



A quiz a week keeps anxiety at bay

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OVERVIEW

Many of the students enrolled in the undergraduate Nursing course at this institution have very little, if any science background; they may not have studied formally for a long time, and a large proportion are non-native speakers of English, in effect having to work in two new languages. Furthermore, science underpins the practice of nursing, and it is full of complicated words and concepts; when a student finds it all “too hard”, he or she may feel that it is impossible to manage anything else in the course. The case study addresses the theme of assessment and the first year experience.

Weekly, low-mark online quizzes that students attempt in their own time and which are easily answerable if they had attended the week’s lectures had a profound impact on the level of self-belief and anxiety in the student group; this translated into generally high marks for the unit overall and left them feeling more confident about entering their second year.

THE CLASS

This case study refers to a 1st year Bachelor of Nursing class, the first and second of five Bioscience units in first semester of the first year of a 3-year course. There are 10 weeks of classes in each semester; students have 70 contact hours in total.

The units are *Applied Science for Practice 1* and *Applied Science for Practice 2*; they cover anatomy and physiology of a healthy ‘normal’ body, microbiology and aspects of biophysical sciences.

There were approximately 200 enrolled students in 2006; these ranged from 17 to late 50’s in age, and from school leavers to those whose formal education ceased over 30 years ago. There was also a mixture of native and non-native English speakers, and a high level of anxiety about this being “science”.

Classes comprised lectures and tutorials and all were held face-to-face at the Melbourne campus [Victoria, Australia].

THE CASE

Each week, after the last lecture had been given, a short [10-question] on-line quiz [using the Web-CT platform] was opened for students. All students enrolled in the unit, and only these students, were able to access this website. This quiz remained open for approximately 80 hours; students could leave it and come back as often as they wished, though it could be submitted only once. They were encouraged to talk about the questions with each other but each had to submit their own answers [the quiz presented the answers in random order for every new access]. It was then marked [automatically in most cases] and each student’s results released at the commencement of the following week.

Questions were generally multiple-choice, true-false or matching in nature, and reasons for the correct answer, and more general feedback where appropriate, was provided for each question. Often, a question offered the options of the correct answer but with two or three reasons, and students were required to know not only what is the answer but why.



In later weeks, some questions requiring a brief explanation in their own words were added. The opportunity was provided for students to compare their answer against a model one and to discuss any questions that arose either one-to-one with the lecture or in groups in the tutorials.

Questions which were poorly answered overall were discussed briefly in either the lecture or tutorials in the following week, if it was deemed that a more thorough discussion was warranted.

Each quiz contributed 1 mark to the overall unit - so 10% of the total. To allow for illness/computer problems/general issues of life, the best 8 quiz scores were used to make this 10%. Thus students who missed one or two quizzes for any reason were not disadvantaged.

The questions were primarily constructed from the lecture content - PowerPoint slides [these were brief and had dot-points or short sentences only] were provided electronically for students to print and to bring to the lecture to minimise writing and encourage listening. The questions dealt in general with the discussion and explanations given in the lecture, rather than that purely on the PowerPoint slides; all of this information could, of course, be gleaned from the texts.

Of course there is no way of detecting or stopping cheating, but of interest was the fact that a significant minority of students showed steadily decreasing scores over the 10 weeks. While almost everyone scored 8/10 or better in weeks 1 and 2, this group were consistently scoring 4/10 or less by the end of semester. Reassuringly, this score correlated very well with their overall performance in the unit [poor].

THE RATIONALE

Students in the first year of any course are anxious about the unknown nature of the learning experience; this is magnified when the content is perceived to be a “new language” such as medical science. Also, a professional course such as Nursing has responsibilities to the profession and to the public to produce practitioners who are competent and knowledgeable [and safe].

It is of course our aim to produce graduates who have the ability to distinguish the important content from the merely “nice to know” and can master it accordingly. While we do not intend to spoon-feed our students, it is in everyone’s interest that they know at least the type and depth of material that they need to be competent and safe practitioners. This assessment, while relatively small overall, is seen by students as “low cost, high value”. It encourages them to attend the lectures and not just rely on brief summary notes for study - particularly important as the other assessments [tests, exams and case studies] require interpretation and explanation, not just rote regurgitation.

Students were encouraged to discuss these questions, as a way of helping them to articulate and explain their thoughts by having to make sense of them to others. The aim, which was conveyed to the student group, was to have them understand and retain knowledge, not to merely pass a test.

These quizzes allow them to see the way we frame our questions for the bigger, more challenging tasks, so they can concentrate on the content and not on the syntax or the semantics; they are not then so frightened by the way a question is worded that they cannot demonstrate their knowledge to us in their answer.

The challenge of small quiz each week meant that students would go over their notes and ask questions, of the lecturer, the tutor, each other and/or the text. Practitioners such as nurses must not only know what to do but why to do it; the quiz was able to take them



beyond rote learning to the deeper understanding of 'why' which allows the development of practice in the real world.

EVALUATION

Each unit in this course is formally evaluated by the University; questions in the evaluation which asked how students perceived the value of small, regular assessment tasks received overwhelmingly positive responses.

Where student written comments were provided in these evaluations, they inevitably said that this helped them to keep up-to-date and not to feel overwhelmed; a significant number also noted that seeing a good score in the quiz, even if it was only worth one mark, made them feel much more confident about their ability not just in this unit but in the course as a whole. Students also said that it made them more likely to attend the lectures, as that was where they "found the answers and understood stuff".

Students who feel that they simply cannot understand science have surprised themselves with good scores, and the renewed enthusiasm with which they apply themselves is rewarding and self-fulfilling. Once the fear lessens, the student can engage with the material and look at it on its merits; these students often discover a real love of the area and have grown to be amongst our top performers. Critically, success [or at least, feeling comfortable] in these fundamental units encourages their belief in their own ability, and this has helped them to master complex content in other areas of the course.

The raw mean and median scores of the 2006 intake were encouragingly high; this was perhaps unexpected given the demographics of the cohort and the experience of other years and other units in this year. There was a reasonable correlation between performance on these quizzes and final score, although no formal statistical analysis has been done. This process also assists the teaching staff as it allows us to see easily where common areas of misconception or lack of understanding occur, and we can address these appropriately and in a timely way.

It is our conviction that this form of assessment fits well with the principles of good assessment design, namely:

- it allowed feedback for self-correction of errors in content or reasoning, and allows and time for reflection at an individual level and in small groups;
- it encouraged students to believe in their abilities and encouraged self-esteem especially amongst those for whom this area is another world and whose mantes was "I can't do science";
- it rewards them for study time in class [attending to the lecture content and asking questions if things are unclear];
- it spread their study evenly across the semester - the content covered in these quizzes is representative of that examined in the entire unit so gives a basis on which to study;
- it helps to promote deep learning by encouraging understanding and articulation of the reasons behind an answer, not just the answer itself;
- it models for students the type and depth of material expected in this unit and the course.



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