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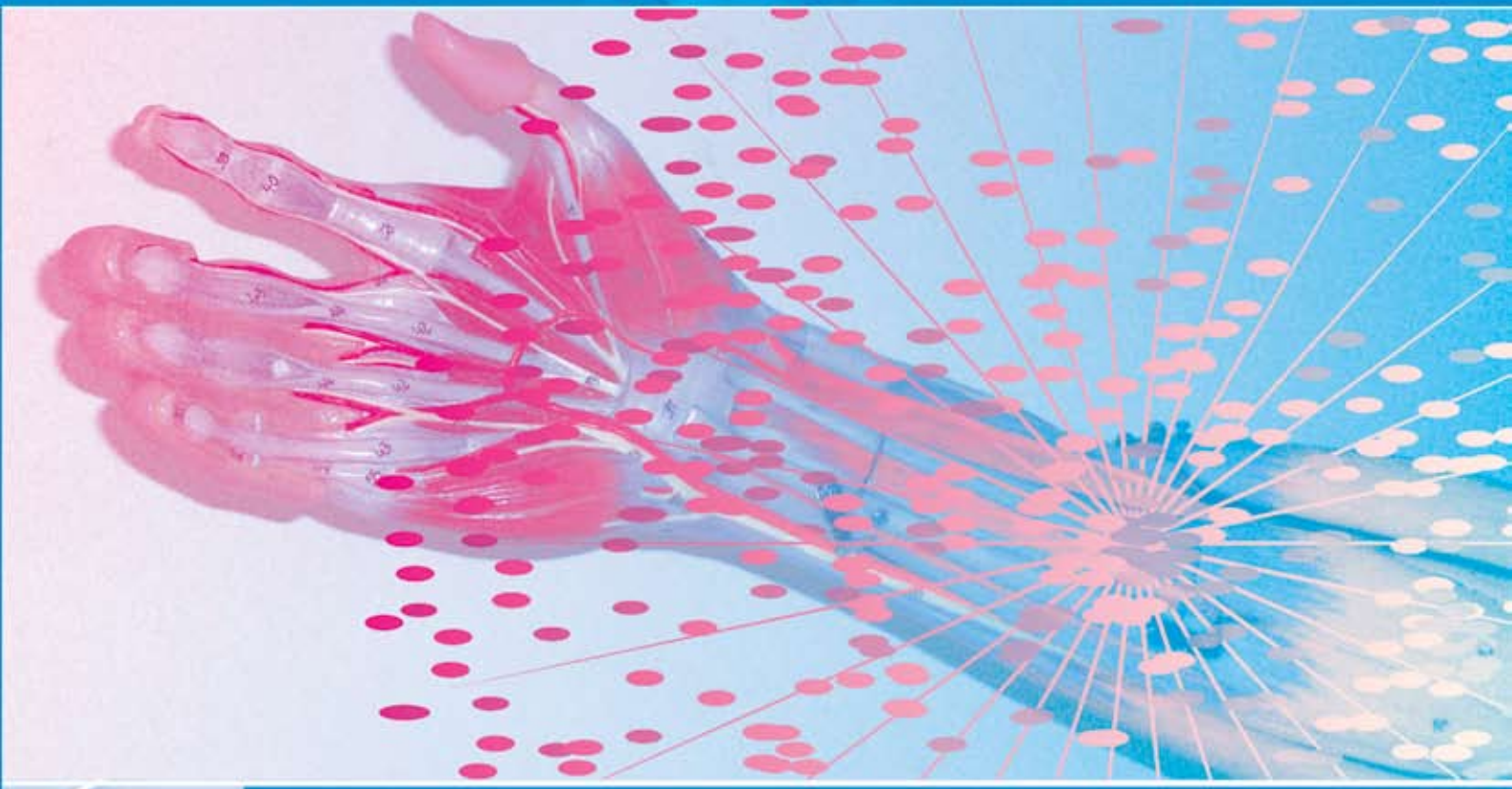

A Peer Reviewed International Journal for the Advancement of Clinical Skills
- 'docendo ac discendo' - 'by teaching and learning'

In this issue:

Executive Board

IJOCS
DOCENDO AC DISCENDO

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The International Journal of Clinical Skills looks forward to contributing positively towards the training of all members of the healthcare profession.

