HOW CAN CAA SUPPORT THE ACQUISITION OF MEDICAL KNOWLEDGE IN AN INTEGRATED MEDICAL CURRICULUM?

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Abstract

Traditional medical education has relied on compartmentalisation of knowledge into both scientific disciplines (anatomy, physiology, etc.) and clinical disciplines (paediatrics, surgery, radiology, etc.). Recent advances in medical education promote the use of an integrated curriculum in which knowledge is developed by studying many aspects of particular problems (Harden, Crosby, Davis, Howie, & Struthers. 2000). Integrated curricula also encourage the use of problem-based learning (PBL) to promote deep learning and the development of good practice for professional life-long learning (Miflin, Campbell, & Price. 2000).

The Peninsula Medical School, a joint venture of the University of Exeter and the University of Plymouth, took its first cohort of students in 2002. In line with best practice (General Medical Council, 2003) it chose to use an integrated curriculum. In the first 2 years students work on 19 'cases' which cover the normal life-cycle in year 1 and common aspects of abnormality in year 2. Learning of medical knowledge is via PBL in groups of about 8 students,

activities in a Life Science Resource Centre, and talks by plenary speakers, all focusing on the main issues relating to the 'case' presentation. Issues may relate to basic science, social and human science, ethics, and public health. Students also take part in clinical skills training, community placements, and undertake special study units to complete the curriculum.

The traditional curriculum is relatively easy to assess as it is subject-based and the knowledge domain easily described. An integrated curriculum is more difficult to assess as the knowledge domain is essentially the whole curriculum. This difficulty is exacerbated by the use of PBL, in which students devise their own group learning objectives based upon each case. There are a number of strategies for assessment of knowledge gained from an integrated curriculum, including the use of 'progress testing' (Van der Vleuten CPM, Verwinjen GM, & Wijnen HFW. 1996). At the Peninsula Medical School we assess medical knowledge through a 125-item test administered 4 times per academic year to the whole School. The level of the test is set at that expected of a recent graduate. For logistical reasons, the test is delivered via a printed paper and the answers entered on an OMR sheet for marking. Feedback to students is via a list of key 'learning points', one for each question in the test. The questions are not returned to the students as the question bank is shared with an international consortium of medical schools and must be secure.

All these issues make the provision of good formative assessment difficult. We are exploring the use of CAA to provide a bank of formative questions, similar in style, content and difficulty to those in the main item bank. Each item will have feedback specific to the student's choice of answer, so that both correct knowledge and misconceptions can be identified as fully as possible. The dispersed nature of the Peninsula Medical School and the feedback requirements have led us to consider computer-aided formative assessment. In addition, a recent survey of students suggests that they are keen to use on-line formative assessment. Although only about half the students access the on-line learning environment on a daily basis and about one-third access it weekly, 70% of students said they would use it for computer-aided self-assessment.

However, our main concern at the moment is the method for generating formative tests. There are issues in both the design of the formative tests and the resources for generating the questions. Given the integrated nature of the curriculum, we have debated whether we should provide formative assessments which individually cover the whole curriculum, as with the progress test. However, this may mean that each formative assessment would only assess a small part of students' current knowledge. So, we plan to provide formative assessments on a case-by-case basis, even though this might work against the integrated curriculum.

Also, although it is difficult to produce high quality test items, it is even more difficult to write constructive feedback on both right and wrong answers which fully address students' misunderstandings. We are planning to use a paid

panel of students, under the direction of a clinical academic, to screen items for inclusion in the question bank and to write the feedback.

In this presentation we will further discuss some of the issues raised in the conflict between good educational practice, student wishes, and the need for assessment.

Reference List

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