

## A Physiotherapy practice educator's reflection upon changes in teaching carried out for student practice placements

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### **Abstract**

*This article is a reflective account of a Physiotherapy educator's efforts to improve the facilitation of learning for undergraduate students, by implementing changes to the 'In-Service Training' (IST) or in-house teaching, based on accepted educational theories and relevant literature. The qualitative experiences of two subsequent pairs of students on the same practice placement were reviewed, before and after changes were made to the planning, structure, teaching methods and facilitation of the IST. The changes implemented resulted from the collection and analysis of student-generated feedback in the form of reflective pro-formas, learning style inventories, as well as the authors own reflective analysis. These raised concerns about the pedagogical, inflexible and didactic nature of the educational methods utilised. Changes to the facilitation of education in this practice placement were instigated for the second pair of students, which incorporated a transition to andragogical strategies/approaches, consisting of for example; greater evaluation of student centred factors such as their individual learning styles/ instructional preferences and learning processes, as well as the implementation of jointly set learning outcomes and more flexible participative methods of education. Following these changes, greater learner satisfaction was reported and a more consistent faster and broader achievement of the student's individual and placement learning outcomes was noted.*

## **Introduction**

Physiotherapy students are required to spend 1000 hours, or approximately 1/3<sup>rd</sup> of their undergraduate training, in clinical placement settings (Chartered Society of Physiotherapy, 2012). Consequently, a large proportion of their education is provided by practice educators, who often have little or no training on how to effectively teach students and facilitate learning. The aim of this reflective article is to analyse and demonstrate improvement in the facilitation of learning of undergraduate students through the teaching provided by the author whilst the students were on one of their physiotherapy practice placements. A case study of two consecutive student placements (pseudonyms of Cathy and Claire, Jane and Jenny are used to ensure anonymity) will be discussed in detail.

The formalised education, or 'In-Service Training' sessions (IST) were the main focus, as concern existed that the teaching/facilitation of learning had been too rigid, didactic and not learner-specific. This pedagogical approach encourages superficial learning (Atherton, 2005), and inhibits deeper understanding, problem solving, and transferability of knowledge/skills to differing situations (Knowles *et al.*, 1998). These are all necessary attributes that undergraduate physiotherapy students need to acquire to become effective professionals (Chartered Society of Physiotherapy, 2012; Health & Care Professions Council, 2007; McMahon, 2006).

Baseline feedback on the author's teaching was gained from the first pair of students and is initially discussed and analysed in the methodology section. Arising from this evidence, changes in strategies in relation to learning & teaching theories will be discussed as will the results of applying these new strategies, which were put into practice with the second pair of placement students.

## **Methodology**

### **1- Baseline Evidence:**

The first pair of students, Claire and Cathy, provided reflective feedback, as advocated by the professional body (Chartered Society of Physiotherapy, 2012), concerning methods and the style of teaching received and the subsequent effects upon their learning over the course of their five-week placement. This took the form of independently completed written evaluation summaries (Chartered Society of Physiotherapy, 2010) of the teaching received. This was supplemented by the authors' reflections on the content, level and delivery of the IST.

It was recognised that the feedback gained, although informative, was not necessarily directly transferable to subsequent students, as factors such as personality and learning styles could be very different for each student/pair of students. For example, students with pragmatic learning styles may prefer practical 'hands on' IST, whereas theorists would potentially engage with and learn more from formalised theoretical discussions (Wessel *et al.*, 1999; Heron, 1988; Honey & Mumford, 1982). It was, however, hoped that regardless of individual learning styles, the student's reflection would be a good representation of the author's facilitation and in-service teaching, and that, even with student differences (such as personality), this would have some relevance to the next student placements, and thus serve as a guide to areas for improvement in the authors education style and methods.

