussing, one or two discuss and others, they are silent. So, most of them most of them, most of the parts, some are leftout. (TR, PreIFG, G3)</i>	
Cliques	02	S29: <i>... we had only problem with two guys. We never grouped with those two guys. That's the problem we had. (TR, PreIFG, G2)</i>	—

Social Connectedness	00	61	
Enhancing interactivity	--	09	<p>S21: <i>I think these strategies are more useful when in that situation like random groups because all are strangers. So, improving friendly[ness], they can be friendly through these strategies and also the discussion will be very interesting through these strategies. (TR, PostIFG, G1)</i></p> <p>S23: <i>Now we can, we know how to deal with a team, like in the previous one I don't have any other experience, but now we have a good experience of how we work with the team and how we continue it in good manner yeah. It's [CSCC training] very helpful. (TR, PostIFG, G1)</i></p> <p>S30: <i>I think the same what Anuhas and Siva said. I think we became more supportive than the first day. I think I could see it, because now we know what techniques and tips, we have to use to support each other. And how to conduct this kind of group discussion session, so I think it went really, really well today. Everyone did a great job. (TR, PostIFG, G2)</i></p>
Building confidence	--	17	<p>S30: <i>I'm more relaxed and I'm more into the group discussion. To be honest, I didn't really like group discussions, because they weren't actually, there were actually not group discussions per se. You know, a one person is talking, and</i></p>

the others are just listening or doing their own activities, nobody asks questions and the ball is passed to another person. But after the [CSCC] training, what we did was different, because of that, now I have a positive outlook on the discussions, and now I know how to improve group discussions. So, now I know how to make group discussions better for others too. So, it made me confident in group discussions. (TR, PostIFG, G2)

S32: *I have confidence because these are our guys ..., I can present those things. I got confidence, that's why I confidently do [did] this group work. (TR, PostIFG, G2)*

S36: *... I have some compassionate strategies to use in the group discussion, so I feel more confident that I can get more ideas and more clear points than others who are not having those strategies. So, you can feel confident through using the strategies, I can get more idea on the discussion, I can get more points on the discussion. So, I can present if I am presenting, I can present my part as well. So, I feel confident knowing those strategies. (TR, PostIFG, G3)*

Increasing social comfort

--

07

S24: *I didn't know the face before I enter this group work. So, if you, if you think like this when you enter the university, they are all faces are new, you face all*

new faces. So, they take some time to build the bond between others. But when you express through the compassionate strategies ... in the discussion in English with strangers,... if you communicate with compassion, ... [within] a short time period, you can build up good bonding, you know, good relationships. (TR, PostIFG, G1)

S30: *..., now I feel really relaxed and comfort in group discussions, I know how to do things, So yeah, I think that changed now [Post CSCC]. (TR, PostIFG, G2)*

S36: *So, on that point, I also feel comfortable with others to ask question. So, it's actually using those strategies also increased the social experience between the group. (TR, PostIFG, G3)*

Enhancing
team Spirit

07

S24: *In the previous meeting, previous presentation he [S23] always tried, kohomahari /m'a:mə/ meka karanna ona, [00:30:17 everybody laughs] mona unath kamak nee [I want to do this by any possible means, It's okey whatever happens] I will complete my responsibility... in this one [PostIGM] he tried working as a team 'what I bring, bring to others, what to give to others?'. Yeah. (TR, PostIFG, G1)*

S29: *... I too need to say, if we got a problem, got a question or a problem or anything, there's a team to defend us and a team*

			<i>to help us to get through these hard thing. And it's a really good thing. So, I think there's really a teamwork, it's for the word 'teamwork', it's really the best example, the conversation today we had. (TR, PostIFG, G2)</i>
Improving listening	--	08	<p>S21: <i>I feel happy because they have listened to my research carefully. (TR, PostIFG, G1)</i></p> <p>S30: <i>For me that meant, they actually listened to what I was telling. (TR, PostIFG, G2)</i></p> <p>S31: <i>I also think the same. This [CSCC] training ... help to enhance our listening. (TR, PostIFG, G2)</i></p>
Creating opportunities for others to speak	--	13	<p>S30: <i>For me it's like when someone is silent, probably because that person is stuck sometimes so when that comes to my mind, I really want to help that person. So, that's it all comes to my mind, I should help that person before it becomes awkward. So, I'm going to casually invite the other person. (TR PostIFG G2)</i></p> <p>S33: <i>Yes, we invite to all because this is a groupwork or not [an] individual [work]. All have to gather and do these things. Vignesh has a problem that, other two are giving their idea, and they have a problem, but 'what is my idea?' and they asked, and he asked</i></p>

about my idea. I think it's a good thing, we want to gather and do the groupwork. (TR PostIFG G3)

S35: *For a group work, everyone's participating is important. ..., by giving some further information and calling his name, we have to engage him into our groupwork. That's very important one. If we neglect him, some time he may have a better idea on that, but he don't [doesn't] like to participate. If we call the name, he can think like, 'Yeah they also tried to make me engaged to the groupwork, and he gives some ideas. . (TR, PostIFG, G3)*

2. Learning Experience		00		35
Productive Participation	Knowledge dissemination and critical perspectives	--	08	<p>S24: <i>... when I asked him that question from S23, I am very happy he gave me the explanation. I'm truly, I didn't know before the word terminal, but he gave me a brief explanation. [00:08:36 S24 smiles] and it is really helpful to me, yeah. (TR PostIFG G1)</i></p> <p>S30: <i>I think, for me, it helped me to learn more. The reason is, everyone was saying, 'thank you' and then they were asking questions from me after the after presenting my research article. For me that meant, they actually listened to what I was telling. And that prompted me to be attentive to what they are telling about their research articles. So, in turn, that helped me to learn new</i></p>

					<p><i>things from their research articles. (TR, PostIFG, G2)</i></p> <p>S36: <i>And they also tried even more to understand my article and to discuss, they tried to discuss about the related related related related thing to my article that's a good thing, I noticed. (TR, PostIFG, G3)</i></p>
Purposeful Facilitations	Keeping focus		--	17	<p>S30: <i>I think the same because when we are using compassionate strategies as attentive listening to someone, we in turn learn something, and as well as the person who is speaking learns from us, because when there is attentive listening. If we don't know something like I said we raised our hands and we asked, we clarify our doubts then and there. So, I think our learning experience become more interesting and we learnt new things. (TR, PostIFG, G2)</i></p> <p>S35: <i>There is no detachment because when they are nodding their heads, our learning experience is increasing, because we can say our thoughts very ... strongly without no doubts. (TR, PostIFG, G3)</i></p> <p>S36: <i>... So, if you use these strategies, I think they feel confident and they will tell the complete thing they came to say, and so we can get the complete knowledge on</i></p>

