



Blended Learning in Practice

Autumn 2015

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Editorial

Welcome to the autumn 2015 edition of our e-journal Blended Learning in Practice. In line with our change in focus for the journal we have in this issue four research articles from participants on our Post Graduate Certificate in Learning and Teaching in Higher Education (PGCertHE) programme. We also have a video produced by Audrey Kempson from the School of Health and Social work in which Audrey discusses her experiences of leading an online programme. This is followed by our regular article on the student voice in which a postgraduate student of Computer Science reflects on his experience of study at the university.



Dominic Bygate

Within this edition:



Helen Barefoot

change are discussed.

Ken Spearpoint from the School of Life and Medical Sciences reviews the pedagogical landscape of simulation based Medical Education (SBME). He considers the diverse range of skills that are included in this field and explores how constructivist, behaviourist and connectivist approaches have influenced the design and delivery of SBME programmes.

Maciej Bancarzewski from the Hertfordshire Business School considers how the financial crisis of 2008 has impacted the teaching of Economics at university level. The study using evidence from a series of semi- structured interviews explores the changes that have taken place. The nature, scale and barriers to

Muhammad Hiyazy & Jana Filosof from the Hertfordshire Business School explore the challenges of embedding Graduate Attributes in the business studies curriculum. They adopt a multi- method approach to the research that allowed them to engage with a range of primary and secondary sources. Two broad themes emerge from the study; the influence of the marketization of higher education and the strategic vision within the HE provider.

Mose Bevilacqua a visiting lecturer at the school of Engineering and Technology discusses the learning experiences of students on foundation programmes in Engineering. He deconstructs the student experience and investigates the mechanisms by which students acquire the necessary skills and knowledge in order to succeed in higher education.

Audrey Kempson from the School of Health and Social Work has developed a series of ideas for good practice that has emerged from her own wide experience of delivering online learning. Audrey's has created a YouTube video that presents some of these ideas.

Continuing the theme of online learning our regular student voice section is presented by **Justin Mifsud**, who was a recent postgraduate student from the School of Computer Science. Justin discusses his experiences of studying an online programme at the university.

We hope you enjoy reading the edition and welcome any feedback.

Helen Barefoot and Dominic Bygate

Contributor Profiles

Ken Spearpoint

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Ken Spearpoint is a Principal Lecturer in Medical & Healthcare Simulation and joined the University in June 2010. He is on a (part-time) secondment from Imperial College Healthcare NHS Trust where he is a consultant nurse in Resuscitation. Ken has utilised simulation in a blended learning context in medical education for more than 20 years. He is developing a research interest in using blended learning pedagogies to improve human factors & clinical decision making in emergency medical care.



Maciej Banczewski

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Maciej Banczewski is a Lecturer in Economics. Maciej is completing his PhD thesis on the process of Japanisation in Poland. His current research interests concern the labour process in transforming economies, globalisation and foreign direct investment. Maciej has been a Fellow of the Higher Education Academy since 2014.

Contributor Profiles

Muhammad Hijazy

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Muhammad is about to complete his PhD at Hertfordshire Business School, where he works as a visiting lecturer. His current areas of interest include Human Resource Management, Organizational Psychology, Equality and Diversity, Spirituality in Management, Cross Cultural Management and Cross Cultural Psychology. Muhammad has successfully completed his PGCert in Learning and Teaching in Higher Education at the University of Hertfordshire, and been awarded a Fellowship of Higher Education Academy. He also received his MSc in Management of Strategic Human Resources from the University of South Wales (Formerly University of Glamorgan).



Jana Filosof

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Jana is Principal Lecturer in Strategic Management Group (HBS) and a Director of Social Enterprise Unit. She is a PhD candidate, and her main research interests are Corporate Social Responsibility and Complexity Sciences. Jana joined University of Hertfordshire in 2003 and has been a full-time member of staff since 2005. She is interested in embedding Social Responsibility into the curriculum and has contributed to the LTI by conducting several research projects on this matter, which were presented at the L&T conferences in 2014 and 2015.

Contributor Profiles

Audrey Kempson

Audrey Kempson is a Principal Lecturer in Mental Health Nursing. A background in NVQs and Workplace Learning led to her Doctorate in Education studies at UH and her research interests are in how people learn alongside work, competence, service user involvement and impact in nurse education and co-production and student involvement in research. She is a Programme Tutor and Module Leader on the MSc in Mental Health Recovery and Social Inclusion (Online) and is developing a departmental framework for MSc work in the department of Nursing (Children's, Learning Disabilities and Mental Health) and Social Work, is the Research Lead for Mental Health, leads modules on the BSc Nursing programme and is part of supervision teams for two PhD students.



Mose Bevilacqua



Dr Mose Bevilacqua holds a BEng (Hons) in Aerospace Engineering, obtained at the University of Hertfordshire in 2005, and a PhD in Materials Science, obtained at the University College London (UCL) in 2010. After holding the position of Research Fellow in Carbon Materials at UCL until September 2011, he joined the University of Hertfordshire in January 2012 as a Visiting Lecturer in Automotive Engineering. He was also appointed as Research Fellow in Carbon Materials in 2013, a role which he held until 2015. In addition to his research work in Materials at the University of Hertfordshire, he developed a keen interest in the application of a Research-Informed style of teaching to study programmes to enrich students' learning experience. His current research area in education includes monitoring student engagement to understand more deeply the learning mechanisms of students of different levels. He is now working as Lecturer in Mechanical Engineering at Uxbridge College, teaching Materials Science to level 4 and 5 Higher National Diploma (HND) students. He is still a part-time Visiting Lecturer and Visiting Research Fellow at the University of Hertfordshire. He is expected to be awarded the PgCert in Higher Education at the University of Hertfordshire in 2015, along with the title of Fellow of the Higher Education Academy (FHEA).

Contributor Profiles

Justin Mifsud

Justin Mifsud is a user experience consultant and system analyst who also manages a team of developers in a web development company in Malta. After obtaining his degree in Computing and Information Systems, he read for a Masters Degree in Human Computer Interaction with the University of Hertfordshire and at the same time started <http://usabilitygeek.com>, a usability blog which has steadily gained a loyal followership. Being a Marketing graduate and holding various web marketing roles within a varied portfolio of industries has helped him acquire extensive marketing and client management experience. Justin is also a member of Smashing Magazine's experts panel, where his role involves performing a technical review of user experience articles before they are published in the magazine.



Teaching & assessing in simulation based medical education: a review of pedagogy

Ken Spearpoint, School of Life and Medical Sciences

Abstract

Simulation based medical education (SBME) has become a widely utilised educational strategy that has been applied to an increasingly diverse range of skills, of both technical and non-technical nature, delivered to a multi-disciplinary, inter-professional healthcare workforce.

This review of the pedagogy has identified that whilst it is recognised that a constructivist, real-world approach is fundamental to the success of the SBME model, behaviourist methodologies play an important part in its effectiveness as an educational strategy. Furthermore, this paper acknowledges that innovative and creative approaches that have incorporated connectivist and narrative educational strategies provide supplementary and complementary benefits to the learning outcomes of participants in SBME programmes.

Introduction

Simulation based medical education (SBME) has become an increasingly widely used tool in the teaching armamentarium over the course of the last 50 years (Department of Health, 2011) and it has been defined as “as an education technique that allows interactive, and at times immersive, activity by recreating all or part of a clinical experience without exposing patients to the associated risks” (Perkins, 1997). SBME is commonly associated with the use of manikins, actors as patients, role-playing and computer technology (and combinations thereof) facilitated by skilled medical educators (Alinier, 2007).

The move towards SBME was largely driven by a combination of greater awareness of patient safety issues, an increasing workforce working fewer hours and an acknowledgement that SBME addresses the complexities of technical and non-technical clinical performance (Department of Health, 2011).

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The focus upon patient safety that has permeated the contemporary health care agenda commenced with the publication of 'An Organisation with a Memory' (Department of Health, 2000). This was more recently under-pinned by the findings contained in the Francis Report (The Mid-Staffordshire Public Inquiry, 2013) and the publication of two further papers (National Advisory Group on the Safety of Patients in England, 2013 and Keogh, 2013) both of which contained recommendations aimed at improving and strengthening the quality of medical education.

Changes to the undergraduate curricula for both medical students and student nurses and the constraints upon time consequential to compliance with the European Working Time Directive have led to considerable restrictions on supervised practice and access to contextualised clinical skills training, which often focus upon the technical elements at the expense of the non-technical, human factors skills (Temple, 2010).

This type of immersive training was established within anaesthesia and crisis resource management in the 1980's (Gaba, 2000) and held almost immediate appeal within the domains of emergency medicine, trauma and resuscitation. The Department of Health published the framework for technology enhanced learning (2011), which recommended widespread use of SBME with specific learning outcomes as part of a blended learning approach, supported by well-educated and proficient simulation educators.

Moreover, the Collins report (2010) formally acknowledged the importance of multi-disciplinary SBME through its inclusion in the curriculum for foundation trainee doctors and in recent years SBME has expanded to provide training programmes for core medical trainees (Health Education East of England, 2015) and medical registrars (Shah et al, 2013) amongst others.

As a programme leader for a master's degree in medical and healthcare simulation in a University based department of post graduate medicine and as an experienced medical

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educator trained to deliver medical simulation through a range of medically orientated life support courses (Resuscitation Council UK, 2015), it is important to adopt and provide a student centred, professional educational experience that is aligned with the UK Professional Standards Framework (Higher Education Academy, 2011) so as to achieve optimal learning outcomes for those students.

As a constructivist reflexive educator SBME appears well suited to constructivist pedagogy and it is my interpretation, through frequent interaction within the SBME collegiate, that a constructivist position appears to represent the dominant pedagogic paradigm. However, integration with other pedagogical frameworks could positively enhance the educational experiences of the students, these are outlined below.

Whilst there are many definitions of what constitutes constructivist education, Cooperstein and Kocevar-Weidinger (2004) suggested that there are four underlying components, being that:

- 1) Learners are active participants.
- 2) Learners construct new knowledge from their learning experiences, based upon their existing knowledge, skills & experiences.
- 3) Learning tasks are realistic, simulated re-constructions of possible or likely events.
- 4) Learners learn through the necessary social interactions and learning conversations.

With its positivist underpinning, behaviourist learning theory presents a contradictory philosophical position to that of constructivism. Learners acquire knowledge and / or skills as a consequence of being didactically taught / instructed that is supported by a reward / punishment system rather than through any reflective contemplation, which would be considered un-necessary (Boghossian, 2006).

Some have argued that cognitivist learning theory has bridged the gap between the behaviourist and constructivist concepts (Cooper, 1993) in that there is recognition that

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whilst (in response to stimuli) information is biologically processed and stored (short-term and long-term memory) learners actively retrieve such information as and when required.

As a response to the increase in distance-learning pedagogy, facilitated by technological advancement, a new learning theory of connectivism has emerged. This theory has embraced the importance of learning through technological networks that can be situated within technological applications (Anderson and Dron, 2012).

Critiques of SBME have considered it to be a resource dependent, expensive educational approach and some have argued that there is a paucity of convincing, supportive evidence of clinical translation (Department of Health, 2011, Motola, et al, 2013). In recognition of the increasing importance placed upon SBME as an integrated educational tool, it would appear timely to conduct a critically analytical review of the learning theories and pedagogy that supports SBME. This paper presents a contemporary review of the SBME literature that explicitly identified its educational underpinning.

Methods

An initial literature search of appropriate databases (PubMed, Web of Science) was conducted using the population / patient / problem – intervention – comparator - outcome (PICO) literature search method (Center for Evidence Based Medicine, 2009) and Table 1 details the PICO strategy used, Table 2 refers to the search terms and the subsequent results. As was evident, despite the use of narrow and specific terms, a large number of potential sources for inclusion in the review were identified. The secondary search strategy then involved scrutiny of article titles that indicated the presence of pedagogical content. If this was apparent the abstract was read and where appropriate, the article was reviewed and considered for inclusion in the review. A similar approach was applied to the Web of Science search engine (detailed in Table 3). This approach resulted in the acquisition of a more focussed group of publications. Lateral searching strategies, which included papers from literature searches that had been previously conducted to inform curriculum

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development and functional knowledge of contemporary SBME literature, provided additional literature that informed the review.

The emphasis of the review was to critically analyse the epistemological / ontological educational perspectives adopted in SBME and examine how this influenced the construction of the educational approaches. Accordingly, the resultant papers, of which there were 9, were scrutinised for their explicitly stated (educationally) focussed theoretical frameworks, with an emphasis on identifying behaviourism, cognitivism, constructivism, connectivism or any respective combination approaches.

Results

Utilising a combination of individual qualitative in-depth interviews and focus groups amongst a cohort of 26 student nurses at different stages in their training, Walton, Chute and Ball (2011) applied a traditional grounded theory approach (Glaser & Strauss, 1967) to address four principle research questions, which in turn were aimed at developing a grounded theory towards simulation pedagogy.

Following exposure to a series of simulation based learning experiences the authors interviewed the participants with the intention of examining the processes as to how students had learned during the simulation activity. The authors also considered the student's perspective of what constituted effective teaching styles and what educational support that the faculty provided in order to promote learning.

The findings indicated that in order to overcome considerable performance and role related anxieties, novice participants required directive, structured guidance and clear role-modeling (through demonstration) of how to interact with the manikin and the associated technical equipment, both in a sociological and professional context. Repetition of practice and an acknowledgement of different learning styles, conducted within a safe environment, where it was safe to make mistakes were implicit in terms of a positive learning experience. This enabled the skills learned through simulation, which provided them with sufficient

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confidence, to translate into their clinical practice.

