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The topic for this research project will be the effect of frequent and consistent quizzing on student achievement. This study will examine whether there is indeed a relationship between frequent low-stakes quizzes and the academic achievement of fourth grade students on summative mathematics assessments, as well as the direction of the relationship.

Gokcora, D., & DePaulo, D. (2018). Frequent Quizzes and Student Improvement of Reading: A Pilot Study in a Community College Setting. *SAGE Open*, 8(2).

A study was conducted by Gokcora and DePaulo (2018) on the effect of frequent quizzes in an Academic Critical Reading course at a community college on a student achievement. Student achievement was measured using a standardized CUNY assessment of reading skills. The results of this study found that students who were given frequent quizzes performed better on the CUNY test than controlled groups. According to Gokcora and DePaulo (2018) formative assessment provides students with the effective feedback that is needed, feedback which is not provided through the use of summative assessments such as midterms and final exams. These types of summative assessments make up the majority of college assessments, despite the knowledge of the positive effects of feedback.

Marcell, M. (2008). Effectiveness of Regular Online Quizzing in Increasing Class Participation and Preparation. *International Journal for the Scholarship of Teaching and Learning*, 2(1).

A study conducted by Michael Marcell (2008) examined the effectiveness of online quizzing on increasing student participation and preparation. Within this article, it is mentioned that frequent quizzing promotes higher performance on exams. However, the author is choosing to examine a different relationship between frequent quizzing and student preparedness to participate in class discussions. Marcell (2018) wanted some way to keep his students accountable for the readings that were assigned to be completed before class. The finding of the study was that brief out-of-class quizzes caused students to raise more reading related questions, thus allowing for deeper conversations, and in turn deeper conceptual understandings among the students.

Roediger, H. L., III, Agarwal, P. K., McDaniel, M. A., & McDermott, K. B. (2011).

Test-Enhanced Learning in the Classroom: Long-Term Improvements from Quizzing. *Journal of Experimental Psychology: Applied*, 17(4), 382–395.

A third study conducted by Roediger et al. (2011) published three different experiments to examine whether or not quizzing promotes learning and long term retention of the social studies material among sixth grade students. The three different experiments examined different conditions. Experiment one was a simple pre-, post-, and review test method. Experiment two added on to the method used in experiment one with the use of repeated quizzing and reading. Experiment three provided students with one multiple choice quiz in class and an online platform in which students can test themselves outside of class. Despite the variation among the experiments they all supported what the study

calls “the testing effect.” All three variations led to increased academic performance as a result of frequent quizzing.

Sotola, L. K., & Crede, M. (2021). Regarding Class Quizzes: A Meta-Analytic Synthesis of Studies on the Relationship between Frequent Low-Stakes Testing and Class Performance. *Educational Psychology Review*, 33(2), 407–426.

Lastly, in an article written by Sotola and Crede (2021) a meta-analytic synthesis was conducted on studies about the relationship between frequent low-stakes testing and class performance. According to this article, frequent testing is not only helpful in improving student performance on assessments but also for improving their ability to learn new material. This phenomenon is known as test-potentiated new learning. The authors found that class quizzes are only moderately effective in improving academic performance. It was also believed that most laboratory findings concerning the relationship between frequent low-stakes testing and achievement appear to generalize well to real-world classroom (field) settings.