THE EFFECTS OF EDUTAINMENT TOWARDS STUDENTS' ACHIEVEMENTS

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ABSTRACT

The purpose of this study is to examine the effect of edutainment (games) in classroom towards student's achievements. Edutainment can be defined as a combination of education and entertainment, which is implemented via software and delivered by a cable network or the Internet. A total of 60 students from two different standards three classes have involved in this study. They shared the same level of knowledge and ability. The respondents have been divided into two different groups, which are control group and experiment group. Each group consists of 30 students. Both groups had given a set of pre-test. Then, the edutainment software was used to support the teaching and learning process in experiment group. While the control group was teach using conventional method without using any edutainment software. In this study, we used the Edutainment software provided by the Ministry Of Education for Information and Communication Technology Literacy (ICTL) Year 2 subjects and with title Ray's Letters and Numbers. After that, the respondents from both groups were given post-test and a set of questionnaire. The collected data were analyzed using SPSS 12.0. Results shows, 83.8% of students agreed that the use of Edutainment software will increase students understanding toward the topic has been taught, 96.6% of students show their interest in using Edutainment software in teaching and learning process, and 94.3% of students agreed that Edutainment software was suitable to be used in the classroom as one of the important teaching aids.

Keyword: Edutainment, Edutainment software, student's achievement, teaching aids.

1. Introduction

In recent years, electronic games, home computers, and the Internet have assumed an important place in the life of children and adolescents. New media are causing major changes in the nature of learning. There is a vast gap between the way people learn and the way in which new generations approach information and knowledge. Nonetheless, in the formal educational setting the new media are still under-represented.

> *"Play is a very serious matter. It i*s an expression of our creativity; and creativity is at *the very root of our ability to learn, to cope, and to become whatever we may be"*
> Rogers & Sharapan (1994) cited in Sharon DeVary (2008).

Referring to the statement given by Rogers & Sharapan (1994) (cited in Sharon DeVary (2008)), playing is the nature of the children and they learn while playing. Young children cannot grasp the complexities of formal education. However, at an early age, they begin to learn through play. This "play" begins to build the foundation of knowledge that is eventually used for more advanced learning. The introduction and ever-increasing use of computer games has prompted educators to debate and research the merits for using computer games as learning tools.

The notion that education and learning can be linked with lucid, playful and pleasurable experiences is not new. The introduction of computers and the Internet has affected this tradition for the past half century. For at least the past twenty years, concepts such as edutainment and technotainment have been radically transforming the relationship between learning and play.

Digital games have been around for over 25 years (Bryce & Rutter, 2003) so today's college students grew up playing digital games as part of their culture. The amount of time children spend playing digital games varies with age and gender. Like it or not, the games have changed the way current students learn. Unfortunately, some teachers are often reluctant to change the way they teach or to incorporate games into their pedagogy.

Children's edutainment has become immensely popular and commercially successful with parents, teachers and children. In the past, however, teachers and parents did not see the importance of edutainment. They did not see how children's everyday play experiences could be a tool for learning. Educational researchers and psychologists have written extensively about the benefits of play as an integral part of children's learning.

2. Literature Review

2.1. What is Edutainment?

Gros (2003), has defined edutainment as education that has been placed within the framework of entertainment This software genre is designed and developed to target parents and teachers and is specifically designed to focus on academic subjects while commercial gaming software is developed to target players for purely entertainment purposes.

Edutainment is a hybrid game genre that relies heavily on visuals and narratives or game formats but also incorporates some type of learning objective (Okan, 2003). The main purpose of edutainment is to promote student learning through exploration, interactivity, trial and error, and repetition in such a way that students get so lost in the fun, that they do not realize they are learning at the same time.

Edutainment software, the Internet and other multimedia products heavily rely on images, animations, sounds, and other components that engage learners' senses, and can provide immersive learning experiences. Education games can also provide students with experiences that simulate real life. For example, simulations can recreate lifelike scenarios that can be used in learning to fly airplanes or to perform knee surgery.

