

## **E-NTERAMATH: INTERACTIVE ONLINE MATHEMATICS TEACHING AND LEARNING THROUGH ANIMATIONS**

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### **ABSTRACT**

Electronic environment is getting more popular as a way to convey learning contents online. By integrating interactivity and animations with e-learning, the students are offered with exciting two-ways learning environment. The fundamental motivation for this study is to investigate student interaction with the learning materials through interactive animations. We focus on how interactivity can improve their concentration and understanding toward the subject contents hence influencing teaching and learning process. We present the result of the design, development and testing of Interactive Mathematics ANimations (IMAN) project. IMAN is a web-based learning systems aimed to help students to understand the geometry and transformation concepts through the usage of interactive animations. For the geometry module, an exploratory study was carried out with 35 participants from University Malaysia Sarawak. They were asked to evaluate three geometry-related e-learning sites. Comments and insight from the participants upon the systems were analyzed. We found that IMAN has successfully help the student to understand both the geometry and transformation concepts compared to traditional usage of textbook. The results of this research are expected to provide basis for interactivity and animation design for e-learning content creation. We conclude with several usability recommendations and guidelines.

**Keywords:** *Animations, interactivity, e-learning, mathematics.*

### **INTRODUCTION**

Managing teaching and learning (T&L) process in the electronic environment is not only a major challenge but also a strategic issue in education sector. Adoption of e-learning has become the potential tool to enrich the T&L activities. The effectiveness of T&L process cannot be judged only by measuring the information transferring from teacher to students; the student should actively involve in the process as they learn. Online T&L activity is definitely the solution to foster that process. Our hypothesis is that animations have a great capability in improving the T&L process. Animation is able to maintain student's concentration much longer than traditional way of instruction. Animation can be utilized to illustrate some topic that cannot be merely presented by pencil and paper.