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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:

The art of basic wound suturing

Prescribing skills of trainee medical staff
Insight as a measure of educational efficacy
The mental state examination
myPaediatrics

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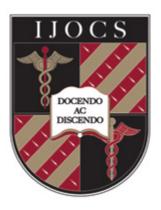
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The International Journal of Clinical Skills looks forward to contributing positively towards the training of all members of the healthcare profession.

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Foreword



As we head into the New Year of 2010, the International Journal of Clinical Skills (IJOCS) can feel justifiable pride that it has fulfilled its ambition to provide the international healthcare community with an arena for clinical skills education and research. For almost all the healthcare professions, clinical skills form the basic foundations and therefore a combined approach is absolutely what is needed for the future provision of a high quality health service.

The role of the ePortfolio in both education and continuing professional development of healthcare professionals continues to evolve as training and revalidation become increasingly important. Clinical skills are an essential element of this process and in 2010 the IJOCS will be proud to publish abstracts and papers from the 8th international ePortfolio conference hosted by ElfEL London Learning Forum 2010. Further information can be found at www.ijocs.org/eportfolio

This year will also see the launch of the new and exciting 'CliniTube' website – a free resource providing a single portal for accessing and sharing an array of information. It should be a valuable resource for students and should give teachers of numerous disciplines the opportunity to share educational materials. I'm certainly looking forward to seeing the 'Clinical Skills Lab' which should become an integral component of CliniTube and will comprise information on a variety of clinical skills.

The International Journal of Clinical Skills is a unique publication in its devotion to clinical skills. I encourage professionals all over the world to continue contributing to its on-going success. After all, our patients deserve nothing less than the best.

David Haston.

Professor David Haslam FRCGP FRCP FFPH FAcadMed (Hon) CBE Immediate Past-President of the Royal College of General Practitioners (RCGP) National Clinical Adviser to the Care Quality Commission United Kingdom

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Insight as a measure of educational efficacy – the implications of social learning theory

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Abstract

Medical education has progressed from students learning isolated facts towards an emphasis on learning as a more complex, interactive process supported by early clinical contact and the presentation of material within a clinical context. This process has used a wide variety of educational theories to explain and justify these changes.

A new Graduate Entry Programme (GEP) included simulated and real clinical contact as an integral part of the teaching programme from the first week, with an emphasis on challenging the students to attempt clinical skills and make clinical judgements. Students were asked to provide feedback on their experiences which were analysed using a qualitative, grounded approach.

The interactive approach was rated highly and although students often found the sessions challenging and sometimes "terrifying", they indicated that they were gaining insight into both their own behaviour and that of other health care professionals and of patients. These data support the 'Social Learning Theory' advanced by Bandura and indicate that evaluating the insight gained by students may be a valuable method for evaluating the efficacy of teaching interventions.

Introduction

In this article we explore the design and evaluation of teaching based on Bandura's 'Social Learning Theory' (later Social Cognitive Theory).

It is widely acknowledged that authentic settings and realistic (or simulated) tasks can greatly enhance the quality of medical education and hence the professionals' performance [1, 2]. Learning based in context, is not just more memorable, but more readily recalled and incorporated into schemata for practical application.

This approach is supported by the finding that subjects are better able to remember information within the same environment in which it was learned, as illustrated by Godden and Badderley. Their study showed that subjects best recalled information learned underwater, whilst underwater, rather than while on dry land and vice versa [3].

Furthermore, students need not only the right environment, but the chance to make decisions and practice skills in order to develop their own abilities [4]. The conclusion seems clear therefore, that we should aim to provide students with as realistic a learning environment as possible.

However, the advisability of early clinical exposure has often been questioned [5]. Some authors have argued that students are not capable of dealing with more complex issues, especially at an early stage of their course; "it would be inappropriate to introduce junior students to this style of interprofessional learning because of their limited clinical experience and the complexity presented by a real clinical environment" [1]. Other authors have described early patient contact as an entirely passive, observational process [6].

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The Graduate Entry Programme (GEP) is a collaboration between Swansea and Cardiff Universities in the UK. Applicants complete two years of case-based integrated learning at Swansea University before transfer to Cardiff University for a final two years of subject based clinical blocks.

