



Letters to the Editor

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LETTERS TO THE EDITOR

The use of real patients in OSCEs: A survey of medical students' predictions and opinions

Dear Sir

Objective Structured Clinical Examinations (OSCEs) are widely used in assessing clinical competency and allow the observation of candidates interacting with *real* or *simulated* patients (Wass et al. 2001). Real patients provide opportunities to demonstrate actual clinical features such as physical signs. However, there are issues regarding the use of real patients in OSCEs (Collins & Harden 1998). OSCEs are demanding and can potentially cause patients distress and discomfort after repeated examinations. Furthermore, actual clinical features can be difficult to standardise across different OSCE circuits. Scant evidence exists in the literature regarding the use of real patients in OSCEs. We therefore carried out a study to evaluate medical students' predictions and opinions regarding the use of real patients in Final MB OSCEs.

An online questionnaire was developed and sent (May 2010) to all final year medical students ($n=205$) at Queen's University Belfast sampling students' predictions of what type of real patient cases would occur in Final MB OSCEs and their reasons for making these predictions. The reasons were categorised and respondents were asked in a follow-up questionnaire to rank them in the level of importance, also being asked on a 5-point Likert scale the influence these predictions had on their learning behaviour.

148 students responded (148/205; 72.2%) to the questionnaire, predicting 57 types of clinical conditions that may feature in Final MB OSCEs. Cardiac murmurs, Chronic Chest disease, Goitre, Varicose Veins and 'Rheumatoid Hands' were the commonest conditions cited. Interestingly, '*prevalence of the condition*', '*ability to standardise across different examination venues*' and '*amenable to repeated examinations*' were considered the most important reasons in making such predictions. 85.1% (126/148) of respondents strongly-agreed or agreed that they focused their studies on these predictions.

This study's findings indicate that our current use of real patients in OSCEs has a strong influence on students' learning behaviours, with a significant proportion appearing to predicate types of real patient cases that may appear in OSCEs. Such predictions appear to drive strategic learning. The risk is that students learn strategically, motivated by a desire to succeed rather than understanding the topics better. Teachers need to meet the challenges of using real patients in OSCEs and widen their participation. By failing to do so, some students may be driven to ignore aspects of clinical experience in their training.

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Polling the audience using text messaging – A tool for medical education

Dear Sir

Audience Response Systems (ARSS), using radio frequency "clickers", have become popular in undergraduate, postgraduate and continuing medical education. The University of Toronto reported sales of more than 10,000 units at \$35.00 each by 2008. A review of the literature (Kay & LeSage 2007) found that benefits of an ARS included:

- improvements to the classroom environment (increases in attendance, attention levels, participation and engagement),
- learning (interaction, discussion, contingent teaching, quality of learning, learning performance),
- assessment (feedback, formative, normative).

Short Messaging Services – SMS – (text messaging) via cell phone can be used to poll audience response, as demonstrated in television shows such as "American Idol". This uses cell phone radiofrequency technology for ARS, eliminating the need for a "clicker". ARS theory is well validated, but the use of SMS to poll the audience in medical education seems as yet to be unpublished despite good uptake in other venues.

Advantages of ARSS that use SMS:

- Minimal cost – no new investment nor support needed.
- Elimination of clicker – no loss functionality.
- Requires little specialized knowledge.
- Can be used in most settings, including webcasting.

Disadvantages:

- Cell phone signal must be available.
- Undergraduates are possibly more comfortable with SMS than are practicing physicians.

There are two leaders in the industry currently – Smspoll (<http://www.smspoll.net/>) and Polleverywhere (<http://www.polleverywhere.com/>). These both offer polling via SMS, Twitter and Web. A personal account with a small number of responses is free. The former only operates in the

UK and Australia, and the latter operates locally in Canada, USA and Australia as well as via long distance SMS in other countries (<http://www.poll everywhere.com/international>).

The author has used PollEverywhere and found it satisfactory. Using cellphone SMS, with little specialized knowledge or skill, it is possible to poll an audience locally or remotely with no new investment in technology, and no support for equipment or training. The “clicker” may someday be superseded. It is also likely that SMS messaging will itself also be superseded someday by other ARS technology.

