

## Do Review Games Affect Test Scores?

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### Introduction/Conceptual Framework

This research was conducted to determine how effective review games were in improving test scores. Studies show that students who are taught using games perform better on exams than those who are not (Seay, 1997). Review games are not only a fun way to involve the students in the material that they are learning, but they also streamline the information that has been taught up to the testing point and help pinpoint the information the students will need to know as well as improve their retention of material. It has been “acknowledged that students have different learning styles and therefore we, as teachers, need to use a variety of techniques, embedded in the teaching and learning environment, to assist their learning” (Franklin, Peat, & Lewis, 2003, p. 79). Review games offer another way to reach more students with different learning styles by providing “opportunities for play and imitation” (Klepper, 2003, p. 23). These games might also improve learning and create an effective teaching aid that can be used at all levels of teaching.

### Methodology

The Introduction to Equine Industry class of 30 students at the University of Arkansas was randomly assigned to two major groups with four teams each. There were two replications of the research conducted during the semester. The experimental design for this study is illustrated in Table 1. Tests were not comprehensive and only included information from the section of material prior to testing.

Table 1

*Experimental design for pre and post Jeopardy-like game testing.*

Replication	Group	1	2	3 <sup>a</sup>
1	1	Jeopardy-like game	Test 1	Test 2
1	2	Test 1	Jeopardy-like game	Test 2
2	1	Test 1	Jeopardy-like game	Test 2
2	2	Jeopardy-like game	Test 1	Test 2

<sup>a</sup>Test 2 scores were not analyzed in the research data

The review game of choice was based on “Jeopardy®” (Griffin, 1964). It is computer-based using hyperlinks within a Microsoft PowerPoint document. Each team was given letters from A to D to signify their answers on multiple choice questions. Each group in turn selected a category and dollar value ranging from \$100 to \$500 with \$100 intervals. There were 5 categories with 5 questions each and an overall final question. After revealing the question, teams had 20 seconds to display the letter or their chosen answer. Teams were responsible for keeping track of their own “winnings” based on correct answers.

The students' Tests 1 and 2 were graded. The grades on Test 1 from each student in their respective group were compared to determine the difference in test averages prior to and following the game. Test 2 scores were used to give all students the opportunity to review and were given the higher test score for the class grade.

### Results

For Replication 1, the mean percentage correct for Group 1 was 87.1% ( $SD=9.7$ ). Group 2 had a mean percentage correct of 68.6% ( $SD=18.1$ ). The results of an independent t-test indicated this difference was significant ( $p= .003$ ). The higher standard deviation in Group 2 revealed that the test scores for students in the review group were more closely grouped than those in the non-review group.

Group 2 for Replication 2 had a mean percentage correct of 88.9% ( $SD=7.7$ ) while the mean percentage correct for Group 1 was 69.9% ( $SD=11.7$ ). The results of an independent t-test indicated this difference was significant ( $p= .00001$ ). The higher standard deviation in Group 1 showed that the test scores in the review group were more closely grouped than scores of students in the non-review group.

### Conclusions/Recommendations

Based on the results presented, test scores were significantly improved for students participating in a Jeopardy-like review game. However, this study only looked at the effectiveness in a specific subject area; the effectiveness in other areas may require further research. The standard deviations indicate that using this type of review may focus a student's thoughts of the material that is going to be covered in the test. Due to this narrow examination of the effectiveness, further research is recommended to determine the effects in different areas of interest and at different levels. Because not all information can be taught in detail or effectively to all students using a game, it is also recommended that review games be used only for review and not a substitute for standard instruction. Using a game as the primary mode of instruction could lower the level of instruction to primarily knowledge-based instead of raising it to higher levels such as synthesis and application.

### References

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