Edutainment games should include the use or acquisition of knowledge in defined subject areas, use intellectual skills that apply to specific course content, and provide interactive feedback. The attributes of high quality edutainment software should include learning goals and objectives that are clear and concise. Games should also provide concept reviews for new content and a vehicle for questions and answers. Games should be fun. When gamers are enjoying themselves, they are more relaxed, energetic, alert, responsive, and are less fearful and more open to learning (Baranich & Currie, 2004; Klaila, 2001).

2.2. Types of Edutainment

Edutainment is an evolving alternative to traditional education method. It can be organized in different ways. White (2003) (cited in Kowit et al. (2006)), categorized the edutainment in four (4) different groups, which are:

- Location-based edutainment which can be divided into two categories: interactive & participatory where children can play and participate in game, and non-interactive & spectator where children can just be seated and exploring (movie, science show, museums and zoos).
- Edutainment by purpose and content consists of informal education which is to improve learners' life control, and skills education which is to give experiences, like simulations.
- Edutainment by target group includes motivation-oriented (learners who have same interest), and age-oriented (learners who have same age).
- Edutainment by type of media contains: edutainment on TV included: comedic drama, historical drama, sketch comedy, skills and travel; computer edutainment included game types: adventure, quiz, role-play, strategy, simulation, and experimental drama; edutainment on Internet included: tele-teaching and tele-learning systems, and web-based educational systems; interactive television. These types of edutainment use the advent of digital television to provide the interactivity via software and hardware and connect with other telecommunication systems.

2.3. Traditional Teaching and Learning Method

One of the common teaching methods that teachers prefer today is the lecture method. Using this method, teacher transmits knowledge to the students who sit passively in the classroom and listen. Another common method is the question-and-answer approach, which was developed in order to avoid the boredom causer by lectures and to provide more efficient learning environment. According to Eee Ah Ming (1997) (cited in Mohd Aris (2007)), traditional teaching focused on the lecture method in delivering the content to the students and they used one-way communication to explain the idea or principle. The students become a passive participant in class. This situation will lead the students to become bored to learn and finally will influence their academic performance.

2.4. Computer Usage in Education

In contrast to the previously described methods, the new technology has been introduced to integrate with the teaching method, which called Computer-Assisted Instruction (CAI). Using CAI, the teacher can use computers at different times and places according to the characteristics of the subject matter, the students, and the available software and hardware. According to Fisher (1997); Mintz (1993); Plomp and Voogt (1995) (cited in Kara and Yesilyult (2007)), a computer enables repeated trials of an experiment with considerable ease in a limited time, provides immediate feedback, allows simultaneous observation on graphical representation, and offers a flexible environment that enables students to proceed with their own plans.

3. Research Objective

The purposes of this research are:

i. To identify how edutainment can effects the students' achievement.
ii. To identify whether edutainment can increase student's interest to study in class.

4. Methodology

4.1. Participants

This research was conducted at a primary school located in Sungai Buloh, Selangor Darul Ehsan. 60 Standard Three (3) students were selected to involve in this research. All of them were randomly selected from different class, but they share the same IQ level. The students are divided equally into two different groups, which is experiment group and control group.

4.2. Instruments

The main instrument used by the researchers in the study was a set of questionnaires consisting of 2 sections. The first section of the questionnaire covers the questions about the background of the respondent, while the second section consists of questions that related to student's understanding, interest and teaching aids. The students were given the questionnaire after the learning process using edutainment software.

4.3. Procedure

The first step in this research is to teach both group of students with the subtopic Letters and Number. The control group was taught traditionally using chalk and talk. Meanwhile, the experimental group was taught using the software for Information and Communication Technology Literacy (ICTL) Year 2 subject entitle *Ray's Letters and Numbers*. This software is provided by the Ministry of Education to the school. After the learning session ended, the questionnaire was distributed to the students in experimental group. Permission to conduct the research was first secured from the school principals and the sessions took place in the computer lab during the English class. All the respondents were assured that their participation in the study was voluntary and at anytime they can opt out with any obligation.