Whilst the paper provided a number of important insights into SBME and recommended further research into the development of simulation pedagogy, there was no explicit theory reported from the grounded analysis of the student's learning experiences, which was disappointing.

Against the background of technological advancement in human patient simulators and the increasing use of SBME, Parker and Myrick (2008) conducted a critical analysis of the simulation pedagogy in a nursing context. In this paper the authors compared and contrasted the behaviourist and constructivist pedagogies whilst touching on contemporary connectivist elements. Recognition is afforded to the apparently effective role that behaviourist methods play in the learning of psychomotor skills through part-task training, where the instructor conveys knowledge to the learner didactically and the learner appears largely passive until the skill is practiced. The authors discussed the inherent limitations of a behaviourist approach that are consequential to the teaching of a skill outside of its clinical context. This approach, where the learner is passive, does not appear to enable the student to deploy higher cognitive elements that may be essential for effective transfer to clinical practice.

Furthermore, the authors urge caution regarding the simplicity of the scenario and the avoidance of cognitive loading and suggest that when focusing upon part-task skills acquisition using SBME, clear learning outcomes and repetition of practice are accessible to students. The merits of pre-loading practical skills learning, modular teaching methods and timely feedback delivered to small groups were all discussed as effective behaviourist pedagogy.

In contrasting behaviourist education to the constructivist approach, Parker and Myrick recounted that in this pedagogy learners cognitively construct their own learning within their unique, personally contextualised, lived experience and that the generation of new knowledge and learning is dependent upon their previous experiences. The authors

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recognised that adoption of a constructivist approach to SBME is strongly evident within the extant literature and as a methodology for developing higher cognitive thinking that promotes active, experiential learning.

Further advantages of the constructivist method were discussed, which included student-centred learning that promotes autonomous decision-making whilst providing the participant with an individual learning experience. This method is more about developing professional decision-making skills that are contextualised within the clinical environment and is often useful in developing the non-technical, human factors ergonomics skills that are a necessity for effective team-working. Again, small group work that promotes integrative learning was recommended with the constructivist pedagogy.

The article concludes by recognising that both behaviourist and constructivist approaches to SBME are supported within the literature, the behaviourist approach is more appropriate for psychomotor, part-task skills training whereas the constructivist pedagogy is most suited to whole-task scenarios that aim to develop clinical decision making and team centred non-technical skills. The authors have provided a valuable pedagogical critique that identified that a blend of behaviourist / constructivist approaches may be appropriate, perhaps bridged by connectivist pedagogy that embraces contemporary technology, which resonated with much of my own experience and practice.

In his paper that discussed the use of narrative pedagogy in simulation, Walsh (2011) indicated that the use of a patient / nursing stories, conveyed through an array of educational media, that may incorporate a broad range of experiences, can act as a stimulating platform for learning. The re-living of real patient stories through their narrative accounts provided the premise for discussion and critically analytical dialogue as a facilitated learning experience that can better prepare students for a range of difficult patient encounters, for example end of life care, mental illness, and bereavement. The author also conveyed the value of the connectivist methodology regarding the use of web-based teaching that was blended and aligned with more conventional pedagogical approaches.

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Much of the argument in support of using a narrative pedagogy was directed to the benefits to learners in terms of being exposed to more difficult, emotional challenging decision making situations (e.g. end of life care) in a safe and supportive, discursive environment in the constructivist tradition. In this insightful and novel paper, Walsh acknowledged the limitations within the evidence-base, but convincingly articulated that this pedagogical approach is well suited to addressing many of the very important human factors components of care that up until recently have been largely overlooked within medical education.

Schaefer and colleagues (2011) conducted a (positivist) review of more than 4000 simulation related publications in part to attempt to identify evidence of pedagogical approaches taken in the delivery of SBME. Using a checklist approach informed by the reviewer's experience of simulation education, researchers scrutinised each of the papers for the presence of a range of constructivist and social cognitivist pedagogies.

It appeared that less than a quarter of the papers identified any particular pedagogical positioning and of those that did almost all exclusively utilised constructivist experiential learning strategies. It was interesting to note the considerable confirmation (unconscious) bias amongst the authors in their failure to explain why they did not consider behaviourist and connectivist approaches to SBME, which undermined the validity of the findings.

The issue of the provision of research-informed simulation pedagogy arose as critical outcome from the work of Haji and co-workers (2014). This group applied the Medical Research Council framework for research as an adjunct to developing a long-term, integrated research strategy to develop SBME. The authors identified a number of specific areas that merited attention and one of these was the underpinning educational theory behind SBME.

This paper did not explicitly comment on the merits of varying pedagogical approaches and as such it is limited in terms of providing informed insights. The resultant commentary acknowledged the importance of both curricula and pedagogical alignment that appeared to

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inadvertently incorporate a connectivist strategy where SBME is integrated and blended with other forms of learning and learning styles.

Hill and Hamilton (2013) conducted a (multiple) questionnaire-based research inquiry into the development of communication skills of overseas medical students. Groups of five to six students attended a 90-minute workshop during which they were exposed to a written scenario (child with asthma) from which they were asked to anticipate communication challenges. They were then shown a video of a simulated scenario, following which they were asked to identify the communication issues that arose. They then discussed these within the group and later reflected on their learning experiences. In conducting this work the authors philosophically aligned the reflective learning style within a constructivist, experiential educational framework. This model contains great appeal as a pedagogical approach for elements of my own module teaching plans.

The results clearly identified that the use of video simulation had a positive influence upon the educational experiences of the participants and contributed positively towards reflective learning. However, the simulation revealed gaps in the interpretive skill sets of the participants and the authors felt unable to comment on how effective the learning would be with regard to transfer of skills into face-to-face simulation. Furthermore, the authors concluded that video-based simulation scenarios are a valuable educational tool in the development of communication skills, supported by a constructivist, reflective pedagogy.

From a constructivist perspective, the methodological approach contained an educational flaw in that the use of prescriptive questionnaires did not provide students an opportunity to receive reflective feedback, which would have been very useful for those that appeared unable to identify key communication issues that were fundamental in the learning outcomes of the exercise, moreover, this was not discussed.

Lyons and associates (2014) conducted exploratory research into the educational efficacy of computer-based interactive virtual humans (IVH), which was theoretically framed by cognitive load theory in that it should be recognised that there is a limit to what one can

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learn within a given time frame. Fifty-six junior medical students were randomised to be placed into small groups of three, or to work alone. At the end of the simulation each participant completed a short questionnaire. Data was analysed to explore if and how the social model of learning influenced the learning experiences of medical students.

Whilst the quantitative analysis indicated equivalence of learning between the two groups, qualitative analysis suggested that those students placed into the group held a significant preference for group work. Additionally, half of those students randomly allocated to the independent working arm indicated that they would have preferred to work with a colleague. The qualitative analysis also identified significant communication limitations with the IVH, however, the authors concluded that using IVH's to teach complex decision-making was effective in both individual and small group learning, but those in the groups worked better. Whilst this mixed-methods paper was informative, it presented a number of complex concepts that may have been better presented as two papers.

In their review of learning theory applied to team-orientated SBME, Stocker, Burmester and Allen (2014) deeply explored and applied much of the experiential learning theories of Kolb. The authors integrated the important work of Dewey and Bandura into Kolb's work, which was then applied to both simulation centre based team training and simulation scenarios conducted within the genuine clinical setting, both in the medico-social context of intra-professional, multi-disciplinary education. This paper also considered alternative approaches that incorporated Ericsson's work on deliberate practice and the scaffolding (zone of proximal development) suggested by Vygotsky.

The conclusions of the authors centred on a conceptual framework for SBME that constituted five theoretical constructs. The main platform was Kolb's experiential learning, supported by the presence of a significant challenge being contained within scenarios. The provision of a psychologically safe space in which to develop the reflective debriefing (Schon) and post-scenario discussion was seen as important. Finally, Bandura's work on self-efficacy (participating / acting in the scenario within the conventional job role),

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preferably within an accurately constructed environmental and cultural setting should provide an optimal situation for effective SBME. This paper provided a comprehensive analysis of optimal pedagogical approaches and a structural model through which to deliver SBME in developing effective teams.

The final paper reviewed was by Eppich and Cheng (2015), which focussed on the pedagogical underpinning of the post-scenario debriefing. The authors drew together an integrated, blended conceptual framework to provide a robust debriefing tool which they termed PEARLS (Promoting Excellence And Reflective Learning in Simulation). The PEARLS tool, which was derived from the evidence base and the authors experiences and opinions, incorporated three distinct sections, namely, 1) the learner's self assessment, 2) skilful facilitation to provide the platform for critical reflection and 3) focussed, directive feedback.

The PEARLS descriptor appears to contain elements of conventional debriefing strategies, for example 'debriefing as a learning conversation', Pendleton's feedback model and debriefing with good judgement. However, the model was pictorially represented in a series of scripted complex decision-trees and checklists that are aimed at providing a degree of objective clarity during the debriefing.

In my experience of instructing across a range of national life support courses over many years, this approach is likely to be challenging in terms of translational application because the time frames that instructors have available for debriefing on such courses are sadly, very limited. The algorithms appeared complex and may be cognitively challenging for instructors to learn and recall. However the authors overtly recognised the need to conduct empirical inquiry to test their hypothesis that the PEARLS framework would enhance post-simulation debriefing in the context of medium-fidelity SBME.

Discussion

During the 22 years that I have been an advanced life support instructor (and an instructor course instructor) for the Resuscitation Council UK, I have experienced a number of

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changes in pedagogical approaches towards practical skills teaching, feedback and debriefing. Whilst at the time those changes felt significant and many colleagues struggled to accommodate the philosophical educational shift, the contemporary evidence-base has indicated that such changes were perhaps minimal.

It would appear through the conduct of this literature review that in the context of providing participants with a meaningful simulation-based learning experience, that would best prepare learners for effective and safe translation of skills in the application and delivery of clinical care, is determined by a number of important developmental educational steps that embraces a range of pedagogical approaches.

Firstly, it would appear that a behaviourist approach is most appropriate for part-task, technical skill based teaching where the novice practitioner who seeks to acquire a specific psychomotor skill is given the opportunity for repetition of practice during which instant reward through positive, critical feedback and guidance play an important part in assisting the learning for the student.

It appears then that didactic, part-task training is well aligned to psychomotor skills learning and that undertaking the learning of skills outside of the clinical context has advantages for the novice in that cognitive overloading is avoided. Conversely, it is also acknowledged that behaviourist approaches have limitations with regards to contextualised learning.

In terms of an educational bridge between behaviourist and constructivist strategies, the literature recognised that there are behaviourist elements contained within full immersion, complete-task SBME (e.g. a cardiac arrest scenario). Using an example from my own practice, I utilise didactic, behaviourist components during the introduction to the course. At this point participants are provided with the 'rules of engagement' and opportunities to ask questions as to how the simulation event will run. Furthermore, in terms of the provision of sufficient time, through interaction, students are enabled to get to know the manikin, the simulated clinical environment and the clinical equipment / technology. This mirrors the

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'part-task' model of learning as essential preparation for the full-immersion, complete task event that follows

The use of simulation in both formative and / or summative assessment is another example of the use of behaviourist approaches in SBME and it is one that is utilised widely in the context of formative and summative assessment in post-graduate modules and in national life support courses (Resuscitation Council UK, 2015).

The literature clearly identified that the dominant educational strategy in SBME is firmly based on constructivist pedagogy. It was also considered that complete task, contextualised learning of complex, team related clinical activities within a space that provides technical, environmental and psychological authenticity, supported by a student-centred, reflective debriefing is well suited to a constructivist approach.

Recognition of the value and advantages of a constructivist approach in SBME was afforded against a number of important learning outcome targets, particularly those regarding translation from learning into practice. A key benefit to SBME comes from the context of the creation of a safe and secure learning environment where participants are psychologically safe and enabled to make mistakes. Much of the literature was also very clear on the critically important intervention of facilitated debriefing at the conclusion of the scenario, in the form of an extensive and detailed debriefing process.

One of the key strengths of a constructivist approach to SBME is centred upon the importance placed upon the authenticity and realism of the experience for the participants. This provides the participants with an opportunity to conduct autonomous, critical clinical decision making skills whilst under simulated duress in a situation of deliberate practice where those events that unfold can be further supported within the scenario debriefing (educational scaffolding).

The articles analysed in this review indicated that connectivist pedagogical approaches are also pertinent to SBME, particularly in the use of on-line scenarios and interactive virtual reality software. It is important to recognise, that a blended approach to SBME may suit the

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learning styles of some students and that such methods carry considerable educational validity that presents attractive possibilities for their inclusion in the wider curricula for SBME. The use of patient stories (narrative pedagogy) was of particular interest as it appeared to offer an important and stimulating alternative to conventional SBME and one that I hope to explore further.

