A CONTEXTUALISED, ONLINE, INTRODUCTORY PHYSICS COURSE

Elizabeth Angstmann[a], Wan Ng[b]

Presenting Author: Elizabeth Angstmann, e.angstmann@unsw.edu.au
[a]School of Physics, UNSW Australia, Sydney 2052, Australia
[b]School of Education, UTS, Sydney 2007, Australia

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ABSTRACT

In semester two 2013 a fully online, inquiry-based, introductory physics course was launched at UNSW. The course is called 'Everyday Physics' and has twelve modules that are based around everyday objects and explaining phenomena such as why a hot air balloon rises, and why a compass points north. The course currently runs three times a year, in semesters one and two and also over summer, with approximately 200 enrollments each time. The students undertaking the course have a variety of backgrounds; it is especially popular with students studying medical science and business. The demographics of the course are fairly balanced, with approximately equal numbers of male and female students enrolled. As an elective subject, the students undertaking this course are spread fairly evenly across all stages of their degrees.

Each week during the course students watch short videoed lectures covering theory, demonstrations and example problems. Students also have a tutorial problem set for each topic with approximately ten questions. The solutions are provided as videos that they may work through at their own pace. The students also complete six investigations at home using common household items. Examples of investigations include using a kettle and stopwatch to measure the specific heat of water, and using earphones and a bucket of water to measure the speed of sound. At the end of the course students submit a report about an experiment they have conducted at home to investigate the physics behind a phenomenon of their choice. A draft of the report is submitted for peer review before a tutor marks the final version. Online quizzes are used to assess the students' understanding of the material covered in the lectures and tutorials.

Students taking the course have been surveyed about their attitudes to online learning and their experiences during the course. The responses from the students indicated that in general they were very positive about the course. They also found the inquiry based approach motivating and engaging.

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