

Role of Computer and Information Technology in Education System

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Abstract:

Computers are playing an important role in the information age. They deeply impact in many areas, undoubtedly, in the area of education to improve the quality of learning as well as teaching. Various resources and technologies have been used to improve the quality of the education system. Prospective teachers, as well as teachers in-service, must aware about the impact of computers in the field of education as well as their subject area to make learning effective. This will help teachers to know the integrated technologies helps in their classroom teaching. This paper will discuss the various usage of computers which make effective learning as well as a teaching process.

Keywords — **Computer, Education system, learning, teaching, IT (Information and Technology).**

1. INTRODUCTION

This is the era of information and technology (IT) . Nowadays, every aspect of our life is connected to IT. Huge usage of IT is emerging in all over the world. Although, use of information and technology is spreading its impact in every field of life. But, it impacts significantly in the field of education to make the learning process interesting as well as successfully [1]. According to J. T. Fouts[2], the first use of the computer in 1970 into the education field. But, now computer and its technology almost use in every educational institution across the world. According to Sahin and Thompson [3], there is frequent use of the technology in the various fields such as research, marketing, business, banking, administration etc. but the frequency of IT use is not much in an education system. But, today, use of IT in an education system has been received more attention for improving the standard of learning as well as teaching. Various resources such as computer, internet, broadcasting technologies are being used to improve the education system [4]. In earlier days, teachers were not much aware of the need of bringing IT as an essential part of their day to day activities. Moreover, it was impossible to do study in foreign universities without going over there. But, today's scenario is completely changed. IT makes it possible by using various technologies such as online education, distance education, Computer Aided Courses etc. in the field of education. No doubt, computers have become essential for everyone in every field. Teachers now started using technology like smart classes, LCD projectors, EDUCOM, Laptops, memory sticks in their classroom to make effective learning process. Haddad et.al.[5] identify the five levels of technologies which are used in education such as presentation, demonstration, drill and practice, interaction and collaboration.

Expansion of the use of information technology gives us many favourable circumstances in tutoring-teaching and educational management abilities. The effective use of IT resources such as virtual classroom has the

great potential to allow for participate the audience from all over the world[6].Moreover, IT allows making the students as well as their parents to participate in the modern educational process[7]. Education system can be effective by using the various technologies such as e-mail, multimedia, internet etc. Some educational documents like NCTM 1989, 2000 encourages the teacher to use the IT in their daily activities [8].There is a huge gap between the way of using the computer today or in earlier days in education system. In earlier days, computer and related technology were used to improve the basic skills of the students. Evaluation of the students was also based on standardized test scores or other traditional measures. Traditional computer education was based on the only traditional curriculum. But, nowadays, computer and its related technology have dramatically changed the education system.Fig.1 shows the relationship between the use of computer and student achievement:-

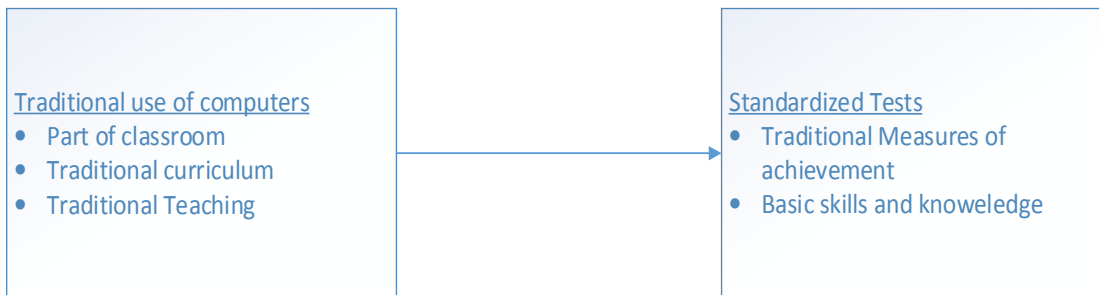


Fig.1 Relationship between computer and traditional education[2]

Today, the use of computer and its related technologies has expanded in education system to fulfil the following purposes:-

- Used as traditionally to teach, practice writing
- Used to provide simulation and real- world environment to improve cognitive thinking
- Used to enhance the communication through Internet and communication media
- Used as productivity tool such as spreadsheet, databases, word processor etc.

Fig.2 shows the relationship between the new use of technology and new learning environment

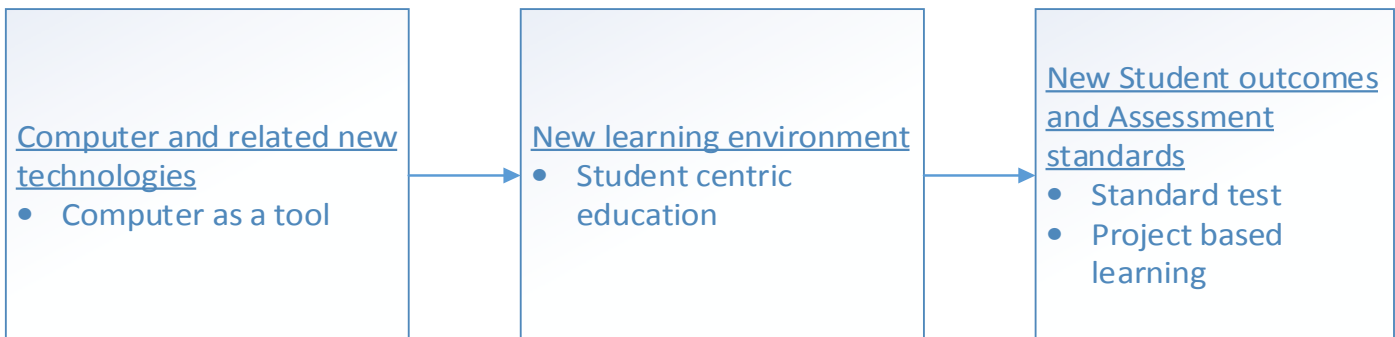


Fig.2 Relationship between the new use of computer, new learning environment and new student outcomes [2]

