



The Effect of Implementing Gamification Principles in a Middle and High School Science Classroom



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Background:

Gamification is the process of applying principles found in gaming to a non-gaming context. With the popularity of modern video games among youth and the role that games have played in education in the past, it seemed logical for my research project to examine what effect gamification had on the middle and high school science classes I teach.

Research Questions:

Focus Question:

Does incorporating gamification principles influence students in a middle and high school science classroom?

Sub-Questions:

1. What effect does gamification have on a student's retention of the material?
2. What impact does gamification have on a student's attitude towards science?
3. How does gamification compare in its effect on students in a middle school classroom versus a high school classroom?
4. How has gamification modified my teaching habits?

Data Collection:

Research Matrix	Likert Surveys	Sample Interviews	Summative Assessments	Teacher Reflective Journal
Main Question	X	X	X	X
Sub-Question 1			X	
Sub-Question 2	X	X		
Sub-Question 3	X		X	
Sub-Question 4		X		X

Table 1: Data research matrix

Results:

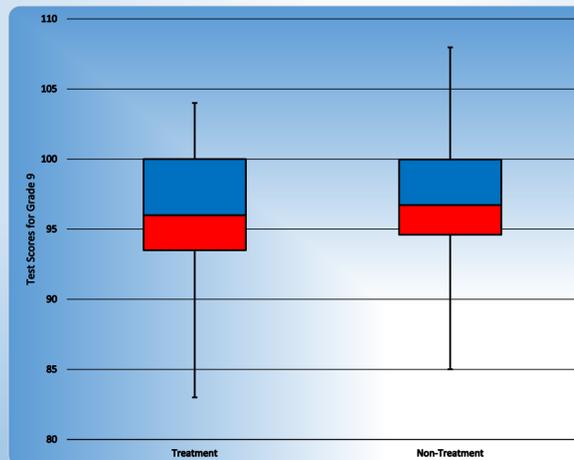


Figure 1: Comparison of test scores for 9th grade class, treatment quarter vs. non-treatment quarter (N = 5)

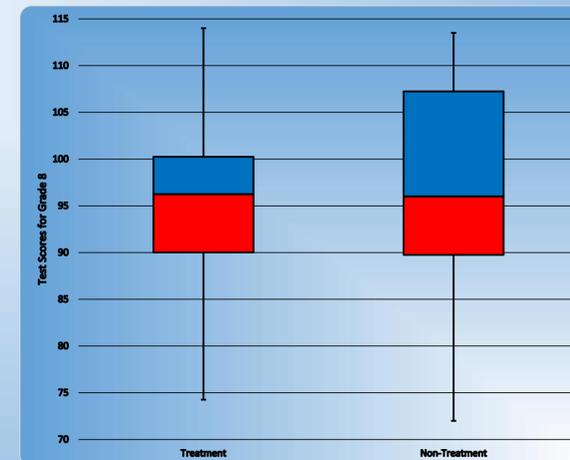


Figure 2: Comparison of test scores for 8th grade class, treatment quarter vs. non-treatment quarter (N = 9)

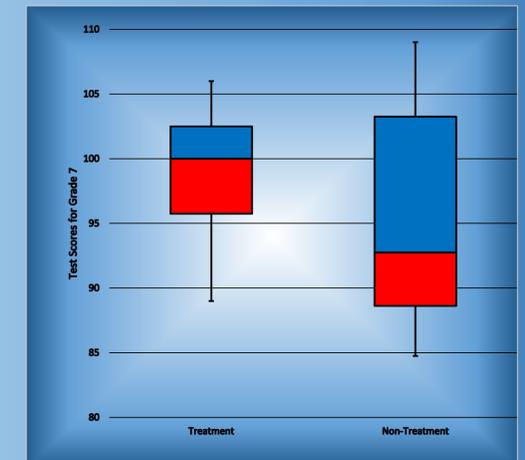


Figure 3: Comparison of test scores for 7th grade class, treatment quarter vs. non-treatment quarter (N = 4)

Discussion:

This study indicates that gamification principles did have a positive impact on the attitudes of the students towards science class. This impact was found to be more prominent in the middle school classes than the high school classes. It was determined that the implementation of gamification needs to be more in depth and implemented earlier in the year.