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The Effect of Using Computer Based Tutorials (CBT) on the Academic Achievements of Male Students at Elementary Level in the Subject of Pakistan Studies

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Abstract

The study was aimed at analyzing the effect of using Computer Based Tutorials (CBTs) on the academic achievements of male students at elementary. The objective of study was to explore the treatment effect of CBTs on the academic achievements of the male students of 8th class. All the male students of FGEI C/G Schools of Khyber Pakhtunkhwa constituted as the population of the study. Twenty two male students of 8th class were determined as sample of the study from FG Public School No.1. Then pair random sampling technique was used to divide the students into two equal groups on the basis pretest test scores. The designed selected for the study was Post-test Only Equivalent Group Design. The data was collected by using teacher-made post-test. Then, independent sample t-test was used for interpretation collected data. The results obtained from the findings of study divulged that the performance of the students of the experimental group was better than the students of control group. This finding depicts that computer based tutorials played a significant role in the academic achievements of the male students of experimental group. Therefore, it was proposed that CBTs based teaching programs may be included in educational institutions at elementary level, especially for the subjects of Pakistan Studies and Social Studies. The current study is conducted at elementary level in the subject of Pakistan Studies. To investigate in-depth understanding of the CBTs program, it is recommended that further studies may be conducted at divers' samples at different levels.

Keywords: Computer Based Tutorials, Effect, Pakistan Studies, Elementary Level

Introduction

A dynamic shift has been observed in the teaching-learning process. Computers as a tool of instruction revolutionised the education sector. Computer technology is constantly becoming part of each and every educational institution (Yusuf & Afolabi, 2010). The incorporation of new trends in education has opened new horizons for educational society. The concept of physical interaction during the learning process is decreasing day by day (Ary, 2010). The use of the internet in educational scenarios creates ease for students and teachers. They can virtually interact with each other using new computer technology. As it is obvious that computer-technology is progressively being applied towards non-instructional uses such as record-keeping, grade-averaging, communication processes, etc. and pre-instructional uses such as developing materials, researching-instructional materials, etc., the teaching-learning program has been brought forth with a new perspective and a greater change (Chen, 2011).

Research studies have proved that teaching methods are being affected by the use of ICTs. Now, the approach to education has shifted from teacher-centred to student-centred (Buda, 2010). The modern approach towards teaching and learning emphasizes the cognitive, affective, and psychomotor development of the students. ICT-based tools and equipment help the teacher to do so. Information and communication technology (ICT) motivates the students to be cooperative, dedicated, and helpful to others. Therefore, ICTs and CBT-based learning improve students' high-order thinking skills (Kara & Yakar, 2009).

According to Twigg (2009), the role of the teacher is very crucial while using modern technology. Teachers' motivation and cooperation in the use of CBTs tools is very pivotal. The proper use of ICTs and CBTs tools is not possible because the teacher does not show an interest (teacher-centered approach). The usage of computer assisted instruction (CAI) in schools and other educational institutions creates a great difference. It is transforming the educational culture completely. It also transforms the entire perception of teachers and students (Abu-Shawar, 2009). A modern teacher is far more than a traditional teacher. The technology used in educational instruction helps modern instructors disseminate information related to students' interests in an efficient and effective manner. The advancement of computer technology has created an increasing number of opportunities for students and learners to gain in-depth knowledge about their chosen subject (Anderson, 2007). of technology in the educational sector has created a lot of opportunities for advanced students. They can do their home assignments and projects in no time. For purposes, they go through different links and sites. The interaction of students through the internet has some adverse effects, but in the supervision of a teacher, this issue can be tackled easily (Al-Busaid, 2012).

Due to computer technology, the world has become a global village. People can quickly communicate with one another. Digital citizenship has brought people closure (Riel & Polin, 2004). Online, people not only help each other but also themselves. In the same way, students cooperate with each other to learn more skills and get more knowledge about their interests. Information and communication technologies (ICTs) have brought revolutionary changes in pedagogy. It promotes a constructivist approach (Bauer & Kenton, 2005). The achievement of students is the primary goal of the teaching-learning process. But it is fact that the more students retain, the more they achieve. Teachers usually want their students to retain more information instead of memorising it (Anderson, 2007). Teachers also face difficulty in engaging students in classroom activities. Sometimes, students do not focus on learning. There are many reasons for this, such as concepts being complex enough to understand;

teaching methods might not be interesting. A teacher needs to have modern interactive skills in this situation. Computer based tutorials (CBTs) help teachers cope with the situation. CBTs keep the students active in the class. They help the teachers with delivering the lecture and demonstrating the concepts in an effective manner (Chen, 2011).