There are other more benefits of using computer in education are as following:-

- Computer can improve the student learning and basic skill area.
- Computers not only improve the learning process, it also increases retention of the students.
- Effective and adequate teacher learning is an integral element of the successful learning program.

2. ROLE OF COMPUTER AND INFORMATION TECHNOLOGY(IT) IN EDUCATION

In earlier days, computers were used in the classroom to teach the basic skills and provide the knowledge of computer as per the curriculum. For example, word processor was used to improve the writing skills of the students. Moreover, students were evaluated on the basis of standardized test scores or other traditional measures to assess the student's achievement. Computer and its technology has been performed various roles such as tutor, surrogate teacher etc.in different field of education. It changed dramatically in the nature of way of teaching has been used in classrooms. Its technology has proved very successful in education management applications like planning, data analysis etc[2]. According to J. T. Fout[2], the first computer was introduced into the field of education as students and teachers learning program". Thereafter, learning process was improved by software sophistication and instruction design and it is still in progress. According to Y.Bo [9], computer technology should be used to reform the teaching methods and curriculum program and the author also present a report on the usage of computer in the field of education. According to Li. Yumei[10], computer can be used in education by three different ways such as "As a teacher", "As a learner", and "As an assistant" and author also describe each role in detail. Broadly, one can consider the following roles of education where computer has been effectively used as shown in Fig.3.

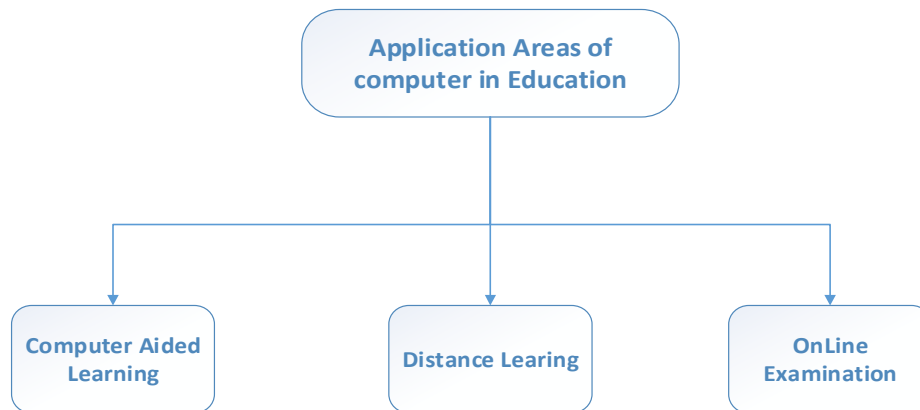


Fig.3 Different roles of Computer in Education

2.1 Distance Learning

Computer has become an important part of every walk of life such as on campus, at home and in office. Computer and related technologies have been used in distance learning through various ways such as Teleconferencing, video-conferencing, audio graphics, Teletext, video text, multimedia and hypermedia, e-books, online database, online discussion, on-demand call in course etc[11]. Virtual classrooms play an important role in distance learning. Students can raise their doubts and teachers can provide the solutions without going to one's place[12].

The following are the different benefits of using technology in distance learning:-

- Cost effective
- Independent of time and place
- Quality education through results access from mass product of course material
- Simultaneously a lot of students can be benefitted

2.2 On-Line examination and monitoring

Online examination and monitoring system have completely changed due to the development of modern education technology. These systems ensure about the fairness and impartiality in the examination [13]. Various researchers [14][15] have been developing online examination system based on web. Today, various exams like GRE, GMAT, SAT, CCNA, MCSE and much more have been conducting computers in all over the world. There are following benefits of using the online examination and monitoring systems:-

- Security
- Fairness and impartiality
- Save time and cost

2.3 Computer-Aided Learning

Today, computers have improved the quality of teaching and enhance the learning process with the help of various tools such as multimedia projector, PowerPoint presentations etc. Traditional methods of teaching can be monotonous, boring and students start getting frustrated. But information technology make learning process more interested through games, animated graphics etc. There are the following benefits of computer-aided learning:-

- Interest and motivation
- Individualization
- Compatible learning style
- Optimal use of learning time
- Immediate feedback
- Error analysis
- Repetitive practice
- Pre-determined to process syllabus

CONCLUSIONS

Computer and its related technology have completely revolutionized our lives. Now, information technology is important in every walk in life. Undoubtedly, computer and information technology great impact in our education system. Various technologies have been used to improve the teaching and learning process. Information technology makes our education system interested and effective. Students can learn better without getting bored and frustrated. This paper presents the current scenario of information technology based education system

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