


RESEARCH PROPOSAL FOR PHD IN MATHEMATICS SAMPLE

STUDYING MATHEMATICS THROUGH
ART USING EDUCATIONAL GAMES



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Introduction

The advancements in the field of digital technology are now currently making huge changes in our world. This gives birth to various digital technologies which are observed to be progressive. Humans, as the inventor of the technology, are oftentimes seen to be under the control of technology, often shaped by it. Unquestionably, through the help of technology, life has become easier and better. As Wilfred (2008) explains, technology has also been transforming the ways in which people think, live, communicate, learn, and work. This form of transformation brings issues that need to be addressed.

Multimedia is one of the most common and advanced forms of technology. The overall combination of text, graphic, audio, sound, and video are all referred to as multimedia. Multimedia may be categorized into two – linear and non-linear. The difference between these two categories is interactive. Linear multimedia may be defined as something that cannot be interacted. For instance, when we watch the movie, we watch the film until the last scene without giving any opportunity to change the ending or other portions that we do not like.

This is different with non-linear multimedia. While creating and designing games using Adobe Flash, for instance, we have the opportunity to interact with the games, and the characters, depending on how we control them. This is because these facets are not fixed, something that we can interact with, or change depending on what we want.



Background of the Study

This research will focus on the technologies that are used in the Mathematics academe, especially focusing on learning Mathematics via art, through the use of video game. As of the moment, traditional approaches in education have resulted in a mismatch between the lessons taught to students, and what the industry currently needs. (Nelman, 2002). As we see, technologies advance rapidly so that the process of learning, as a useful learning suitable for various learners for students of all ages.

Statement of the Research

The purpose of education with which art is used is to make students fully aware of the environment, understanding more themselves, as well as others (Patterson, 1976). Video games are usually connected with art, in the way that it refers to the process of creating video games that use visual art. As such, video games are one of the educational materials which may be used as an aid for learning in order to improve the achievement of students. The games may also be used as a tool inside the classroom, engaging students to be motivated in their study.



Research Objectives

The objectives of research in this study include:

1. Determining the factors that reduce the performance of students in Mathematics and Math related subjects among students in secondary schools.
2. Evaluating the impact of educational games as learning tools on the achievement of students in Mathematics.
3. Investigating the differences in the achievement of students in learning Mathematics using art through conventional educational games.

Limitation of the Study

One limitation of this study is the respondents involved. The respondents are only limited to students in secondary schools. The sample size is limited only to 150 respondents, consisting of students coming from public schools only. This size is too small so as to make a general conclusion that is based on the overall effect on learning the subject of Mathematics using art by means of education games among secondary school students.

References

- Nelman, D. (2002). Does Game-Based Learning Have an Impact on Students? *Results from Recent Studies*, 23-45.
- Patterson, Y. (1976). *Learning Mathematics and Play*. Florida: ABC Press.
- Wilfred, G. (2008). Educational perspectives on mathematic modeling. *Applications in Mathematics*, 2(1), 3-6.