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Foreword

Globalisation and Clinical Skills

The International Journal of Clinical Skills (IJOCS) – the new road to new skills? Maybe – but it has certainly opened a platform for the globalisation of clinical skills. The World Health Organisation's (WHO) programme on globalisation targets public health risks, security and outcomes. Driven by the concept of "global public goods" and cross-border health risks, the underpinning issue is to promote health for the poor by way of achieving national health targets. As with the IJOCS, the WHO strategy seeks new technologies in the clinical arena to provide investigative tests – with the WHO being particularly interested in those tests which are suitable for developing countries along with new drugs for endemic diseases. The aims are indeed noble. Investigative and therapeutic technologies create a vacuum for the dissemination, sharing and globalisation of clinical skills, which remain the main asset and commodity which clinicians of poorer nations exercise, promote and share. The IJOCS has released a bolt for health professionals to do just that – share knowledge.

The provisions of the healthcare industry in developed countries by sheer volume and demand, streamlines clinical skills into sub-specialised areas. Clinicians (medical, paramedical and nursing) in these areas gain clinical expertise that are unique to their field and emerge from rich patient-clinician interactions. The clinical skills of dealing with children with disabilities, rehabilitation medicine and terminal care are mere examples that are deficient in the poorer health economies that spend the best part of their human resources to combat diseases of malnutrition and poor sanitation.

The IJOCS provides a global resource centre for sharing and promoting clinical skills between clinicians and health professionals. Senior clinicians, who practiced medicine during the last four decades, will have recognised a gradual and progressive pattern of dependence on technologies with less reliance on clinical skills. The IJOCS provides a platform for sharing and debating the inter-phase and interactions between new technologies and clinical skills. It promotes the development of a new layer of clinical expertise that will emerge from the interpretation, application and/or exclusion of new technologies, for the benefit of clinical care.

I trust that clinicians practicing in poorer health economies will enhance the Journal by sharing their clinical skills and knowledge. Their special expertise of managing clinical needs, within restricted resources, expectedly stimulates the human ingenuity and creativity, leading to the development of clinical skills suitable for each unique circumstance. I, for one, will be actively supporting the IJOCS innovative approach to collaboration of skills. The IJOCS will provide a vehicle for the transmission of these skills across the globe for sharing expertise between different health economies to enrich the overall clinical skills arena.

Hippocrates recognised the professional responsibility of the individual clinician by stating that physicians "must have a wealthy …medical knowledge, clinical skills, medical ethics, interpersonal skills,…". The IJOCS improves the physician's opportunity to enhance his/her clinical skills "by teaching and learning".

Dr Atef R Markos FRCOG FRCP

Investigating new approaches to facilitating the learning of female pelvic examination for health care professionals

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Abstract

This paper will focus on a new approach within the UK to teach female pelvic examination to undergraduate medical students. The use of Gynaecological Training Associates (GTA) (non-medical females trained to teach pelvic examination while themselves being examined) by students is not a new concept and has been used in America and Scandinavia since the 1970's. However, in the UK, GTA's are rarely used. The discussion will follow how one GTA programme is being developed at Southampton General Hospital, and drawing heavily from pedagogy how the sessions are being planned.

Background

The culture of health care delivery is constantly changing. As health delivery enters the twenty-first century this changing culture has been felt acutely within undergraduate medical education, and as educators the need is to embrace and accept this change. This discussion will examine how the training of doctors has changed from the established didactic apprentice model to problem based learning, and how societal expectations and rising health demands have shaped undergraduate medical education. The impact of these changes suggests that medical students are not competent to perform intimate female pelvic examination (FPE). In response to this, the discussion will offer the notion of the Gynaecological Training Associate (GTA) and how they can be utilised within undergraduate medical curriculum drawing from Morley and Parle (2007) Learning Trajectory and Biggs (2003) concept of Constructive Alignment. The debate will conclude with a discussion of the introduction of a GTA programme within the author's hospital with further analysis of how the teaching programme is being adapted to the learning styles of the students.

All forms of professional education share the goal of preparing students for accomplished and responsible practice in service to others [1]. Thus, professionals in training must master both theory and knowledge; the final test of their efforts, however, will be not what they know but what they do. The purpose of medical education is to provide opportunities for learning, the development of skills, and to instill the values of the profession in an appropriately balanced and integrated manner [2, 3]. In the apprenticeship model of medical training which prevailed up to the mid-20th century student doctors encountered this knowledge, skills and values in a didactic way, as enacted by their teachers, in the course of caring for patients, since health was concerned merely with the mechanics of body parts and systems. The Consultant would traditionally conduct ward rounds where much of the teaching occurred: a female patient would have little choice when the Consultant informed her that her breasts were about to be examined by numerous medical students.

Often consent was not properly obtained [4]. More recently, high profile malpractice cases have put enormous pressure on the medical profession to ensure that unethical practices are prevented and challenged. Patients themselves have higher expectations of the medical profession in part due to the huge undermining of the patient-doctor relationship as a result of Shipman, the Bristol Heart Inquiry and the Alder Hay body parts scandal in Liverpool [5].