									<i>that. So, that will help to our learning.</i> (TR, PostIFG, G3)
Seeking clarification		--		10					<p>S22: ... because of that greeting and all, they had a chance and they are feeling, easily, and they had asked me questions when they had a doubt or like that, and they had asked questions. Because of that, the greetings and all I think they got the strength may be from the strategy. Yeah. (TR, PostIFG, G1)</p> <p>S31: <i>'ehkə dɪ'vləp karanava apiva eɪp 'nləɟ 'ehkə dɪ'vləp karannath helapful vei 'ehkə anɪθ aya api kathakarana 'ehkə ahana kota apita thiyena daʊts egollangen ahanna apita 'ehkə 'hɪlpfəl venava.</i> (They develop us and help to develop our knowledge too. When others listen to us, what we talk, we can clarify our doubts asking from them. That helps developing our knowledge. (TR, PostIFG, G2)</p> <p>S35: Without hesitating, we can ask questions from him and can clear out doubts. And further we can clarify those things very clearly, that's the learning experience. (TR, PostIFG, G3)</p>
3. Social Experience					115				
Mediated Learning Experience					59				
Challenges to Psychological Safety			59						00 --
	Social anxiety	07							<p>S31: Yeah, my social experience, d'en tʃ'ʌræk b'eɪeɪi v'eɪdʒ, m'i: g'a:lən mən'a:və</p>

		h'ɪrɑɪdə kɪj'ɑ:lə/ [Now I feel little bit nervous thinking that what do they think about me]. (TR, PreIFG, G2)	
		S35: <i>I'm [was] little bit nervous when the meeting was started, because I didn't concentrate on the Vignash's Vignash brother's one.</i> (TR, PreIFG, G3)	
		S34: <i>I was a little bit nervous because video, we don't have (no cameras on), without video only we are having ...</i> (TR, PreIFG, G3)	
Difficulty of communicating in English	16	S22: <i>... when it comes to university, most of the presentation, everyone has to do in English. ... But sometimes they they feel shy, or they feel awkward to speak in English.</i> (TR, PreIFG, G1)	--
		S29: <i>... there are some kind of problems due to some mentalities ... I'm talking about only our group members. When we are talking if all the group members are Sinhala, uh uh we never talk in English and if someone talk in English, we used to laugh at him ...</i> (TR, PreIFG, G2)	
		S34: <i>And also, interacting in the group also if two Tamil guy[s] and two Sinhala guy[s], if one Tamil or Sinhala, then we force them to talk in mother language, interacting in English is reduced.</i> (TR, PreIFG, G3)	
Reluctance to switch the cameras on	13	S22: <i>Me, I usually turn off my camera, ..., I had never gone through a meeting like this.</i> (TR, PreIFG, G1)	--

					<p>S30: <i>I wasn't really okay with it [switching on the cameras]. I was like 'we should switch off the camera and talk'. (TR, PreIFG, G2)</i></p> <p>S35: <i>Normally, we don't switch on [camera]. Due to that, ... , we can also join online meetings and we can roam in everywhere. (TR, PreIFG, G3)</i></p>
Psychological Safety		00		59	
	Reported reduction of anxiety	00	--	15	<p>S22: <i>I have noticed from Kavith because, in the previous one, I don't know who asked the question from him, but he said that 'I don't know', but today's discussion when he was asked questions, he was ready to that and he answered them. That's what I noticed. (TR, PostIFG, G1)</i></p> <p>S34: <i>They feel free to talk. And they did not get nervous. (TR, PostIFG, G3)</i></p> <p>S35: <i>We didn't feel nervous to ask questions [from] each other. (TR, PostIFG, G3)</i></p>
	Improving communicating in English as a second language (ESL)	00		23	<p>S24: <i>... when we speak in English within the group sometimes, some students, they can't speak in English. When we use these things, you know, the compassionate strategies to invite them or to do with our work together within our groups, I feel most helpful to others. ... So, I think it's bringing others to the beautiful way of communication (TR, PostIFG, G1)</i></p>

S29: *So, it really improved our English skills and when we were in online sessions, we are not talking like this. Most of the time we were, most of the time I was not listening to that, I play, or I join the online session and go somewhere. Because we never turned on the camera. So, within the period of this pandemic, I mean it's like a year now, we never talk in English ..., I think ..., due to the online sessions, we didn't get a chance to speak in English. In my opinion, ... in this week, I really talked in English more than the last year. (TR, PostIFG, G2)*

S30: *I think the same. For an example ... if you're not able to understand or present some part in English, we are doing some other stuff, I think ... strategies are really helpful explaining and in bridging that communication gap between people. (TR, PostIFG, G2)*

Enhancing
group
communication

13

S22: *I'm also have the same opinion like Dehemi but what's the difference is when compassionate strategies are something related to caring for others, so when there's a stranger, when we are like showing our caring for them, they will be get to easily communicate with us, and all so it would be useful to them to communicate in English, with the strangers when we use these compassionate strategies. (TR PostIFG G1)*

S30: *This case of an internet connection lost in the middle of a discussion, what we usually do is, if that person can connect back, we ask them to explain it again. And we should say that 'it's Okay, because it happens ... don't worry about it', but this is the part that we didn't get, 'can you please explain it to us again?'. So, we we try to make sure that it's not, their fault, honestly sometimes it's actually it's not their fault, ..., so we try to make sure using compassionate strategies, we try to make sure that other person is at ease after the issue. So, they can continue from where they lost. . (TR PostIFG G2)*

S35: *If we saw the compassionate actions, then there will be energy created into us to present very well. (TR PostIFG G3)*

Willingness to
switch on
camera

--

08

S29: *Most of the time ... I'm not listening to that, I play, or I join the lecture and go somewhere. Because we never turn on the camera but now, we do [turn on our cameras]. TR PostIFG G2)*

S35: *In the previous previous session everyone not focused on the camera ..., but today, everyone focused on the camera. TR PostIFG G3)*

S36: *we can see like that they are seeing the camera. TR PostIFG G3)*

The Notion of Equal Agency	00	--	30	<p>S22: ... in the previous session, ..., I just presented and I had never given a chance to the other people to ask me questions. just like randomly presented it and I just gone through. But after the compassion session, I just got that I have to wait for them, I have to give them time. (TR PostIFG G1)</p> <p>S29: Yes, I have used when ending my research article, I usually used to say, 'Any questions?' so I replaced it in another word. So, it's a really good thing. (TR PostIFG G2)</p> <p>S31: Yes. After the training, I have learnt a lot from how to do a teamwork nicely without any interference and without any conflicts, giving equality to everyone in the group, and the chances to talk and how to address others if they are not talking and I really learnt a lot. (TR PostIFG G2)</p>
Community Building	00		24	<p>S24: We can communicate through these skills, through the input this compassionate strategies. I think, we can build up very good unity strength community. (TR PostIFG, G1)</p> <p>S29: So, we really need this kind of strategies when communicating with other. If there is this kind of strategy, it really help us to build our friendship and the</p>

			<p><i>everything more than that, we have now. (TR PostIFG, G2)</i></p> <p>S33: <i>Yes. If we have these strategies, we can relate the strong bond and strong relationship. if we are going to do a group work, and then the ethnicity or the religion is not a problem for us if we know these strategies. I think they both are not a problem for us to our group work. (TR PostIFG, G3)</i></p>
<p>Circumlocution (Using Mother Tongue)</p>	<p>00</p> <p>--</p>	<p>02</p>	<p>S22: <i>It is good ... because in the middle of the discussion, you might have seen like we had discussed it in Sinhala and Tamil also. ... we had to discuss it in all three languages, as some of the words that are bit difficult to understand and don't know how to explain it clearly [in English], so we have gone through it. (TR PostIFG G1)</i></p>

4. Group Management Strategies 16

<p>Strategies used to Enhance Engagement (Pre-Study)</p>	<p>Assigning task-specific roles</p>	<p>S21: <i>... we can and give, divided work to everyone We usually do one part for one person. (TR, PreIFG, G1)</i></p> <p>S32: <i>In group work, before the group work, divided that work into equal parts and give to them and get ready to present it. (TR, PreIFG, G2)</i></p> <p>S33: <i>We also divide our group work in separate parts and give others, all to do their work. (TR, PreIFG, G3)</i></p>	
---	--------------------------------------	--	--

