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



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Simulating haemorrhage in medical students

The i-DREAM Project

Educational leadership: a core clinical teaching skill?

Designing a clinical skills programme...

Learning to talk with patients

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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

Initial evaluation of the use of experiential learning in teaching clinical skills to trainee physicians

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Introduction

Medicine in the UK is granted professional autonomy by society on the premise that medical practitioners are competent on entry to practice and will monitor and maintain their own competence. The most important motivating factor for continuous learning and change is the doctor's desire to be more competent in delivery of health care [1]. Traditional Courses relying on specialist lectures are ineffective [2]. Although we can assess ourselves and implement self directed learning, this has also been shown to be ineffective [3], often because doctors tend to concentrate on skills they perform well and avoid deficient areas [4, 5]. In the United States, attempts at voluntary recertification have failed and have been replaced by mandatory procedures [6]. The introduction of periodic revalidation in the UK was due to start in 2005 [8] but has been postponed until a review of regulatory reforms is conducted. Delays may have occurred because techniques (eg. peer review, remediation and formal written examinations) are complex and expensive [6, 7].

The drive to improve patient safety, and requirements that medical training becomes competency based, have made the old idiom 'see one, do one, teach one' unacceptable. Studies have indicated that it is possible to improve training through well conducted needs assessments [9] and carefully designed teaching [10]. Such approaches are however expensive [11] and the European Working Time Directive has led to a reduction in available training time.

In response to these pressures, a one-day clinical skills course was introduced into the School of Medicine, Swansea University in collaboration with the Royal College of Physicians. A course with similar aims had previously been established in the North East Region. This research has been carried out in accordance with the Declaration of Helsinki [12] of the World Medical Association. Fully informed written consent was obtained from each of the candidates after full explanation of the purpose, nature and risk of the study was explained.

Methods

Content of the Course was chosen on the basis of informal discussion with trainees and an assessment of what was possible. Initial skills chosen for inclusion were arterial blood gas taking, ascitic fluid aspiration, central venous pressure line insertion, consent, cardioversion, intercostal drain insertion, lumbar puncture, non-invasive ventilation, naso-gastric tube insertion, pleural aspiration, temporary cardiac pacing and male urinary catheter insertion. Twelve candidates were sent a DVD containing self directed teaching materials covering each of the skills prior to attending the course.

The Course was based on the principles of 'experiential learning', in that there was no attempt to 'teach' any of the skills. Participants were expected to attempt each skill without detailed introduction. Tutors then observed participants' actions and provided support as appropriate, ranging from assisting those with little experience and challenging the more able with additional problems or complications. This was felt to be more appropriate for the needs of participants as they were practicing doctors aiming to improve their practice rather than novices in need of didactic training.

Abstract

The aim of this study was to evaluate a Royal College of Physicians accredited, one day, Senior House Officers' clinical skills course. Questionnaires were given to 11 Senior House Officers, prior to attendance, at completion, and three months after. Prior to the Course, participants felt competent in three to eleven of the twelve skills included. Post Course questionnaires revealed participants found the Course overall to be of benefit. At three months, it was reported that practice had changed and confidence levels had increased. On reflection, participants found the Course valuable, stimulating and relevant to their specific learning needs. We conclude that this form of teaching is an effective way of developing clinical skills in trainee physicians.

In the morning, participants were assigned in pairs to a station where each in turn was asked to perform a skill on either a manikin or simulated patient. Tutors observed participants performance, assisted by checklists. One was then given targeted feedback and the second completed the task. After 15 minutes, each pair rotated to the next station and any remaining time was used for discussion. Tutors were a mixture of consultant, trainee hospital staff, university skills tutors, including nurses and operating department practitioners. The process was repeated in the afternoon after a lunch break.