The medical education apprenticeship model of learning is no longer compatible as health delivery has changed, is far more complex, and is concerned with issues such as; communication, team working, leadership, diversity, ethics and law, public health, sociology and nutrition [6].

Within the last forty years there has been a rapid expansion of biomedical knowledge. Despite this, fashions in medical education over the same period have shifted away from factual didactic teaching towards contextual or problem-based learning. This paradigm shift has been justified by studies showing that problem based learning improves reasoning and communication while being associated with few if any detectable knowledge deficits [7].

More recent changes within health care delivery: patients spending less time in hospital [8], patients in hospital being more acutely unwell and are therefore unwilling to be 'practiced on' by students and outpatient clinics being busier as more patients are being treated away from the hospital environment and within the community. The above changes have resulted in clinicians struggling to find the time to teach all the necessary skills to students in the traditional ways [9].

Further examination of changes within health care delivery [8] suggest that patients are spending less time in hospital as demands on health resources exceed supply. Patients are being treated more commonly for their ailments in community settings such as GP surgeries and are not being admitted to hospitals. More recently government proposals advocate the use of 'Polyclinics which 'house' GP's alongside other health professionals under the same roof' [10]. There are plans for 150 of these Polyclinics to be set up in London. Hospitals are therefore catering more for the acutely unwell patient.

The impact the above changes have had on teaching undergraduate medical students female pelvic examination is that there are less patients in hospital for students to 'practice on', and the patients that are there are more unwell and unwilling to be practiced on. More community patients have swelled outpatient clinics to the point where clinicians struggle to find the time to teach all the necessary skills to students [9]. The result is that students do not acquire the skills necessary to perform this intimate examination.

Gynaecological Training Associates

One response to recent healthcare and societal changes in training undergraduate medical student's female pelvic examination is by the use of Gynaecological Training Associates (GTA). The GTA is a non-medical female trained to teach pelvic examination while themselves being examined by students; the GTA's work in pairs, with one acting as the patient and the other acting as the instructor. This teaching method is highly effective [11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24]. It has also been found to be an efficient use of resources and acceptable to medical students [20, 25, 26, 27]. Student's outcomes have been evaluated by randomised control trials [28]. Students taught by GTA's performed more pelvic exams [24] and scored higher on interpersonal and communication skills [24] than control groups. Students taught by GTA's scored higher in technical skills (or the same as) than those taught by other methods [15, 30]. Following teaching from a GTA the students practice in the clinical environment on patients.

Kleinman et al (1996) [15] concluded from their study that teaching medical students with a GTA was highly effective. Within the study students from two health care centres were taught pelvic examinations in two different ways. The first group was taught using a GTA and the second group by a senior doctor. The study highlighted that although student communication skills were significantly superior in the first group; no differences were found in technical skills between the two groups which may cast doubt on the results. Plauche and Baugniet-Nebrija (1985) [25] suggest that student's communication skills may have been inhibited due to the presence of the senior clinician and that the student may have been embarrassed about saying the wrong thing. A conclusion that can be drawn from Kleinman et al (1996) [15] study is that communication skills, when conducting an examination of such sensitive nature as this, are highly important and can be improved when the person on whom the examination is carried out on (GTA) can give immediate feedback to the student.

An interesting cultural point made by Sharma in the British Medical Journal (2003:1394) [31]

…fortunately we don't have such problem in India where patients gladly let the medical students examine them including pelvic examination'. We feel the old and well proven method of examining the real patients can never be substituted by any other method least so by examination of an actress.

In sharp contrast Dent (2003) [9] disputes the notion of the GTA as 'an actress' and suggests that the role is more akin to being a teacher, as the GTA teaches the student how to conduct a pelvic examination following a rigorous training programme herself.

Theroux and Pearce (2006) [28] have shown that although the notion of using GTA's in undergraduate medical education is highly beneficial, there are drawbacks. Firstly, there is a high cost involved in the recruitment, training and use of GTA's in medical schools, which in this climate of fiscal restraints may deter some schools from embarking on such a set up. Secondly, the GTA will teach the medical student how to conduct a pelvic examination on normal anatomy and have no exposure to abnormal pathological findings, such as cancer. Lastly, student stress when being taught this procedure on a real person can be high, especially for the male student. To allay student fears it is imperative that GTA's are trained in effective methods to ease the student gently into the learning scenario.

Another strong reason for the introduction of the GTA is as Cowdrey (2004:212) [7] persuasively argues:

The rubber manikins are dreadful; they are completely inadequate for the learning technique. They are made of rubber- a very different consistency to a woman's body. But the main thing is you can't communicate with a manikin.

However, the rubber manikins are a useful precursor to the student being introduced to the GTA as anatomy can be revised. To exclude the manikin could be too much of a gap for the student, as it is preferable for them to build up their clinical and communication skills in a logical sequential manner.