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The time investment in research for clinical educators

Dear Sir

Over time, the role of the academic physician in the United States has evolved from that of teacher and scholar with clinical duties to one more resembling a private practice clinician with the additional duties of teaching and scholarship. This change has been reflected by many institutions by the creation of the clinical educator pathway to allow those heavily engaged in teaching and clinical activity to achieve promotion and tenure. However, these pathways often require research and journal publications, even though the clinician may have no scheduled time for these activities. Sheffield et al. (1998) found that 42% of the scholastic activity of clinician educators was relegated to times outside of the regular work week. Thus, if clinicians find it necessary to sacrifice off-duty hours to meet these standards, have the time requirements adequately been considered? Further, if an institution defines scholastic activity by the type and number of publications, from what data does it determine the number?

I found no studies in the literature that examined the time required to take a study from conception to acceptance for publication. Therefore, I set out to get an idea of the amount of time needed to accomplish this. I chose a retrospective chart review of residency applicants to our Ophthalmology program to detect misrepresentation of claimed publications (Wiggins 2010). I chose this as an example of a minimal time-expenditure, original research article. During the study, I recorded the start and stop times of each research activity using the same timer.

The pre-research activities (background research, composing the study protocol, submitting and obtaining institutional

review board approval) took 20.3 hours over 2 months. Data collection and analysis required 32.1 hours over 4.5 months. Manuscript writing and submission took 28.8 hours over 1.5 months. The manuscript was accepted 22 days after submission. The total time spent on the project was 4868 minutes (81.1 hours) over 8.5 months.

Compared to this study, other projects would be expected to take longer. Given the time this project required, it would have been difficult to produce more than three research papers every 2 years. Academic institutions should take time constraints into consideration or consider other options, such as accepting less time intensive publications or providing protected research time.

Administrators have difficult decisions in balancing the need for institutional revenue production, education and scholarly production. Hopefully, these and future findings will stimulate discussion and aid in those choices.

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Revolution in education – New possibilities in education of medical students

Dear Sir

The expansion of knowledge available through internet makes both teachers and students reconstruct their previous ideas about teaching and learning. Exploring the opportunities of the internet is definitely a challenge for teachers since they have to face with new technologies but application of new ideas and methods will certainly make the process of teaching and learning more effective.

By using Really Simply Syndication (RSS), all the information necessary for a lecture or research can be collected easily on a daily basis in one personalized platform; we can surf amongst the articles, news and other information regarding our topic to be investigated. Moreover, the channel refreshes itself on a daily basis so we do not need to search for the necessary information since it comes to us.

If we could call the attention of medical students to a certain topic or we need to gain more information about it, the following video sources might be useful.

Medical channels on YouTube (<http://www.youtube.com>)

Free Video Lectures (<http://freevideolectures.com>)
 Teaching Videos (<http://teachingvideos.co.uk>)
 Learners TV (<http://www.learnerstv.com>)
 MD TV (<http://mdtv.com>)
 Videos published by MD Anderson Center (<http://www.mdanderson.org>)

The following examples could also be used in medical education as they contain resources and information helping the work of students and teachers:

EduFire (<http://edufire.com>)
 PsyBlog (<http://www.spring.org.uk>)
 Webicina (<http://www.webicina.com>) that selects the most relevant social media resources such as blogs, podcasts or community sites dedicated to medical conditions and specialties.
Peditop (<http://www.peditop.com>)

The following sites can provide “life belts” for teachers searching for solutions for different problems:

Slideshows on Slideshare (<http://www.slideshare.net>)
 Google Alerts (<http://www.google.com/alerts>) that lets users receive automatic updates via e-mail focusing on a search term or name.
 Glide (<https://desktop.glidesociety.com>) that might serve as an online desktop in the near future.

Using such applications cannot be made compulsory, but the growing demand of students for getting up-to-date information and the application of the latest technologies forces teachers to become acquainted with such technologies and possibilities as soon as possible.

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Reliability and validity of a Chinese version of the Dundee Ready Education Environment Measure in the postgraduate context

Dear Sir

Although the Dundee Ready Education Environment Measure (DREEM) (Roff et al. 1997) has been used worldwide for over a decade, the criterion validity of the instrument has not been

fully established, the aim of this study was to assess the reliability and validity of the Chinese version of the DREEM for evaluating postgraduate students' perceptions of their learning environment.

A total of 790 postgraduate health profession students completed the Chinese version of the DREEM (Sun & Zhao 2003) in January 2009 in China. Factor analysis was employed to determine whether the data revealed the same constructs as identified by the DREEM developers. Correlations between subscales and total score were calculated to assess validity. Item-subscale, item-total correlation coefficients were calculated and Cronbach's alpha coefficients were used to assess internal consistency.