Evaluation of the training programme was formulated in four stages. First, a questionnaire was sent to participants before attendance. Candidates were asked to indicate their experience and confidence level in each skill, which served as a needs analysis. They were also asked about their expectations and aims. Second, after completing training, each was given a questionnaire asking them to rate each station on a 5 point Likert scale (1 - very poor, 5 - very good). They were also asked whether they found each station too complex or simple and whether each station was relevant to their practice. A final text box asked for suggested omissions or additions to future courses. Third, a 'hot debrief' was conducted by staff involved at the end of the course, with each station discussed in turn. The final stage was a questionnaire distributed to participants three months later, which asked them to complete free text answers to the questions "how relevant was this course to your needs", "did this course modify your learning activities", "have you arranged any further education in response to the course", "how many times have you performed each skill since the course" and "have you changed your practice following the course". Space was left for additional comments.

Results

All candidates stated that they understood the principles of each clinical skill. They felt totally competent in three to eleven of the twelve procedures. Procedures which candidates had not previously performed included:-

Temporary Pacing Wire Insertion - 11 candidates
Non-Invasive Ventilation - 10 candidates
Central Venous Line Insertion - 5 candidates
Intercostal Drain Insertion - 4 candidates
DC Cardioversion - 3 candidates
Pleural Aspiration - 1 candidate
Lumbar Puncture - 1 candidate

The majority expected that the Course would serve to consolidate what was already known in addition to learning new skills. They welcomed the opportunity to obtain 'hands-on' experience with more complex skills such as temporary pacing and central venous line insertion. One candidate expected to learn about more complex procedures at the same time as being assessed in less complex skills and hence evaluate current practice.

Initial responses indicated a failure to review the pre-Course DVD based teaching material by five of the participants. Three of these stated that they received the DVD too late after delayed application. The other two suggested technical problems although both DVDs were checked and found to function normally. The

majority were pleased with the videos on DVD but some felt the need for more videos of 'live' clinical procedures particularly, temporary cardiac pacing and central venous line insertion.

Responses to the post-course questionnaire suggested that all participants felt that all of the stations were relevant to practice. Some acknowledged that although skills might not be relevant to their current post they would be in future posts.

Comments included, "very well organised", "learned a lot", "unique" and "excellent" in content. It was generally felt that more time could have been spent on central venous line insertion, intercostal drain insertion and temporary pacing wire insertion stations. It was acknowledged that some of the stations were less complex than others but that, "even those (clinical skills) we have done lots of, it is better to revise and be scrutinised on proper techniques and appraise our current abilities."

It was suggested by three participants that naso-gastric tube insertion, urinary catheter insertion and arterial blood gas taking stations could be omitted. Consent (one participant) and ascitic aspiration (one participant) were also mentioned. Suggested additions to future courses included pleural biopsy (two participants), therapeutic paracentesis / ascitic drain insertion (five participants), suprapubic catheter insertion (two participants) and bone marrow aspiration (one participant).

The 'hot debrief' session reinforced the positive impression. In particular, participants had engaged with the material well and felt that effective learning had taken place, even though some had failed to review the pre-Course information. The experiential teaching approach was effective and introduced a sense of tension that had a positive effect on the learning process. Overall, quality of the models was considered to be excellent although the temporary pacing model lacked realism and the inability of the naso-gastric model to simulate retching/vomiting made the task too easy. Absence of some anatomical landmarks from the central venous cannulation model also limited learning potential.

Post Course questionnaires were only returned by five participants. All felt the Course to be either relevant or very relevant to their own needs. When asked whether the Course had stimulated modification to their learning behaviour, all answered "yes", with comments such as "more comfortable during procedure therefore learnt to manage my patient better", "made me more aware of procedures", "encouraged me to actively seek out procedures when the opportunity arose", "practiced more confidently" and "makes me more careful and more aware of complications". Only one participant had arranged further education following the Course and had sought out clinical opportunities to perform procedures they had not seen or performed. One commented that they still did not use lignocaine when undertaking arterial blood gas analysis. Another noted that they now perform the Allen's Test prior to arterial blood gas analysis. Two felt more confident in performing ascitic aspiration. One commented that they "tended to take more time with patients whilst obtaining consent to allay their fears," and that they "explained procedure, benefit and complications in a more efficient way". Another felt more confident undertaking DC Cardioversion whereas the others had not had the opportunity to perform Cardioversion since attending the Course. One noted that they now considered

performing lumbar puncture with the patient sitting upright. The nasal support ventilation station was considered very helpful in assisting individuals to set up NIV. Three commented that they no longer performed NIV as their hospital now managed these patients in an intensive care area. One had altered their practice of male catheterisation but was not specific. Another individual noted they were more aware of the need for asepsis.