Communicating indirectly	<p>S35: <i>While we were doing the presentation, with our colleagues, we will take one translating friend, because if you want to talk with other language friend, we take one translating friend. We will give the idea to him, and we share the idea to them. (TR, PreIFG, G3)</i></p>			
	<p>S36: <i>So, when I'm doing our group work or group works if I feel that someone is showing less engagement in the topic, so I personally I personally try to interact with him or her rather than the others. (TR, PreIFG, G3)</i></p>			
	<p>S36: <i>So, when I'm doing our group work or group works if I feel that someone is showing less engagement in the topic, so I personally I personally try to interact with him or her rather than the others. (TR, PreIFG, G3)</i></p>			
Questioning	<p>S29: <i>Mainly we use ..., asking questions. (TR, PreIFG, G2)</i></p>			
Strategies Used to Manage PostIFGs	<p>CSCC 00</p> <p>Inviting others by their names</p>	<p>--</p>	<p>87</p>	<p>S24: <i>... before, in the previous presentation, I did not invite anyone and even I didn't thank to someone, but today I collect and I used, I correct and used all those things. (TR, PostIFG, G2)</i></p>
				<p>S36: <i>... the strategies that I used in today's session and by others ... calling by their names and So, those strategies worked well. (TR, PostIFG, G3)</i></p>

Expressing gratitude	--	<p>S32: ... at the first session, we didn't say thank you and they also don't [didn't] know how to stop and start the next session That time it went with silence, but this time, ..., we said, 'thank you'. (TR, PostIFG, G2)</p> <p>S35: I also rarely thanks to the presenters. Today, I thanked mostly [to] all of them. That's the difference, I did. (TR, PostIFG, G3)</p> <p>S36: And the second thing is, after finishing the article, they said, like Asim said, they said, 'thank you'. . (TR, PostIFG, G3)</p>
Warm tone	--	<p>S30: When we are selected randomly into groups like being warm to others and appreciating others, I think that can bring out the closeness in each other. (TR, PostIFG, G2)</p> <p>S36: ... asking some questions in a in a friendly manner, friendly and warm tone. So, those strategies worked well, I think. (TR, PostIFG, G3)</p>
Sustained screen gaze	--	<p>S24: I read read read. I always read I don't [didn't] really look at their faces and asking the questions, so they are [were] boring, and I am [was] also boring. So, it collapsed everything, I think. But when we, when I use these compassionate strategies, it will bound together, bond together and give very knowledgeable and I think very</p>

			<p><i>beautiful group discussion. (TR, PostIFG, G1)</i></p> <p>S34: <i>... , in the first day, we were all nervous to present but we also even noticed their facial expressions, we noticed each and everyone's facial expressions.</i></p> <p>S35: <i>When everyone [is] presenting today we don't have nervousness. Everyone did it in a very friendly manner. I can see smiling faces today. (TR, PostIFG, G3)</i></p>
Nodding	--		<p>S21: When they are responding to my research, nodding heads or asking questions or whatever I feel happy because they have listened to my research carefully. So, I felt happy.</p> <p>S32: They were nodding like this. [S32 nods his head showing the reaction].</p> <p>S35: <i>As Vignesh brother said, in the previous Monday session we rarely used nodding the head nodding their head. But today, most of them did that</i></p>
Using Chat box			<p>S33: <i>We can use chat box. If we want to tell something to one person. (TR PostIFG, G3, C3)</i></p>
Student Developed	00		17
Observing others' faces	--		<p>S33: <i>Yes, I also fully focused while listening and giving ideas to others and I gave my facial expression, because they</i></p>

want to know about our ideas. And, I want to motivate them.

S34: *Last week I said, it is difficult to focus on the presenter, but I think I have changed a bit because we are focusing everyone's face, while presenting and also when a person presents also, we are focusing him and I think I think that things changed.*

S36: *I also try to understand the thing, what they came to say and in the same time I watched others that, is there any reactions in their faces that they are feeling that they are not understanding the thing, so I watched I watched for that also, but I think everyone is okay, with the articles because there's no such reactions in their faces while one is presenting.*

Raising/waving
hand to signal
interest in
speaking
(without
interrupting)

--

S23: *In the previous sessions we don't, [didn't] at the same time we talk two or at least two, two people are talking in at the same time, and now we shake [raise] hands and we continue it. It's good*

S21: *Yeah yeah I agree with that*

S29: *And also, today [00:05:35 S29 laughs] is the day I found out where the raise hand function is, I never used that raising hand [before].*

S32: *Yeah, same like Anuhas and Inuthi said.*

5. Student views on the task designed for attention to compassion

Negative	00	--	00	--
Positive	11	<p>S21: <i>I think this is good, this is better than the previous ones.</i> (TR, PreIFG, G1)</p> <p>S29: <i>Yes, it was really nice experience (than previous group works).</i> (TR, PreIFG, G2)</p> <p>S34: <i>Better, it's really better (than previous group works).</i> (TR, PreIFG, G3)</p>	08	<p>S21: <i>I think these strategies must be taught in at least at university, because we have never learned that from university or school or any place, so I think these must be taught.</i> (TR PostIFG G1)</p> <p>S30: <i>Yeah, I think it's [teaching CSCC to students] really helpful because, like conditions, whether it's online or physical, after the degree when we go to cooperate world or government job, anywhere, anywhere in our life, we get to do group work with people. So, when we know the skills, when we know about the skills, it will help us to communicate and get work done, and you know, and also to encourage others to perform better in group work. So, I think it would be really helpful if we can have this kind of modules in our degree programmes.</i> (TR PostIFG G23)</p> <p>S35: <i>Definitely compassionate strategies are important in the online, online sessions, because someone may be very talkative. So, we have to interrupt and change the person. So, we can say the name and we can stop, not by neglecting, we can stop in very kindly manner. It's very important in online mode.</i> (TR PostIFG G23)</p>

6. Shared Virtual Background 00

--

22

S21: ... *pleasant environment and background interruptions are not here, I think, concentration is high.* (TR PostIFG G2)

S29: ... *it's really a good thing. ... changing the background, it's also really new thing to me, I never done that before on the zoom meetings.* (TR PostIFG G2)

S32: *I also never used before, the background.* (TR PostIFG G2)

Appendix C.8

C.8. SPSS Analysis of Questionnaire 1 on Group Work Behaviours – Cycle 3

Table C8.1: Wilcoxon Signed-Rank Test Statistics - Questionnaire on Group Work Behaviours

	Z	Asymp.Sig. (2-tailed)
AELevel - EngLevel	-1.414 ^b	0.157
AQ4.1 - BQ4.1	-0.431 ^b	0.666
AQ4.2 - BQ4.2	-0.319 ^c	0.750
AQ4.3 - BQ4.3	-0.000 ^d	1.000
AQ4.4 - BQ4.4	-0.447 ^c	0.655
AQ4.5 - BQ4.5	-0.108 ^c	0.914
AQ4.6 - BQ4.6	-0.816 ^c	0.414
AQ4.7 - BQ4.7	-0.702 ^b	0.483
AQ4.8 - BQ4.8	-0.431 ^b	0.666
AQ4.9 - BQ4.9	-0.604 ^c	0.546
AQ4.10 - BQ4.10	-0.979 ^b	0.327
AQ4.11 - BQ4.11	-0.431 ^b	0.666
AQ4.12 - BQ4.12	-0.595 ^b	0.552
AQ4.13 - BQ4.13	-0.690 ^c	0.490
AQ4.14 - BQ4.14	-2.588 ^b	0.010
AQ5.1 - BQ5.1	-1.925 ^b	0.054
AQ5.2 - BQ5.2	-1.980 ^b	0.048
AQ5.3 - BQ5.3	-1.207 ^b	0.227
AQ5.4 - BQ5.4	-1.444 ^b	0.149
AQ5.5 - BQ5.5	-2.401 ^b	0.016
AQ5.6 - BQ5.6	-1.994 ^b	0.046
AQ5.7 - BQ5.7	-1.852 ^b	0.064
AQ5.8 - BQ5.8	-1.724 ^b	0.085
AQ5.9 - BQ5.9	-1.999 ^b	0.046
AQ5.10 - BQ5.10	-2.588 ^b	0.010
AQ5.11 - BQ5.11	-2.412 ^b	0.016
AQ5.12 - BQ5.12	-0.541 ^c	0.589
AQ5.13 - BQ5.13	-0.791 ^c	0.429
AQ5.14 - BQ5.14	-1.994 ^b	0.046
AQ6.1 - BQ6.1	-1.265 ^b	0.206
AQ6.2 - BQ6.2	-1.100 ^b	0.271
AQ6.3 - BQ6.3	-2.640 ^b	0.008
AQ6.4 - BQ6.4	-1.179 ^b	0.238
AQ7.1 - BQ7.1	-1.841 ^b	0.066
AQ7.2 - BQ7.2	-2.333 ^b	0.020
AQ7.3 - BQ7.3	-1.983 ^b	0.047

* a. Wilcoxon Signed-Rank Test, b. Based on positive ranks, c. Based on negative ranks, d. The sum of negative ranks equals the sum of positive ranks.