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Tables

Population	Medical simulation, Medical simulation education, Medical simulation train-
Intervention	Pedagogy, learning pedagogy
Comparison	
Outcome	Education, training, safety, learning

Table 1. PICO strategy applied to PubMed search engine

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((((medical[All Fields] AND ("Simulation"[Journal] OR "simulation"[All Fields])) AND ("teaching"[MeSH Terms] OR "teaching"[All Fields] OR "pedagogy"[All Fields])) AND (("learning"[MeSH Terms] OR "learning"[All Fields]) AND ("teaching"[MeSH Terms] OR "teaching"[All Fields] OR "pedagogy"[All Fields]))) AND (Medical[All Fields] AND ("Simulation"[Journal] OR "simulation"[All Fields]) AND ("education"[Subheading] OR "education"[All Fields] OR "educational status"[MeSH Terms] OR ("educational"[All Fields] AND "status"[All Fields]) OR "educational status"[All Fields] OR "education"[All Fields] OR "education"[MeSH Terms]))) AND (medical[All Fields] AND ("Simulation"[Journal] OR "simulation"[All Fields]) AND ("education"[Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "training"[All Fields]))
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1327 hits identified

Table 2. Search terms used – PubMed search engine

Medical Simulation Pedagogy' 40 hits – 3 papers extracted

Medical simulation assessment pedagogy' 11 hits – 1 paper used

51 hits

Table 3. Search terms used – Web of Science search engine

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Author(s)	Year	Title	Journal	Type of paper	Key Pedagogical position(s)
Walton, Chute and Ball	2011	Negotiating the role of the Professional nurse: the pedagogy of simulation: a grounded theory study	Journal of Professional Nursing	Qualitative Research (Grounded theory)	Constructivist Social cognitive theory Connectivism
Parker & Myrick	2008	A critical examination of high-fidelity human patient simulation within the context of nursing pedagogy	Nurse Education Today	Review	Comparison of behaviourist and constructivist pedagogy
Walsh	2011	Narrative pedagogy and simulation: Future directions for nursing education	Nurse Education in Practice	Review	Narrative pedagogy
Schaefer et al	2011	Instructional Design and Pedagogy Science in	Simulation as an Educational Intervention in	Literature review	Constructivist
Haji et al	2014	From Bricks to Buildings. Adapting the Medical Research Council Framework to Develop Programmes of Research in Simulation Education and Training for	Simulation in Healthcare	Commentary	Connectivism
Hill & Hamilton	2013	Using videoed simulated clinical interaction to promote communication skills and reflective practice for overseas-born medical stu-	Communication in Medicine	Research (questionnaire)	Constructivist (reflective)
Lyons et al.	2014	The impact of social context on learning and cognitive demands for interactive virtual human simulations	PeerJ	Research	Cognitive load theory
Stocker, Burmester and Allen	2014	Optimisation of simulated team training through the application of learning theories: a debate for a conceptual framework	BMC Medical Education	Review	Constructivist (experiential, reflective) Social cognitive the-
Eppich & Cheng	2015	Promoting Excellence and Reflective Learning in Simulation (PEARLS)	Simulation in Healthcare	Theoretical	Constructivist Reflective

Revisions consequential to the peer review

The impact of the financial crisis 2008 on How We Teach Economics

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Abstract

The world financial system was brought to a standstill in 2008. The consequences of the subsequent recession are being felt until today. Financial crisis affected not only the whole economies, but also reshaped the economics as discipline and more importantly changed the way the economics is taught in the post-crisis environment. Based on the semi-structured interviews conducted with experienced lecturers in economics at one of the largest Universities in the South-East England; this paper attempts to address the question, how substantial these changes are at the University level. The study reveals that changes were introduced at the limited scale, and were conducted spontaneously, rather than institutionally. It also argues that a substantial change of approach in economic pedagogy at both – lecturing and textbook – levels is deemed necessary by economics teachers. At the same time business orientated profile of the universities and insufficient funding are seen as the main obstacles to reshaping the economics pedagogy in the aftermath of the recent financial crisis.

Key words: Financial crisis, economic pedagogy.

Introduction

The financial crisis of 2008 was the largest economic shock since the Great Depression in the 1930s. The effects of subsequent recession are felt until this day. The question remains, whether this could have been prevented. Economists were partly to blame, as the complex models developed by them did not predict incoming crisis (Krugman, 2009). It was also argued that the economics as the discipline has been detached from the real world. Moreover, the discipline became 'over-simplistic' and 'overconfident'; it was assumed that markets were always rational and self-equilibrating, and that financial innovation (e.g. derivatives) and increased trading activity was axiomatically beneficial (Turner, 2010). Even if seeing business schools as 'agents of apocalypse' is an exaggeration; it is crucial to understand the level of responsibility the economics pedagogy bears in educating future economics professionals. As *The Economist* (2009) observes:

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"You cannot both claim that your mission is 'to educate leaders who make a difference in the world', (...), and then wash your hands of your alumni when the difference they make is malign"

In 2008, in her famous speech given at the London School of Economics, the Queen asked academics, why they had not foreseen the financial crisis coming. This question has not been fully addressed yet. Economists failed in the theoretical field – unable to predict the crisis, as well as in the didactics of the economics itself - teaching the discipline, which became highly 'technical' and 'theoretical', and arguably less practical. As Blaug (1997: 3) put it:

"Modern economics is sick. (...) Economists have converted the subject into a sort of social mathematics in which analytical rigour is everything and practical relevance is nothing."

Some economists (e.g. Chang and Aldred, 2014) suggested that the way economics is taught should be 'revolutionised', pointing out that the teaching in economics was dominated only by one school of thought – the neoclassical one. Students themselves have also expressed their dissatisfaction in the way the economics courses are taught (Inman, 2013). To address this 'homogeneous' approach students united themselves into a broad organisation, an International Student Initiative for Pluralist Economics, which wants to bring more open approach in teaching economics in post-crisis set of conditions (BBC Radio 4, 2015). In November 2011, Harvard students staged a walkout to express their discontent with the content of economic course they have attended. In a letter to their lecturer they stated:

"A legitimate academic study of economics must include a critical discussion of both the benefits and flaws of different economic simplifying models. (...) There is no justification for presenting Adam Smith's economic theories as more fundamental or basic than, for example, Keynesian theory."

(Harvard Political Review, 2011)

A similar walkout took place long before the global crisis, in 2000 in Paris, where students complained about the narrowness of their economics education, demanding changes in the

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economic curriculum. Their protest gave foundations to Post-Autistic Economics Movement (see Fullbrook, 2011; www.paecon.net, 2015)

The aim of this paper is to identify what lessons have been learned from the 2008 financial crisis in terms of economics pedagogy. Specifically, this research seeks to answer the question whether and what has changed in the way economics as a discipline is taught. This article is structured as follows. The next section will provide the broad discussion on changes in teaching economics. The following sections outline the methodology chosen for this research and the research findings.

Teaching economics – what after the crisis?

The role of the science of economics and economists for every society is crucial. For instance during the Great Depression in the United States, in order to tackle the recession, the Roosevelt administration increased the number of professional economists employed (Seabright, 2012). Accurately designed and implemented economic policies can improve the lives of citizens. On the other hand inadequate policies can deteriorate countries' economic performance for years. Before the 2008 financial crisis, and during periods of prosperity, economics was a hidden science; there was also little debate on how economics should be taught. For example Colander (2005) argued that the economics textbooks are outdated by pointing out the mismatch between what economists do and what economists teach. Edward Fullbrook (2009) went even further by calling economics textbooks 'toxic'. This view was also supported in his further work. He pointed out that:

"(...) the textbooks we use, and the courses that we teach harbour fundamental misconceptions about the way economies, most especially their markets, function. And in economics nothing is more important than teaching, because, (...), economics is primarily a teaching profession. This makes economics pedagogy a natural starting point for both an analysis of how economics went so horribly wrong and how it might be made less a facilitator of human disaster in the future."

(Fullbrook, 2011)

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The 2008 financial crisis has changed the *status quo* and economics was brought to the central place of the debate. In the aftermath of the crisis academics rushed into reforming the 'dismal science' explaining what was inherently wrong with the discipline. The Bank of England has even organised the conference titled 'What Post-Crisis Changes Does the Economics Discipline Need? Are Graduate Economists Fit for Purpose?' The top scholar economists suggested how the teaching in economics should be improved. The question, how to prepare economists to explaining, researching, but most of all – predicting and preventing – future economic crises, had to be raised. The answer lays in prospective economists' 'training' and its 'fitness for purpose' – namely, how the students at university level are taught economics and how this affects their future performance as economists. It is crucial that the students are equipped with the theoretical tools they will need in their professional careers. Lack of this equipment (or the unsuitable equipment) can, as the recent crisis demonstrated, lead to catastrophic consequences.

The didactical debate proposes several remedies to tackle the problems the crisis has created in the approach to teaching economics at university level.

Firstly, reshaping of the undergraduate economics curriculum could be considered one way of dealing with this problem. Today's British universities mainly tailor their programs to the need of private employers. Therefore, the 'unpractical' subjects such as philosophy and history were nearly erased from the curriculum. As it was argued above, economics became a very technical and abstract discipline. This approach was also reflected in the way the economics is taught. Students and faculties were obsessed with technique over substance and assessment tested mathematical puzzle-solving ability, not substantive knowledge about economics (Blinder, 1990). Mathematical models are very important; however they should not be detached from real life. As British economist Ronald Coase (1997) – Nobel Prize winner in economics in 1991 argued: 'Existing economics is a theoretical system which floats in the air and which bears little relation to what happens in the real world'. Economics is much more complex phenomenon, which cannot be only explained by 'impressive looking mathematics' (Krugman, 2009). Overreliance on theoretical models was also criticized by economist and writer Paul Ormerod (2010) who said:

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I think that a serious problem with the way much economics is taught is that theorems are presented as if – that's one of our favourite phrases, as if, so I can't resist getting a mention of it in early – as if they had the same standing as, say, propositions in engineering textbooks. This is very far from being the case. Economics is much more a way of thinking about the world than learning about undisputed, scientifically settled theorems.

The historical perspective is necessary to understand phenomenon of the crisis in general. Shiller (2010) postulated putting more emphasis on the history of economic thought in undergraduate economics programs, which would enhance the comprehension of the macroeconomics. Understanding of the historical and philosophical development of the ideas without grasping the general history, and the knowledge about world affairs would be futile. Consequently, Chang and Aldred (2014) indicated that students should know more about history of capitalism, history of finance, and current state of the world economy. James (2012) points out that the knowledge about history is essential for understanding the financial crisis. Hence, the history can be used a source of patterns, or in the simple terms just 'lessons', and source of policy advice. As James (ibid: 124) explains:

"In the aftermath of the 2007 crisis, the policy-related use of history is very common. Immediately after the collapse of Lehman Brothers there was a broad consensus, built on historical interpretation, that countercyclical fiscal and monetary policy could stop a Great Depression. Old schools of Keynesians and monetarists might give different types of advice, but they both depended on the idea that there were macroeconomic policy lessons from the 1930s."

Put the crisis context aside. Lack of this historical perspective among students has its repercussion in terms of employability. A study report on economics graduates' skills (Pomorina, 2012) suggested that employers were dissatisfied with the prominence of quantitative subjects in the undergraduate curriculum (ibid: 22):

"There seems to be a general bias in favour of quantitative ability and financial understanding, which while undoubtedly a valuable skill, seems to have come at a cost of deeper knowledge of economic history. Previous policies and developments in economic

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theory over time, as well as the context in which such decisions were taken, is an important part of understanding the impact of potential future policies."

Following on the point of lack of pluralism in economics; the general economic history and the history of the economic thought are not the only subjects to be included in the post-crisis curriculum. Students should also be taught behavioural economics, as:

"This cyclical nature of the history of economic thought suggests that cultural, political and historical circumstances may play a more influential role in economics than in the hard sciences, an inevitable consequence of the fact that human behaviour is at the centre of our discipline."

(Lo, 2012:73)

Secondly, the relationship between the economic theory and praxis is too detached. Economics graduates often lack practical knowledge and, as Chang and Aldred (2014) suggested, they have difficulties with e.g. national accounts, company balance sheets, flow-of-funds accounts, surveys and interview techniques. While during lectures and tutorials they analyse and discuss particular case studies within the suggested contexts; those real-life examples are more complex and hence more difficult to grasp. The aforementioned study report on graduates' skills (Pomorina, 2012) also identified the problem of practical application of theories. One of the employers provided advice on various aspects of economics education that can be improved: 'Encourage more application of concepts and theories to unfamiliar situations. Encourage students to work with students in other disciplines on joint projects' (ibid: 23).

The picture presented above proved that economists, both teachers and practitioners, agree that the post-crisis economics as the discipline and more specifically as university subject need a fundamental change. The reform should include reshaping the undergraduate curriculum and accenting more practical dimension of economics. Furthermore, as Chang and Aldred (2014) alerted, 'bad economics affects us all' and:

"Above all, the future of economics education is ultimately a matter for all of us, because what economists learn in their degree influences what they do later when they make

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important policy decisions that fundamentally affect our lives – financial deregulation, welfare cuts, gas prices, and healthcare reform.”

(ibid)

Methodology

This study draws on primary data from interviews conducted with lecturers in economics at one of the largest universities located in the South East England. The approach to the research was concentrated on in-depth and triangulated exploration of the teaching in economics at one University. Anderson (2013: 206) suggests that a closer level of contact is necessary in order to obtain information of good quality that is 'quite detailed, rich and extensive'. Four face to face, semi-structured in-depth interviews were conducted in February and March 2015. All of the interviewees were university teachers in economics, with the experience in teaching in academia being between five and thirty years. While the qualitative approach provides a better understanding and description of the teaching reality, the chosen research method undoubtedly brings some limitations. One of the major drawbacks of qualitative approach is the problem of truth. Secondly, the sample of the data analysed is small – it involves one university and only four teachers. Initially the researcher approached six respondents of which only four agreed to participate in the project. The refusals were mostly motivated by busy lecturing schedules and lack of time. Thirdly, the interviews were not recorded and the researcher had to rely on his notes and memory. Note taking is the best available strategy when recording is not permitted, however it distracts both, the researcher and the interviewee, and therefore the record of what was said may only be partial (DiCicco-Bloom and Crabtree, 2006). It is not as accurate as the transcript of the recorded interview and therefore some important data can be lost in the process. In case of the recorded interviews the issue of the self-consciousness of the respondents may pose a problem. People are sometimes reluctant to be recorded; hence they are more cautious with more attention paid to their responses.