Like Pakistan, many developing countries have recently introduced computer technology. Pakistan is also a developing country. Most of the schooling here in Pakistan is traditional. But some schools have been equipped with modern technology. The government of Pakistan is trying to improve the education system. Computer labs and multimedia facilities have been installed in some secondary schools. The impact of these steps is very positive (Farooq, 2001).

Statement of Problem

Usually, students feel difficulty in understanding complex topics related to their studies. Complex concepts related to tough subjects are easily taught without using modern technology (Ary, 2010). It is an obvious fact that the use of computer technology in educational institutions is very common. Computer Based Tutorials (CBTs) can help students cope with this difficulty. Therefore, the following study was selected to explore the effect of using computer-based tutorials (CBTs) on the academic achievements of male students at elementary school.

Objective of the Study

To explore the treatment effect of computer based tutorials (CBTs) on the retention level of male students of 8th grade.

Hypotheses of the Study

H01: There is no significant difference between mean scores of the male students of (CBTs based) experimental and control group on academic achievements.

Significance of the Study

The role of computer technology in the field of education is very remarkable. Computer-based tutorials (CBTs) play an important role in the teaching-learning programme. They improve not only the learning skills of students but also help them improve their academic grades. The study might be significant in a sense that it can help not only students but also teachers in their teaching-learning process.

Literature Review

According to Anderson (2007), today's world is the world of technology. Human beings are exploring space. The Chinese and Americans have sent their explorative machines to the planet Mars. In the medical field, treatments for different diseases have been discovered. Nowadays, it is impossible for a man to live in this world without touching these new inventions. Gambari (2001) has the opinion that the invention of the computer and the internet has changed the entire way of life for humans. Distances have been reduced; communication has become faster; travelling has become easy and swift; learning has become easy and compatible. The incorporation of information and communication technologies into everyday life has revolutionized the entire society.

In the 80s and 90s, technological advancements were only used for the manufacturing of weapons and other industries, but now these technologies are being used in almost all sectors of life. Over the past decade, technology has been used in a variety of ways and for an array

of purposes (Haddad, 2007). Data and interchangeable advances (ICTs) are incorporated as an essential component of the educating learning measure by a large group of learning foundations all over the world (Young, 1997). Understudy instructor schooling has gone through a fast turn of events and change in light of the new rise, advancements, and new difficulties in training (Riel & Polin, 2004), bringing about the restoring and rebuilding of instructional methods to prepare the understudies for future difficulties by instructive organizations (Auerswald & Magambo, 2006).

There is a critical contrast in the level of variation of ICT at optional and higher auxiliary level instruction. Nonetheless, developed countries have the least contrast (Pritchett & Viarengo, 2011). According to the Asian Development Bank Report (2011), ICTs have the capacity to interface the information hole in the advancement of training and instructive open doors through limitless admittance to assets and individuals. In instructive situations, e-learning gatherings are otherwise called Learning Management Systems (LMSs), which are "web based, programming permitting educators to deal with and oversee materials appropriation, tasks, correspondences, and different parts of guidelines for their courses" (Abu Shawar, 2009). Today, LMS has become a basic segment of the instructive framework in the majority of organizations. Interests are expanding in mixtures as they move toward that mix in study halls and online exercises (Pishva *et al.,* 2010).

Notwithstanding understudy's attributes and social impacts, framework quality and data quality significantly affect students' fulfilment of LMS (Al-Busaidi, 2012). LMS System characteristics are the attributes of a framework that can be estimated as reaction time, dependability, adaptability, comfort use, and simple entry, efficient planning, and personalization (Al-Busaidi, 2012). Twigg (2004a) extended an all-inclusive Technology Acceptance Model (TAM) with regards to e-learning administrations. In this proposed model, apparent value, seen perkiness, and saw convenience have been anticipated to be affected by apparent self-rule uphold, saw ability, and saw relatedness. Despite the fact that TAM has received considerable attention in previous research, Watson and Gemin (2009) examine the effects of persuasive variables influencing TAM development.

According to Chandra and Lloyd (2008), "CAI is used in achieving educational outcomes by using interactional activities between students and a computer controlled display and entry device response." Consequently, computer-assisted-instruction is the application of computer technology to give directions to the pupils in a manner that the pupils react to the directions and acquire the desired results immediately (Kara & Yakar, 2009). According to Gambari (2003), research studies indicate that modern computer technology may transform the teaching-learning process. The student-centered approaches can be supported by the use of computer technology. In turn, it can be very easy to enhance higher-order thinking skills and supportive learning skills. To recognize the significance of CAITM in education, numerous countries around the globe are trying to incorporate computer assisted teacher-training programmes into their educational institutions (Haddad, 2003).