Integration into curriculum

Morley and Parle (2007) [33] offer a useful learning trajectory through vertical integration and how the GTA can fit into undergraduate medical student learning:

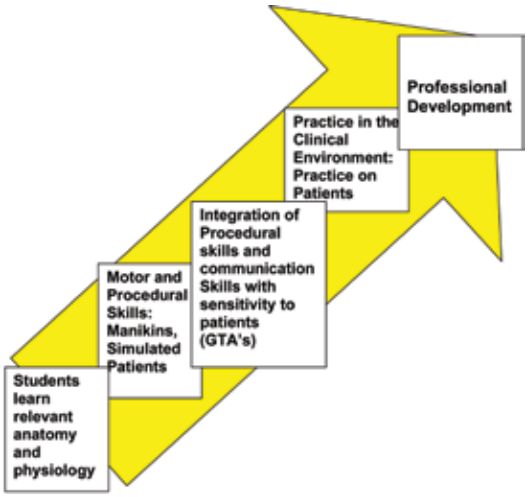

Figure 1: Female Pelvic Examination learning Trajectory (Adapted) Morley and Parle (2007) [33]

Firstly the student learns female anatomy with accompanying physiology. This is backed up by videos and anatomical models. The student then moves from the theory to applying motor and procedural skills with the use of manikins and simulated training devices. The next phase in this model, before the student uses their newly found skills on the patient, is where they integrate their procedural skills with communication skills and sensitivity to the patient with the use of gynaecological training associate (GTA). Linked to, and consistent with Morley and Parle's (2007) [33] suggestion of a learning trajectory, is the notion of constructive alignment [34]. This suggests that the delivery of teaching should be in a balanced way in which all components support each other, 'as they do in any ecosystem' [34]. For the best quality teaching, all parts of that teaching need to be aligned. If they are not then the results can be disruptive and can lead to surface learning which is characterized by rote learning of material, typically to be reproduced in an examination. Ramsden (2003) [35] suggests surface approaches are, 'uniformly disastrous for learning.'

The concept of constructive alignment purports that learning outcomes, which have been described by Paterson et al (2004) [36] as an 'unambiguous statement of learning intent' are explicitly stated. The teaching methods are chosen that meet the learning outcomes. Finally the assessment tasks address the learning outcomes, in this way it can be seen if the students have learned what the outcomes state they should have learned. In higher education, D'Andrea (1999) [37] makes a powerful case for the use of learning outcomes which allow teachers to clarify course content, teaching approaches, assessment strategy and allows for reflection of all aspects of pedagogic practice. They have also been described as the cutting edge of curriculum developments in medical education as these will place the emphasis on 'what sort of doctor' is produced. Learning outcomes determine the curriculum content, its organisation, teaching methods, assessment process and provide a framework for curriculum evaluation [38]. Using learning outcomes in medical undergraduate curriculum design are supported by Hamilton (1999) [39] provided these relate, in part, to the mature professional role of the medical graduate and the quality of care provided. Within the FPE session one of the stated learning outcomes is: students will have been shown the best way to communicate and approach a patient who needs an intimate examination. However this is not aligned to student reality since the student is taught to perform the FPE on a manikin which is inconsistent with student reality. This is an important point as the government and healthcare professions are asking for more transparent and explicit outcomes of undergraduate medical education. The General Medical Council (GMC) [40] has responded by identifying that certain standards are achieved in professional practice and that medical schools are responsible for ensuring that their graduates possess these skills to practice [40,41].

Outline of session

There is a clear need therefore for the introductory use of a GTA. The GTA is employed as a learning tool and completes student learning within the FPE session within Morley and Parle's (2007) [33] learning trajectory idea. The discussion will now examine how this can be achieved practically within the author's place of work. The discussion will explore how other medical education centres have improved, and deliver this sensitive subject to medical students and will draw on credible data from the United States of America, Canada, Australia and Scandinavia and from the author's experience of how GTA programmes are being developed in other parts of the United Kingdom.

The success of a project can rely on how well it is planned. Poor planning can lead to poor outcomes. For best outcomes is it essential that this project is successfully managed. To ensure best success of the project key facts and expert opinions have been gathered to ascertain key issues, key stakeholders have been approached and their support gathered. (In the course of the author's fact finding three UK hospitals have been visited and will be referred to hospital x, y and z). Empirical evidence, expert opinions and key information gathered by the author would suggest the key issues when setting up a GTA programme include: recruitment, assessment and training of the GTA's. These issues will be examined in turn.