Research Findings

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Drawing on the interview data, the following section will give accounts of economics teachers' views on the effects the global financial crisis had on the economics pedagogy in their institution. It will try to answer the questions as to whether and in what way they responded to the crisis in terms of the academic content. Lecturers implemented the changes spontaneously, rather than through the coordination between them at the departmental level.

"For me it was natural to include material related to the financial crisis. I understand that is very difficult to do it in every single module, however, where it is possible I'm trying to relate the content to the financial crisis 2007/2008. I know that the contents of several modules have been altered, for example International Production and Governance and the Global Economy."

Another lecturer added:

"We responded to the crisis quickly, and introduced the subject which addresses the complexity of the financial system (the Anatomy of the Financial Crisis). Moreover many students are interested in deeper understanding of the current crisis; therefore, a few of them took up the dissertation which directly dealt with this issue. Some of my dissertation students admitted that they were inspired by this module. I think that students are more critical, than they used to be."

Other subjects (e.g. Behavioural Economics, Institutional Economics, or the History of the Economic Thought); which would enrich the curriculum, have not been introduced yet. The explanation is prosaic: lack of the resources. One of the lecturers is sceptical about introducing the course on the history of economic thought:

"I think our students are not prepared yet. This is a 'very academic' subject, and majority of students are lacking philosophical background. Obviously, the history of the economic thought is present at the top universities. Here, it's different. We get students from various backgrounds. I agree, the history of economic thought would enhance our course, but introducing it at this moment is quite idealistic. Moreover, I don't think we have enough resources to do it."

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All of the interviewees stressed that apart from understanding of the background of the financial crisis; students needed to be equipped in knowledge about the alternative policies which might be implemented in the aftermath of the crisis. International character of University facilitates debate on austerity. Lecturers admitted that tutorials are being enriched with many foreign students raising the question of the effects of the financial crisis and providing examples from their home countries at the same time. Moreover, the curriculum itself is not everything. Students should be engaged in a debate on the crisis not only during their classes. As one of the lectures stressed:

"After the crisis, we want to encourage students to broader discussion on economic policies not only during the classes, but also during the specially organized debates. Just one week ago, students' Economic Society has organized the debate titled 'Is Austerity the best path for the UK's Economy in 2015?' Personally, I think it is a sign of a positive change. It also shows that students took initiative. In the end of the day, some of our graduates will be designing the economic policies."

The knowledge on the financial crisis was also partly adopted in so called 'employability modules' (*Industry Practice for Economic Professionals, Enhancing Employability in Economics and Professional Economist*). As one of the lecturers said:

"Employability modules actually, constitute a perfect occasion for the students to discuss the consequences of the financial crisis for the industry more generally. It does not really matter, where our graduates will work; finance, marketing, or sales. They need to understand the mechanisms which drive crisis, and how these may affect the economy. Also, at the very first tutorials we discuss and criticize the current approach to teaching economics. I give the student chance to speak freely about their views in this matter. We value their comments."

Conclusion

This study addressed the question of what has changed in the way economics as the university subject is taught. University lecturers took up the challenge of teaching the economics after the crisis. Overall results remain quite mixed. Firstly, the changes were

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implemented by teachers in the spontaneous manner, rather than officially through the department, hence they are not always reflected in the course programmes. Secondly, no additional modules were initiated, apart from one subject introduced which directly deals with the financial crisis (Anatomy of the Financial Crisis). The content on the financial crisis was accommodated within existing modules. Thirdly, two main obstacles to addressing the reform of the post-crisis economics were identified by the interviewed lecturers. They are of the opinion that the University has insufficient resources to introduce the whole set of new subjects, and that the students would need to undergo preparatory courses in philosophy or history to benefit from the additional modules proposed. Considering the current situation, the short term solution lies in implementing a "living" curriculum model, which is "responsive to accommodating the inclusion of syllabic-relevant developments beyond the confines of the lecture theatre" (Kelly, 2015: 13). In the long term, changes should be applied at the national level, including revisiting the textbooks and curricula. The reform is essential to meet the needs of students and the industry.

Regrettably, this study draws on interviews conducted at only one institution; which undoubtedly is a limitation to this research. A wider, qualitative study, taking into consideration both, lecturers' and students' views, would definitely contribute the debate. It would also allow reshaping the economics curriculum in the right direction.

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The Reality & Challenges of Embedding Graduate Attributes in the Business Studies Curriculum: A Case study of a Higher Education Institution in England

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Abstract

This study explores the challenges of embedding Graduate Attributes (GA) in the curriculum of business studies. A case study was used to reflect on the experience of the business school of a specific Higher Education Institution (HEI) in England to adopt graduate attributes as a strategic vision, and to investigate the challenges which the institution faced in embedding those attributes in the curriculum.

A multi-method approach was adopted in the research. One email and four individual unstructured face-to-face interviews were conducted with academic staff and a manager, and thematic analysis – via NVivo software package – was used to code the qualitative data. Descriptive and non-parametric inferential statistics – via SPSS and Microsoft Excel software – were conducted in secondary data of 257 questionnaires filled by students, of which only 92 of them were practically included in the analysis. Document analysis was also conducted on some formal published and unpublished documents (e.g. *Module Handbook* and *Program Periodic Review*) within the case study.

Two broad emerging qualitative themes, titled (i) marketization of education (ii) strategic vision and different hierarchical levels; were discussed in accordance with the quantitative results, existing literature and context of the case study. The research found that, firstly, marketization of education increased the workload pressure on academic staff and boosted consumer characteristics among some students who are more interested in receiving high exam grades and developing personal employability skills than improving their intellectual. Secondly, a lack of awareness among students and staff about their university's GAs, although both parties understand the general concept of those attributes; which can be attributable to inefficiency in delivering and promoting the university's strategic vision within the module level.

This research should contribute in increasing the awareness in the academia about how to implement GAs effectively, considering a wide range of suggestions which were proposed to enhance the graduate attributes within the pedagogical practices. Although the research considered only one case study of a business school, the findings which the research concluded and discussed are still believed to be relevant to most of HEIs in England, with consideration of the specific context within each institution.

Keywords: Graduate Attributes, Employability, Accountability, Marketization, Higher Education, HEIs, Pedagogy, Curriculum, Business, Management, United Kingdom, England.

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1. Introduction

As the economy becomes more knowledge oriented (Duncan, 2015) and employers become more interested in “real-world” skills from graduates (Millican et al., 2011), business students are now looking to increase their employability by developing certain attributes desired in the business world.

Graduate Attributes (GAs) have been placed increasingly under the attention of Higher Education Institutions (HEIs) (Treleaven and Voola, 2008), because they are considered by employers as reasonably acceptable standards which could be used to judge the competency of graduate candidates (Green et al., 2009). GAs are now seen as the students' overall achievement of their academic life; which does not only include the academic knowledge which the students obtained, but also the soft skills which the students gained during their experience at the university (Biggs and Tang, 2011; Hinchliffe and Jolly, 2011). Those attributes include – but not limited to – critical thinking, problem solving, communication skills, teamwork, discipline knowledge, social responsibility and ethical standards, professionalism and respect to others (Healey et al., 2013; Hunt and Chalmers, 2013; Bartkowiak-Théron and Anderson, 2014; Yamada, 2014).

In Australia, GAs have been subject to debate and research since the 1990s (Barrie et al., 2009; Rigby et al., 2009), but permeated to the UK HEIs only recently. This has been attributed to the quick introduction of marketization of education in England (Parr, 2015), widespread of accountability notion in higher education (Natale and Doran, 2012) and popularity of League Tables (Berbegal-Mirabent et al., 2015) which have Graduate Prospects as key measurement indicator of success. All this made English HEIs very keen to equip their students with sufficient and up-to-date GAs.

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Due to the importance of GAs in increasing the employability of students (Hager and Holland, 2007); the university, whose business school is the case study of this article, included GAs in its strategic vision a few years ago with an aim , among others, to enhance the employability of its students. The purpose of this article is to reflect on the experiences and challenges faced by the staff of the business school in embedding GAs within the curriculum. The specific research question is "*What are the challenges faced by the academic staff in embedding graduate attributes in the curriculum of a business school?*"

2. Methodology

A multi-method case study was undertaken by combining qualitative methods used to collect and analyse the primary data, and quantitative methods used to analyse secondary questionnaire data which was previously collected in the business school. The research mainly relied on the qualitative methods to draw upon thematic analysis to address the research question. The quantitative data was for supporting the qualitative findings.

Quantitative Study

Secondary data of 257 questionnaires was previously collected from students in the business school. The questionnaire was originally developed to measure the students' understanding and perception to university's GAs. It asked the respondents first whether they are aware of the university's GAs, and then instructed those who answered "yes" to rank the attributes, by using five-point Likert scale, in order to three criteria (table 1).

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Table 1: Ranking Criteria of the University's GAs

Sets of Likert Statements	Ranking Criterion	Likert Scale
Set1	Importance placed by the respondents	From 1 (not important) to 5 (very important)
Set2	Importance that would be placed by the employers	From 1 (not important) to 5 (very important)
Set3	Emphasis that has been put on GAs during the respondents' studies	From 1 (no emphasis) to 5 (lot of emphasis)

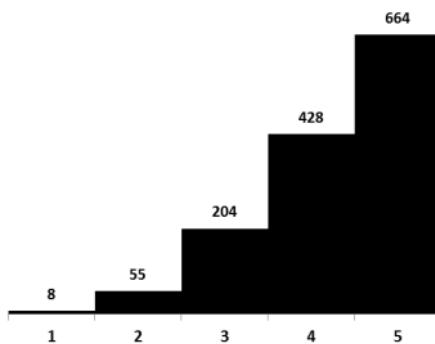
Descriptive and non-parametric inferential statistics were used to analyse the quantitative data. SPSS software package was mainly used to analyse the data, with the help of Microsoft Excel software in some cases requiring special arrangement of the data set.

Median was used to summarize, merge and rank Likert data; because it is the best option for ordinal and highly skewed data (Macfie and Nufrio, 2006) (as shown in Table 2 and Figure 1). However, Interquartile Mean was also used as an equitable mechanism for ranking Likert data.

Table 2 : Frequencies Table of All Likert-Scale Data (15 Statements)*

Likert Values	Frequency**
Not important / No emphasis	
1	8
2	55
3	204
4	428
Very important / Lot of emphasis	
5	664
Missing	21
N (92 respondents)***	92 X15 = 1380

Figure 1: Histogram of All Likert-Scale Data (15 Statements)*



* It is shown above that the data as whole is highly skewed. Moreover, most of the individual Likert statements have also skewed distributions.

** Based on all raw Likert data.

*** The respondents who answered "yes" to Q1 and filled Likert statements (see table 8).

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Qualitative Study

Qualitative methods were primarily used to address the research question, firstly because, qualitative methods enabled me to address the exploratory research question and link it to the context within the university (Dul and Hak, 2008). Secondly, qualitative tools helped in gathering deep information from the research's small sample (Saunders et al., 2009).

Individual unstructured face-to-face interviews were conducted with four academic staff, working in the business school, who were chosen based on convenience sampling. The qualitative data also contain email correspondences between me and an academic manager in the school (see the participants' details in Table 4). The interviews were audiotaped with the permission of the participants. The tapes were transcribed verbatim to avoid any data collection error (Zikmund et al., 2012); using a system of transcription symbols – inspired from Jeffersonian's method (Potter et al., 1987) – to make the text more understandable, and to inform the reader about the context (Table 3). Consent was also obtained from the manager to include the email correspondences in the research data.

Table 3: Symbols used in the Qualitative Quotes

Symbol	Use
[...]	Omitted parts, by the researcher, because it is not related to the point discussed.
[text]	Writings added by the researcher to complete the sentence or to make the text grammatically correct.
(text)	Writings added by the researcher to make the text more meaningful. Additional comments from the researcher to describe meaning of the text or the context in which it was mentioned.
<text>	The speaker's emotions and facial expressions.

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The research was conducted according the university's *Protocol for Reflective Practitioner Work by Academic Staff*. In order to comply with the ethics regulations and not reveal the identity of the research participants, a special anonymity system was used to refer to the participants (Burton and Steane, 2004) (Table 4).

Table 4: Research Participants*

#	Anonymity	Participant's Details	Interview Duration (minutes)
1	M-FTL-ML	A male full-time lecturer who is involving in module leading	21:27
2	M-VL-ML	A male visiting lecturer who is involving in module leading	24:35
3	F-VL-T	A female visiting lecturer who is not involving in module leading	18:18
4	M-VL-T	A male visiting lecturer who is not involving in module leading	20:30
5	Manager	A manager who is involving in curriculum design	Email Interview

* The majority of the participants are visiting lecturers which reflects a disproportionate representation of permanent staff

The anonymity codes consist of the first initials of the participant's gender "M or F", Job title "FTL or VL" and teaching responsibility "ML or T". The researcher referred to himself within the transcripts by using the word "Me".

M: Male F: Female

FTL: Full-time Lecturer VL: Visiting Lecturer

ML: Module Leader T: Seminar Tutor

Manager: code is intentionally lacking personal details in order to protect the manager's identity which might be easier to unhide

Thematic analysis – via NVivo software package – was used to code the interview transcripts and categorize the emerging themes under two key topics (see Figure 3). The qualitative study also includes document analysis of some formal published and unpublished documents within the business school such as *Module Handbook*, *Program Validation* and *Program Periodic Review*.