The use of computer-based tutorials (CBTs) in education has lessened the burden on teachers and students. Students can learn, understand and explore more and more about their subjects. Their cognitive skills can be enhanced by using CBTs based tutorials. CBTs enable students and teachers to interact with each other in a convenient way. Their abilities to comprehend a phenomenon sharpen. The computer-based tutorials play an important role in the teaching-learning process. Teachers focus most of their work on these tutorials. Once a task is completed, the teacher can prepare the results very swiftly.

Method and Procedure

This portion deals with the method and procedure of the research study which was taken up by the researcher. In addition, it involves the population and sample of the study, collection of data, analysis of data, and the adopted procedure for the study.

Population

The population of the study consisted of all the male students studying Pakistan Studies at elementary level in FGEI C/G Schools of Khyber Pakhtunkhwa.

Sample

Twenty two male students of 8th grade were selected as the sample of the study from FG Public School No.1 Risalpur Cantt. The selected students further divided into two equal groups such as experimental group and control group on bases of pretest by using pair random sampling technique.

Design

The nature of the research study was experimental which involved two groups such experimental and control group. Farooq (2001) considered that post-test only equivalent group design would be appropriate to appraise the significance of the treatment which involved two equivalent groups such as experimental and control group.

Research Instrument

The researcher developed a teacher-made post-test research tool with collaboration of subject specialists. This tool was used for collection of data. For validation of research tool, the test was subjected to subject experts and process of pilot testing.

Reliability of Research Instrument

The reliability of post-test was determined by using split-half method. The test items were divided into two equal halves. The results obtained from these tests were exposed to Spearman-Brown Prophecy Formula. The obtained co-efficient reliability index 0.74 was satisfactory.

Procedure of the study

Two teachers were selected to teach the two sample groups of students to conduct the research activity. One experienced subject specialist teacher was selected for the control group. The experimental group was treated by the researcher himself. The students of the experimental group were taught through computer based tutorial (CBT) method, whereas the students of the control group were taught through conventional lecture demonstration method. Lesson plans were developed for the control group, whereas CBT-based activities were developed for the experimental group. The treatment continued for six weeks. Experimental and control groups were exposed to same course of content at the same time in separate classrooms. A post-test activity was conducted after the completion of the projected course. Data was gathered from both groups for further treatment.

Data Analysis

The researcher used statistical tools such as Mean, Standard Deviation and independent sample t-test for data analysis and interpretation. To measure the overall performances of the respondent groups, mean scores were calculated. For the measurement of difference between the experimental and control group, independent t-test was administered. The value of probability (p) was 0.05 for testing the hypotheses.

H01: There is no significant difference between mean scores of the male students of (CBTs based) experimental and control group on academic achievements.

Table 1: Significant difference between the mean scores of post-test of Experimental and Control group

Group	N	M	S.D	SED	t-test
Control Group	11	54.91	3.05	2.51	7.86
Exp Group.	11	63.00	3.74		

The table 1 shows that calculated t-value (7.86) is greater than the table value (2.08) at 0.05 level of significance. So, this evidence leads to the rejection of null hypothesis. On the basis of explored fact, it can be interpreted that there is a significant difference between the mean scores of male students of experimental and control group. The computer based tutorials had a significant effect on the academic achievements of the male students as compare to the control group.

Conclusions

After doing statistical analysis of the data, it was concluded that participants in the experimental group performed better as compared to control group, which was a sign that computer-based tutorials had a considerable effect on students' performance in the subject of Pakistan studies.

Recommendations

Keeping in view above mentioned conclusions and discussions, the following recommendations were made and list below.

1. The research study revealed that the computer-based tutorials had a noteworthy effect on the academic achievements of students at elementary level. Therefore, it is suggested that computer-based tutorials may be integrated into teaching at elementary level.
2. The study (CBTs) proved the significance of CBTs in the subject of Pakistan studies. The students showed recommendable performance. Therefore, it is recommended that the CBTs may be adopted for teaching of Pakistan studies at elementary level.
3. The study (CBTs) evolves computer skills and competency, therefore it is suggested that teachers may be equipped with computer literacy.
4. The research study was conducted at elementary level. The results were considerable. To investigate the profound understanding of CBTs, it is proposed that this technique may be tested at secondary level.

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