

## Abstract

Research-based consensus about the about the connection between proctored and non-proctored assessments in online mathematics classes at the post-secondary education as related to success, retention, and final exam scores, provides instructors and administrators with little guidance when creating policies for online classes due to the lack of research. The purpose of the quantitative research design, using a series of logistic generalized linear mixed models (GLMM) were conducted to examine the relationships between proctor status and all the dependent variables, final exam scores, success (passing the semester with a 70% or higher), and retention of online mathematics students in the areas surrounding Baltimore, Maryland. Final exam scores, success, and retention were compared between students who were given proctored versus non-proctored tests during the semester to determine if there was a relationship between the test data in relationship to proctored versus non-proctored tests in online mathematics classes. A relationship status was determined by examining five different online mathematics classes with about 1900 students over a three-year period (2016-2018).

The results indicated students who took assessments during the semester in a proctored class were more likely to fail the final exam. Proctoring semester assessments meant students were 1.49 times more likely to fail the final exam. White and other races were more likely to pass the final exam than African-Americans. With final grades, students who were proctored were less likely to succeed. The result suggests students who attended the non-proctored assessments during the semester were 1.53 times more likely to succeed in the course. Results predicting retention demonstrated proctoring was not associated with retention. The only significant finding showed Whites were more likely to be retained than African-Americans.