Participants had not previously been formally assessed and felt the Course had made them more confident, which suggests they were reflecting more on their practice even though it had not changed.

Discussion

Performance of a skill at a high level implies that an individual has passed through four levels of learning:

Stage		
1	Unconsciously Incompetent	Don't know they don't know how to do it
2	Consciously Incompetent	Know they don't know how to do it
3	Consciously Competent	Knows how and is conscious of the skill
4	Unconsciously Competent	Can perform the skill without conscious effort

One example is breaking bad news to patients. Many are unaware of the complexities and perform this task extremely badly (Stage 1). Experience and/or attending a Course may lead to awareness of shortcomings (Stage 2) leading to, for example, increasing use of the common techniques, choice of location, arrangement of seating and use of certain phrases. In most cases this leads to appropriate behaviour (Stage 3). Ultimately, staff behave in a certain way, 'because it feels right' and often become unaware of the complex choices being made (Stage 4).

The difficulty with traditional teaching courses is that if participants are unaware of their own incompetence, the course may reinforce misplaced confidence and inhibit further learning. This was apparent with this course as many participants incorrectly identified themselves as competent in certain skills. Experiential learning, however, challenges individuals and makes us question our own performance, leading to deeper learning [13, 14]. Although this approach may lead to the delivery of less information, it ensures that feedback is targeted directly at each subject's weaknesses. Furthermore, it ensures that each subject leaves the Course with an understanding of the areas in need of improvement and with a range of ideas that can be incorporated into their clinical practice.

Conclusion

This Course demonstrated that trainee physicians from a variety of backgrounds can be taught clinical skills in a laboratory setting. The positive feedback supports the use of experiential teaching methods and the process of rotating through a series of teaching sessions. The Course was considered enjoyable, interesting and had a positive impact on learning and practice. These findings support the provision of active learning experiences rather than didactic teaching when teaching clinical skills.

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Clinical Skills Lab (CSL)



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

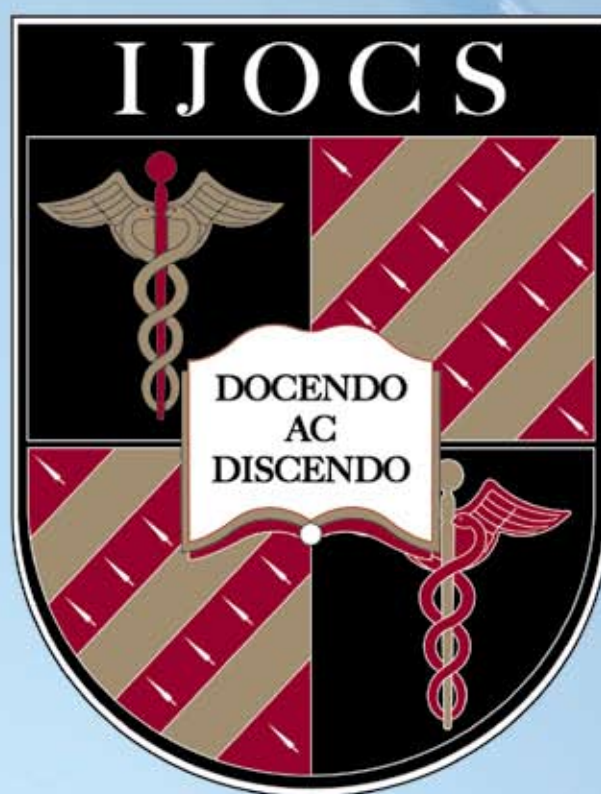
- History taking skills
- Communication skills
- Clinical examination/interpretation skills
- Practical skills

Not only will this valuable resource provide material to students as a learning tool and revision aid, for example, OSCEs, it will also offer educational materials for teachers from all disciplines, allowing some standardisation of practice. The Clinical Skills community will also be encouraged to contribute, making this database interactive.

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