

THE SUCCESS OF COMPUTER ASSISTED EDUCATION

How the education life of a student is change?

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Abstract: Today, We are living in a digital world, where everything is going to be computerized and the task we are doing is depend upon the factor how computer and internet change the system of education. The main goal of this paper is to explain the area, where computer assisted system improve the effectiveness and quality of education system. The computer assisted education system change the perception of student in all over the world.

Index Terms – Computer Assisted Education, Multimedia, Traditional Education, Internet, Search Engine, Video Website and Application.

I. INTRODUCTION

Before we start to understand the topic, we need a brief knowledge about computer and computer assisted education and system. A computer is a computing device used daily in our life by which we can solve many problem, it also help in doing large scale of computation work which are not easy for human. Computer is a machine has some integrated circuits (IC), input and output devices connected to it. But nowadays computer can solve many types of problem and the size of computer is also very small compare to old computer devices. Computer can be in form of mobile, laptop or tables. ^[1] Now, Computer and internet both are varying day by day and solving lots of problem. As we all know that the internet and computer device(s) both are necessary to communicate and share information from one place to another. Now internet is another important part of our discussion, the internet is used to describe you as a network of different networks connected to each other. These networks are use to share information or message from on to another in a locally or globally.

Computer assisted education is not a new fact. In the early 1960s, Stanford University psychology professors Patrick Suppes and Richard C. Atkinson experimented with using computers to teach math and reading to young children in elementary schools in East Palo Alto, California.^[2]

Traditional vs. Modern Approach: -

Currently, we are living in a modern or digital world, where everything is going to be digital. Our Doors to our bedroom, all of these things are digital for example we have a smart door with CCTV camera and Voice System. We are using mobile phones and other electronics devices to communicate to each other with the help of internet. Every day life is very much affected by digital innovation and digital technology. Today we cannot live without digital devices. Our education system is also affected by computer technology. There are many ways that affect the traditional way of education. In traditional methods of education written books, notes or personal knowledge of teacher is use to teach students. In traditional way students only have limited sources of knowledge. Students only get the knowledge which is delivered by the trainer or teacher. All the academic work is done on written form. The traditional method of education consumes lots of time and money. Students need lots of books to carry ion schools and colleges with some extra stationary. Computer assisted education is very helpful for students and teachers. Digital technology is very useful for learning their course from anywhere. There are many technology, software and website which help them to access more course material. Nowadays digital technology is also helping the person with disability. Many type of traditional work is now done with digital technology. Mobile, Computer, laptop and internet is helping the students and teachers very much. These are as following: -

- Online examination system
- Online form filling and information collection
- Search engine
- Different website for information sharing
- Online course work
- Video Site
- Video Conferencing

Increasing Access of Computer Assisted Education

Today the access of computer assisted education is highly increasing as the internet user increasing. There is a high demand of computer assisted devices, software and websites. It is now possible for a small mobile phone to access the internet as the cost of digital accessory is decreasing. All the educational bodies are focusing to provide the computer aided or computer assisted education system to each and every entity. Computer devices are now much cheaper then compare to it was before. The more users can use it. The wider and far from the metro or you can say rural areas also can use the computer devices and internet. Technology is increasing very widely and small mobile devices can be thinks as an advanced computer system. Now every University and Educational institution is focusing online course, examination, form filling and etc.

Flexibility

Today there is no barrier between student and educational bodies. Students can learn things from internet and achieves his/her goal. In the traditional view students have to move to the physical places to complete their studies, but today there are many online, distances or Open University. The course material can be search from internet with the help of computer devices. Students are not forced to go to physical places. There are many type of lectures, videos, hypertext or information available that provide the flexibility to students for studies from anywhere in the global.

Interaction between teachers and students

Today we can share our information globally without any fear of losing data. In the past, teachers were actual meetings to interact with their students. It was only during physical meetings that teachers could deliver their lectures and instructions inside a classroom. However, nowadays, this type of absolute dependence on physical meetings is gone, and student can meet their teacher by video conferencing. It is easier for teachers and students to stay in touch via electronic mail and other internet-based services such as instant messaging or chatting services or file sharing applications.

Although the need for physical meetings between teachers and students remains is necessary to understand to lecture more clearly, but technology has change the way teachers and students are meeting. Students are not ready to waste a single penny to meet to their teacher until their no other ways remains.