Appendix C.9

C.9. SPSS Analysis of Questionnaire 2 on Compassionate Engagement and Action Scale – Cycle 3

Table C9.1: Wilcoxon Signed-Rank Test Statistics - Questionnaire on Compassionate Engagement and Action Scale

	Z	Asymp.Sig. (2-tailed)		Z	Asymp.Sig. (2-tailed)
AQ1 - BQ1	-1.710 ^b	0.087	AQ36 - BQ36	-0.966 ^b	0.334
AQ2 - BQ2	-0.853 ^b	0.394	AQ37 - BQ37	-0.853 ^c	0.394
AQ3 - BQ3	-0.308 ^c	0.758	AQ38 - BQ38	-2.064 ^b	0.039
AQ4 - BQ4	-2.677 ^c	0.007	AQ39 - BQ39	-1.292 ^b	0.196
AQ5 - BQ4.5	-0.564 ^c	0.573			
AQ6 - BQ4.6	-0.768 ^c	0.443			
AQ7 - BQ4.7	-0.834 ^c	0.404			
AQ8 - BQ4.8	-0.154 ^b	0.877			
AQ9 - BQ4.9	-1.259 ^b	0.208			
AQ10 - BQ10	-1.433 ^b	0.152			
AQ11 - BQ11	-1.897 ^c	0.058			
AQ12 - BQ12	-1.140 ^b	0.254			
AQ13 - BQ13	-0.552 ^b	0.581			
AQ14 - BQ14	-2.428 ^b	0.015			
AQ15 - BQ15	-0.570 ^c	0.569			
AQ16 - BQ16	-1.316 ^c	0.188			
AQ17 - BQ17	-1.975 ^c	0.048			
AQ18 - BQ18	-0.060 ^b	0.953			
AQ19 - BQ19	-0.358 ^b	0.721			
AQ20 - BQ20	-1.344 ^c	0.179			
AQ21 - BQ21	-0.674 ^b	0.500			
AQ22 - BQ22	-1.633 ^b	0.102			
AQ23 - BQ23	-1.511 ^b	0.131			
AQ24 - BQ24	-1.294 ^b	0.196			
AQ25 - BQ25	-0.268 ^c	0.789			
AQ26 - BQ26	0.000 ^d	1.000			
AQ27 - BQ27	-1.735 ^b	0.083			
AQ28 - BQ28	-1.845 ^b	0.065			
AQ29 - BQ29	-2.437 ^c	0.015			
AQ30 - BQ30	-1.709 ^c	0.088			
AQ31 - BQ31	-0.181 ^b	0.856			
AQ32 - BQ32	-1.316 ^b	0.188			
AQ33 - BQ33	-1.008 ^c	0.313			
AQ34 - BQ34	-1.616 ^b	0.106			

* a. Wilcoxon Signed-Ranks Test

b. Based on negative ranks.

c. Based on positive ranks.

d. The sum of negative ranks equals the sum of positive ranks.

APPENDIX D

Appendix D

Cycles 1, 2 & 3

Questionnaires

Appendix D.1

D.1. Questionnaire 1 on Group Work Behaviours

This short, anonymous survey asks questions about group work. Could you kindly spend approximately 05 minutes sharing your opinions, please? The results from the survey (pre and post) will help us identify the impact, if any, of the evidenced based compassionate pedagogy to support students' communicative ease with others in groupwork. The work is approved by the University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority, UH protocol No. cHUM/PGT/UH/04345.

You are free to withdraw at any stage, just stop answering the questionnaire or leave this page.

What will happen to the data collected within this study?

- The data collected will be stored electronically, in a password-protected environment, for four years, after which time it will be destroyed under secure conditions.
- The data will be analysed and the results will be used in publications and presentations. The analysis will contribute to the primary researcher's PhD project.

1. In the box below, please enter the code given to you by the researcher.

2. Demographic Information

2.0 Which age group do you belong to?

- 18 - 25
- 26 - 35
- 36 - 45
- 46 - 55
- 56 and above
- Prefer not to say

2.1 What is your gender?

- Male Female
- Other Prefer not to say

3. In your view, which of the following best describes your level of English?

- Expert user - accurate, appropriate, fluent with full understanding.
- Very good user - rare errors, use complex language well.
- Good user - only occasional errors, use complex language quite well in most situations.
- Competent user - some errors, use some complex language in familiar situations.
- Modest user - frequent errors, have difficulties with complex language.

4. Please tick any of the following behaviours that you have demonstrated (your own behaviour) in your group discussions.

	Negative Group Behaviours	Always (1)	Quiet often (2)	Sometimes (3)	Not very often (4)	Never (5)
4.1	Talking a lot so that others do not get many chances to speak.					
4.2	Talking in silences when other group members are talking.					
4.3	Not looking at all the other people in the group.					
4.4	Using difficult language terms or expressions without explaining so that other people in the group may not understand.					
4.5	Not listening carefully to other peoples' ideas.					
4.6	Not helping other people when they are getting into difficulty while they are speaking.					
4.7	Talking over others.					
4.8	Not inviting others to speak.					
4.9	Not thanking others for their contribution.					
4.10	Speaking very little or not at all in the group.					
4.11	Not even reading a little bit in order to bring something to the discussion.					
4.12	Letting other people talk and talk without interrupting them.					
4.12	Letting other people talk and talk without interrupting them.					
4.13	Allowing others to speak too fast for everyone to understand them.					
4.14	Not asking for more explanations when understanding becomes too difficult.					
4.15	Other:					

4a. If you selected the item 15 'Other', please include your observations here.

5. Please tick any of the following behaviours that others have demonstrated (you have observed in others) in your group discussions.

	Negative Group Behaviours	Always (1)	Quiet often (2)	Sometimes (3)	Not very often (4)	Never (5)
5.1	Talking a lot so that others do not get many chances to speak.					
5.2	Talking in silences when other group members are talking.					
5.3	Not looking at all the other people in the group.					
5.4	Using difficult language terms or expressions without explaining so that other people in the group may not understand.					
5.5	Not listening carefully to other peoples' ideas.					
5.6	Not helping other people when they are getting into difficulty while they are speaking.					
5.7	Talking over others.					
5.8	Not inviting others to speak.					
5.9	Not thanking others for their contribution.					
5.10	Speaking very little or not at all in the group.					
5.11	Not even reading a little bit in order to bring something to the discussion.					
5.12	Letting other people talk and talk without interrupting them.					
5.12	Letting other people talk and talk without interrupting them.					
5.13	Allowing others to speak too fast for everyone to understand them.					
5.14	Not asking for more explanations when understanding becomes too difficult.					
5.15	Other:					

5a. If you selected the item 15 'Other', please include your observations here.

6. These questions are about your confidence in considering your and others' behaviours during group work. Please tick your answer for each question.

	Confidence of working in groups	Not confident at all	Not that confident	Reasonably confident	Extremely confident
6.1	How confident are you to engage in group discussion?				
6.2	How confident are you to draw others into group discussion?				
6.3	How confident are you to address the behaviour of someone who is dominating the discussion during group work?				
6.4	How confident are you in moderating your own behaviour to benefit group discussion?				