### **2-Baseline feedback evaluation**

Summarising Claire and Cathy's feedback forms, it became evident that satisfaction with the teaching and learning they received was quite different. Claire appeared satisfied with the IST stating that:

“Overall the IST was very good” “presentations really worked ..... I learnt of lot from my educator”

Whilst Cathy's feedback was more critical:

"content was comprehensive, but too in-depth to understand.....the take home message got lost"

"I did not feel able to contribute, relying entirely on my educator"

"I prefer more 'hands on', rather than just talking about patient problems and treatments"

Although at the time as Cathy's educator I had not picked up on this, her feedback made me subsequently question the value of these sessions to her.

There could be several reasons for the disparity in the feedback and the perceived value of the IST for students. Both attended the presentations together, so content was identical. The learning taken from the sessions, however; was very different. This may relate to the individual cognitive ability/style, (Cassidy, 2004), with factors such as perception and thinking being set within one's personality (e.g. Sadler-Smith & Riding, 1999; Riding & Cheema 1991).

In 1983 Curry attempted to resolve the variety of differing learning style models, theories and instruments in existence and conceptualized a three-level system, known as the layers of an onion, the so-called 'Onion Model' (Figure 1). The first and innermost layer of Curry's model relates to various personality models that describe the influence upon learning, referred to as the cognitive personality style. This personality style is described as being a relatively permanent dimension, involved in adapting and assimilating information. This layer is described as the deepest and most difficult to access and, being independent of the environment, is regarded as the most stable level of the model. It is thus unlikely to be altered via external influences such as changes in teaching methods or the physical surroundings.

The second or middle layer represents the individual's information processing style and is related to how external stimuli and information are processed, or put simply; how an individual learns. Curry (1983) suggests this layer is also relatively stable but can be subject to change via external influences such as instructional preferences or teaching styles. This concept was built on by Hartley (1998), who considered the application of this cognitive ability to be relatively fixed, but recognised that adaptations could be achieved, given optimal circumstances, for example, the application of suitable teaching methods to individual learning situations or environments.

The third and outermost layer of Curry's onion (Figure.1) is directly exposed to the environment and external stimuli, and is thus considered the least stable and displays the most potential for change. It relates to the individual's instructional preferences or their learning styles, as well as how they identify and choose learning situations and interact in given environments (Patterson & Pratt, 2007; Sadler-Smith & Riding, 1999).