Recruiting a GTA means placing an advert where it will be seen by women. Pickard et al (2003) [24] in the UK were successful in placing posters in community reproductive health clinics and general practices. Beckmann et al (1988) [19] in the USA recruited from a feminist self-help group and states (1988):

GTA's are also self-selected in the sense that they share an activist self-identification in the areas of woman's health care and women's rights-most would espouse the term 'feminist' as an accurate description.

Hospital x recruited via the internet and the local intranet. Hospital z advertised outside of their hospital in GP surgeries, family planning centres, and on a Daily Bulletin: an electronic news facility. To advertise in-house could risk the GTA being recognised by a peer, or a work colleague, and by the very nature of the role would be inadvisable. Nowhere in the literature does there appear a detailed description of the advert detail. However,

to overcome the sensitive nature of the role and the subsequent wording, hospital z described the role as an 'Innovative teaching programme' which 'captured interest'. Hospitals x, y and z all required the perspective GTA's to be computer literate (Pickard et al, 2003) [24], as all application forms were filled out electronically. However, this may be limiting for some applicants, who were not computer literate, thus excluding some women.

To ensure clear job boundaries, careful thought has to be given to the job description and person specification for the GTA role. No clear guidelines are given in the literature, however, Beckmann et al (1988) [19] suggests that GTA's should be selected 'for their high intelligence, good verbal skills, personal maturity and emotional stability'. Following applications an informal evening presentation may be useful to actually inform the candidates of the role they are applying for. Hospital z suggests that this meeting is useful for interviewers to meet potential GTA's on an informal basis and is invaluable for the short listing process. This informal meeting serves to inform candidates of job role and salary. Hospital x and z suggest that short listing is carried out following the informal meeting, and the interview panel consists of all key project personnel.

The success of the programme relies on the quality of the GTA training (Beckmann et al 1988) [19]. The GTA has a fourfold remit: She must be skilled in performing a gynaecological examination, knowledgeable about issues relating to interpersonal communication, able to teach these concepts and being capable of evaluating whether student learning has occurred. This training is performed by experts including obstetricians, communication experts and within the GTA group itself. Beckmann et al (1986) [18] suggests the GTA training time frame consists of eight to ten sessions each lasting 90 minutes (13.5 to 15 hours), Beckmann et al (1988) [19] suggest four workshops lasting six hours each (24 hours total), hospital x suggest training over two months and hospital z suggest 22 session lasting 2 hours each (44 hours total). It is interesting that one hospital spent more than three times longer than another to train their GTA's. This may be due to financial constraints within each hospital facility. A study of student exam results and performance following teaching of female pelvic examination between hospitals may reveal some interesting data.

Because of the complex role of the GTA the training must cover all aspects of this role. The GTA must be competent in examination technique. It would be prudent therefore for her to be aware of what the students are taught and perhaps given access to student material (Beckmann et al 1988) [19]. Teaching the GTA best practice can be by way of video or observing a real pelvic examination which would serve to teach her correct anatomy, included within this the need for effective communication during the procedure. Following this the GTA needs to be taught how to teach. Role play scenarios may be useful here to emphasis the barriers that may present during the procedure: the embarrassed or the inappropriate student. As the GTA becomes more skilled she may then need to perform the pelvic examination on her colleagues (GTA's) and perform all the functions of the session participants as described by Beckmann et al (1988:127) [19]:

One GTA acts as the patient, one as the medical student, and one as the instructor. During the session, every GTA assumes each of the three roles. The session is observed by the doctor coordinator to provide feedback on technique and by communication experts to provide feedback on communication and teaching.

Once trained, the GTA will attend for an exam of her newly learned skills before commencing her role, and once she feels confident and competent within her new role will work autonomously.

At the author's place of work a GTA Steering Group has been established which consists of two obstetricians, specialist lecturers, a communication expert, two undergraduate medical students and the project coordinator (author). The purpose of the steering group is to ensure that the project has the best chance of success and delivers value for money. Success and value for money will entail a much wider remit than how other hospitals in the United Kingdom have delivered their GTA programme. These hospitals have followed narrow boundaries staying within the remit of the undergraduate medical curriculum. However, to maximise benefit to other health care professionals it will be necessary to widen the GTA remit to a wider health care audience. From this perspective local health economies, for examples, GP surgeries, Walk-in health centres, NHS Direct centres, family planning centres and Genito-Urinary clinics will be included in GTA communications with a view to widening training for these health facilities.

Student learning styles

Teaching students in this manner offers the student safety and protection as they learn. Ethical issues are minimised as practice is mainly using rubber manikins and the GTA. However, a main issue, and concern for the teacher is how to adapt the teaching to the learning styles of the students. Coffield et al (2004) [42] state 'How can we teach students if we do now know how they learn? Coffield et al (2004) [42] further states; *There is a strong intuitive appeal in the idea that teachers and course designers should pay close attention to students' learning styles-by diagnosing them, by encouraging students to reflect on them and by designing teaching and learning interventions around them.*

Before analysis of individual learning styles can commence, the term itself needs exploring and discussion of current themes is necessary.

