OC09116 – Instructional Pedagogies
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ABSTRACT
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Testing Options for Online Delivery of Undergraduate Economics Courses

Online course delivery has necessitated an in-depth evaluation of testing options while complicating exam construction methods. Because online course delivery is generally not a proctored environment, it is often difficult to detect authorship of student work on examinations. Exam delivery methods must therefore be carefully chosen to promote academic honesty and prevent grade inflation. Another complicating factor in large online-degree granting programs is that a common final exam may be mandatory for assessment purposes. Since instructors do not create their own exams, a method for communicating clear teaching expectations without releasing the final exam in advance must be devised.

Given the complexity of exam construction and delivery in online programs, this study proposes the use of randomly generated multiple-choice exams based on a preselected set of testbank questions as the most efficient and appropriate means of course assessment. In addition, it is recommended that the proctored final exam be composed of questions that have appeared in semester exams, a method that fully informs instructors and students of expectations on the final exam.

The multiple-choice format in an online environment has several advantages. Coverage of material can be broader and more detailed than essay exams, which is particularly relevant in accelerated formats. Multiple-choice scoring is objective, consistent, and reliable and can yield data revealing the relative performance of individual instructors as well as online versus face-to-face performance. Finally, test generation can be automatic, solving the problem of continual test redevelopment for each new semester.

The multiple-choice format has its critics, however. Stephen Buckles and John J. Siegfried assessed the efficacy of multiple-choice questions to evaluate the in-depth learning of economics in a 2006 study. The authors found that multiple-choice questions could be used through the fourth level of Bloom's taxonomy of educational achievement, or "analysis," but could not be used to evaluate the two highest levels, "synthesis" and "evaluation." Another criticism of multiple-choice testing

specific to online delivery is the inability of the instructor to detect cheating, thus promoting grade inflation.   Testbanks have also become available for purchase online by students, creating an opportunity for memorizing answers rather than understanding concepts.

To analyze the efficacy of repeating multiple-choice questions on the final exam, data were gathered on 92 repeated multiple-choice questions from upper-level economics courses administered in a proctored setting. Results indicate that when students encounter a question repeated twice during the semester, there is improvement over the initial encounter, but this improvement does not occur consistently for every question. Paired difference and regression analyses indicate that although improvement is statistically significant, repeating questions in the multiple-choice format should not contribute greatly to grade inflation if the set of possible questions is large and questions within the set are randomly generated.