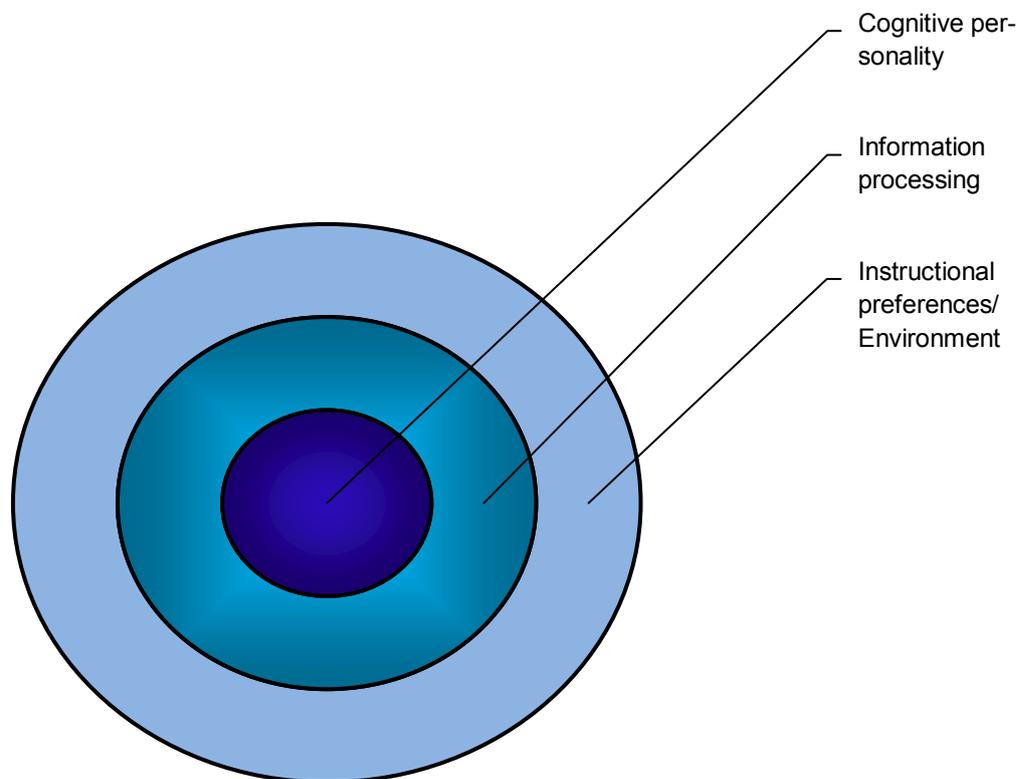


Figure.1 *Curry's Onion model.*

Subsequent authors, (Cassidy, 2004; Hayes & Allinson, 1994) have also recognised that this outer layer of Curry's onion, relating to learning preferences, can be influenced by external factors such as the environment, resulting in short-term changes in the student or learner. It would therefore follow that this is the layer that a teacher or educator is most likely to be able to influence by skilled manipulation, of for example; a classroom or meeting room, the content, or methods of facilitation, teaching materials and aids utilised.

Learner preferences have also been closely linked to the application of cognitive ability/style by Kolb, (1984) and by Honey & Mumford (1986), who make direct comparisons within their learning style categories, to Kolb's learning cycle (1984), (Figure.2). Kolb describes how the different application of ability or processes such as "Concrete Experience", (the "doing") or "Abstract Conceptualization", (the "concluding or surmising"), may be used at different stages during learning.

Learners may have stronger preferences or motivations for different processes/levels within Kolb's cycle, depending upon their previous learning experiences. The didactic IST used with the initial pair of students could have, for example, suited Claire better as she may have preferred "Abstract Conceptualization", whereas Cathy may have preferred "Active Experimentation" or "Concrete Experience" and required more practical 'hands on' IST, to enhance her learning. Instructional preferences relate directly to how learners will interact with different tasks and facilitation. For example, a "Pragmatist" who is keen to try things may not participate or learn from lengthy theoretical discussions. It is possible that Cathy and Claire's instructional preferences may explain the differing experiences from the ISTs and hence differences in the feedback.

Potential incompatibility with my facilitation/teaching style could also have contributed to the disparities seen in the learning and feedback. A potential 'matching' (Hayes & Allinson, 1996) of my initial didactic, theoretical, discursive type of teaching style to Claire's instructional preference was noted from my IST reflection.

It appeared that Claire responded well to my teaching methods which could indicate that she possessed traits similar to myself, that of a “Theorist” and a “Reflector” (Honey & Mumford, 1986) and that she may therefore also have had preferences towards “Reflective Observation”. Hence my instructional/teaching style could have inadvertently matched her learning preferences.