7. To what extent do you think group behaviours can influence your learning? Please tick your answer for each question.

		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
7.1	Group discussion with other students usually leads to a better understanding about a topic					
7.2	The quality of the discussion is determined by the way the group members interact					
7.3	The quality of the discussion is determined by knowledge of the group members					

8. Please add any additional thoughts about group work.

Thank you very much for your participation.

Appendix D.2

D.2. Questionnaire 2 on The Compassionate Engagement and Action Scale

The Compassionate Engagement and Action Scales

This short, anonymous survey asks questions about Self-compassion, (Section 1), Compassion to others (Section 2) and Sensitivity to compassion from others (Section 3). Could you kindly respond to the questions below? This will take approximately 10 minutes. The results from the survey will help us identify each individual participant's engagement with, and then action, if any, in relation to: Self-compassion; sensitivity/receptiveness to compassion from others, and compassion for others. The work is approved by the University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority, UH protocol No. cHUM/PGT/UH/04345.

You are free to withdraw at any stage, just stop answering the questionnaire or leave this page. What will happen to the data collected within this study?

- The data collected will be stored electronically, in a password-protected environment, for four years, after which time it will be destroyed under secure conditions.
- The data will be analysed, and the results will be used in publications and presentations. The analysis will contribute to the primary researcher's PhD project.

In the box below, please enter the code given to you by the researcher.

C. Self-Compassion

When things go wrong for us and we become distressed by setbacks, failures, disappointments, or losses, we may cope with these in different ways. We are interested in the degree to which people can [be compassionate with themselves](#). We define compassion as "a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it".

This means there are two aspects to compassion. The *first* is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or suppress them. The *second* aspect of compassion is the ability to focus on what is helpful to us. Just like doctors with their patients. In other words, the first aspect of compassion is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore, read each statement carefully and think about how it applies to you if you become distressed.

Section 1 – These are questions that ask you about how motivated you are, and able to engage with distress when you experience it. So:

When I'm distressed or upset by things...

1. I am motivated to engage and work with my distress when it arises.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

2. I notice, and am sensitive to, my distressed feelings when they arise in me.

	1	2	3	4	5	6	7	8	9	10	
--	---	---	---	---	---	---	---	---	---	----	--

Section 2 – These questions relate to how you actively respond in compassionate ways when other people are distressed. So:

When others are distressed or upset by things...

22. I direct attention to what is likely to be helpful to others.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

23. I think about and come up with helpful ways for them to cope with their distress.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

24. I take the actions and do the things that will be helpful to others.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

25. I don't know how to help other people when they are distressed.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

26. I express feelings of support, helpfulness, and encouragement to others.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

E. Compassion from Others

When things go wrong for us and we become distressed by setbacks, failures, disappointments or losses, others may cope with our distress in different ways. We are interested in the degree to which you feel that important people in your life can **be compassionate to your distress**. We define compassion as “a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it”.

This means there are two aspects to compassion. The first is the ability to be motivated to engage with things/feelings that are difficult as opposed to trying to avoid or suppress them. The second aspect of compassion is the ability to focus on what is helpful to us or others. Just like doctors with their patients. In other words, the first aspect of compassion is to be motivated and able to pay attention to the pain and (learn how to) make sense of it. The second is to be able to take the action that will be helpful. Below is a series of questions that ask you about these two aspects of compassion. Therefore, read each statement carefully and think about how it applies to the important people in your life when you become distressed.

Section 1 – These are questions that ask you about how motivated you think others are, and how much they engage with your distress when you experience it. So:

When I'm distressed or upset by things...

34. Others are accepting, non-critical and non-judgemental of my feelings of distress.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

Section 2 – These questions relate to how others actively cope in compassionate ways with emotions and situations that distress you. So:

When I'm distressed or upset by things...

35. Others direct their attention to what is likely to be helpful to me.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

36. Others think about and come up with helpful ways for me to cope with my distress.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

37. Others don't know how to help me when I am distressed.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

38. Others take the actions and do the things that will be helpful to me.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

39. Others treat me with feelings of support, helpfulness, and encouragement.

	1	2	3	4	5	6	7	8	9	10	
Never											Always

Thank you very much for your participation and time spent on this survey.

APPENDIX E

Appendix E

Focus Groups/ Interviews

Appendix E.1

E.1. Pre-Intervention Focus Group Questions (after the initial online group discussion)

1. Thank you so much for taking part in that discussion. How do you think it went overall?
 - a. Can you tell me more about that? What do others think?
2. Thinking about the discussion you have just had, what was your learning experience like during this discussion?
 - a. What about your social experience of the discussion?
3. Can you compare this experience with other online group meetings you may have conducted recently in relation to your learning experiences in those meetings?
 - a. Can you compare the design/format of this group work with your previous group work?
4. Can you compare this experience with other online group meetings you may have conducted recently in relation to your social experiences in those meetings?
5. Thinking about your colleagues' behaviours with each other during online discussion groups on your modules, do you find that colleagues tend to *share* speaking time *equally*?
6. Can you think of strategies you use in your group work discussions here and elsewhere, to increase your own or others' engagement in the discussion?
7. How effective are these strategies in your experience?
8. Still thinking about your colleagues' behaviours with each other during discussion groups, do you recall *anything in particular* that sticks in your mind - either positive or negative?

9. Thinking about what you have described so far, in what ways do you think this impacts/impacted your group members' confidence at speaking English in the group?
10. In your own group work with colleagues anywhere in the university:
 - a. Have you ever felt left out of the discussion, or have you ever seen this happen to others?
 - b. What if anything did you try to do to address this for yourself or others?
11. Could you think back to one of the most inclusive, work-related team or group **discussions** you have ever had - where everyone there contributed/participated -what, for you, were the most important outcomes of the experience?
(social/psychological? Learning? Effectiveness of the group on task?)
12. How do you feel about switching on camera in your group meetings?
 - a. Do you feel more confident to speak to your friends/ your group members, when you are looking at their faces (when the cameras are on) or when you are looking at their initials (when the cameras are off)?
13. How do you perceive another group members' eye contact/screen gaze? If someone does not sustain eye gaze/screen gaze, do you feel that s/he does not pay attention? Or pay attention?
 - a. As to your point of view, why people do that (avoiding eye gaze) in group discussions?
 - b. What may be the outcomes of that to other members in the group?
 - If the speaker breaks screen gaze?
 - If listeners break screen gaze?
14. How do you feel about being in 4 equal size rectangles (Screen real estate) in the online group meetings? (Psychological impact of being in four equal boxes in their group meetings)
15. Is there anything more you would like to say about what you have all considered so far in this focus group discussion?

Appendix E.2

E.2. Post-Intervention Focus Group Questions (after the final online group discussion)

1. Thank you very much for taking part in that discussion. How do you think it went overall? Can you tell me more about that? What do others think?
2. What compassionate strategies, if any, did you use in this discussion that you did not use in the previous discussions? (Group G: What compassionate actions did you take? E.g., selecting research article, using mother tongue words etc.)
3. Together, can you remember any responses to these strategies you used in the group?
4. Do you think the Compassionate strategies help (or not) to enhance social experience of your group today?
 - a. If you used compassionate strategies, in what ways, **if at all**, do you think this helped students' social experience of the discussion?
 - b. If you feel that what you tried did not help that, could you tell me why you think that was?
5. If you used compassionate strategies, in what ways, **if at all**, do you think this helped enhance other students' learning experience in the discussion today?
 - a. If you feel that what you tried did not achieve this, could you tell me why you think that was?
6. Did you observe any change in yourself – in your own behaviours in the discussion - after having the CSCC developmental training? (Group management skills)
7. Did you notice any change in your fellow students' behaviours after the CSCC developmental training?