A subjective approach was used in presenting and discussing the qualitative findings (Falvo, 2010), and first person writing style was adopted in the discussion and conclusion sections; whereas, generalization of quantitative results was avoided in some cases, since it was not clear whether the sample data was statistically representative to the population (Bryman and Cramer, 2003). A number of semantics were used in the discussion and conclusion sections (see Table 5).

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Table 5: Semantics used in Discussion & Conclusion

Word	Refer to
Interviewee(s)	Educator(s) participated in face-to-face interviews
Respondent(s)	Student(s) participated in a questionnaire survey
School	Business school which is the research case study
University	University which includes the research case study
HEIs	Higher Education Institutions in general

3. Results and Findings

Quantitative Study

The data of 257 questionnaires were reasonably divided between males (52.3%) and females (47.7%). The majority of respondents were between 18-24 years old (89.5%), and undergraduate students (91.3%) (Table 6).

Table 6: Respondents' Age and Level of Study

		Frequency	Percent	Valid Percent	Cumulative Percent
Age	Valid	18-24	229	89.1	89.5
		25-34	23	8.9	98.4
		35-44	2	0.8	99.2
		45 and over	2	0.8	100
	Missing	Total	256	99.6	
		System	1	0.4	
Level of Study	Valid	Total	257	100	
	Level 4	Level 4	69	26.8	27.2
		Level 5	53	20.6	48
		Level 6	110	42.8	91.3
		PG	22	8.6	100
	Missing	Total	254	98.8	
		System	3	1.2	
	Total		257	100	

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With regard to the first question (Q1) asking the students whether they are aware of the university's GAs, $(36.8\%)+(0.4\%)=(37.2\%)$ of the respondents declared that they were aware of the university's GAs while $(47.6\%)+(15.2\%)=(62.8\%)$ were not (Table 8). The responses on Q1 vary based on the level of study (Table 7).

Table 7: Level of Study versus Q1

Level of study	Prior to today, have you been aware of the University's Graduate Attributes		Total
	Yes	No	
Level 4	20.9%	79.1%	100.0%
Level 5	58.5%	41.5%	100.0%
Level 6	30.8%	69.2%	100.0%
PG	65.0%	35.0%	100.0%

% within Level of study

Postgraduate students were more aware of the university's GAs than undergraduate students

Level 5 students were more aware of the university's GAs than the students in the other undergraduate Levels

Based on Table 8, I only included in the analysis the data of 92 respondents who answered "yes" to Q1 and filled Likert statements. Therefore, all the results presented below were concluded from the data of those 92 respondents.

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Table 8: Decision on Including Likert Data

		Frequency	Percent	Valid Percent
Valid	Not aware of the university's GAs and did not answer Likert statements	119	46.3	47.6
	Not aware of the university's GAs but answered Likert statements	38	14.8	15.2
	Aware of the university's GAs but did not answer Likert statements	1	.4	.4
	Aware of the university's GAs and answered Likert statements ★	92	35.8	36.8
	Total	250	97.3	100.0
Missing	Did not answer Q1, but answered Likert statements	7	2.7	
Total		257	100.0	

Table 9 shows that Medians were large and Interquartile Ranges were small in all categories.

Table 9: Medians and Interquartile Ranges of the university's GAs

	Importance to Respondents		Importance to Employer		Emphasis during Studies	
	Median*	Interquartile Range**	Median*	Interquartile Range**	Median*	Interquartile Range**
Intellectual depth, breadth and adaptability	4	1	5	1	4	1
Learning and research skills	4	1	5	1	4.5	1
Professionalism, employability and enterprise	5	1	5	0	4	1.25
Respect for others	5	1	5	1	4	2
Social Responsibility	4	2	4	1	4	1

* The respondents put a huge emphasis on GAs in all three sets of Likert statements

** The variance between the observed values were not very significant which means that Medians were quite representative to the data that they were calculated from

Cronbach's alpha test was applied on Likert statements to test the internal consistency which is one of the reliability measures; its alpha value (0.845) was in a highly acceptable level (>0.8) (Burns and Burns, 2008). Mann-Whitney and Kruskal-Wallis tests revealed,

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respectively, no significant difference between genders or between levels of study for every individual Likert statement.

The Friedman test suggested a statistically significant difference ($p=0.000<0.05$) between the three sets of Likert statements (Table 10). Post hoc analysis, using Wilcoxon signed-rank test (two pairs at the time) and Bonferroni adjustment (new significance level of $0.05/3 = 0.017$), concluded statistically significant differences ($p<0.017$) between each set with the other two. Looking at the differences, table 10 shows the respondents' thought that employers place slightly more emphasis on GAs than themselves, and those attributes were not articulated fully in the curriculum (table 10).

Table 10: Ranking of Set1, Set2 & Set3

Set of Likert Statements	Mean Rank*	Median**	Interquartile Mean**	Interquartile Range**
Set2: Important to Employer	2.27	5	4.70	1
Set1: Important to Respondents	2.05	4	4.50	1
Set3: Emphasis during studies	1.68	4	4.14	2

* Resulted from Friedman test

** Based on raw Likert data

Similarly, Friedman test concluded a statistically significant difference ($p=0.000<0.05$) between the five different attributes (Table 11).

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Table 11: Ranking of Different Attributes

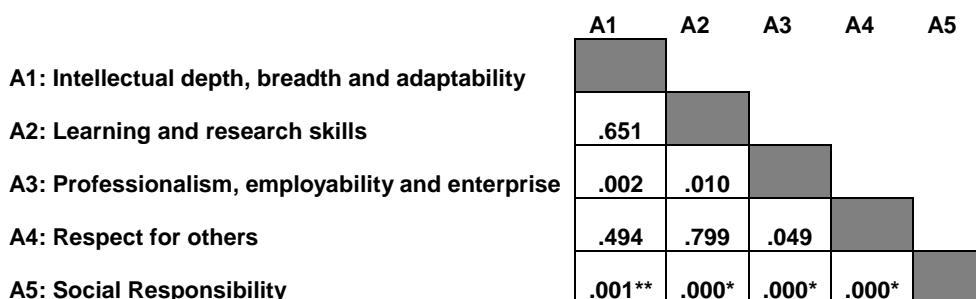
Set of Graduate Attributes	Mean Rank*	Median**	Interquartile Mean**	Interquartile Range**
Set A3: Professionalism, employability and enterprise	3.51	5	4.72	1
Set A4: Respect for others	3.14	5	4.57	1
Set A2: Learning and research skills	3.05	5	4.52	1
Set A1: Intellectual depth, breadth and adaptability	2.99	4	4.40	1
Set A5: Social Responsibility	2.31	4	4.05	2

* Resulted from Friedman test

** Based on raw Likert data

By conducting the same Post hoc analysis as above (but with new significance level of $0.05/5 = 0.01$), Table 12 was calculated. The table shows statistically significant differences ($p<0.01$) between the Social Responsibility and most of other attributes; whereas, there were no statistically significant differences between all the other attributes. Thus, the pairwise differences between Social Responsibility and the other attributes were the only responsible of Friedman test's result.

Table 12: Results of Post Hoc Analysis (Between Attributes)



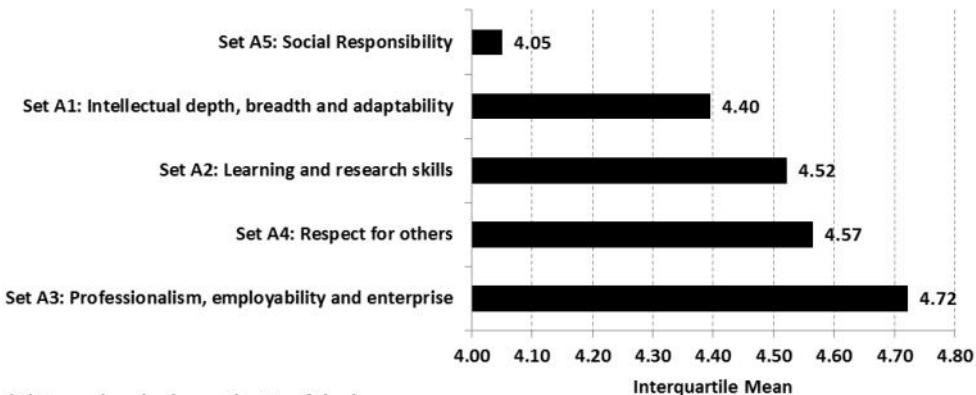
* Statistically significant difference between Medians of the two attributes at 0.01 level

** The exact p value is 0.001319 which is remarkably close to significance

Table 11 shows that the differences between attribute sets were relatively not significant; however, Social Responsibility had a noticeable low rank in comparison with the other attributes, which explains Post hoc's results above. Whereas, employability was placed among the top attributes (Figure 2).

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Figure 2: Interquartile Mean of Different Attributes*



*This graph only shows the tip of the bars

By conducting Friedman test on the raw data of Likert statements, it was not surprising to conclude a statistically significant difference ($p=0.000<0.05$) between the Likert statements. However, the ranking resulted from the test provided an interesting insight into the way which students perceive GAs across categories (see table 13).

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Table 13: Ranking of Different Likert Statements

	Likert Statement	Mean Rank*	Median	Interquartile Mean	Interquartile Range
Importance to Employer	Professionalism, employability and enterprise	10.55	5.0	5.00	0.00
	Respect for others	9.79	5.0	4.72	1.00
	Learning and research skills	8.54	5.0	4.68	1.00
	Intellectual depth, breadth and adaptability	8.14	5.0	4.65	1.00
	Social Responsibility	7.63	4.0	4.61	1.00
Importance to Respondent	Professionalism, employability and enterprise	9.51	5.0	4.74	1.00
	Respect for others	8.90	5.0	4.71	1.00
	Learning and research skills	8.20	4.0	4.56	1.00
	Intellectual depth, breadth and adaptability	8.04	4.0	4.48	1.00
	Social Responsibility	6.64	4.0	4.09	2.00
Emphasis during Studies	Learning and research skills	8.28	4.5	4.60	1.00
	Intellectual depth, breadth and adaptability	7.49	4.0	4.47	1.00
	Professionalism, employability and enterprise	7.10	4.0	4.52	1.25
	Respect for others	6.11	4.0	4.12	2.00
	Social Responsibility	5.11	4.0	3.55	1.00

* Resulted from Friedman test (rank of each statement among the other fourteen ones)

All Likert statements have relatively close scores. However, the attributes in "Important to Employer" score higher than the corresponding ones in the other two categories

Students place identical order to the attributes based on their importance to the employers and themselves; while they think that the university has different priority, than employers and themselves, in implementing the attributes

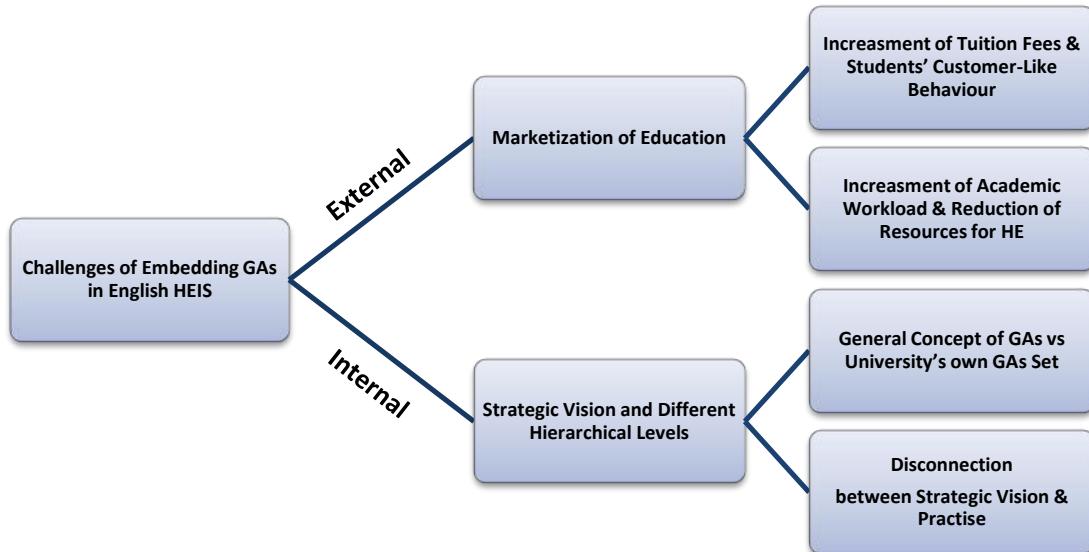
Qualitative Study

A common approach of presenting qualitative findings was used, by integrating the qualitative findings and discussion together in the interest of the storyline (Daymon and Holloway, 2010). Therefore, a brief summary of different qualitative themes was illustrated

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in Figure 3, whereas the detailed qualitative data were left to the discussion section.

Figure 3: Research Qualitative Themes



4. Discussion

In the attempt of addressing the research question which is “What are the challenges faced by the academic staff in embedding graduate attributes in the curriculum of a business school?”, we discussed below two key themes, covering a number of interrelated narrower sub-themes emerging from the qualitative data, which represent the most significant external and internal challenges to implement GAs (Figure 3).