Cassidy (2004) [43] attempts to break down the concepts and processes which underlie learning styles and classifies them into three: information processing: the way information is perceived stored and organised, instructional preference: predispositions towards learning in a certain way and learning strategies, the adaptive responses to learning specific subject matter in a particular context. Coffield et al (2004) [42] in their extensive review of the literature contend the issue of definition is problematic in that 'beneath the apparent unproblematic appeal of learning styles lies a host of conceptual and empirical problems'. They contend that the field of learning styles is divided into three main areas of activity.

Firstly, the explosion of theory that has emerged in the last fifty years, which has resulted in seventy one models of learning styles (Coffield et al 2004) [42]. This is concurrent with other findings: Kolb (2000) [44] has shown, when producing a bibliography of his own experiential learning theory that more than 1000 research entries existed. The website for the Dunn and Dunn Learning Styles Questionnaire has a bibliography with 1140

entries [45]. Kah-Ti et al (2006) [46] have reported over 2000 articles written about the Myers-Briggs Type Indicator between 1985 and 1995.

Secondly, Coffield et al (2004) [42] contend that evidence about learning styles is guided by contrasting and disputed theories from psychology, sociology, policy studies and education. This, in itself, is useful; however, individual academic researchers develop their reputations by establishing individual territories and specialisms, which are then defended against those from different perspectives. The result is a fragmenting, with 'little cumulative knowledge and cooperation research' [42].

Thirdly, on a commercial front many personality instruments and inventories exist [47, 48] which are used widely in many professions. The commercial gains for the creators of these personality instruments can be large and critical engagement with the empirical bases for their claims can be unwelcome.

It can be stated then, that the notion of individual learning styles is a contentious one, with many theories co-existing. However, for the purposes of the discussion, deeper analysis of four prevailing learning styles will be explored and how the proposed female pelvic examination (FPE) sessions are being developed with reference to these prevailing styles.

Kolb (1971) [48] proposed the experiential learning model and the instrument he designed to test his theory is the Learning Styles Inventory (LSI). He suggests that learning is not a fixed trait but a differential preference for learning which changes slightly from situation to situation. Kolb (1984) [49] further asserts 'learning is the process whereby knowledge is created through transformation of experience. Knowledge results from the combination of grasping experience and transforming it'. For Kolb, learning requires the resolution of conflicts between dialectically opposing modes of adaptation to the world. New knowledge is constructed by learners choosing the particular type of abilities they need. Effective learners need four kinds of ability to learn, and this learning is in a cyclical form: from concrete experiences; from reflective observations; from abstract conceptualizations; and from active experimentalisations. In this way four sub learning styles have emerged [49].

The Converging style relies primarily on abstract conceptualisation and active experimentation. Students with this learning style are best at finding practical solutions for ideas and theories and, according to Kolb (1984) [49] prefer to deal with technical tasks and problems rather than interpersonal skills. These learning skills can be useful in specialist and technological industries. Effective, therefore in practical situations, students within the FPE sessions can learn during the practical part of the sessions when the pelvic examination is performed, however, for them, real learning may occur when conducting role play scenarios.

The Accommodating style's dominant learning abilities are concrete experience and active experimentation. For these people a "hands-on" approach is best as they enjoy carrying out plans and involving themselves in new and challenging experiences. Their tendency may be to act on "gut" feelings rather than logical analysis.

These learning skills are important for effectiveness in action oriented careers such as marketing or sales and nursing [50]. For the student in the FPE session therefore, it is important that a logical, systematic, theory based and sequential system of palpation is presented, so that student actions can be evidence based and theory linked.

A Divergent style relies heavily on concrete experience and reflective observation. People here are best at viewing concrete situations from many viewpoints, are excellent at generating ideas and like to gather information. Kolb (1984) [49] suggests that people with this learning style can be imaginative, emotional and specialize in the arts. In formal situations they prefer to work in groups, listening with an open mind and receiving personal feedback. This is an important point and should work well within the context of the FPE session as impromptu group work is proposed for problem solving. Furthermore, personal feedback will be given to students following role play, from their peers and the tutor, on their performance.

The Assimilating style's dominant learning abilities are abstract conceptualisation and reflective observation. People with this learning style are best at understanding a wide range of information and putting it into a concise logical format. Being more concerned with a theory having logical soundness than a practical value, assimilators can be found in information and scientific careers. Students within the FPE session setting may function better during the logical, systematic, theory based and sequential pelvic examination, however, it is important that they are involved with the role play, and the practical aspects of the intimate examination sessions.