8. If you did notice any changes after the CSCC developmental training, did this have any effect – or not – on your own:
 - a. Learning experience in the group discussion?
 - b. Social experience in the group discussion? (If positive answers got to c.)
 - c. Please think very carefully about the next question: *Do you think these behaviour changes you have noticed, might NOT be connected with compassionate strategies that you have tried out? Could there be other reasons for them? What are your thoughts everyone?*

9. Did you notice any observable silences during the group discussion?
 - a. If yes, How did you feel about asking/inviting someone to talk?
 - b. If no, when there is any observable silences, How do you feel about asking/inviting somebody to talk?
 - c. What thoughts if any encourage you to invite somebody to talk?

10. Compassionate communications are more usually taught *in class* and used *in class* for small group discussions. Do you think it is worth teaching these compassionate communication skills for group discussions, if your group discussions are held *online*?

11. What do you think might be difficulties here, for using compassionate communication strategies for online group meetings, if any?

What are your suggestions for how this/these could be solved? (What could be done if anything?)

12. To what extent do you think it is helpful or unhelpful for these skills to be taught on the modern degree curriculum?
 - a. Why? Please give your reasons.

13. Thinking now about English language learners, do you think the use of compassionate communications skills by the group is likely to have any effect, perhaps positive, perhaps negative – or maybe no effect at all - on their English language speaking skills development?
 - a. Do you think these skills could help you manage communicative difficulties?
 - b. If groups are selected randomly, how do these skills help you in ESL communication?
 - c. Do you feel more confident about your group work communication knowing these skills or not?

14. Use of the compassionate skills is sometimes assessed - so it is credit-bearing - on some degrees in the UK. Do you think this is *appropriate*? Would you like this to be happen on your curriculum? Why?
15. The 5-year strategy of a UK university now includes helping more staff and students learn about this kind of compassion-focussed teamwork. What are your thoughts about this?
16. Thinking about the history of relationships between our Sri Lankan Tamil, Muslim, and Sinhalese for example 30-year war, the Easter Attack, do you think compassionate communications have any role to play on your university curriculum for community building for these student groups?
17. Do you have any suggestions/ anything to add to our overall discussion?
 - a. *Shared Background*
 - b. *Group management skills*
 - c. *Language learning skills*
 - d. *Compassionate communications strategies*
 - e. *Any other*

APPENDIX F

Appendix F

PowerPoint Presentation on Cognitive Skills of Compassionate Communication

(All images included in the presentation were from <https://giphy.com/explore/gippy>
and licenced under creative commons)

COMPASSIONATE COMMUNICATIONS IN ONLINE GROUP WORK

Ms. JMPVK Jayasundara,
School of Social Sciences, Humanities, and Education
University of Hertfordshire

1

OVERVIEW

- > How Do Our Brains Work?
- > What is Compassion?
- > Why Compassion?
- > Group Discussions – Common Problematic Behaviours
 - Non-Contributors
 - Monopolisers
- > How to be Compassionate in Group Work


2

How Do Our Brains Work?

- o Suppose you are out shopping all day. 20 shop assistants are delightful except for one who is rude.
- o Of your 20 interactions, which are you most likely to remember?
- o Take two minutes to think about this and share your ideas with each other

3

How Do Our Brains Work?



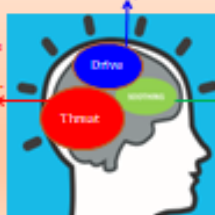
- o Our brains are hard wired to be alert to threat – it's a system which has enabled our species to survive (fight, flight or freeze).
- o The trouble is that the **threat system** in our brains is **dominant** and can overtake everything else – including our power to engage in creative higher level thinking.

4

How Do Our Brains Work?

Three Circle Model

The Drive System leads us to strive to achieve what we want or need (or what we believe we need)



The Threat System identifies threats... creates anxiety... motivates us to actions:
Fight, Flight or Freeze

The Soothing system allows us to think more calmly and rationally and to focus. We can train this system.

Source: Compassionate Mind Foundation, 2005

5



6

How Do Our Brains Work?

Regulation of our emotions in our brains

"Each system is associated with different brain regions and different brain chemistry. Distress is caused by imbalance between the systems, often associated with underdevelopment of the soothing system."

Mindfulness and Clinical Psychology Solutions (2019, p4)

Over stimulation of the threat and drive systems can lead to mental wellbeing difficulties as there is no space for the brain's soothing system.

7

What is Compassion?

IT IS NOT AN EMOTION

IT IS A MOTIVATION:

to notice (not normalise) the distress or disadvantaging of yourself and/or others and do something (wise) to reduce or prevent it.

Neuroscience, group psychotherapy and clinical psychology studies confirm this (Wilbert-Pard Chaden, 2013; Jajay, 2015; Loria, 1995; Ricard, 2015)

8

What is Compassion?

There are three types of compassion:

- Self-compassion
- Compassion for others
- Sensitivity to compassion from others

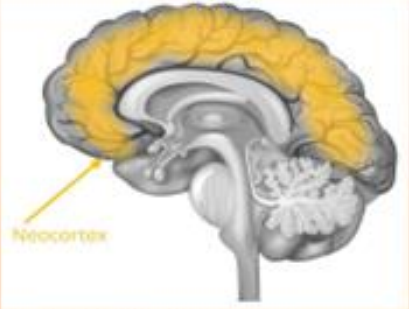
9

Experiment: Practicing Self-compassion

1. Try to **notice/witness** any self-criticism you have and how it makes you feel.
2. **Thank** that self-criticism; **do not fight** against it.
3. But now imagine counter-arguments in order to **let** that feeling **go or diminish**.
4. Does this help you **think more calmly and clearly**?
5. **Speak** often to yourself with **real kindness** just as you talk to a close friend in distress whom you care for.
6. Try to **practice this gently** for a minute these steps now and then with slow, deep breathing.
7. This can **change your brain chemistry** and your heart rate. These changes will allow you to think more calmly and clearly.

10

Evolving of Compassion in Human Brain



Hull, M. (2018). Master Learning of Human Brain. Toronto: Yale Science. <https://www.youtube.com/watch?v=080100000000>

11

Causes of Compassion

- Emotions
- Context
- Skill sets



12

Why is Compassion Not an Emotion?

- Can you think of something compassionate you have done for someone else that you can remember?
- Take one minute to remember quietly.
- Can one of you share with the group what this action was? (within 2 minutes)

13

13

Why Compassion in Group Work?

There are many reasons why it might be tricky to think and communicate in teams (study or working place):

- It's a new/strange environment
- We don't know each other yet
- We're not sure what's expected
- Our previous experience in groups hasn't been great
- We're shy
- We don't want to say the wrong thing



Perhaps you can think of others?

14

14

Teams in the workplace have been researched to identify what makes them most effective

Google

Project Aristotle: (2012-2017)

180 teams
250 attributes
\$5 million
300+ interviews

What do you think the key characteristic was?

(Source: Duhigg, C., 2016)

15

15

Why Do We Need Compassion?

- Research shows that if members feel a sense of belonging the teams more likely to succeed (Ma & Yuen, 2011; Cozolino 2013; Gilbert, P., 2005, 2017).
- Members who control their threat systems are more likely to feel safe and therefore work more collaboratively.
- Whether for you now or in the workplace compassionately managed groups/teams develop graduate attributes: respect for others, intellectual depth and adaptability.
- Compassion for self and others improves critical thinking (Gilbert T. et al., 2018) innovation and creativity (Poorkavoon, 2016)

16

16

Group Discussions (Team meetings): Common Problematic Behaviours

- Non-contributors



17

17

Group Discussions – Common Problematic Behaviours

- Monopolisers



We're gonna blue sky some ideas.

18

18

Assisting Non-Contributors



19

Pass the Hot Potato


- When someone freezes - their mind goes blank - or they've no more to say. But they can 'pass the hot potato'. Which means, they can quickly invite another student "So what do you think, Shamm?"; or to the group: "What does everyone else think?"