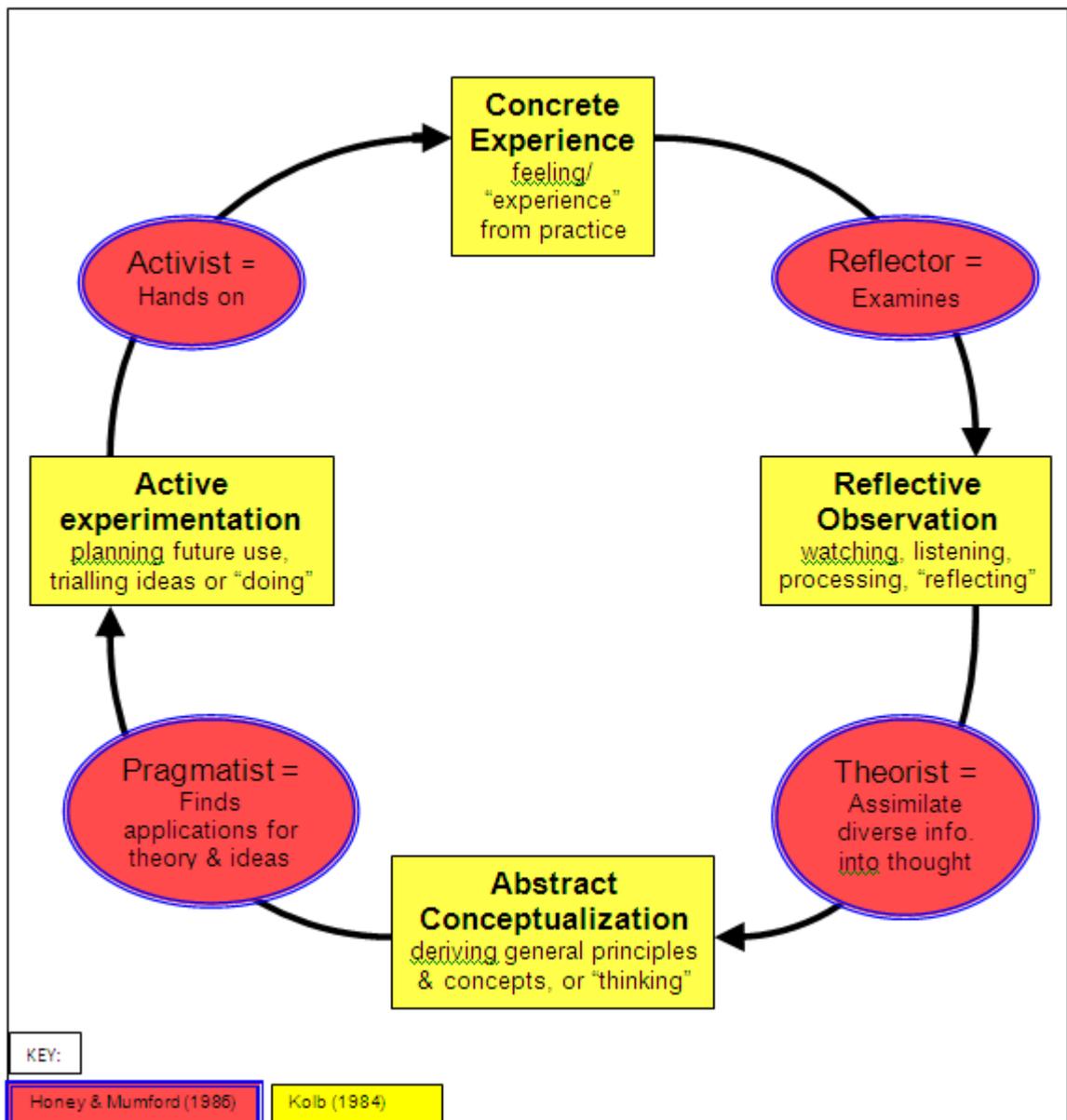


Figure.2 Relationship between Kolb's model of experiential learning & Honey & Mumford's learning style inventory.

As a result of this, Claire appeared to really engage in the ISTs and was a lot more responsive than her peer. This could have enhanced her achievement and satisfaction, whereas Cathy on the other hand may have experienced a 'mismatch', whereby her learning preferences may have been in opposition to my instructional preferences, resulting in reduced application of cognitive ability, participation, motivation, and understanding on her part. These mismatches could potentially be eliminated, as teaching or facilitation styles relate directly to an individual's cognitive style and hence their instructional preference, (Curry's outer layer) which can be altered (Garlinger & Frank, 1986). Hayes and Allinson (1996) describe empirical evidence supporting the view that instructional preferences, and by default teaching styles, can therefore be adapted to differing situations.