Online Tests, Course Material and Assessments

Today, there are many ways to take students evaluation through some online test with the help of computer assisted education. Nowadays students do not require going to the physical places to give any type of test. We have many platform where students can directly open their mobile or laptop or any other similar device to connect with internet and they can easily give their assessment to their trainer or teachers.

Now telecommunication sector is focusing to make more numbers of users, and they have reduced the cost of internet and similar services. With the help of computer assisted education students saves a lot of money, time and other resource like paper etc. The assessment is now very popular as the time and cost of assessment is decreased by using computer assisted education, all the educational institution are now focusing to implementing it on large scale.

Students can access millions of e-books from different online stores for their study. There are many website which provide the online e-books or other course materials for students and new innovation and ideas can be share with each other. There are many type of blogs or website which provides the free of cost information to students.

Lifelong Learning

If a teachers wants to teach his/her students, how is an elephant and what are the actual size, color, behavior and other attribute of an elephant then in traditional way of education he/she would draw a picture of elephant on a white or black board. If a student watches the video of an elephant then he/she can be clearer and will keep the good knowledge of an elephant and this type of knowledge is remain in their brain for a lifelong time. This lifelong learning is provides by the computer assisted education. There are many examples of such things where visual phenomena can be more understandable compare to the traditional way of learning.

Case Study of Ath. Kehagias and Pan.Vlachos: -

There were computer scientist and engineers who did many case studies on this topic. One of them is much related to our topic and has a great impact on the computer assisted education. Therefore, one case study quoted for showing importance of computer-aided education. Ath. Kehagias and Pan.Vlachos has a research called Melon project for Melon foundation grant to their project, which is fulfilled in The American College of Thessaloniki. They choose American College students for their diverse educational backgrounds. They wanted to design courses, which will teach to the students basic mathematical knowledge (necessary for follow-up courses); and, they want to relevance them to mathematics. And they though thing to keep a fine balance between showing more technical (in which case students will be alienated) and too simple (in which case students will lose interests in the course). Then they organized a course which they can use computer in class. By they were using some software packages such as Microsoft Excel and Mathcad. At the end of the course they had also found that it computers did play a positive role, in "sweetening mathematics"; and. And they have found that CAE students were better at it than traditional ones.^[3]

Innovation of Smart Schools

Schools which support students' learning and thinking skills with programs, infrastructure, tools, teachers and management aided by information and communication technologies are Smart Schools. In a Smart School, students are autonomous learners; they learn how to learn. Smart Schools enable children to acquire abilities of constructing knowledge from available information. These abilities are crucial to a learning society. With access to the state-of-the-art information and communication technologies, Smart Schools will provide a learning environment where the pupils will develop the ability to construct their own knowledge. All pupils have this ability. It can be enhanced by the use of computers, the Internet and other learning technologies. The aims of the Smart Schools will be to promote balanced development, help integrate knowledge, skills and values, enable multidisciplinary, thematic and continuous learning and help acquire competencies to cope with the Information Age. Considerable amount of preparatory work is to be done by several agencies, together, before Smart Schools make a start. There are a number of recognizable tasks ahead. Standardization of hardware and software for these schools is one. Pre-service courses may have to be attuned to the skills required of a Smart School teacher. Therefore, IT skills have to be suitably integrated into the teacher education curriculum. Appropriate training modules for in-service teacher and induction level training are to be developed. Implementation of the Smart School program as per the blueprint will require development of learning activities using

learning technologies and appropriate pedagogy for autonomous learning. Processes of computer-assisted assessment, digitized maintenance of performance records and their accessibility to parents are to be adopted. The responsibility for development of navigational maps on the World Wide Web and multimedia learning materials on school subjects will also have to be taken up.

There is a perceptible readiness amongst various sectors to support and take part in the Smart Schools initiative. The process can rely upon support from individuals and private enterprises that have shown remarkable willingness to participate. There is an existing base of trained manpower among educators. A number of schools have already adopted IT-based learning materials and methods and are making use of the global network for accessing learning resources. Time is now to start our own Smart Schools.^[4]

Effective Technology for Students and Teachers

There are few examples in table 1 of website, software and technologies which are very helpful in computer assisted education; however, both teachers and students can use these educational technologies as these are very helpful for both teachers and students.