Marketization of Education

The majority of interviewees emphasized that the new notion of students as “paying customers” (Tomlinson, 2014, p. 29), which was strongly reinforced in the recent years by the dramatic increase of university tuition fees in England (Coughlan, 2011), limits the school’s ability to design the curriculum and implement GAs effectively. A module leader commented on this issue as:

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"I think what's wrong here [...] is how we treat students as customers [...] At the moment you know students [...] are paying so much. The business relationship I think [...] is dangerous and undermines the university as an institution" (M-FTL-ML)

This notion made the students in UK HEIs more value-demanding (Woodall et al., 2014) in return of their payment. However, M-FTL-ML's concern about the risk of creating unhealthy relationship between students and academics (Beckmann et al., 2009; Furedi, 2009) could be justified. As students are expecting higher teaching quality (Tomlinson, 2014), they might misjudge or disagree with academics about the aspects of teaching quality. The students' high demand made them over-dependant on the education system, which accordingly led to a lot of pressure on staff, as explains:

M-VL-ML: The teachers are under a lot of pressure to make sure students get through which comes from that part of the education system where quite a lot is done for them (students) [...] There is so much pressure to hit targets [...] and they (students) come here [...] with the same sort of attitudes that the lecturer is gonna do a lot of the work for them.

Me: What is the drive of [...] making things easy for the students?

M-VL-ML: People who are fee-paying [...] expect more. I paid for this therefore I expect more of the service, I am a customer.

In addition to the pressure to "improving the student experience, in particular since the £9,000 tuition fees hike" (Parr, 2015), budget cuts (Wilkins et al., 2013) and growth of student numbers in UK HEIs are all main factors contributing in increasing the workload burden of academic staff (Parr, 2014). We could argue that this situation led to compromising the service provided to students. For instance, a bigger classroom size (Parr, 2015) means more work should be done by teachers to respond to students' emails and sort out their administrative issues, and less time left for planning teaching activities or co-ordinating between staff, as shown below:

"The conversations that I have with the module leaders are very brief and they only say oh [...] this is what you have to do and this is the deadline, so we don't have in depth relaxed conversations [...] We never discussed this (GAs)" (F-VL-T).

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I actually felt the frustration about the burdensome administrative workload from at least one interviewee; which by the way represents a trend, among a wider academic population in UK HEIs, existed even before the recent resources cuts (Corbyn, 2009).

Surely, those circumstances could not reinforce an incubator environment for creative and innovative education (Parr, 2015). Thus, as M-VL-ML argued that “a lot of emphasis sometimes [is placed] on the box ticking of the assessment and less on the soft skills such as professionalism as it is quite hard to measure”. In fact, Ritzer anticipated in 1996 that focusing on hitting targets and students’ course progression, which are considered as indications of success (Beckmann et al., 2009), might make education service like “fast food industry” where production efficiency and cost effectiveness are more important than student learning and development (cited in Nickolai et al., 2012, p. 212). Therefore, when combining the huge pressure on academic staff with students’ customer-like behaviour; we sometimes see ourselves not only unable to enhance GAs between students, but also promoting the very opposite equivalent to them. A teacher talked about ethics as one of the university’s GAs:

“I think you end up with sort of game happening. The university says we must have ethical behaviour [...], but in reality the steps to enforce ethical behaviour [are] time consuming and involve a lot of hard work (referring to plagiarism) [... Teachers] are not trying to get the highest level of ethical behaviour, but what they’re trying to do is reach the end of the course with less than 10% failing rate so everything look ok and we do not have any remediate work to do [...] I think the students kind of know that too [...] they kind of know a bit of unethical behaviour can be gone away with [...] so it goes on” (M-VL-T)

Marketization of education made HEIs more obsessed about their brand (Parr, 2015), as a result of increasing tuition fees and introduction of national and international performance evaluation systems using limited quantifiable indicators (Campbell, 2014). On the other hand, students are looking for the value of their money and concerned about their post-graduate future; whereas, some of them ignore the importance of their study effort in increasing the chances of getting jobs after graduation (Selingo, 2015) and pay off their

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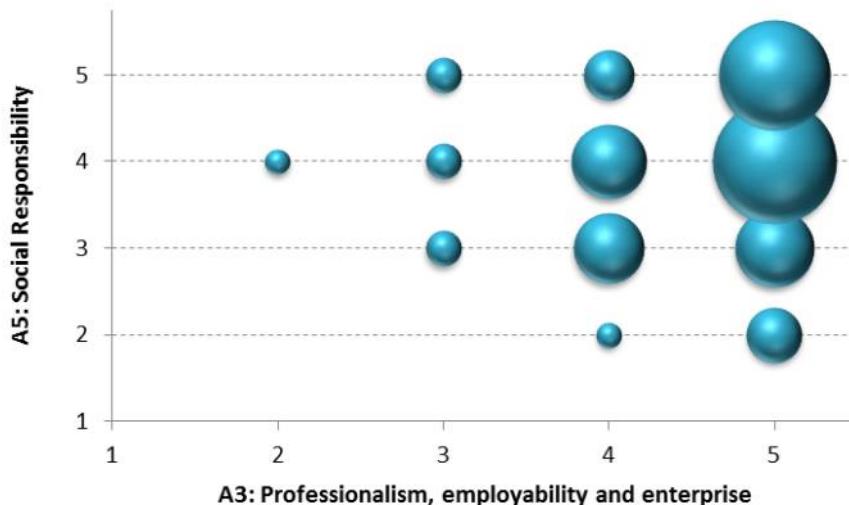
student loan book (Wyness, 2013). Moreover, some students tend to see employers as buyers of the university's admission system (including students' record) rather than their education (Duncan, 2015). Therefore, it was not surprising to hear that students prioritize exams and achieving high grades to increase their chance of getting a job (Scullion, 2014) rather than developing their intellectual, F-VL-T talked about an incident happened to her:

"After I had explained the point to the students, I could see the students were really impressed and they were like oh wow this is such a good point, but one of the students sitting in the front asked me: sorry, is this coming in the exam? and I said no. She said oh well then fine, and she stopped taking notes. So my idea is we only do the minimum level of work. This is how the culture of the university is; you know the idea of students as customers" (F-VL-T).

The quantitative data showed that some GAs are more challenging for the school than others: the students surveyed were very alert and have a firm perception about employability skills (such as effective communication, problem solving, digital literacy and numeracy) which are, in addition to qualification, the most important elements that employers are looking for in any potential applicant (Blades et al., 2012). Whereas, social responsibility values (e.g. ethics), which might be difficult to measure immediately by employers, scored at the bottom of the attributes list and was scattered and significantly different than the other attributes (see Tables 11&12 and Figures 2&4).

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Figure 4: Social Responsibility versus Professionalism, employability and enterprise



The size of balls refers to the number of respondents who got their responses matched in the ball

The majority of A3 data is concentrated within a small range (mainly 4-5)

The data of A5 is scattered within a bigger range; The students hold a wide range of different views about A5

Even M-VL-ML told me, criticising students' behaviour, after the interview that GAs includes habitual and emotional things which can be brought into play by students when they are needed in the professional life, but some students seem not interested in implementing those attributes during their academic life. Actually, many studies such as *THE's Best University Workplace Survey 2015* (Parr, 2015), revelled that this trend of criticising and blaming students for the negative aspects brought by marketization of education is not uncommon among educators. However, portraying students as careless and lazy (Ng and Forbes, 2009 cited in Natale and Doran, 2012) and blaming them of taking advantages of being customers could hinder the efforts for engaging them in the learning process (Carey, 2013). Williams (2012) suggested that we need to deeply investigate the causes of this student attitude which is certainly not limited to the increment of tuition fees.

One possible reason of this student attitude, highlighted by the interviewees, could be a sort of disconnection between how the curriculum is designed in the school and the students' expectation from the curriculum. In this respect, the quantitative data showed that students surveyed align their judgement of GAs to their perception of what employers are looking for. However, the same data also suggested that the students think that the university has

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different priorities, from employers and themselves, in implementing the attributes (see Table 13). Another reason could be attributed to the lack of insisting on the students' ethical behaviour as mentioned in M-VL-T's quote earlier, and to unsatisfactory emphasis on social responsibility values in the curriculum as suggested by the quantitative data (Table 13).

This poses a challenge which the school should face by revising the current curriculum and teaching practises to make sure that they endorse ethical values and meet the students' expectation, and at the same time, enlighten the students about the important role of intellectual in improving their competence and increasing the chances of getting a job.

Strategic Vision and Different Hierarchical Levels

Although developing students with the university's GAs is one of the strategic objectives of the university under the study, all interviewees admitted that they have not been instructed or guided by their line managers about implementing those attributes within teaching activities. For example:

"Nobody told me that I should be considering graduate attributes when I am teaching, so obviously I do what [...] my line manager tells me to do" (F-VL-T)

However, the interviewees were able to provide a relatively clear definition of GAs and link it to the employability, because many GAs concepts (e.g. employability and social responsibility) are fully discussed within the business and management literature (Ryan et al., 2011). Actually, three out of the four interviewees taught some of GAs concepts as business subjects within their modules. A module leader explaining why he is familiar with GAs:

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"I heard it (GAs) only because I was involved in a module called (omitted: module title) and some of the stuff we related to the attributes of graduates [... because] there are some attributes you need to show off in your CV" (M-FTL-ML).

These quotes are somehow compatible with the results that only 37.2% of surveyed students were aware of the university's GAs; however, those among 37.2% believe that the university's GAs are very important to employers and businesses, although they were implemented well but not perfectly in the school's curriculum. In particular, professionalism and employability were placed by respondents among the top important attributes, as might be a result of, firstly, the students' awareness of their importance for the potential employers, and secondly, the school's commitment on the professionalism and employability attributes, as explained by a module leader:

"It is about employability. You have to increase the chances for them to get a job and that's why some of the assignments are design to boost some of the skills" (M-FTL-ML).

We can see that the business school was successful to some extent in articulating the general concept of GAs within the broad curriculum; but less successful in implementing GAs in the daily teaching activities and reflect them in the students' attitude, or promoting its own GAs vision – as part of its identity – between teachers and students, as a teacher stated:

"There is a slight disjunction between what we're trying to promote and sometimes what we're putting into practise" (M-VL-ML).

Most of interviewees see the university's strategy as something introduced to promote the university's image and "just to prove that something is done" (M-FTL-ML). However, I think that the problem might not be in the strategy itself but in the way of delivering it throughout the university's hierarchy, and specifically, in articulating it by educational activities in the bottom line. Put differently, the issue, raised during interviews, is that the university's strategy has been hampered between the programme level and module level.

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Although an academic manager explained to me that “module leaders are asked to articulate how they will address graduate attributes in their module guides” (Manager), I found by looking at a sample of module handbooks that GAs were actually mentioned in some of those modules, but in very general and vague phrases and without any information explaining how those GAs will be included within the teaching activities. Whereas, GAs were tackled more formally and deeply within the programmes’ paperwork, as explained below:

“When a new programme is developed or is going through a periodic review, part of the paperwork asks how the programme will address graduate attributes” (Manager).

By looking at the validation documents of some programmes, I noticed – unlike module handbooks – that those documents contain some explanations of how GAs are covered throughout the programme, although I was not sure how the detailed GAs information of each module was collected.

This raises a question of to what extent module leaders see GAs as academic business topics taught as part of the module’s curriculum, or as essential elements which HEIs should equip students regardless of discipline (Walsh and Kotzee, 2010). The school needs to make GAs as part of the module level’s concern; otherwise, it will miss a big opportunity. If teachers in classrooms are still not informed properly about GAs, and not engaged in implementing them as part of the university’s learning and teaching strategy, they end up with a case like this:

“I sort of slightly see it [[GAs]] as one thing is mentioned in the university <laughed>. Yah, I don’t attempt to achieve the graduate attributes through my teaching, no” (M-VL-T)

5. Conclusion

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The research explored the challenges faced by academic staff in embedding GAs in the curriculum of a business school in England. I found that (i) marketization of education increased the workload pressure on academic staff and boosted consumer characteristics among some students who are more interested in receiving high exam grades and developing personal employability skills than improving their intellectual (ii) Lack of awareness among students and staff about the university's own GAs, although both parties understand the general concept of those attributes; which is attributable to inefficiency in delivering and promoting the university's strategic vision within the module level.

In addition to the suggestions presented in the discussion section, I recommend that some administrative help could be provided to teachers, by allocating an administrative tutor for each programme, thus teachers can invest more time in reflecting GAs in their practise. The pressure on academic staff could also be reduced by using technology, such as blended learning (Garrison and Kanuka, 2004), which could make education both cheaper and more effective (Duncan, 2015). For example, online platforms could be used more effectively to encourage students to ask and help each other, and to organize their learning activities prior to and after the classroom sessions; rather than directly contacting the lecturer in every single issue they face. Moreover, the university needs to have a very deep discussion about how it could make a balance between the student satisfaction and its values and social responsibility. Discussions also need to be made about whether and to what extent the university should focus on teaching or learning facilitation, and whether it domesticates students for "lifelong consumerism" or "better life."(Natale and Doran, 2012, p. 192).

More collaboration should be done between the programme tutors and module leaders with regards to GAs by, for example, greater involvement from module leaders in programme periodic review process and more visibility from top managers in the bottom line as M-VL-ML suggested. In addition, more formal and informal events could be conducted to familiarize students and educators alike about the university's GAs. We could also look at the positive examples of implementing GAs and try to enhance and replicate them throughout the school. For example, the quantitative study showed that a relatively high

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percentage (65.0%) of postgraduate students surveyed were aware of the university's GAs, whereas low percentages were scored for undergraduate students. We could investigate the education practises which made a significant number of postgraduate students aware of the university's GAs and then try to implement them throughout the other study levels.

I also suggest that those attributes should be explained more deeply in the module handbooks and could be included in the module feedback survey. This will help students to understand how GAs have been implemented in their study, and to encourage them to reflect those attributes to themselves and their courses when they submit the feedbacks. On the other hand, this could raise the teachers' attention about the strategic aspects of their educational work within a very heavy workload environment, and it could also help teachers to assess the way they articulate GAs in their teaching activities.