As well as possible mismatches in instructional and teaching preferences, the method of delivery could be questioned, as a didactic lecture type approach was used throughout all IST. This pedagogical method was historically used for children and can encourage learner dependency by promoting submissiveness (McMahon, 2006; Knowles *et al.*, 1998). A didactic pedagogy ensures the teachers exclusive responsibility for decision making regarding the content of the taught session, the method, timing and evaluation (Knowles *et al.*, 1998). This approach often encourages superficial, 'rote' learning, used for example, to pass exams (Atherton, 2005; Boud *et al.*, 1999). This type of learning allows factual recall within similar contexts, but is potentially less useful for professionals, (McMahon, 2006), as the transferability of skills and knowledge to different situations encountered in clinical practices may be limited.

Andragogy in contrast, can promote independence, deeper understanding of concepts and represents the adult end of the child/adolescence/adult learning continuum (McMahon, 2006; Atherton, 2005; Knowles *et al.*, 1998) This adult model is based on the premises that adults know why they need to learn, are self-motivated and want to learn, possess responsibility for decision-making and have greater breadth of experience (Knowles *et al.*, 1998).

To promote andragogy, learners should make decisions regarding their own learning, (in this study, the IST's), which unfortunately was not the case with Cathy and Claire, as the IST programme and objectives for their learning were set in isolation before their placement began.

Knowles *et al.*, (1998), acknowledge that instances may exist when different pedagogical strategies are needed for particular learners or goals. The students' situation here may be an example of this, as being completely new to a specialist area and with minimal relevant experience to draw upon, they may have been more dependent and required more direction. Students on placement will sometimes often have to 'rote' learn standard information quickly, to be able to reproduce and perform routine tasks effectively and safely and therefore, didactic pedagogical approaches may be more appropriate, particularly in the early stages of their placement learning. The need for different learning processes is discussed within the literature, but with recognition of the need to move towards andragogy to increase personal responsibility for learning, as opposed to remaining dependent upon facilitators with continued pedagogy (Knowles *at al.*, 1998). As clinicians are generally not formally taught how to teach, but instead how to practice (Twinn & Davies, 1996), it is likely that I replicated my experiences of undergraduate teaching when 'educating' my students. Literature suggests that adequate training is necessary to ensure facilitation is carried out in an appropriate and supportive manner (Mackreth, 1997, Porter, 1997; Kilminster & Jolly, 2000), a lack of which in my case may have led to, for some, less optimal supervision.

From my own reflection on the IST programme, it was evident that the method of facilitation adopted was familiar and easy to reproduce, irrespective of the students' personalities and learning styles. I was perhaps comfortable with the pedagogical responsibility for learning, as I believed that this kept students more dependent and served to reinforce my positional and expert power (Etzioni, 1975). Without any challenge to my teaching/facilitation from peers, I had not sufficiently reflected, or taken the necessary steps towards abstract conceptualization or active experimentation.

The method of feedback used to gain Cathy and Claire's evidence, is also worthy of investigation, as differences may have been due to the modality used (written). Claire's feedback for example, was significantly shorter. If she had a strong aversion to written learning and been an "Activist" or "Pragmatist" (Honey & Mumford, 1982; Honey & Mumford, 1986), she may not have fully participated with this mode of feedback, and therefore an alternative, such as verbal feedback, may have been more appropriate. If conversely she had had a strong preference for "Read/write" learning, (Fleming, 1992) she may have engaged more in the reflective feedback process and potentially identified deficits in her learning.

It should be noted, however, that the literature questions the relevancy and accuracy of student evaluation/feedback. Pounder's (2007) comprehensive literature review concludes that research into student evaluations does not demonstrate any concrete relationship with teaching performance. He cited many examples of unrelated variables influencing evaluations, from time of day/week, teacher's personality, to students giving positive feedback to keep on the 'teacher's good side'. Much of the literature concurs with Pounder, (e.g. Crumbley *et al.*, 2001; Smith & Kinney, 1992; Dowell & Neal, 1982) which is troubling in view of the widespread use of student evaluation's (Seldin, 1993).