Table 1. Different type of software and website of computer assisted education

• Tutorialpoint	• TI 84 Plus – Graphing Calculator
• Wikipedia	• Math Success Deluxe
• Byju	• WhiteSmoke
• Google	• HomeworkHelp.com
• Youtube	• Chegg
• Unacademy	• High School Success Deluxe
• Google Translate	• Tutor
• Timetoast	• RefSeek
• Bubbl.us	• iEARN
• Scribd	• Wikispaces
• TodaysMeet	• Vocaroo etc.

Research Model

In this research, two groups of graduation students were selected. The research was done on these groups with two different methods. All the two groups were taught computer programming language – Java. Group A was taught Java in traditional method where they were taught in black board with the help of written notes. Group B was taught Java with the help of computer assisted education where Personal Computer was used in practical labs. Smart classes were also used by their teacher. Both the methods are taught by the same teacher and with the same amount of time period. For the purpose of determining the influence of the methods, the experimental/testing Model was used in this study. This research is conducted with the application of pre-test and post-test.

Before beginning to study with the students of both A and B group, we had formed a teaching design related to the topics to be given by using Dick and Carey Model. The steps of the model are given below.^[5]

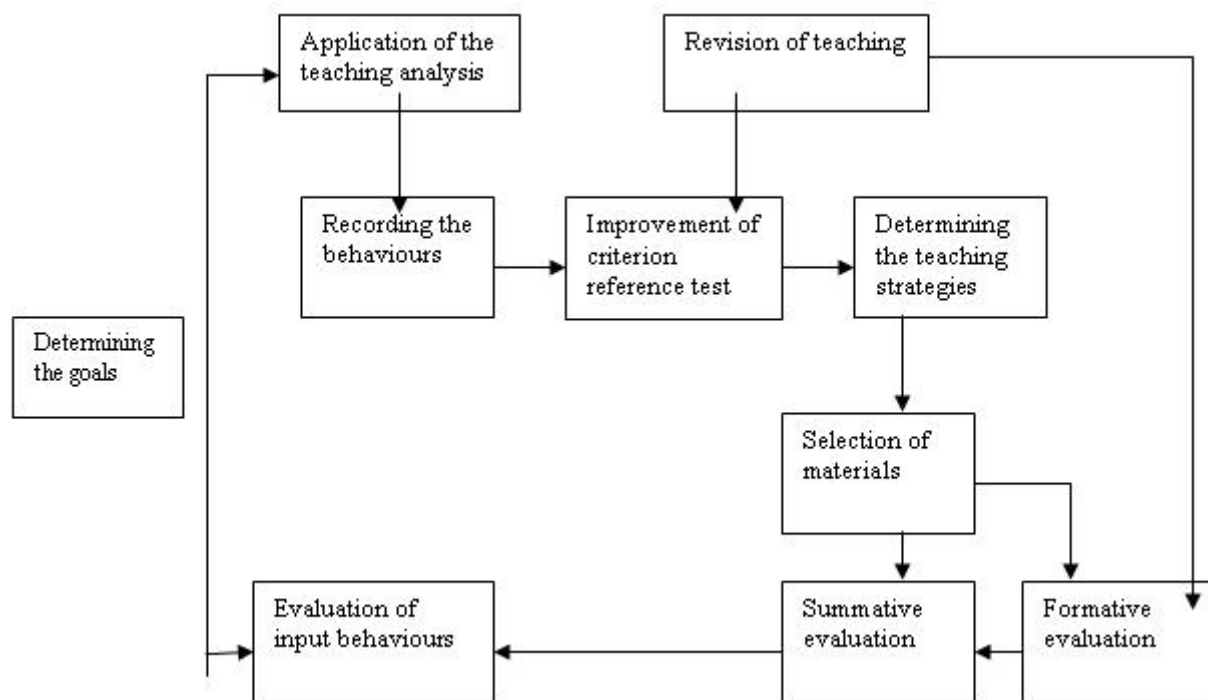


Figure1. The Model of Dick and Carey

The four week study of the control group has four classes each one is 50 minutes. In the first two hours of the classes, students listened to the topics of that class accompanied by power point slides prepared by the teacher. They took notes when necessary while listening to the subject. In opposition to the study realized in experimental group, the researcher answered all the questions asked by the students and contributed while instructing this group. Because the computer is the basic teaching material used by the instructor in the computer assisted teaching method. Computer doesn't replace the instructor but contributes the teaching. In the last 2 hours of the class, students were placed in a position that each would have a computer to study on. The same worksheets prepared for the experimental group were given to this group as well and made them apply the subject. On the contrary, the teacher who didn't answer any questions and help in the application of the experimental group, answered all the questions and helped the students to support them in this method.^[6]