In the light of a recent survey by ComRes which suggested that more than half of UK students in humanities and social science subjects, including the business and management studies, do not think that their courses represent good value (BBC, 2015); this research provides a significant opportunity to understand the students' expectation toward the curriculum of a business school in the £9,000 tuition fees era. The research should also contribute in increasing the awareness in the academia about good teaching practises and how to implement GAs effectively; for instance, F-VL-T mentioned that:

"Giving this interview has made me realized I should be more focused on graduate attributes. Maybe, I am not doing my job as a tour, I should be a better tutor <smiled>" (F-VL-T)

However, further research could be done to explore how GAs can be used to enhance the identity of HEIs in their internal and external marketing campaigns; and how those attributes are tackled between junior and senior educators or between academic and non-academic staff within HEIs.

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Although the research considered only one case study of a business school, and suffered from a small qualitative sample with disproportionate representation of permanent staff and probably non-representative quantitative sample; I believe that the findings discussed above are still relevant to HEIs in England, with consideration of the specific context within each institution.

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The Learning Experience of Engineering Foundation Degree Students

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Abstract.

University foundation courses have been designed to address the need of highly-diverse groups of students approaching Higher Education. These courses have been developed to support the needs and expectation of both traditional and non-traditional students, either keen on securing employment, or embarking with confidence on an Honours Degree programme.

One of these programmes is the “Foundation Degree”, which targets individuals wishing to acquire knowledge and skills readily interfaceable with the work environment (Higgins, Artess and Johnstone, 2010); Engineering is particularly suited to be the subject of this type of course due to its intrinsic empirical character as a discipline. The development of Engineering Foundation Degrees has also met the employers’ demand for a competent, empirically-oriented work force. In the past 15 years, the Foundation Degree has been developed to respond not only to the needs of employers, but to fulfil students' demand for a course that balance empirical and theoretical contents and learning activities.

Another foundation programme is the “Extended Degree” in Engineering, which offers a foundation year to applicants who did not fulfil the entry criteria for the first year of an accredited Engineering Honours degree (Fowler, 2015). Like the Foundation Degree, this course is aimed to both traditional and non-traditional students, supporting and enabling the acquisition of the necessary skills and knowledge to enter Higher Education, whilst taking into account their previous experience (McDowell, 1995). This course was initially developed in the 1980s to increase the national pool of professional engineers, and therefore was developed as a Level 0 study programme preceding the first year of an Engineering Honours degree.

There is a need to capture the learning experience of foundation students approaching Higher Education in order to develop and improve learning methodologies that provide them a rich and enjoyable learning experience, hopefully contributing to their academic, professional and personal development. This paper builds upon the past experience of foundation students to further elucidate the mechanisms behind the learning process of

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students of engineering foundation courses. The author's experience as a lecturer in a foundation engineering course at a British Higher Education Institution is presented and analysed. The effectiveness of contemporary learning methodologies and pedagogies on the learning process of students of engineering foundation courses, including the author's, is then discussed. The evidence gathered shows that taking into account students' emotions within the context of a problem-based approach to learning promotes student engagement and is an example of deep learning (Montero and Gonzalez, 2009).

Introduction

The author of the present article is a Visiting Lecturer in Automotive Engineering at a British Higher Education Institution. He specialises in teaching the Materials Science sections of modules of foundation and undergraduate programmes. His experience has highlighted that students' age, level and experience can influence the motivation behind their choice of study course, as well as their level of commitment to learning. Students enrolled on foundation courses are an eclectic blend of individuals possessing different knowledge and skills, as well as disparate purposes for choosing this type of course. Foundation courses have to provide a study programme balancing Professional and University knowledge (Biggs, 2003) and need to consider students' different learning styles (Honey and Mumford, 2006) in order to provide them a comprehensive and enjoyable learning experience. The author's experience as a lecturer in a foundation course indicated that adopting a student-centred approach to learning has promoted students' interest in the topic presented. It has also contributed in sustaining their interest and enjoyment of the subject study that manifested in terms of a much higher level of engagement with the learning process compared to the traditional old-fashioned lecturer-centred approach (Gresson, 2005, Higgins, 2010, Wagner, 2004). A student-centred approach is of paramount importance to embrace students' expectations, and values them as keen individuals looking to expand their knowledge and maturity as by the very definition of "student engagement": "*Improving the motivation of students to engage in learning and to learn independently*"(UK quality code for HE, chapter B5).

Furthermore, there is ample evidence to support the proposition that a problem-based approach is instrumental in stimulating students' curiosity, focus, and will to succeed by

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actively encouraging them to express their natural curiosity and skills (Montero and Gonzalez, 2009). Students are not spectators and should be able to relate their subject study to their own past experience and daily life (Chickering and Gamson, 1987). Acquiring new knowledge can then be a gratifying and empowering experience that encourages them to further expand their ability to relate with the world as main actors rather than passive spectators. When students' attention is captivated, their emotions partake and sustain their intellectual abilities, resulting in better marks (Kahu, 2013). The lecturer's awareness of students' emotions is particularly important to nurture and foster student engagement; there is an affective dimension to the experience of learning that can be attributed to either attachment, that is, students' feeling of belonging (Libbey, 2004), or to students' enjoyment and interest in the subject study (Furlong, 2003). These views are confirmed by the author's experience with teaching foundation students.

This paper aims to review, clarify and analyse student engagement within engineering foundation programmes, discussing the psychological and emotional processes that favour and sustain a student-centred approach, which is critical for providing a deep, rich and enjoyable experience to students approaching Higher Education.

Methodology

The experience of the author with teaching Level 0 students in the Extended Degree in Engineering in a British Higher Education Institution is reported and analysed. The literature review of articles documenting student experience within foundation programmes was carried out using the search engine Google Scholar. The search terms chosen to perform the literature review included: "Foundation programmes development", "Engineering students experience", "Engineering student engagement", "Pedagogy in engineering disciplines", "Student diversity in engineering programmes", "Problem-based learning", "Engineering students learning experience", "Assessment methodologies in engineering disciplines", "Emotions and learning". Firstly, the author aimed to collect relevant data on foundation students in general, with an emphasis on students of engineering foundation courses. Secondly, the author attempted to clarify the learning mechanisms supporting student engagement in engineering foundation programmes using his own experience and relating it to those of other authors. The literature review focused on articles published from

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1995 to 2015. The author focused on more recent articles published within the last 5 years when researching the pedagogical literature.

Critical Review

Students approach Higher Education with a wide range of purposes, from hoping to secure employment to choosing a course matching their academic orientation. They are a mixture of traditional and non-traditional students, some possessing significant working experience and some little or none. As the requirements to enter Higher Education courses in Engineering can be stringent, courses have been developed to suit students' prior knowledge and experience, along with teaching methodologies to enable them to learn and develop successfully (McDowell, 1995).

The Foundation Degree was introduced in 2001 to confer basic knowledge in a subject to students, who would then either enter employment or continue with their studies in the same area. The Foundation Degree is an intermediate-level higher education qualification within the National Framework for Higher Education Qualifications (NFHEQ) (Gresson, 2005) that can be completed in two years or the equivalent part-time (Wagner, 2004, Harvey, 2009).

Foundation Degrees were initially conceived and structured to respond to the employers' demand for competent, pragmatic work force. This aspect is still being promoted at present. In particular, Foundation Degrees in engineering were initially developed out of a demand of employers in the sector of engineering and construction, and offered a wide occupational coverage as well as introducing more direct employers' involvement and accreditation, and supporting a more immediate application of skills in the workplace (Higgins, Artess and Johnstone, 2010, Wagner, 2004). Foundation Degrees in Engineering are therefore structured to take into account the wide diversity within applicants, many of whom come from non-traditional academic backgrounds and some being mature students, often already in employment (Gresson, 2005). The relative flexibility of the entry requirements makes it in fact ideal for potential applicants already possessing significant work experience wishing to use their experience and knowledge to obtain an academic qualification; it is also suitable for potential applicants returning to education after a long

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break (Gresson, 2005). In a review edited for Foundation Degree Forward (Fdf), an organization that aimed at supporting students during their foundation studies but is no more active, Higgins and co-authors (Higgins, Artess and Johnstone, 2010) surveyed the student experience with Foundation Degrees; the majority of applicants decided to enrol in this type of course because it offered a more specific employment-focused alternative to the usual academic programmes, and thus it would help them to obtain a job. Two thirds of them indicated that they carefully chose the subject of their course, and over 50% stated that their choice was motivated by a wish to actualize their potential. Most of the potential students were also careful with the choice of a particular institution as it offered specific courses matching their interests. It is clear that applicants were inquisitive and enthusiastic when looking at Higher Education, and wished to find a course that would enable them to express their potential. The course has to therefore take into account the expected large variety of students' learning styles and provide a learning experience that permits the development of students as reflective-learners, thus contributing to their development as responsible individuals.

The Extended Degree is a foundation programme offering students an alternative entry route to Higher Education compared to the traditional BTEC, A Levels or Access programmes. The students applying for this type of course are typically non-traditional, some of them not holding any formal qualification, some others possessing some educational experience that does not fulfil the entry criteria into a BEng or BSc degree programmes. The Extended Degree offers students a 1-year study programme leading to possible progression to a chosen accredited main degree pathway (Fowler, 2015). This programme was initially developed in the 1980s and formed part of the former government 'Higher Introductory Technology and Engineering Conversion Courses' (HITECC) initiative, which aimed to increase the national pool of professional engineers (Fowler, 2015). In Engineering, Science and Technology disciplines there is a limited number of students achieving the necessary level of scientific and mathematical knowledge and expertise required to complete Higher Education courses independently or through their work experience (McDowell, 1995). Foundation courses such as the Extended Degree in Engineering provide a supportive learning environment to enable students to acquire the necessary knowledge and skills to be successful with their academic studies and

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professional careers (McDowell, 1995). Feedback from students enrolled in the Extended Degree in Engineering at the University of Hertfordshire in 2014 was consulted; one student reported that the course helped her decide which path to take; another reported that the course acted as a stepping stone to the BEng degree; another student reported that the course provided further opportunity of development (University of Hertfordshire, 2014). Foundation courses such the Extended Degree must therefore offer students a study curriculum balancing Professional knowledge, which is functioning, specific and pragmatic, and University knowledge, which is declarative, abstract and conceptual (Biggs, 2003). In order to achieve this purpose, such courses have to support a deep approach to learning, which can be achieved through maximising student engagement. A problem-based approach to learning can be of particular relevance in engineering disciplines to provide students a stimulating, challenging, and enjoyable experience. A problem-based approach to learning has been proved to be successful in embracing students' enthusiasm and stimulate their skills and creativity, thus contributing to sustain a high level of student engagement (Montero and Gonzalez, 2009).

The author of the present article shares Montero and Gonzalez's point of view supporting the effectiveness of a problem-based approach to learning, which he employed as a learning methodology within foundation courses. The author is a Visiting Lecturer in Automotive Engineering at a British Higher Education Institution, teaching Materials Science modules of the Extended Degree in Engineering. The author organized his module by devising a scientific topic that would be investigated by students during a series of 3 laboratory classes, one class per week lasting one hour. Classes included a maximum of fifteen students. The author decided to carry out the classes in the university's laboratory (whose space was specifically tailored to students' comfort). The classes constituted a re-enactment of the author's own research work in a much simplified manner, so to provide students with examples of contemporary engineering research work and methodologies. The author believes that a research-informed style of teaching contributes to create a rich and stimulating learning experience for engineering students. Adams and Felder's vision of a contemporary figure of the engineering educator includes envisaging "*Educational and workplace environments as learning laboratories to delve into how, what, and why students are learning, and how engineers use this learning. Designing experiments to develop,*

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assess, and disseminate new instructional materials, methods, and learning environments" (Adams and Felder, 2008).

