

Online feedback assessments in physiology: effects on learning

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Online formative assessments are an increasingly popular supplement to traditional summative exams in higher education, however formal evidence supporting their educational benefits is lacking. This study evaluated the impact of online feedback quizzes on the learning outcomes of the cohort of science students enrolled in our stage 1 undergraduate Physiology course in session 1 2009. Three online feedback quizzes were offered during the 12 week course. To encourage student participation and preparation, each quiz was worth 5% of the overall course credit. Quizzes consisted of 10 multiple choice questions on a specific section of the course material. Summative end of session examination marks were analysed with respect to performance in quizzes, and were also compared to those achieved by students completing the course in session 1 2008, in which the quizzes were not offered. A survey was conducted to gather students perceptions regarding the quizzes. There were no significant differences in the end of session examination marks between the 2008 and 2009 student cohorts. However, there was a significant relationship between performance in the quizzes and performance in the end of session examination ($r^2=0.231$, $n=450$, $P<0.001$). Further, students who performed poorly in the quizzes were more likely to perform poorly in the end of course examination. Survey results were generally favourable, with the majority of students identifying the quizzes as a valuable learning tool. These findings suggest that the online quizzes are good predictors of final exam performance and can be utilised to target students in need of remediation and assistance.