It is therefore acknowledged that there are limitations in this approach to gaining student evaluation and feedback, especially in this case with only two students. It was, however, hoped that despite the issues concerning usefulness of evaluative feedback, the information gained could be used to devise a more effective learning experience for subsequent students.

### 3-Strategies for the next two students

#### i) Learning Contracts:

Following discussions with the next two students, Jenny & Jane, at the beginning of their practice placement regarding their perceived strengths & areas of weaknesses, they were encouraged to identify and document their expectations, aims and objectives, and personal learning needs and strategies in the form of a learning contract (LC).

The students agreed these would be used to evaluate progress instead of the generic pre-set placement learning aims and outcomes utilised previously. Whilst Boud (1992) suggests LCs can limit opportunities, such as spontaneous learning situations/environments, several authors (e.g. Laycock & Stephenson 1994; Solomon, 1992) state that improvements in ownership, participation and motivation are identifiable, as LCs are focused on learner's needs and wants, and provide a summative function to assess development (Laycock & Stephenson, 1994).

Use of LCs also satisfies two of Sadler's (1989) three conditions necessary for learners to benefit from feedback. These consist of possession of achievable goals/standards, and the structure/ability to compare performance against these goals/standards. This allows LCs to be used for formative as well as summative assessment. Many authors (McMahon, 2006; Nicol & Macfarlane-Dick, 2006; Torrance, 2001; Sadler, 1989) demonstrate that formative assessment and feedback benefits learners by promoting evaluation and self-reflection, clarifying good performance, and encouraging self-esteem and motivation. It also identifies weaknesses and allows subsequent improvements to be implemented before summative assessment. In addition to the formative function of LCs, the students in this case suggested a need for on-going assessment and feedback following specific IST sessions, which was also implemented.

#### ii) Peer Learning:

To satisfy the perceived need for on-going feedback, the concept and positive aspects of peer learning and assessment were introduced and discussed. These included improving reflection, critical enquiry and communication skills, as well as promoting lifelong, deep and andragogical learning (Boud, *et al.*, 1999; Lincoln & McAlister, 1993). It was agreed that assessment/feedback would be facilitated via the introduction of peer clinical supervision sessions. These would enhance learning and transference of skills into clinical practice, as well as facilitating timely feedback, active learning, reciprocity and cooperation between the students, thereby satisfying three of seven principles of good practice for undergraduate

education (Chickering and Gamson, 1987).

As advocated by the Chartered Society of Physiotherapy (2010), supervision logs were used to promote awareness of the processes of supervision and assessment and the concept of 'good feedback' (Nicol & Macfarlane-Dick, 2006). My monitoring of every third supervision session was agreed to moderate assessment and feedback, to facilitate debriefs with appraiser and appraisee, and to minimise the adverse effects of peer supervision, as described by Declute & Ladyshevsky, (1993) and Boud *et al.*, (1999), such as competitiveness, exploitation or factual inaccuracies.

iii) Learning styles:

In order to identify how the IST programme could be designed to ensure optimal learning a 'learning style' or 'instructional preference' questionnaire was identified (Fleming, 2005) that both Jenny and Jane, as well as myself completed and compared. The "Visual, Audial, Read/write, Kinaesthetic" (VARK) inventory (Fleming, 2005), was selected as it was free, easy to administer (taking only 10 minutes to complete the web based questionnaire - essential in clinical practice where time is very limited) and had no commercial bias. However, as validity and reliability are not yet proven, caution was used in its interpretation (Coffield *et al.*, 2004). The results of the completed inventories clearly showed Jenny's and my own learning styles of "Read/Write" modes matched (with very similar scores across the categories), whilst Jane mismatched, with "Multimodal" preferences (weak scores across the four learning mode), and a slightly stronger tendency towards the "Kinaesthetic" mode of learning. Based on this result Jane may therefore learn best when she actually experiences situations or events, such as physically feeling patients muscle tone or joint movements, or practising communication techniques. Conversely, Jenny for example may benefit from reading about differences in muscle tone or theories of communication and writing notes. Following the students and my own comparisons of the findings from the VARK, both Jenny and Jane were keen to determine which instructional method would be optimal to facilitate their learning and at which stages of their placement. Therefore discussions were had regarding the difficulties in using different instructional preferences