Kolb purports that learning is cyclical and that learners should use all four phases to become effective. However, Mainemelis et al (2002) [51] analysed 81 studies in a meta-analysis of the effectiveness of Kolb's claims and found only 61% supported the experiential learning theory, 16% showed mixed support and 22% showed no support, and furthermore, concluded that the balance of the evidence suggested that the validity of Kolb's claims is questionable. However, others claim experiential learning to be effective and argue for its usefulness as a pedagogic tool [50].

Very much influenced by Kolb, Honey and Mumford (1992) [52] developed their learning styles questionnaire (LSQ), which is a tool for exploring how people learn. Honey and Mumford (1992) [52] themselves state '…the similarities between his (Kolb) model and ours are greater than the differences'. They purport that people fall into four main categories of learning: Activist, Reflector, Theorist and Pragmatist. These categories are a description of the attitudes and behaviours that determine a preferred way of learning for an individual. They postulate that people tend to prefer different methods of learning, but do not see this as opposite ends of a spectrum. Instead they believe that people move between four different states of learning, which they have defined as activist, reflector, theorist, and pragmatist. These four states relate to their own version of the learning cycle whereby people have an experience, reflect on it, draw their own conclusions (theorise) and then put the theory into practice to see what happens. Based on the result they then move round the circle again if required until they are successful (in other words they have learnt).

Activists respond more positively to learning situations offering challenge. They thrive on new experiences [53] and have been linked with Kolb's (1982) active experimenter; however, they may

rush into a situation without adequate preparation. It is essential, therefore, for them to patiently observe how to conduct the FPE in a thorough manner, practice with the use of a manikin and then apply their newly learned skill in a competent professional manner. Reflectors prefer to stand back and ponder before any action is taken, similar to Kolb's (1982) reflector observer. They prefer observational activities when learning such as carrying out an investigation. The strength of a reflector, it is suggested by Honey and Mumford (1992) [52], is from observing the practical demonstration of how to carry out the FPE. However, it is important for them to put into practice what they have observed through the role play scenarios. The theorist according to Peng (2002) [54] adapts and integrates information in a step-by-step logical way. They prefer to maximise certainty and feel uncomfortable with subjectivity. The theorist, in line with Kolb's (1982) abstract conceptualiser prefers activities that explore the interrelationship between ideas and principles. In this manner it is important for the theorist that the delivery of the FPE session is logically linked, systematic and sequential. The pragmatist, linked to Kolb's (1982) concrete experiencer, will be eager to test things out in practice but not so keen on the theory behind the idea. The pragmatist is a keen problem solver. Within the FPE session the pragmatist will excel at the hands on approach, but will need to be mindful of the underpinning rationales and theories supporting the necessity of conducting the intimate examination.

Furham (1996) [55] explored the relationship between Honey and Mumford's learning styles and classic personality variables such as introspection and extroversion, and concluded that 'learning styles are a sub-set of personality and so need not be measured independently'. Jackson and Lawty-Jones (1996) [56] confirmed these findings and suggested that learning styles represent the components of personality which are related to learning. In Furham's (1996) [55] study it is important to note that the percentage of variance explained by both personality and learning styles was only 8%. The author comments (1996):

This is not a large amount and indicates that the majority of variance was unrelated to individual differences in personality and learning style'

Perhaps it may have been pertinent for the researcher to have directed the research emphasis to whatever explained the remaining 92% of the variance.

Further studies by Allinson and Hayes (1988) [57] concluded that the LSQ was stable and its internal consistency was well established, however, Allinson and Hayes (1988) [57] added that it's concurrent and predictive validity were suspect. They purported that the LSQ was not a satisfactory alternative to Kolb's inventory method of learning styles.

Dunn and Dunn (1983), unlike Kolb (1984) and Honey and Mumford (1992) assert that learning is often unrelated to intelligence and is more related to extrinsic elements. They purport that learning style is divided into five elements called 'strands' which consist of environmental, emotional, sociological, psychological and physiological elements and significantly influence how people learn (Dunn and Dunn, 2003). They developed a Learning Styles Inventory (LSI) to ascertain how people learn. This model of learning is complex therefore only a brief analysis will be offered.

The environmental strand refers to lighting, sound, heating and seating arrangement. Some students study better in a cool and quiet environment, others with their music on. The LSI manual [58] suggests as people get older they become more concerned with their surrounding when studying. Does this imply that the environmental structures and set up within the FPE sessions for medical students who are early twenties should be ignored? Efforts should therefore be made to ensure the room temperatures are neutral: not too hot or cold; that the room is well lit; and the chairs are situated in a horseshoe fashion. Although room temperature and sound impact only a small percentage of learners, for those who have a strong need for silence or sound and/or a specific room temperature, these elements are critical for functioning effectively. If the temperature or acoustics do not match their biological preferences, they become distracted and are unable to concentrate [59] which can affect their performance.