Our thesis was that these students would have the necessary skills to engage in challenging, experiential learning on commencing their studies and that prior clinical experience or a base of scientific knowledge would not be necessary. Furthermore, we believed that this teaching should be a regular, core element of the course rather than being relegated to a specialist 'block' as has been used previously [7].

Although it was not possible to provide all students, in the first two years, with regular clinical exposure, our aim was to recreate the clinical environment within the school, using clinicians, actors and simulations, with teaching informed by Bandura's 'Social Learning Theory' [8].

The course comprises a series of case based teaching weeks that include, regular lectures, interactive anatomy sessions, half day sessions in General Practice and student selected half day sessions in a variety of clinical settings.

Each student had a half day each week of Integrated Clinical Method (ICM) consisting of around six stations, each of 25 minutes duration. Each station covered a different clinical skill and involved a student completing a clinical task while being observed by their peers. The skills included seeking information, explanations, examinations, as well as practical procedures. The stations used the tutors, actors or students as simulated patients. A handout was provided before each session and most sessions were preceded by a demonstration from a healthcare professional. From the outset, the teaching team was recruited from as wide a range of professionals as possible, including nurses, operating department assistants (ODAs), General Practitioners (GPs) and consultants with selection based on those able to provide student centred, practical teaching.

Most of the skills on any one day would be related to the case of the week, with the remainder designed to revise previous tasks or provide some variety. Whenever possible a student was asked to attempt the task, as if the situation was real and followed the attempt with discussion and attempts by further students. Students were always encouraged to experiment and 'failures' were treated as learning opportunities. Students were not forced to continue in the face of any difficulty [1].

Methods

At the end of each session, students were asked to complete a named questionnaire including rating the session on a five point scale (1-very poor, 2-poor, 3-adequate, 4-good and 5-very good), with space to provide free text comments on the teaching.

The free text was analysed using a grounded, thematic approach [9]. The content of the questionnaire responses were read by one investigator (AB). All the entries were divided up into separate 'comments'. For example, an entry "Great day, but thought the manikins could be more realistic" was treated as one general comment of approval and one suggestion for change. Emerging themes were identified and refined until all the data could be subsumed within these themes. Items and events related to

the research question were then electronically coded by the investigator using a database (ACCESS, Microsoft Corporation), with constant cross-checking of coding.

Results

The attendance of students at each of the clinical skills sessions was very high (98%) with 88% of students completing a feedback form after a teaching session, producing a total of 646 forms. The rate of completion for individual students was between 62% and 100%. Twelve forms were submitted without a valid name and the mean rating on these forms was 4.5 out of a possible 5 (4.5/5).

The median rating was 5 (range 2-5) with an average response of 4.62 (range 4.17-4.96) and only one rating of less than 3 (adequate).

All students included at least one positive comment and all but eight of the students included at least one negative comment. No student included more than six negative comments. This indicates that not only did the students complete the forms, but that they also felt able to provide negative feedback.

Four main themes emerged from the data; the learning environment, specific teaching techniques, consolidation of learning and personal development. In each of these themes, comments were either positive or identified deficiencies. For each category, we now give examples with the number of comments shown in brackets:

Learning environment

The learning environment was rated highly with a total of 335 positive comments. These included non-specific comments such as "great" (54), active learning (36), an appreciation of the practical nature of the session, such as "good to have a go" (30), support such as "demonstrated well" (30), repetition such as "great to revise" (25), terrifying (18), enjoyment (17), relaxed (14), variety such as "nice to have a good mix" (13) and interesting (8).

Deficiencies included the need for more practice (13), teaching that was too simple or difficult (6), too much repetition (6), timing problems (5), the need for more structure and guidance (4), the temperature of the room (4) and non-specific complaints about the quality of the teaching (3).

Specific educational interventions

The components of the course commented on as being useful included feedback and discussion (19), taking a history (9), working in a multidisciplinary environment, "really good to have both physiotherapists and paramedics" (9), interactive models (13), a demonstration (6), ability to examine (4), presentation of clinical scenarios (4), actors (4), students presenting findings (2), photographs (2), real patients (2), working in teams (2) and peer tutors - "having other students do the acting is a good idea" (2). Deficiencies included peer tutors - "don't see the point of having one of the other students teaching" (2) and wanting models replaced by real patients - "live babies would have been better" (8).

