

Online feedback assessments in introductory physiology courses: effects on students' learning experience and outcomes

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Online formative assessments have become increasingly popular in higher education, however formal evidence supporting their educational benefits remains limited. This study investigated the impact of online feedback quizzes on the learning experience and outcomes of a large cohort of undergraduate students enrolled in an introductory Physiology course. Five online feedback quizzes were offered over two consecutive sessions with several quiz models tested; some quizzes were available for students to undertake unsupervised while others were conducted under supervision either with or without the use of study notes. All quizzes comprised of multiple choice questions on a specific section of the course and had credit attached to them to encourage student participation and preparation. Summative end of session examination marks were analysed with respect to performance in quizzes, and were also compared to those achieved by students from the previous year, in which the formative quizzes were not offered. Online evaluation surveys were conducted to gather students' perceptions regarding the quizzes. The surveys showed that the vast majority of students welcomed the introduction of the online quizzes and perceived them to be a valuable learning tool. Despite this, analysis of end of session examination scores found that introduction of online quizzes did not have a significant impact on academic performance in this cohort. However, there was a significant relationship between performance in quizzes and performance in the end of session examination, which was evident for all quiz formats tested. Further, students who performed poorly in the quizzes were more likely to perform poorly in the end of course examination. These findings suggest that the online quizzes are good predictors of final examination performance and may be a useful tool to target students in need of remediation and assistance.