Collection of Data

There are 30 students in group A and 30 students in group B. Before starting the research there was a pre-test applied to both the groups. In a four week time period Java programming language is taught to group A in traditional method, and group B is taught using a computer assisted education method. In the application process, students have been excluded from the scope of this research. During the teaching period, it was observed that both the group actively participate in the learning process, and students were highly motivated about their subject. At the end of this research, there was a post test to check the result and average of every test is noted down for further findings.^[6]

Analysis of the Data

Analysis of the data, obtained from the application, was conducted using SPSS software. Both the group given few tests which are pre-test and post-test. The idea behind these tests is to analyze the grade or performance of the students. Both groups worked very hard. Each test has 50 questions of Java programming. During the research period group B is allowed to carry laptop or other computer devices inside the classroom and they have to trained for many other technologies which can help them to gain access of online course material. The result of these groups will decide the method performance and average of these tests is taken for the analysis. By calculating the pre-test and post test average scores and standard deviation of the test and control groups, the differences between groups before and after the experimental activity was tested as 0.05 in the level of significance using a "t" test applied to the dependent and independent groups.^[7]

Finding or Result

The following table shows the average of pre-test and post-test of both A and B groups. The scores and statistical evaluation results of the pre test and post test of this study, which were conducted in order to compare traditional and computer assisted education in teaching Java programming language and to determine the retention of the learnt information are specified in Table 2. A significant difference does not exist between the pretest scores of the computer assisted and traditional educational groups.^[6]

Table 2. Comparison of the general pre test and post test scores of the groups.

Groups	No. of Students - N	X	S.d	t-test	P-value
Pre-test					
Traditional Education - A	30	15.89	2.47		
Computer Assisted Education - B	30	16.60	1.50	1.390	0.169
Post - Test					
Traditional Education - A	30	35.70	5.93		
Computer Assisted Education - B	30	41.33	6.25	3.513	.001

A significant difference does not exist between the pretest scores of the computer assisted and traditional educational groups. For this reason, it can be stated that students do not differ in terms of pre-condition learning or input behaviors ($t=1.390$; $p>0.05$), in other words, the groups are equal. The average post test score of the students, who received computer assisted education is $\bar{x} = 41.33$, and the average post test score of the students who receive traditional education is $\bar{x} = 35.70$. The difference (success) between the points of post test of both groups is found to be significant [$t=3.513$; $p<0.05$]. Considering this, computer assisted education provides a significant improvement in the success of the students on the topic of Java programming language when compared with traditional education. This result shows that the improvements that are observed in the success of the students can be related to the processes that were carried in the computer assisted education. According this result, it can be stated that students receiving computer assisted education shows differences in terms of remembering what they have learnt and enables retention in learning when compared to traditional education, in other words it can be stated that computer assisted education is more effective than traditional education. To support education activities with visual and audio equipment provides enrichment based on the technological developments or availability of technology. Also, the method of instruction with sound, video and animations facilitates remembering what has been learnt in the computer assisted learning environment. In terms of application, conveying scientific concepts and principles visually to the students via appropriate teaching techniques and computer assisted education is more effective in increasing the student's motivation to learn when it is compared to other methods. ^[7]

Conclusion

Computer assisted education supports Virtual or Online Learning. Unlike physical classrooms, online learning is flexible and students from different locations can attend the same class or lecture with no need of traveling from those places. Computer assisted education helps students gain access to open educational resources like online e-books, google scholar, youtube, Wikipedia etc. These resources are kept under the public domain and are freely available to anyone over the internet. The use of computer assisted education makes students feel in control of what they learn, what they wants to learn and from where they learn. Students find it easy to learn with technology. Different types of educational software, website or mobile applications are designed to help students learn various subjects easily. The use of computer assisted advanced technologies in education sector also helps teachers reach their students easily and it also helps students reach their teachers or fellow other teachers or students in real-time. Computer assisted education completely change the life of a students. Now they have more time and money to increase their knowledge.

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