Rest of course

Positive comments related to the opportunity to consolidate knowledge (16), assisting learning - "has helped my understanding of gastrointestinal disease as well as improving my confidence in history taking" (10) and appreciating the relevance of the skills relative to the rest of the course (5).

Deficiencies included problems dealing with the material without adequate background knowledge (5), proximity to other high stakes assessments that took priority (4) and teaching that contradicted other sources (1).

Personal development

Personal development was taken as indicating newfound perceptions unrelated to the specific skills being taught. Students commented on new perceptions, improved confidence - "this week was really useful because I felt I'd shown a marked improvement on other weeks" (15), how difficult clinical medicine is - "very valuable to see how hard this can be, i.e. it's not just a chat whilst taking notes" (9), new experiences "being strapped on the spinal board was an interesting experience" (9) and gaining patient experience - "good to get an idea of how a patient might be feeling" (9), "amazing to see how much you could get just by looking" (5). There were no deficiencies relating to personal development.

The comments often reflected different student evaluations of the same teaching session, for example, with two students commenting on the same session as being "great to revise" and "a bit repetitive at times". Single comments also contained what appeared to be contradictory information, for example, "really enjoyable session, though terrifying at the end".

Discussion

These data are unsurprising in that students exposed to practical, interactive and clinically relevant teaching would be expected to rate it highly and this is reflected by the high rates of attendance, rating scores and large numbers of positive comments.

However, the students included those with a degree in physics, philosophy or foreign language(s), who were asked to take a clinical history from an actor or examine an abdomen within two weeks of starting the course. Despite this, there were only five comments relating to the need for prior knowledge and two comments that the level of material was set too high (there were four comments that it was too simple).

The challenging nature of the sessions was also commented on by the students, with some being "terrifying" - this perhaps reflects the view that students can be challenged more when the environment is non-judgemental and supportive [4].

The development of medical education in recent years has been dominated by the rise of problem based learning (PBL) [10, 11] with the belief that it "delivers a coherent, integrated programme and offers several advantages over traditional teaching methods".

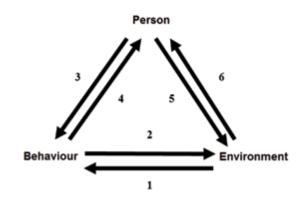
Although there are a variety of studies demonstrating improved outcomes after the introduction of PBL criteria, these studies did not produce a consensus as to what these studies mean for the future of medical education [12, 13, 14]. Although opinions are divided, there seems to be a recognition that "PBL has been oversold by its advocates, promising enormous benefits and largely ignoring the associated resource costs" [12].

Although PBL has been criticised for lacking an underlying educational theoretical background, it is usually cited as using some form of contextual learning, such as information-processing theory [15] which emphasises the need to link information to prior learning, to make the context of learning as realistic as possible and to allow students to discuss or 'elaborate' the knowledge they have learned.

Although PBL provides a rich, stimulating intellectual environment, it can be criticised in lacking the opportunity for students to put their theories into practice. Bandura [8, p78] identified practice as a key feature of learning; "Conversation is not an especially effective way of altering human behaviour. In order to change, people need corrective learning experiences".

Social learning theory is based on the concept that learning can be seen as the interaction between three basic facets: the person, their behaviour and the environment (Figure I). As well as recognising the failure of purely cognitive interventions to produce reliable behavioural change, it also recognises the failure of behavioural interventions to produce change that lasts beyond the period of reinforcement. It views learning as an interaction between the person (P), their behaviour (B) and their environment (E).

Figure 1:The Learning Process (adapted from Bandura [8])



The model predicts the following interactions:

- The stimulus from the environment actor / patient / assessment
- 2. The behavioural response of the student to that stimulus
- 3. The influence of the personality / psychology of the student on that behaviour
- 4. The impact of the behaviour on the student
- The impact of the stimulus on the personality / psychology of the student
- 6. The feedback provided by the student to the organisation

This model links effectively to other interpretations of the learning process.