concurrently, as well as the pros & cons of 'matching' and 'mismatching' differing learning and instructional styles (Ford & Sherry, 2001; Sadler-Smith & Riding, 1999; Hayes & Allinson, 1996). As both Jenny and I had strong "Read/Write" preferences and Jane was "Multimodal" with elements of "Read/Write", this was agreed upon as the initial matching preference to improve short-term learning (e.g. Hayes & Allinson, 1996; Riding & Douglas, 1993; Riding & Sadler-Smith, 1992). The students also decided that as they become more familiar and confident within the speciality, the facilitation method of the ISTs could include more 'hands on' practical approaches to allow a greater match to Jane's "Kinaesthetic" preference. This would serve to enhance Jane's learning, whilst challenging Jenny to develop and adopt a more multi-modal learning approach, which is useful in enhancing flexibility in differing learning environments and situations (Hayes & Allinson, 1996)

iv) Active participation in IST:

During agreement of their LCs, discussion was facilitated with the students, both individually and jointly, to identify their educational needs in order to agree and prioritise the IST programme. This early collaboration in the decision-making and IST planning, promoted movement towards andragogy (Knowles *et al.*, 1998) and away from the pedagogical pre-emptive setting of a standardised IST programme. The improved ownership resulting from cooperative/collaborative approaches (Declute & Ladyshevsky; 1993) was seen to increase the student's awareness of their needs and motivation towards participation in the IST.

The students subsequently decided initial IST should be on safety issues and theory associated with using specialist equipment on their placement. Despite Jane's "Kinaesthetic" preference, both students described didactic lecture style IST as their preferred facilitation method for these sessions. This pedagogical need felt by the students could relate to their feelings of dependency and reliance upon set procedures, policies and more experienced staff, such as myself, as both were new to this highly specialised area with no previous experience.

To ensure promotion of andragogical interaction and facilitate deeper and more active learning, the new IST programme was less structured and didactic, with

content being focused on the students' actual needs rather than my perceptions of them. This incorporated case studies and problem based learning, as well as practical sessions. Hand-outs were still provided to promote latent reflection, but were less formal and lengthy than those used for Cathy and Claire, and included diagrams and pictures to include more varieties of learning and instructional preferences. To further reduce learner dependence, peer learning was facilitated whereby the student's chose, researched, and presented topics in less formal sessions, stimulating cooperation and reciprocity, as well as encouraging deeper learning (Chickering & Gamson, 1987).

### **Results** - Evaluating changes

In order to evaluate the changes in facilitation of learning with the second pair of students, I continued my self-reflections following each IST session, but these were more evaluative and focused upon change. The abstract conceptualization was stronger and greater efforts were made to actively experiment (Kolb, 1984) with different styles and methods of facilitation.

It became evident upon analysing my reflections that moving away from my original didactic style, towards a more fluent facilitatory approach, whilst daunting with feelings of loss of control and worry about digressing from my plans, promoted more free thinking. The sessions became more productive and interactive, stimulating active learning as we explored and discussed many associated relevant topics prompted by the students, rather than simply following my perceptions of what I felt they needed to know. The overall scope of the IST's, as well as the essential content was however maintained to ensure the relevant learning experiences for their practice placement were still achieved.

The students also continued to feedback on the IST, via reflection on-action (after the event), using modified written pro-formas, which provide constructive and positive comments such as;

“Less formalised approach worked as I was not afraid to speak up even though I was not sure I was right”

“It was great we could both help.... and problem solve why my way would not work”

“I was worried about not being given the right answer by my peer ....., it was good our educator could guide us if we went wrong”

Resulting from raised awareness of learning styles and instructional preferences, the students suggested using visual analogue scales in addition to written comments on their IST experiences, to enhance objectivity and quality of their feedback. With the IST being less formal and with greater student participation, verbal reflective feedback was also discussed and implemented successfully. This occurred both ‘in-action’ (concurrently during the IST), which allowed the IST to be adapted or focused more to suit the students’ needs during the session, as well as ‘on-action’ (latent reflection) which occurred after the IST and served to inform the facilitation method for future ISTs.