4.4. Data Analysis

The data collected during this research was analyzed using Statistical Packages for Social Science version 12 software (SPSS v12). T-test was used to elicit whether there was a significance difference among groups for the control group and experimental group. Significance level was decided by taking p values into consideration $p > 0.05$, meant there was not a meaningful difference, $p < 0.05$ meant there was a meaningful difference.

5. Findings and Discussion

5.1 Edutainment Software

This research was conducted using the software for Information and Communication Technology Literacy (ICTL) subject for Year 2 entitle *Ray's Letters and N*umbers given by Ministry of Education. Figure 1 shows the interfaces for this software.

Figure 1: Interface of edutainment software

5.2 Pre-test and Post-test Result

Both groups had learnt the topic of Letters and Numbers using traditional teaching method. After the class ended, they had given a set of question that tests their understanding towards the topic. After two weeks, the students were being taught again with the same topic. This time, however, the experimental group was brought to the computer laboratory and being taught using the edutainment software. The result of the student's achievement is shown in Figure 2 and Figure 3.

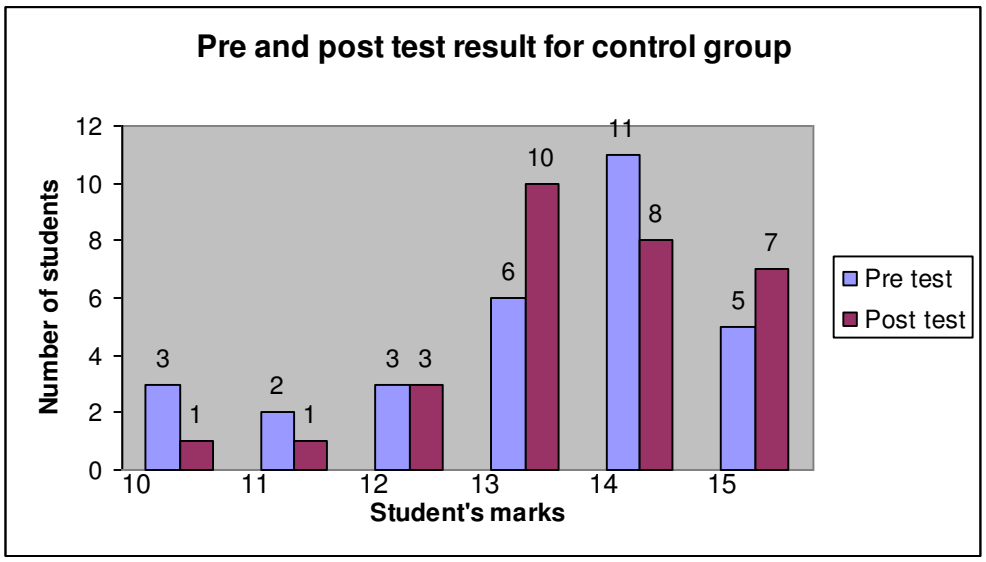

Figure 2: Pre-test and post-test result for control group.