Experience is placed at the centre of the learning experience and reflects the commonly held view that active, experimental learning is more effective than passive classroom learning [16]. It involves the provision of a stimulus (I) which provokes both an observable behaviour (2) and an intellectual response (5) from the student. The 'experience' in this case could include clinical experience, simulation, discussion or even formal assessments. However, what is clear is that the utility of the 'experience' lies in its fidelity to the real world. That is, the more closely the 'experience' mirrors the complexities of clinical practice, the greater will be its learning potential. The converse, that an 'unreal' experience, such as an inappropriate assessment, has also been acknowledged [17]. Our data indicate that the strategy used was generally effective in that the 'experience' was rated highly and also that the students identified new insights and emotional responses to the teaching.

The effect of the student (3) on the interaction reflects not only the psychology of the student, but also all aspects of their prior learning. Classroom learning therefore has an important place in preparing students for an interaction in suggesting novel concepts and alternative courses of actions. Our data indicates, perhaps surprisingly, that prior knowledge was not often a problem for these students despite their varied background and early stage of study.

The impact of the interaction on the student (4) reflects the recognised importance of debriefing after simulation based learning [18]. It allows students to clarify not only what happened, to evaluate it, but also to explore possible explanations and plan future alternative responses. It might also be seen as the process described by Schon as 'reflection-in-action' [19]. Although we did not seek to measure the quality of this aspect of the teaching, personal observation confirmed the importance of discussion to the process. Failure to stimulate debate could be seen as a key marker for a lack of success of the 'experience'.

The facility for students to provide feedback on their training (6) will encourage them to evaluate their own environment and attempt to change it for the better. The provision of detailed feedback can also be seen as evidence of the successful completion of the educational process.

Lastly, the success of this model is entirely dependant on the process being repeated throughout the course. Sustained, intentional practice [20] is the key to acquiring mastery of any discipline and successful practice leading to perceived self-efficacy is recognised to motivate and prolong effort, especially in adversity [8, p80]. Although this has obvious appeal, there are clearly cost implications for this approach, although achieving this pattern of learning may involve the redistribution of learning rather than the provision of additional resources.

This model also provides a framework for tutors in that any interaction, whether real or simulated, can be followed by a standard sequence of questions.

- What happened? (1, 2)
- 2. Why did you respond in that way? (3)
- 3. Why did they act / respond in that way? (5)
- 4 What do you need to learn? (4)
- How do we need to change the learning environment? (6)

This study is limited in that it did not include any outcome measures as part of its design and whilst student satisfaction is relevant, effectiveness at a higher level of Kirkpatrick's Hierarchy would need to be demonstrated to show that this teaching technique is truly effective; although some authors have questioned whether it is possible to evaluate such curriculum based changes [13].

Conclusion

These data support the use of early, active clinical activities in graduate entry medical students from a variety of backgrounds.

Social learning theory provides useful insights into why PBL may have failed to deliver the promised advances in medical education and indicates how changes to curricula may enhance the learning of students.

In particular, the importance of personal 'experience', linked to the opportunity to reflect on the experience, suggests that curricula should focus on providing cycles of experience and reflection throughout the entire course. This concept of social learning practice may provide more effective learning as well as a method of evaluating the learning of students as they progress through the course.

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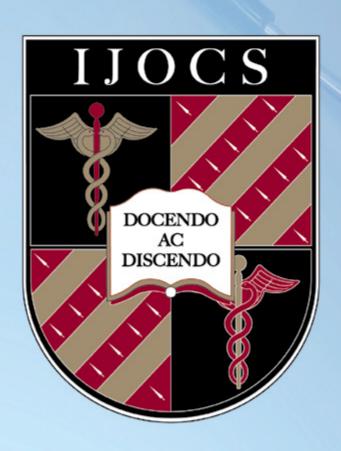
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The Clinical Skills Lab database will comprise information on over 200 clinical skills, broadly separated into:

- → History taking skills
- → Communication skills
- → Clinical examination/interpretation skills
- → Practical skills

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