20

Strategies to HELP Non-contributors

- Invite with their name (gentle, warm tone)
- Be generous and say "thank you". This helps group bonding.
- Watch carefully how members flourish through inclusivity and thanks.
- Notice: your own and others' undermining box language in the group meetings, especially if things get frustrating.
- Try helping unprepared colleagues for example time management, research skills.



21

Disrupting Monopolising Compassionately



22

Self-regulation Strategies for Monopolisers

- Be concise - aim to manage the time as this encourages the flow of group work
- Invite others
- Slow down and listen well
- Then build on what others say
- Chat box: to put comments and questions, useful to point to chat box when it is time for monopolizer to pay attention to thought process of the rest of the group.



23

Dealing with a Disagreement in the Team

- When a disagreement arises
- "Your compassionate skills now mean that even if half the group disagrees with the rest, the group can become more bonded, informed and insightful than before the disagreement. Welcome disagreement as an intellectual challenge." (Gilbert, T. 2020)



24

Strategies for Monopolisers and Their Groups

- Understanding what may be happening.
- Being concise to leave space for others.
- Listening carefully to build on the group's ideas.
- The group's compassionate body language to help others be more concise and inclusive.

Source: Gilbert, T. (2007, April 06). Video Clip: Compassion in Team meetings. YouTube. Available at: <https://www.youtube.com/watch?v=05070000000> [Accessed on 07 April 2020].

25

Strategies for Including Others

- Silence: the group's (just) breathing and thinking... don't worry about reasonable silence.
- Not normalising seeing others talked over. When monopolisers dominate others.
- Disrupting cliques and dominating pairs. Which excludes others.
- Bringing others into the discussion: **Yes** and **no**. (Use your colleague's **name** to invite them to speak. Use a warm tone of voice)
- Letting people **stay out** of the discussion - when they need to. Open doors for them again and again.
- Thanking each other. The power of gratitude for bonding teams.
- Quacking your own, as well as others' body language + Screen Cops
- Working with **non readers** who have not prepared for the meeting.

Source: Gilbert, T. (2007, April 06). Video Clip: Compassion in Team meetings. YouTube. Available at: <https://www.youtube.com/watch?v=05070000000> [Accessed on 07 April 2020].

26

Useful Tips

- Select relevant material.
- Make sure you are sufficiently familiar with it to explain clearly what you have found.
- It is your job first to **summarise** in a few points so you can explain it to your group easily.
- In preparation it is also important to ask yourself questions about what the material is. Eg. Will this work for our group? If it is not quite right, could it be adapted for your group work?
- When you are listening to a colleague who is presenting, please don't interrupt unless you didn't understand something.
- Practice makes a huge difference.

27



28



29

APPENDIX G

Appendix G

Cycles 2 & 3

Shared Virtual Backgrounds

The following 10 images chosen by the researcher with the participants as per their requests and then were shared with all groups to select one as their common virtual background.



Figure G.1: Image 1: The Caribbean Sea with moving waves and waving leaves of a palm tree – Available in Zoom backgrounds



Figure G.2: Image 2: Sri Lankan paddy field (Source: <https://www.cdofrends.com/story/14040/blockchain-plants-microinsurance-advantage-sri-lankan-paddy-fields>)



Figure G.3: Image 3: Sri Lankan greenery hillside with St. Clair fall (Source: <https://www.srilankatailormade.com/rainbow-tour-in-sri-lanka/>).



Figure G.4: Image 4: Airbnb Zoom background (Source: <https://www.pinterest.co.uk/pin/224687468897778158/>).



Figure G.5: Image 5: Opened window to greenery environment (Source: <https://www.mydomaine.com/interior-design-zoom-backgrounds-4842797>)



Figure G.6: Image 6: Little Library Yellow Chair (Source: https://www.eastman.org/sites/default/files/2020-04/GEM_Library_BrocadeChair_Zoom.png)



Figure G.7: Image 7: Free Zoom Virtual Background from Resource Center: Chris Menard Training (Resource: https://chrismenardtraining.com/CMT/images/sections/downloads/zoom/static-backgrounds/large/OfficeZoom_0005.jpg)



Figure G.8: Image 8: Take your next Zoom call from the bridge of the Starship Enterprise (Source: <https://www.ebaumsworld.com/pictures/funny-zoom-backgrounds-to-use-on-your-next-call/86232108/?image=86232418>)



Figure G.9: Image 9: A home image can be used as Zoom background (Source: <https://blog.ruggable.com/10-virtual-zoom-backgrounds>)



Figure G.10: Image 10: A photo by Malshani Samaraweera

APPENDIX H

Appendix H

Cycles 1, 2 & 3

Poster Designed to Invite
Students

OPPORTUNITY!!

Can you spare a little time in **May/June** or **July**, in three sessions of Online Group Meetings?

- Are you a **Student** studying **Science, Technology, Engineering or Maths** for whom English is not your first language?
- You'll gain a **Certificate from the University of Hertfordshire (UH), UK** confirming your participation in this study.
What a boost to your CV!
- All three sessions will be conducted online via Zoom/ MS Teams

Within a Week	Time	All three Sesaions are conducted within a week and Online via Zoom or MS Teams
01 st Day	1.5 hrs	Pre- Intervention Questionnaire 1 (05 minuees) Small group discuaeion among 04 students (20-25 minuees) Focus Group (30 - 40 minuees)
02 nd Day	01 hr	Pre-Intervention Questionnaire 2 (05-07 minuees) Training Session on Group Management Skills (30- 40 minuees)
3 rd Day	02 hrs	Small group discuaeion among 04 students (20-25 minuees) Post-Questionnaire 1 (05 minuees) Focus Group (30 - 40 minuees) Post- Questionnaire 2 (05- 07 minuees)

You Gain!



Training on Group Management Skills



UH Certificate



Happiness of Contributing



This study has been approved by the University of Hertfordshire SSAH Ethics Committee with Delegated Authority.

UH Protocol number **CHUM/PGT/UH/04345**

APPENDIX I

Appendix I

Ethics Approval Notifications

Appendix I

SOCIAL SCIENCES, ARTS AND HUMANITIES ECDA

ETHICS APPROVAL NOTIFICATION

TO Jayasundara Mudiyanseelage Priyantha Vijitha Kumari Jayasundara
CC Dr.Theo Gilbert
FROM Dr Timothy H Parke, Social Sciences, Arts and Humanities ECDA Chairman
DATE 03/10/19

Protocol number: cHUM/PGT/UH/04345

Title of study: The Viability of Virtual Reality Simulation for Developing Students' Group Management and The Viability of Virtual Reality Simulation for Developing Students' Group Management and Language Learning Skills in Sri Lankan Higher Education

Your application for ethics approval has been accepted and approved with the following conditions by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

no additional workers named

Conditions of approval specific to your study:

Ethics approval has been granted subject to the following conditions:

- Supervisor must see and approve the applicant achieving permission from the remaining Sri Lankan university and from the relevant manager at UH.

General conditions of approval:

Ethics approval has been granted subject to the standard conditions below:

Permissions: Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

External communications: Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

Invasive procedures: If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

Submission: Students must include this Approval Notification with their submission.

Validity:

This approval is valid:

From: 10/10/19

To: 10/10/21

Please note:

Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.

Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit form EC2.

Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

Failure to report adverse circumstance/s may be considered misconduct.

Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

**SOCIAL SCIENCES, ARTS AND HUMANITIES ECDA****ETHICS APPROVAL NOTIFICATION**

TO Jayasundara Mudiyansele Priyantha Vijitha Kumari Jayasundara
CC Dr. Theo Gilbert, Dr. Lily Meng & Dr. Saskia Kersten
FROM Dr Ian Willcock, Social Sciences, Arts & Humanities ECDA Chair
DATE 28/02/2020

Protocol number: acHUM/PGT/UH/04345(1)

Title of study: The Viability of Virtual Reality Simulation for Developing Students' Group Management and Language Learning Skills in Sri Lankan Higher Education.