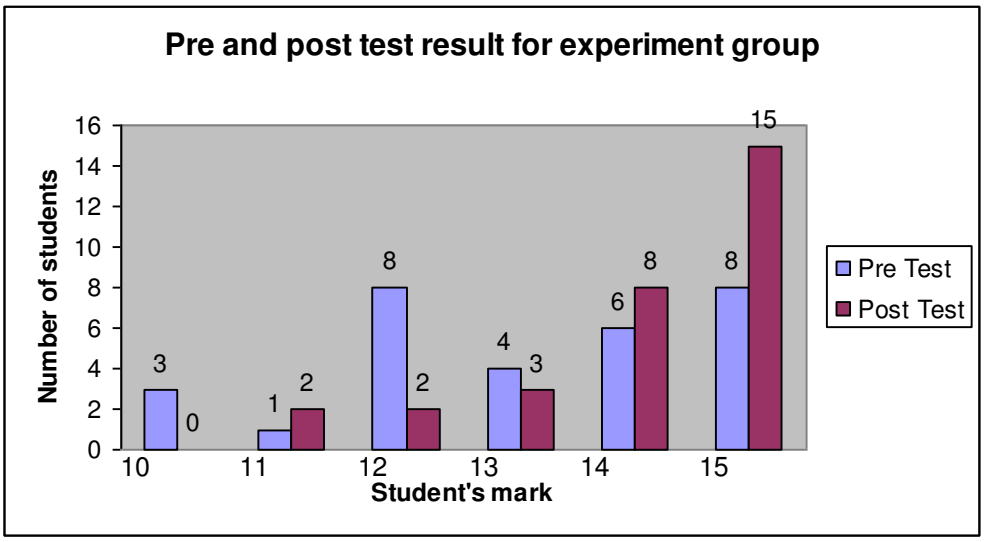

Figure 3: Pre-test and post-test result for experiment group

Based on the Figure 2 and 3, the results indicate that the highest number of students in control group get the 14 mark (11 students) while the highest mark for the students in experiment group is 12 and 15 (both with the number of students is 8). There is, however, a big different when compared to the result of post test for experimental group. After having a class using edutainment software, half of the students (15 students) get the score with 15 marks.

5.3 Analysis of t-test

T-test was used to compare the mean scores for the responses. As seen in Table 1, at the beginning the pre-test means of control group and experiment group were 4.17 and 4.10 respectively. These results showed that the sample's pre-treatment knowledge levels were much closed to each other and there was not a statistical different between the two groups ($p= 0.847$, $p>0.05$).

Table 1: T-test result of pre-test for control group and experiment group.

Value	Pre-test Control Group	Pre-test Experimental Group
Mean	4.17	4.10
Standard deviation	1.533	1.626
Significant value	0.847	0.847

Yet, at the end of the treatment, the post-test means of control group and experiment group were 4.47 and 5.07 (as shown in Table 2). A statistical significant difference was found between the groups ($p= 0.005$, $p<0.05$).

Table 2: T-test result of post-test for control group and experimental group

Value	Post-test Control Group	Post-test Experimental Group
Mean	4.47	5.07
Standard deviation	1.252	1.230
Significant value	0.005	0.005

5.4 Questionnaire Analysis

The questionnaire was given to the respondent in the experiment group after they had a lesson using edutainment software. The questionnaire is divided into two main sections which are Section A that focus on the background of the respondent and Section B that covers the student's response towards edutainment software. In this paper, the discussion of findings will be focused on the second section of the questionnaire.

5.4.1. Students' understanding

Figure 4 shows the evaluations result regarding to the student's understanding towards the teaching topic (English subject). As we can see from the graph, 96.7 % (29 students) of the respondents expressed that the usage of edutainment software helps them to learn English subject, 93.3% (28 students) said that the edutainment software helps to increase their understandings towards the teaching topic and also edutainment software helps them to spell better in class. 90% (27 students) of the students also agreed that the Edutainment software give them more information through various examples. When asked about the usage of instructions in edutainment software, 80% (24 students) said that the instructions help them to play and use the edutainment software.