In addition to the introduction of peer clinical supervision and formative feedback sessions, I also asked colleagues to peer evaluate the IST sessions to provide impartial feedback in an attempt to offset some of the validity issues relating to student evaluation and feedback (Pounder, 2007). Ellington & Ross (1994) described benefits of introducing peer assessment into university teaching evaluations. In their example ‘mentors’ were specifically trained and whilst voluntary uptake was low, 8 of the 12 who volunteered considered it to be “extremely helpful” and the other 4 “reasonably helpful”. The model I introduced, whilst similar, was more akin to Adam’s (1994), ‘Buddy’ system, whereby peers without formal training were invited to observe teaching activities. I found this approach non-threatening and the ‘Buddies’ provided critical and constructive feedback which could be discussed analysed and conceptualised, and then actively experimented with by implementing further changes.

Perhaps the most reliable method of identifying changes in learning, resulting from improvements in the IST sessions, was to evaluate achievement of the students

objectives. The LCs were constantly referred to during the placement to provide formative feedback, with final summative assessment performed at placement completion. Unusually, significant progress was consistently observed towards achieving Jane and Jenny's personal objectives, contributing to full achievement at the end of the placement. With previous students, including Claire and Cathy, progress was usually slow, with frequent non-completion of some objectives, despite increased activity towards the end of the placement. Jenny and Jane's improvement may have related to improved participation, motivation and compliance, secondary to improved ownership, (Atherton, 2005; Knowles *et al.*, 1998), and/or from the continued timely formative feedback, as advocated by Chickering and Gamson (1987). It is noted however, that the depth and breadth of individual students' knowledge, skills and motivation, as well as their ability to participate, learn and change over the course of practice placement is very variable. Hence, the positive outcomes noted following changes to the IST, may simply be attributed to the latter pair of students being relatively brighter, better engaged and more competent than the former. Further research would be required in order to draw a more substantive conclusion.

### **Conclusion**

Over the course of these two placements, I became more aware of the importance of focusing facilitation of learning towards individual learner needs and preferences, rather than remaining an "unconscious incompetent" (Bandler & Grinder, 1979), within my comfort zone of didactic formal teaching. I had to continue to assess the learning styles and instructional preferences of students whilst considering relative merits of matching and mismatching. My facilitation needed to be tailored to meet the student's needs, dependent upon their experience, stage of learning and whether the aim at different stages of the placement was more towards deep or superficial learning. Continued effort at revisiting these principles and those of pedagogy and andragogy need to be made with every new learner encountered, in order to understand and respect their diverse talents & learning preferences.

The process of self-reflection/evaluation and peer observation to inform change in facilitation was uncomfortable due to the challenge of my historical, deeply ingrained familiar methods of teaching. Examples of this include feelings of loss of control as I implemented less structured IST, as well as potentially reducing my expert/positional power over my students. However, in spite of these concerns, positive comments and feedback were gained from students and peers regarding improvements in facilitation. Despite the learning structure and the order and rate of learning being different, both with regard to the summative assessment and personal observations, I recognised that Jane and Jenny's achievement of knowledge, concepts, and skills was deeper and more transferable than those of the previous students.

Resulting from the personal learning undergone, I am now more familiar with different learning and facilitation strategies, types of IST and media that could be used, and also the variety of evaluative tools available. I am now better equipped to facilitate learning in a wider variety of individuals and circumstances. The biggest challenge that remains is to ensure that I continue to self-review and actively complete learning and reflective cycles so that my ability to facilitate learning continues to evolve.

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