The model's second stimulus strand, the emotional strand, includes the emotional elements of persistence, motivation and responsibility. Although the element of persistence is innate, the others are developmental [60]. Persistence refers to the desire either to complete a task before taking a break while working on an activity. Within the FPE session students will be offered, from the outset, the chance to take a break during the session. Motivation is concerned with whether or not a person is internally or externally motivated. To promote student motivation questioning and student interaction is to be encouraged.

The third stimulus consists of sociological elements that specify whether a person wants to work alone, in pairs, with peers, in a team, or with an adult who is authoritative [60]. This last point is interesting in that when learning how to perform a FPE the teaching has to be conducted in an authoritative manner conforming to the behaviourist paradigm. The theory of behaviourism concentrates on the study of overt behaviors that can be observed and measured [61]. It views the mind as a "black box" in the sense that response to stimulus can be observed quantitatively, totally ignoring the possibility of thought processes occurring in the mind. Behaviourism has its place in medical education as when completing the FPE within role scenarios; the student will be encouraged to perform it exactly as has been shown.

The psychological strand in the model looks at different processing styles. Within this strand the tutor is concerned with how the students processes the information they receive: small chunks or the whole picture. These two processing style preferences are known respectively as analytic and global. Most students can adopt either approach. But for some learners processing style can be a major concern. Prior to the FPE session global students will be encouraged to access the session notes electronically which for those needing the whole picture will allow them to view and digest the session content. Analytical students within this model will be given information in bite size chunks as the session progresses.

The physiological strand covers mobility, intake and times of the day. Some students need some form of muscle activity when they learn, they like to move around. The FPE session will encourage students to participate in the role play scenario which involves leaving their seat and engaging with a human being. Many students according to Dunn and Dunn (2003) [47] need food and drink to keep alert, while others prefer not to eat and drink. This is a difficult issue for the teacher to address, as Health and

Safety issues do not permit the consumption of food or drink during session delivery. Time of day may be another important factor affecting when students learn best. Studies have shown that evening time can be an optimal learning time [62, 63, 64]. This brings difficulties for the teaching of the FPE session as its delivery will be within core working hours.

The Visual, Auditory and Kinesthetic (VAK) learning styles model [65] offer reasonably simple methods to understand and explain people's preferred ways to learn unlike Dunn and Dunn's (1983) model of learning. It is the simplicity of this model which has contributed to its popularity. The VAK model purports that students receive or learn information in three ways: visual (seeing), auditory (hearing), or kinesthetic (doing). The learner may prefer one style of learning for one task and a combination for others. Sharp et al (2006) state:

VAK is perhaps an over-rated phenomenon and offers little to no diagnostic or predictive power whatsoever. It is our current belief that many advocates of VAK provide its converts and anyone else who will listen with little more than a statement of the obvious.

The main criticism of the VAK learning style is that it states the obvious, is too simplistic and is simply just common sense. However, Lujan and DiCarlo (2006) [67] argue that the VAK learning style is important and useful when teaching medical students, concluding that students prefer a multi-teaching approach when learning a new skill. When presenting new information to students, it may be useful to ascertain their preferred learning choice as this would provide instruction tailored to the student's individual preference and ensure all students are not all treated the same. Teachers, too, it is suggested [66] within the VAK paradigm, have a preferred way to learn and will often teach in the same way. By ascertaining the student's learning choice may motivate teachers to move from their preferred learning style to using other established learning styles. Within the FPE session it will be difficult to ascertain the learning style of each student, so it is important to deliver all styles throughout the session. The visual student will benefit and learn from the PowerPoint® presentation and handouts that are available, the auditory student will learn as they hear the explanations of skills being demonstrated and the kinesthetic learner will gain knowledge by being given a chance to complete the skill as a doer.

This discussion has shown how, in light of changing health care, clinical skills centres have been able to prepare medical students for accomplished and responsible service to others [1] and through the reflection of four main learning discourses should lead to a balanced and well evaluated FPE session.

Conclusion

It has been shown that health care delivery has changed, is changing and will continue to change. The challenge for undergraduate medical educationalists is to embrace and rise to the challenge of these changes. The apprentice model of medical student training is no longer practicable and this, coupled with rising health care demand and changing societal expectations has giving rise to simulation within clinical skills centres. This discussion has explored how the teaching of FPE can be improved by using gynaecological teaching associates and how a GTA programme can be implemented into an undergraduate medical curriculum.

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