Five factors were found by a varimax rotated principal components analysis. The original factor names were maintained, but items in each factor were changed. All these five factors achieved eigenvalues greater than 1, and in total accounted for 41% of the variance. The results also showed that correlations between subscales were lower than subscale-total correlation coefficients, and suggested good validity of the DREEM and its subscales. Moderate to high correlations were found among the five DREEM components, indicating the similarity of the attributes (the varied aspects of educational environment) they measure. The results also demonstrated an excellent level of internal consistency, and Cronbach's alpha ranged from 0.62 to 0.9 across factors, with an overall alpha of 0.94.

The results are consistent with previous findings, and illustrate that the Chinese version of the DREEM could be a valuable measurement for assessing postgraduate students' perceptions of their learning environment. Further assessment will take place with a more representative range of postgraduate students to investigate its stability, feasibility and utility for assessing educational environment.

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Learning in a new era

Dear Sir

For many program directors, July 1, 2011 is Judgment Day for graduate medical education. In the article by Turner et al.

(2011), the authors outline the fundamental dilemma of the task at hand: “The volume of information that physicians must learn is increasing; yet, trainee educational time is limited.” These are concerns shared by many other countries that have already moved to more aggressive duty hour restrictions, like the United Kingdom and most of Europe.

Our medical education has been based on a model of passive teaching: that we can build an educational program that provides an all-encompassing experience that leads to competency and mastery of medical practice. This is reflected in lectures that want to “cover it all” instead of introduce a framework upon which students can build on independently. Students extend this hidden curriculum: if the curriculum defines the minimum requirements for competency, then I do not have to do anything else once I leave these walls. Consequently, if we have less time, we need to be more efficient in teaching.

We applaud the efforts of Turner et al. to explore more efficient learning techniques by individualizing learner preferences and styles. However, increasing efficiency and efficacy of teaching methods used within the confines of a curriculum bound by duty hours is not enough to solve the dilemma completely. We propose a different approach to the dilemma of shorter duty hours. We need to rethink our assumption that learning only occurs within the confines of a curriculum, bound by the physical walls of a hospital and the metaphysical walls of duty hours. Instead, if we are to succeed in the new paradigm of duty hours restrictions, we need to look at ways to carry learning and education beyond the confines of direct patient care and beyond the confines of 80 hours a week.

Even if residents walk out of the hospital after 16 hours, learning cannot stop! Innovative strategies like web-based modules, podcasts, self-reflection, simulation, and other strategies that can be done during the “off hours” can expand learning opportunities beyond the limitations of duty hours and allow the time needed to attain competency and mastery. If we are to teach physicians with continuing medical education as a guiding principle for lifelong learning, we need to think about ways to harness the other 88 hours in a week not covered by the duty hours.

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Incremental cost benefit of an innovation

Dear Sir

McGee and Kanter (2011) offer a fascinating insight into how they develop innovation in medical education technology. They give emphasis to sustainability and cost – two factors which are all too often forgotten in the excitement of innovations. However analysing the cost and benefit of a new innovation is only part of the story – the costs and benefits of the existing system should also be taken into account. An innovation may be inexpensive and have real benefits, but if leaving things the way they are is less expensive and renders a similar level of benefit or even more benefit, then the value of the innovation is very much open to question. But only through analysing the cost and value of the baseline and then that of an innovation can we assess the *incremental* cost benefit of an innovation. And when reports of innovations are written up and submitted to medical education journals it should become the norm that the costs and benefits of both innovations and usual intervention are mentioned.

The authors rightly state that ‘many educational projects, especially the unsuccessful ones, are never reported in the academic literature’ and it is worth reflecting on why this may be the case. An educational project may fail because it rendered no benefit or was too expensive or both. Researchers may be unwilling to tell their peers about their less than successful projects and editors may be unwilling to publish ‘negative’ results in medical education journals. This has been a long-term problem in clinical research and there has been justified outrage at some commercial bodies failing to publish research that did not have the expected outcomes. Requiring researchers to sign up their projects to clinical trial registries is one way of ensuring that what is started gets finished and then written up. Also a number of publications such as the *Journal of Negative Results in Biomedicine* have the express purpose of providing a home for negative research reports. Should there be a *Journal of Negative Results in Medical Education* and who if anyone would contribute to it?

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Editor’s note: Perhaps this could be tested in MedEdWorld? (www.mededworld.org)