Your application to modify and extend the existing protocol as detailed below has been accepted and approved by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

no additional workers named.

Modification: Detailed in EC2

General conditions of approval:

Ethics approval has been granted subject to the standard conditions below:

Original protocol: Any conditions relating to the original protocol approval remain and must be complied with.

Permissions: Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

External communications: Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

Invasive procedures: If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

Submission: Students must include this Approval Notification with their submission.

Validity:

This approval is valid:

From: 28/02/2020

To: 10/10/2021



SOCIAL SCIENCES, ARTS AND HUMANITIES ECDA

ETHICS APPROVAL NOTIFICATION

TO Jayasundara Mudiyansele Priyantha Vijitha Kumari Jayasundara
CC Dr. Theo Gilbert; Dr.Lily Meng; Dr.Saskia Kersten
FROM Dr Ian Willcock, Social Sciences Arts and Humanities ECDA Chairman
DATE 22/04/20

Protocol number: acHUM/PGT/UH/04345(2)

Amended Title of study: The Viability of Compassionate Communications Pedagogy for Developing Students' Group Management and Language Learning Skills Online in Sri Lankan Higher Education

Your application to modify and extend the existing protocol as detailed below has been accepted and approved by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

no additional workers named

Modification:

- Revise Title
- Amend the end date
- And other modifications as listed in the EC2 application

General conditions of approval:

Ethics approval has been granted subject to the standard conditions below:

Original protocol: Any conditions relating to the original protocol approval remain and must be complied with.

Permissions: Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

External communications: Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

Invasive procedures: If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

Submission: Students must include this Approval Notification with their submission.

Validity:

This approval is valid:

From: 22/04/2020

To: 23/12/2022

Please note:

Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.

Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit a further EC2 request.

Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A or as detailed in the EC2 request. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

Failure to report adverse circumstance/s may be considered misconduct.

Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

ECSIHP
13.2.19

PAPER 10.2



This is an official notification by a student of the University of Hertfordshire in respect of a study involving human participants.

Protocol Number: *CHUM/PGT/UH/04345*

Approving Committee: *The University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority*

If you have any queries concerning this document, please contact me *JMPVK Jayasundara*, pj19aac@herts.ac.uk or my principal supervisor *Dr. Theo Gilbert*, T.I.Gilbert@herts.ac.uk.

FORM EC3: CONSENT FORM FOR STUDIES INVOLVING HUMAN PARTICIPANTS

I, the undersigned [*please give your name here, in BLOCK CAPITALS*]

.....
of [*please give contact details here, sufficient to enable the investigator to get in touch with you, such as a postal and/or email address*]

.....
hereby freely agree to take part in the study entitled

The Viability of Compassionate Communications Pedagogy for Developing Students' Group Management and Language Learning Skills Online in Sri Lankan Higher Education. (UH Protocol No. CHUM/PGT/UH/04345)

1 I confirm that I have been given a Participant Information Sheet (a copy of which is attached to this form) giving particulars of the study, including its aim(s), methods and design, the names and contact details of key people and, as appropriate, the risks and potential benefits, how the information collected will be stored and for how long, and any plans for follow-up studies that might involve further approaches to participants. I have also been informed of how my personal information on this form will be stored and for how long. I have been given details of my involvement in the study. I have been told that in the event of any significant change to the aim(s) or design of the study I will be informed, and asked to renew my consent to participate in it.

2 I have been assured that I may withdraw from the study at any time without disadvantage or having to give a reason.

3 In giving my consent to participate in this study, I understand that voice, video or photo-recording will take place and I have been informed of how/whether this recording will be transmitted/displayed.

4 I have been told how information relating to me (data obtained in the course of the study, and data provided by me about myself) will be handled: how it will be kept secure, who will have access to it, and how it will or may be used.

5 I understand that if there is any revelation of unlawful activity or any indication of non-medical circumstances that would or has put others at risk, the University may refer the matter to the appropriate authorities.

6 I have been told that I may at some time in the future be contacted again in connection with this or another study.

Signature of participant.....

Date.....

Signature of (principal) investigator.....
J.M.P.V.K. JAYASUNDARA

Date.....

APPENDIX J

Appendix J

Research Publications

Peer-reviewed Journal Articles

- Jayasundara JMPVK, Gilbert T, Kersten S and Meng L (2023) Why should I switch on my camera? Developing the cognitive skills of compassionate communications for online group/teamwork management. *Frontiers in Psychology*. 14:1113098. doi: 10.3389/fpsyg.2023.1113098.

Available at:

http://journal.frontiersin.org/article/10.3389/fpsyg.2023.1113098/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Psychology&id=1113098.

- Jayasundara, J.M.P.V.K., Gilbert, T. Kersten, S., and Meng, L. (2022) 'How UK HE STEM Students Were Motivated to Switch Their Cameras on: A Study of the Development of Compassionate Communications in Task-focused Online Group Meetings'. *Education Sciences*. 12(317).

Available at: <https://doi.org/10.3390/educsci12050317>.

Book Chapters

- A chapter on 'Adopting a Social Justice Lens in EAP – The Application of Cognitive Skills of Compassionate Communication (CSCC) in Online Task-focused Group Meetings' for an edited book entitled, *Social Justice in EAP and ELT Contexts* by the University of Westminster, UK, in collaboration with the University of Durham, UK was accepted to be published by Bloomsbury (in February 2024).
- Jayasundara J.M.P.V.K., Gilbert T., Kersten S., and Meng L., (2023). Why Should I Switch on My Camera? Developing the Cognitive Skills of Compassionate Communications for Online Group/teamwork Management. In Waddington K, Manley J., Edginton T., and Kanov J., (Eds) *Compassion: From Neuroscience to New Horizons and Innovative, Inclusive Research Agendas*. (pp. 102-122). *Frontiers in Psychology*.

Conference Presentations

- The paper entitled 'Compassionate Communications for HE Online Group Work Management' was presented and published at the University of Hertfordshire's Annual Learning and Teaching Conference held on July 6th, 2023.
- The paper entitled 'Is Compassionate Communication Facilitative or Disruptive in HE's Online Group Meetings?' was presented and published at the University of Hertfordshire's Summer Post Graduate Research (PGR) Conference held on June 30th, 2023.
- The paper entitled 'Compassionate Communications for Motivating Students to Switch their Cameras on during Online Group Meetings' was presented and published at Research in Distance Education (RIDE) Conference, Accelerating Innovation. Centre for Online and Distance Education, University of London held on June 15th, 16th, 17th, 2022.
- The paper entitled 'How can communicative eye contact in F2F be adapted in online task-focused group discussions?' was presented and published at Learning & Teaching Conference Higher Education for the Common Good: Learning from COVID-19 Conference, Teaching Excellence Academy, University of Hull held on July 13th & 14th, 2021.
- The paper entitled 'Why should I switch on my camera? A study of how students were persuaded to do so in online group work' was presented and published at Herts Learning, Teaching and Learning Conference, Learning and Teaching Innovation Center, The University of Hertfordshire. July 30th, 2021.

Keynote Speech

- Delivered a Keynote Speech on 'Building Student Teams and Communities for Enhanced Group Cohesion and Collective Critical Thinking' with Dr. Theo Gilbert at the INTI-UH Joint Symposium on Teaching and Learning After Pandemic organised by the INTI International University and Colleges at Malaysia in collaboration with the University of Hertfordshire in October 06 & 07, 2022.

Walking Conversation

- I contributed as an invited resource person to a Walking Conversation to talk about my research work to interested scholars for an hour (01) at the walking conversations (Ellenbrook Fields) held as the final event of the UH Teaching and Learning Conference held on July 01, 2021, the University of Hertfordshire.