

The focus of the pre-class stage is always a short online written quiz that the students must submit before each lecture, based on their assigned reading preparation. The pre-reading exercises focus on the textbook used in both units, ‘Physics for Scientists and Engineers: A Strategic Approach’ (Knight, 2007). This book was chosen for its conversational writing tone, making it accessible for first-time readers.

These pre-reading exercises form part of the overall assessment, worth 5 per cent of the total for the unit. Marks are awarded for effort rather than correctly completing the questions. Full marks are therefore awarded if the students answered all questions seriously, regardless of how many are answered correctly.

The first two of three questions of each quiz are conceptual and interpretive questions based on the key concepts identified for each reading. The final question always asks the students what they found hardest in this reading (Angelo & Cross, 1993; Crouch & Mazur, 2001). This question was designed to pick out the common problems experienced by the students and is posed in the format described by Crouch & Mazur.

The completion deadline for the online quiz is set less than 12 hours before the relevant lecture. This means the lecturer must process the quiz responses very rapidly ahead of class to identify common difficulties requiring discussion; a complex task as written answers are used rather than a multiple-choice quiz. Initial management methods were to simply scan the responses to the final question to establish an efficient, overview summary of key issues (Crouch & Mazur, 2001). To improve this process, we developed a purpose-built computer software tool that extracts and consolidates the responses from the web-based-courseware¹. Using a thematic

¹ Our software package is named “Semant”. The source code is available at <http://www.smp.uq.edu.au> (search for “Semant”) although we are not able to provide support for its use.