King Saud University

**Journal of King Saud University –
Languages and Translation**

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FULL LENGTH ARTICLE

The impact of using multimedia on students' academic achievement in the College of Education at King Saud University

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Abstract   The purpose of this study is to find out the impact of using multimedia on students' academic achievement in the College of Education at King Saud University. This study's effort is to answer the following questions:

- What is the impact of using multimedia on students' academic achievement in the "computer & its use in education" curriculum?
- Are there any statistically-significant differences between the average marks of the experimental group & that of the control group in the pre & post measurements of students' academic achievement in the school of Education?

  To this end, an experiment of two equivalent groups was designed, one of the groups is experimental & the other is control; each of them consists of 20 female students. The lecture was given to the first group using a computer presentation program which uses multimedia treated as an experimental group, while the second group was given the same lecture using the traditional method which uses the dialog & discussion technique treated as a control group. Both groups were subjected to pre & post tests in the subject tackled by the lecture. The analysis result of the pre test showed no statistically-significant differences, which in turn proves the equivalence of the two groups. Meanwhile, the analysis result of the post test showed the following:

  There are statistically-significant differences between the experimental group and the control group at a significance level of 0.05 for the interest of the experimental group.

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1. Introduction

Education encounters, in modern times, challenges in all aspects of social, economic & cultural life; the most important of which are over-population, over-knowledge, education philosophy development & the change of teacher's role, the spread of illiteracy, lack of the staff & the technological development & mass

media (Aloraini, 2005, p. 30–32). This drove the teaching staff to use the modern teaching technologies to face some of the main problems, which education & its productivity encounter, by increasing the learning level which may be achieved through providing equivalent opportunities for all people whenever & wherever they are, while taking into account the individual differences between learners (Wilkinson, 1986, p. 13 & Abd El-Halim Said, 1997, p. 19). To improve the educational productivity, some of the teaching staff sought to mainstream technology within education, developing traditional techniques & using new educational methods (Al-A'ny, 2000).

Mainstreaming the technological media within what is called ''Multimedia'' is the pattern which led to infinite applications of computer technologies. The concept of this technology came into being with the appearance of sound cards, then compact disks, then came the use of digital camera, then the video which made computer an essential educational tool. Nowadays, multimedia expanded to become a field on its own.

The concept of multimedia technology is broad & it has infinite usage fields; it is a profound element as an educational technology in addition to its use in medical & statistical domains & in establishing databases. Moreover, the entertainment sector is one of the sectors that has the lion's share in using this technology. Interaction is the main element in multimedia technology as most of its applications are characterized by interaction. Consequently, multimedia programs may provide a more effective & more influential experiment than using each technology separately.

The researcher thinks that multimedia is one of the best educational techniques because it addresses more than one sense simultaneously, as it addresses the senses of sight & hearing. Multimedia programs provide different stimuli in their presentations which include a number of elements some of which are (Aloraini, 2005, p. 55–75):

- Texts,
- spoken words,
- sound & music,
- graphics,
- animations and
- still pictures.

These elements were mainstreamed in a comprehensive presentation so as to provide effective education, which in turn will support the participation of the different senses of the learners in diverse syllabi. (Hadmin, 2000).

Some of the advantages of these programs are:

1. They make the reading process a dynamic one instead of the written presentation of the texts printed in the book (Zaitoun, 2002, p. 259).
2. Presenting different drawings & pictures supports the clarification of ideas & communication of information.
3. Moving easily from a presented subject to another provides a good chance for questions & discussions.
4. Using different presentations like video clips along with maps or other kinds of presentations help to get the information closer to reality. Adding music makes the idea clearer and it attracts the attention of the learners (Aloraini, 2005, p. 73).

5. They rise the attention & interaction between students & the educational subject (Qandeel, 1998, p. 1625).
6. They comprise the elements of amusement & suspense (Qandeel, 1998, p. 1625).
7. They are graded according to the learner's abilities from easy to difficult ones (Qandeel, 1998, p. 1625).
8. They provide teachers with a new educational style & encourage curiosity (Holsinger, 1995, p. 9).
9. They help teachers & learners look into topics from a broader perspective as each topic comprises enormous information (Holsinger, 1995, p. 9).
10. They guide learners to peer learning (Alfar, 2009, p. 123).
11. They are concerned with providing simultaneous feedback (Qandeel, 1998, p. 1625).
12. They help learners remember & transfer their knowledge (Alfar, 2009, p. 123).
13. They support the user's work & innovation, which makes the possession of a computer a necessity for both the student & the teacher.

As a result of the efficiency the multimedia programs achieved in the educational domain, the researcher sought to subject these programs to research in order to find out the best style for presenting & applying them in a way which ensures their optimization in education.

1.1. Study problem

The study problem is focused in finding out the influence of using multimedia in teaching computer & its uses in education on the female students' academic achievement, especially the female students of the Education College at King Saud University, in comparison with their colleagues who benefit from this curriculum through traditional education. This problem is made more specific in the following question:

What is the impact of using multimedia in teaching ''computer & its uses in education'' curriculum on the female students' academic achievement?

1.2. Study objectives

The study aims to find out the impact of using multimedia on the female students' academic achievement in the ''computer & its use in education'' curriculum through knowing the difference of academic achievement between the female students who were given the lecture by using multimedia program (the experimental group) & those who were taught by using traditional methods – teacher, discussion & dialog (the control group).

1.3. Study significance

The importance of the subject study is a result of the following issues:

1. It allows reaching a simplified strategy which leads to easy understanding on the part of the female students.
2. It raises the female students' academic achievement in computer subjects.
3. It develops the female teachers' abilities of using multimedia in teaching computer subjects.