Moreover, Danvers supports the necessity for the learning environment to foster interactions between learners, in which reflection and action balance one another (Danvers, 2003). Taking into account the high diversity of the students of the Extended Degree and their different learning styles, the author felt that structuring his classes following Kolb's learning cycle (Kolb, 1984) would provide an optimal and enjoyable learning experience for foundation students. Kolb's learning cycle has already been successfully applied to engineering disciplines (Kuri, 2000), as it promotes the development of students' analytical skills, synthesis and evaluation that are not nurtured by mere delivery of knowledge through a lecture, but are critical in teaching engineering subjects. Implementing the cycle thus allows engineering students, and particularly foundation engineering students according to the author's view, to develop critical and reflective skills through various learning styles. In this cycle, empirical experimentation (feeling) triggers a need for learning, which prompts reflective observation of the experience (watching), followed by conceptual explanation (thinking) to reinforce the new experience. Upon integration, action is triggered (doing), and since action modifies current knowledge, new experiences happen and the cycle repeats. A problem-based approach to learning is a successful approach to the application of Kolb's Cycle (Kuri, 2000), therefore the author devised his classes so that the problem itself drove the learning, encouraging students to become reflective-learners. Students were introduced to engineering case studies regarding structural issues affecting well-known buildings. The author felt that the choice of well-known buildings such as the Statue of Liberty contributed to captivating students' attention and focus at the beginning of the module, as well as to stimulate the link between their own experience and the real world, which in turn attempted at involving students' emotional sphere with the subject, thus creating a more intimate link with it. Students' spirit of inquiry was stimulated, resulting in students asking pertinent questions since the beginning of the class. Eliciting was then used to guide them from the presentation of the engineering case-study towards the need for experimental work to investigate those structural issues, just in the same way engineers did in the past. After the author clarified the use of the required laboratory instruments, students then proceeded on

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to performing the required experimental work in groups (which were previously arranged) under his supervision. Having completed the experimental work, eliciting and group discussions were used to guide students through the investigation of the problem presented in the case study. By interacting with one another and with the author, they gradually arrived at formulating solutions of the problem. More in-depth theoretical explanation to complement and reinforce the experimental findings was given during the following classes, and after ascertaining students had already reached a good understanding of the problem and its solution. The author endeavoured to ensure that this was successfully achieved by having students explain back to the lecturer what they had learnt through interactive discussions during the second class. Although students seemed to be mainly pragmatists stylistically, some of them requested more detailed theoretical explanation in the third class, an occurrence that the author had already taken in account due to the expected high students' diversity and learning styles. The author was aware of the need to balance the highly-practical manner in which learning contents were presented with a more typical academic emphasis on theoretical knowledge and report writing. The need to balance empirical and theoretical knowledge is critical to ensure students are well prepared to undertake the higher level of workload of a Bachelor's Degree; it is in fact expected that foundation students carry on with their academic study before starting employment, and therefore must be ready to undertake the higher level of workload of a Bachelor's degree. This is particularly the case with the Extended Degree in Engineering, with 60 to 70% of students progressing to 'mother' programmes within the Department (Fowler, 2015). The author also endeavoured to take into account students' different learning styles (Honey and Mumford, 2006), which contributed to the sustenance of their enthusiasm and curiosity, and enriched the learning experience by valuing students' different personalities. The use of drawings, charts, and further personal study was encouraged throughout the classes, aiming at providing a wide range of tools through which students could express their creativity. The author feels that the positive feedback received by students at the end of previous academic year for the same foundation course (77% of students scoring an overall 5 out of 5 to their experience whilst reading for their foundation course, 14% 4 out of 5 and 9% 3 out of 5) (University of Hertfordshire, 2014) and their good performance indicated that a problem-based approach taking into account the involvement of students' emotions with the learning process confirms to be an optimal learning strategy,

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hopefully contributing to the students' enjoyment of their course and to their long-term retention of the topics studied, which is a form of deep approach to learning. According to McDowell, a student adopting a deep approach has the intention to understand their subject study and to relate to one another the different aspects of the contents learnt (McDowell, 1995).

The author realized that students' level of engagement in the class increased upon commencing the experimental work, and peaked afterwards during the discussion of the results, showing that they were sustained by a genuine interest of realizing how the experiments performed (in a somehow heightened emotional environment due to time constraints and being observed by their peers) contributed to the solution of the engineering problem of the case-study presented. The author observed students were exhibiting a sense of positive pride and self-confidence in having been given the possibility to show their intellectual capabilities. This is in agreement with the "Self-Efficacy" theory, which proposes that human achievement is dependent upon interaction between one's behaviour, personal thoughts and beliefs, as well as environmental factors (Bandura, 1997). Bandura shows in his study that self-efficacious students engage more actively, work harder, persist longer, and seem less prone to adverse emotional reactions upon encountering challenges compared to those who doubt their capabilities (Bandura, 1997). For example, young students participating in cognitive-based activities showed considerably higher levels of perceived efficacy and academic skills compared to those who received didactic instructions (Schunk, 1981). Students' self-beliefs about academic skills are critical in boosting their motivation to achieve (Zimmerman, 2000). Tierney and Slack (Tierney and Slack, 2005) also reported in their study that foundation students built gradually a sense of self-confidence throughout their studies, which is a critically important characteristic for persistence in learners according to Peters (Peters, 1992). It is pertinent and appropriate to attempt at elucidating how their learning process unfolds in order to improve learning methodologies for students' long-term retention of knowledge. A behavioural approach to learning can only partially explain the learning processes of engineering foundation students. Whilst the behavioural approach takes into account students' thinking process and behaviour, as reported in this model's subsections 'level of academic challenge' and 'active and collaborative learning', learning is also emotional

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(Christie, Munro and Wager, 2005), so it would be imprecise and reductive to ascribe the level of high focus of students solely by means of a behavioural approach to learning (Kahu, 2011). In his study of the experience of foundation students of graphic design, Jackson (Jackson, 2008) also argues that learning according to behaviourism is mechanical rather than reflective, and therefore reduces the transferability of the knowledge and skills learnt in the class to the 'real world'. It is the author's belief that the psychological perspective (Kahu, 2011) offers a more comprehensive picture of the learning processes of foundation students. Newman and co-authors (Newman, Wehlage and Lamborn, 1992) define students' engagement as "*a psychological investment and effort directed towards learning, understanding, or mastering the knowledge skills or crafts*". Their level of emotional involvement is reflected not only in their good conduct and optimal attendance to the classes (as also reported by the author), which are two dimensions of the behavioural approach (Fredericks and Blumenfeld, 2004), but also in their enjoyment and interest in the learning activity showed by their questions that often went beyond the scope of the course. The author felt that his students were motivated by the enjoyment and interests in the activities during the classes, rather than mere cognitive and behavioural engagement to obtain good marks, which Bryson and Hand (Bryson and Hand, 2008) describe as a false engagement. Such manner of engagement in the learning process is considered a deep approach to learning also by the socio-constructivist theory of learning, in which students see learning as an internal process whereby they attach meaning to the topics studied in an intimate fashion (Montero and Gonzalez, 2009). Effective and long-lasting learning is achieved through the construction of knowledge by means of creating meaning from their existent knowledge accumulated from their own experience to the subject study. According to Jackson students do not learn by studying concepts as isolated units, but consider the inter-relationships of such concepts and experience in relation to the context, that is, an aim or objective (Jackson, 2008). The lecturer's role is to facilitate students' productive thinking based on the perception of concepts and experiences as integrated wholes, thus contributing to students' professional and personal development (Curzon, 1985). Effective learning is also fostered when students have some control over the learning environment and accept responsibility for their own learning (Johnson, Johnson and Smith, 1998, Boud and Feletti, 1991). Problem-based learning is an example of deep learning (Woods, 1995) that embrace the different learning styles of engineering foundation students and their

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target of become more employable. Montero (Montero and Gonzalez, 2009) successfully applied problem-based learning to level 6 students in Electronic Engineering. Some issues were identified, including the non-optimal knowledge of first year undergraduate students, and the lack of maturity in dealing with open-ended scenario. The author encountered similar problems with his students of the Extended Degree, as well as a lack of adequate literacy skills. Taking into account his students' level and less sophisticated cognitive abilities, the author decided to spread a single laboratory class that would normally be delivered in its entirety in one hour for level 6 students into 3 hours, one hour per week, for foundation students. Students' literacy skills could then be monitored and supported comfortably, and the author prepared a list of key jargon terms that represented also threshold concepts, and wrote them down on the white board, often referring to them during the classes.

The author also recognized the importance of his disposition towards students, and particularly the need for warmth and respect towards students to foster a sense of belonging (Bryson and Hand, 2007, Kember, Lee and Li, 2001). The author considered the three levels of engagement reported by the Holistic approach to learning (Kahu, 2013) when devising and conducting the classes, namely: discussions with students, which were constantly encouraged throughout the class; enthusiasm for the subject, as showed by the author active research work in the field of materials science for almost 10 years; professionalism with the teaching process, making sure the boundaries between teacher and students were respected in a friendly atmosphere. Further encouragement to students to embrace reflective-learning was given by requesting them to report their experience and analysis with each of the three laboratory classes by filling in an electronic journal. The author monitored students' journal entries and was able to recognize the challenges students reported, which he addressed in the following class. The author guided students to utilize their journal entries to complete the required assessment, which he designated to be in the form of a report describing and discussing the different stages of the learning journey, from the presentation of the engineering problem to its solution and explanation. The author believes that this form of assessment, reproducing real-life case of inter-departmental communication of an engineering company, sustains active learning (McDowell, 1995).

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The author is in agreement with Jackson (Jackson, 2008) that a 'gestaltist' approach can be of great value to nurture the quality of thought that foundation students can develop when considering 'real-world' scenarios. Gestalt is a German word for "Whole", "shape", or "form". 'Gestaltist' psychology argues that the human mind has the tendency and capacity to organizing and structuring elements, forms, or shapes. As the human mind seeks to label and confer meaning to situations, the organization of apprehended concepts will come to assume a greater meaning and value to the individual compared to the structuring parts on their own and even their mere sum; in the words of Jackson: "*Gestalt, when applied with constructive reflection, offers real opportunities and possibilities for learning by, through and from experience*" (Jackson, 2008). A problem-based approach to learning set in a student-centred fashion can embraces and nurture the natural curiosity and motivation of foundation students, hopefully increasing their chances of achieving their objectives.

Conclusion

The learning experience of students of foundation courses in engineering was reviewed and critiqued, revealing students to be inquisitive and having high expectations from their study courses. The author's experience with teaching students of the Extended Degree in Engineering, confirmed the findings of previous studies reporting students of engineering foundations courses to be highly diverse and showing different learning styles (McDowell, 1995, Honey and Mumford, 2006). The author concurs it is necessary to balance the practical orientation of engineering foundation courses with a more academic approach to suit the diversity of students, their confidence to progress on to study for an Honors Degree programmes, and the formation of their professional figures as future employees in the Engineering, Science and Technology sector.

This paper suggests that the behaviourist approach is limited in describing and attempting to understand the learning experience of students of foundation courses in engineering. It advocates that the psychological model provides a more thorough and holistic perspective of the learning process, as it takes into account the involvement of students' emotional sphere. The author's experience with teaching students of the Extended Degree in Engineering provided further evidence that awareness of the emotional aspect of learning

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within a problem-based approach can maximise engineering foundation students' performance and thus their academic and professional development.

The author feels that further detailed data surveying the satisfaction of students of engineering foundation courses, as well as further detailed feedback from them could provide the basis for more insights into tailoring the structure of foundation courses to meet students' needs and expectations.

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Online learners - how to increase engagement.

Audrey Kempson, School of Health and Social work.

In this video Audrey Kempson discusses her experiences of delivering online learning and explores some ideas for engaging with students online.



The URL of the video is: https://www.youtube.com/watch?v=Kss_DrJRFYY

Reflections of An Online Learner

Justin Mifsud

School of Computer Science

Justin Mifsud is an experienced online learner who is based in Malta, and is sharing his experience of completing an online Masters Degree at the University of Hertfordshire.



Tell us a little bit about yourself.

My name is Justin Mifsud. I am from Malta. In my job I lead a team of web developers and we are involved in web based application development.

I am originally a graduate in Marketing. I then graduated in IT and have recently completed an Online Master's degree in Computer Science specialising in Human Computer Interaction at the University of Hertfordshire.

Why did you choose to study an online degree?

I did not want to quit my day job it's a stable job which I love doing. It's about prioritisation and flexibility. I wanted to further my studies but at the same time I wanted to continue my career.

What did you like about learning online?

Definitely the flexibility is useful. If I am working late it allows me to study at my own pace and in my own time. You can easily balance work life and study commitments. I had direct contact with my online tutors and I could schedule my studies in bursts. I could group 2 or 3 days and do a good chunk of work online. I am a night time person so I would commit to studying in the evenings when the house is much quieter.

What were the kinds of challenges in studying online?

It required regular commitment, be strict with yourself plan ahead, work consistently. I would not advise leaving things to the last day as things can happen. Closer to a deadline you may need to take a vacation from working in order to do more considerable work - it's about planning. It's tough having a fulltime job, studying and having a young family. You have to be disciplined to do it, but it is doable – that is the encouraging part.

Reflections of An Online Learner

What would be a typical week involve for you when you are learning online.

Basically I plan ahead for what work needs to be done that week. After coming home from work and doing the normal family things I would have 2 – 3 hours at night for studying. This is when I work best – but I have friends who like to get up early in the morning and work. It is really about when you function best. But when you have a deadline you need to push it a bit more, at other times you can be a little more relaxed. The important thing is consistency – you cannot leave it all towards the end because it just does not work.

What form did the assessments take?

Assessments were in the form of projects and also online tests. The projects were built up of phases which were completed and then feedback was given. I would use this to move onto the next phase. The online tests were 30 minutes long and consisted of multiple choice questions.

How did you get feedback on your work and what did you do with it.

Feedback from my tutors was through StudyNet and via email. My tutors in the School of Computer Science were very helpful. They would answer my emails and if I felt a question was of interest to others I would post it on StudyNet and get responses from students and other tutors. I found this to be very good. For my project my supervisor was very good, she did a good job. I would email and Skype. You plan ahead, schedule meetings, it worked seamlessly.

How did you interact with your tutors and other students?

With other students - in Malta we have a community. I know some of the other students personally. It's a small island. I liked the discussion with other students. Using StudyNet you get better quality feedback from them. The students tended to have group discussions rather than one to ones – StudyNet was brilliant for this.

What advice would you give to other online learners?

It's not an easy feat. You have to commit yourself, but it is rewarding. There are times that you say "what am I doing", or "I should quit". These things happen and you need to be mentally focussed and prepared for it. The course is very hands on. The university and the department did a good job. The qualification has a very solid reputation which is important from a work and an academic perspective. It has helped me to advance at work – I can better understand my development team.

Reflections of An Online Learner

I have an understanding of system design and analysis and project planning which are core parts of my work. It has been a rewarding experience that I will carry for the rest of my life so the pros are much greater than the cons. It's important to assess your own situation – see how many hours you can commit realistically each week. You need to commit yourself, invest the money and commit your free time – there were fewer weekends at the sea for me than before.

If doing your programme again is there anything you would do differently?

Not that much - I would participate more in discussions. If I had the choice I would do it again, it was a very rewarding experience.

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