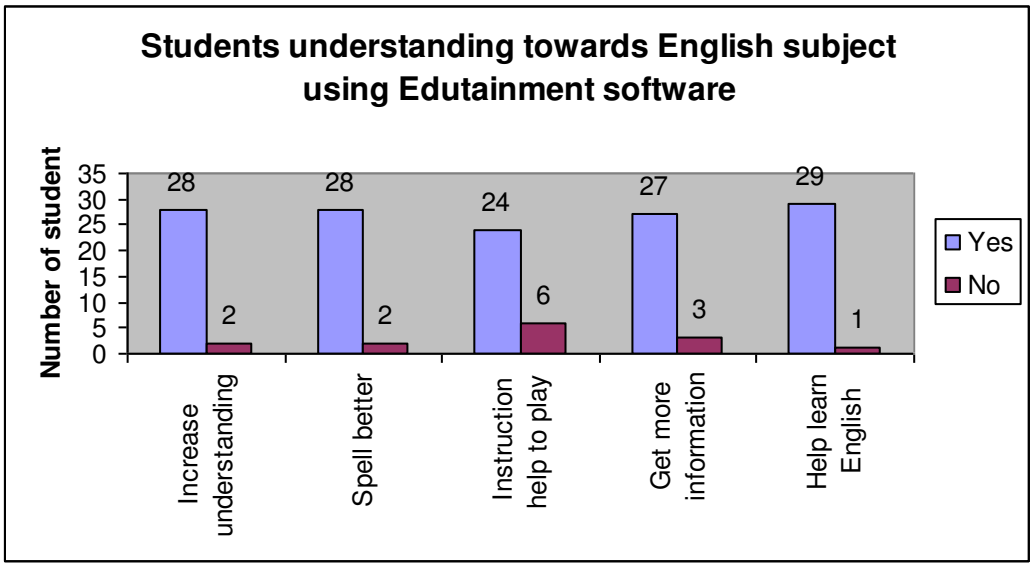

Figure 4: Evaluation result of students understanding towards English subject

5.4.2. Student's Interest

The respondents also had been asked about their interest about the edutainment software. In Figure 5, more than 85% (26 students) expressed their positive interest about the edutainment software. 96.7% (29 students) said that they like to use this software and it helps to increase their interest to learn English subject. 93.3% (28 students) said that the learning and teaching process become more interesting when they learned using this interesting Edutainment software and 86.7% (26 students) said that the usage of Edutainment software encourage them to attend English class.

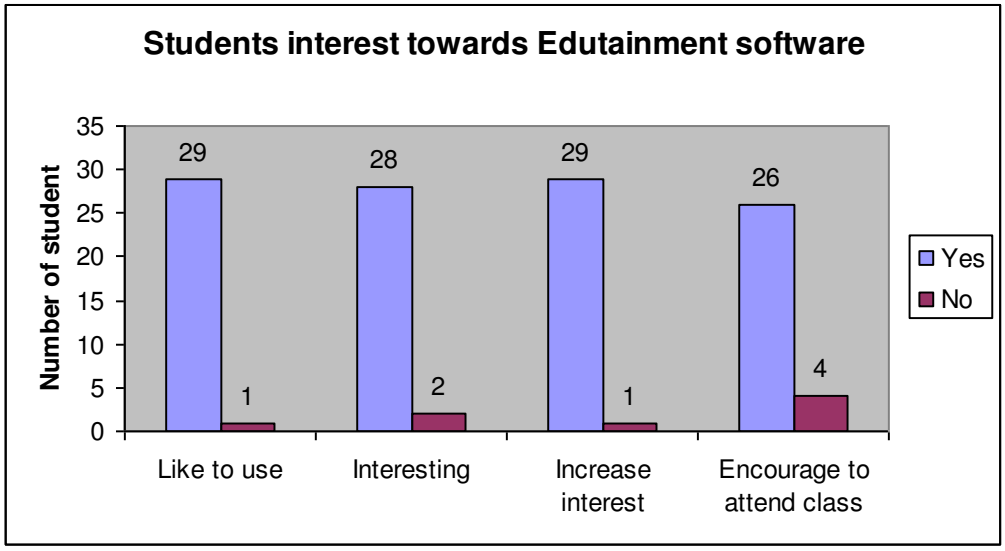

Figure 5: Evaluation result regarding the interest in using edutainment software

6. Conclusion

As education design becomes more complex and challenging, a new form of teaching is required in delivering a new knowledge, integration and a more democratic relationship between teacher and students. Educators should vary their teaching method in order to increase student's interest and understanding. There are various methods that can be chose to help them in delivering their knowledge to the students. Educators have to be creative and innovative in order to choose the right teaching method, at the right time, for the right students.

Despite the fact that students enjoy learning in the educational software setting, they are seldom used in an educational environment to enhance learning outcomes. Reasons for their absence from education include the high expense to develop games and very few games are correlated with the curriculum. It is true that digital games should be used only as a tool to supplement the curriculum rather than substitute for it. Educators can ignore the trend or they can harness the great learning potential of digital games, allowing students to learn by exploring virtual worlds, collaborating with each other, and solving problems without realizing they are learning.

It is a big hope that this study will serve as a reason for further interest in the scope of educational software on students' understanding of English concepts and learning achievements.

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