Review for Session Topic: Raising students' meta-cognition (self-assessment) abilities

Commentary on:

Gardner-Medwin & Curtin "Certainty-Based Marking (CBM) for reflective learning and proper knowledge assessment

Winning et el. "Developing clinical self-assessment skills in first-year dental students"

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CERTAINTY-BASED MARKING (CBM) FOR REFLECTIVE LEARNING AND PROPER KNOWLEDGE ASSESSMENT

As I tackle the seasonal pile of scripts to mark I am particularly receptive to papers on automated assessment systems. This one describes an interesting form of assessment which, while new to me, has a substantial pedigree of 10 years of use at more than one institution. Certainty Based Marking is an elaboration of true/false questions, but can also be used with multiple choice questions where students indicate the level of confidence they have in their choice of answer. The objective is to overcome the element of luck (cutting both ways) perceived by students and to promote self assessment and reflection in students revising material and preparing for exams. As well as picking an answer from various alternatives offered students must also rate their confidence in their choice by giving a confidence score, e.g. where a student is highly confident they give their choice a score of 3. If they are correct they are gain 3 marks but if wrong 6 marks are deducted. If the student has a low confidence then 1 mark is gained if the answer chosen is correct but none lost if wrong. A confidence level of 2 gains 2 marks if correct and loses 2 marks if not.

The paper reports favourable responses from students and that students find the method of testing transparent and easy. The CBM system is used at UCL for both formative and summative assessment initially for testing in maths, in order to help students identify their weak areas and to take more care, but mostly the system is used for formative tests and pre-exam revision. The CBM is web supported and can be carried out on the student's computer, there are help links also provided. At UCL the CBM is used for a substantial part of the year end testing and they report a very wide access made from outside the UCL.

The paper gives arguments to support objective questioning in general from the authors' experience, i.e. that they need not be limited to testing factual information, they may be more useful than essays or problems, that T/F questions are often best practice and that "don't know" options are not good.

There is a further section where more issues are discussed. While the system is bound to create interest in some students and provoke a greater involvement in the revision process there are some questions that might be useful to explore.

How is a pass mark set? True, the paper here has demonstrated an equivalence based upon a scaling between CBM and conventional testing this appears to be bourn out by experience but this appears to be based upon the % correct above chance and that this is based upon the confidence of the student. A lucky confident student may score well in a CBM test compared with an un-confident but knowledgeable student who would do better in a conventional test.

Might CBM contribute to stress levels among students? When used for summative assessment does the CBM appear more stressful for students? Most people will be familiar with dilemmas arising from well crafted multiple choice questions where the 2 last alternatives are very close. With CBM there is the potential for a double jeopardy, not only might you fail to gain marks you might lose more unless you are timid in your confidence levels.

How can CBM assess reasoning if students are only reflecting on their reasoning instead of developing it? Many disciplines require the reasoning to be demonstrated in the assessment process, formative and summative. CBM encourages reflection and self awareness in students but high scores, and indeed low scores, may arise because the reasoning is faulty but the correct response is still selected, i.e. being right for the wrong reasons.

DEVELOPING CLINICAL SELF-ASSESSMENT SKILLS IN FIRST-YEAR DENTAL STUDENTS

Assessment of student performance in practical activities can be much more difficult than traditional paper exercises. This paper describes an elaborate series of self-assessment exercises for dental students in their clinic performance. These exercises are conducted throughout their courses but the paper deals with first year exercises. The process is supported by workshops held frequently and in parallel with the clinics. The workshops use small groups of students who conduct exercises and review, and make responses to the other students and tutors, concerning the process of completing self-assessment exercises. In sum these students appear to be guided into establishing for themselves a self assessment program.

The paper justifies the approach using published thinking in education and it also reports favourable student feedback.

For discussion it might be worthwhile to consider some aspects of this work and how they may assist other courses and other types of practical activity.

For discussion

Consistency of experience between students. One difficulty in rigorous practical work assessment, self or otherwise, is how to contrive a practical exercise that will consistently, between students in a year group and between years, deliver the same degree of difficulty in all the repeats and yet be sufficiently varied so as to hold interest and to explore all aspects of the activity, the clinic in this case.

Quality of self assessment. If students are assessing themselves, or other students, how can the tutor ensure that the assessment is adequate. In the paper presented students are instructed, via the workshops, into the processes of assessment, but the judgement of an experienced practitioner is still necessary. Therefore the degree of rigor of the assessment is still dependent upon the skill and perceptiveness of the student. It may be that students self assessing their own work, or examples presented in video of the work of others, will engage more in the process but the assessment is still only as good as the assessor.

Can this experience be exported to disciplines different from dentistry? The paper does not make the nature of the clinics clear but it is possible that the clinics may be contrived to deal with specific dental problems and that these may be very highly defined. However other disciplines, or other aspects of dentistry, may not be so amenable to such tight control, and indeed the key problem might lie in correctly assessing which specific problems are being confronted. Therefore for assessment purposes how easy is it to contrive testing exercises that encompass the full range of technical problems encountered? The workshops are clearly an important contribution to the assessment experience but in pragmatic terms can this be readily used in all other disciplines?

This work has been made available as part of the REAP International Online Conference 29-31 May 2007.

Please reference this work as:

Watson, N. (2007). Review for Session Topic: Raising Students' Meta-cognition (Self-assessment) Abilities. *From the REAP International Online Conference on Assessment Design for Learner Responsibility, 29th-31st May, 2007*. Available at http://ewds.strath.ac.uk/REAP07