A Review on Teacher Educators' Perception towards Computer

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Abstract – This study examined how teacher educators' perception towards use of computer. Computers make much benefit for people and play an important role in this information age. They impact in many areas, of course, including the educational system. Because of their huge impact for our daily life, the educational function and advantage of computer gradually attract educators' attention. Students should be able to use computers as a learning tool in classrooms to promote their learning. "Technology is an essential tool for learning and teaching. It can enhance students' learning". The results revealed that the teacher educators possessed their high attitude towards computer.

Key Words: Computers, Teacher Educators.

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1.   INTRODUCTION

Man is in pursuit of knowing existence right from the origins of our culture, and only man has the capacity of reasoning of living and non-living species. Without the potential for thought, man is an ape. So, education is a necessity for this reasoning. Awareness of man can be gained only by schooling. Knowledge is power, according to K.K. Bhatia & C. L. Narang say. "Man is the image of God, Roof and Crown of all things".

Man has two elements. Biological and sociological or Cultural, while the former is maintained and transmitted by food and reproduction, the latter is preserved and transmitted by Education. Through Education man tries to speak new ideas and new ways of life.

Teachers' Education

"A good Teacher is an eternal student. A teacher is the one who teaches the true meaning of life. A teacher introduces to a new vision of life. A teacher helps in accomplishing a target. A teacher is a source of inspiration."

Dr. S. Radha Krishnan

In the olden times, there was no systematic provision for the education of teacher but it was assumed that he alone had a right to teach who had acquired complete mastery over knowledge and could also translate it into practical life.

Indian teachers imparted education with a unique devotion. Society gave these teachers the highest respect because they were committed to bring about the comprehensive and harmonious development of the student's personality as it is expressed in the statement "aacharya devobhava" which occurs In the Taitriya Upanishad.

Even during the Buddhist and Jain periods, a teacher occupied a much respected place in society. It was presumed that he gave the student real self- knowledge. Respect was shown to him by saying "Na devah shri guroh" During the middle ages, a person well versed in religious rituals and predominance was regarded as a good teacher. The need for systematic education of teachers came to be felt during the British period, which led to Teacher Training.

In 1904, the Indian Education policy laid special stress upon the appointment of able and highly trained individuals to the Indian Education service. A training period of one year was fixed for graduate Teacher and in this training importance was given to theory as well as practice. Different curricula were prepared for pre-graduate and graduate Teacher and in addition model schools were attached to each teacher training center.

In 1913, the government took the definite step of declaring the policy that no individual should be allowed to teach, in the modern education system as long as he did not possess a certificate providing his ability as a teacher. In 1910, the Calcutta University Commission introduced education as a subject at the intermediate and graduate levels. In 1929, the Hartog Committee suggested the introduction of refresher courses, and the idea was again stressed latter by Mudaliar and Radha krishnan Committee. The Kothari Commission gave great importance to the establishment of intensive education colleges for the training of teachers.

In the system of personal relationship with in which children learn, the teacher is probably next to members of the immediate family. In the classroom group, where children, adolescents and adults interact, the teacher plays the role of the leader, the one who gives or withholds security and is responsible for law and order. The teacher is considered as the pivot of any educational system of education. If the teachers are well educated and trained and if they are intellectually alive and take interest in their job, then only the success is ensured but on the other side, if they lack training in education and if they cannot give their heart to their job, the system is destined to fail.

2. IMPORTANCE OF ICT FOR TRAINING TEACHERS

One of the most widely cited reasons for the use of ICT in education has been to prepare the new generation of students better for a workplace where ICT is becoming more and more pervasive, specifically computers, the internet and related technology.

In the contemporary school, ICT is an important instrument. In a variety of ways, it will involve students and make the teacher's job considerably easier. Using ICT, however, does not inherently guarantee good learning. There may also be a case in which the class is much immersed in its computer web-based activity, but does not benefit from the activity indefinitely. Both operations, ICT or not, should challenge high-level pupils to consider and aim to make them better learners. It is difficult to distinguish participation from having high-level pupils to consider and to make them active learners-they are all linked.

Information and Communication Technology aims to create virtual education systems that are intended to reflect real-world activities without the disruption, cost or time taken to observe the actual occurrence. They provide the user with continuous feedback regarding the status of the event and the available opinions. When it is considered that learning to read is a process, teaching reading in a practical way just makes common sense.

In the educational learning process, the application of information and communication technologies has many advantages.

1. There are no longer geographical boundaries for learning any concept. Full independence is giving to the learner to select desirable education.

2. It links learners to multimedia resource doing away with over dependence on textbooks. Learners will have access to online education.

3. It promotes independent, flexible according to one's own level and pace, a type of learning where learners take projects that relates to application of curriculum in practical aspects.

4. It allows individuals to use his/her multiple cognitive abilities to the fullest extent. It assures lifelong learning.

With the advent of Information and Communication Technology the learner is not just dependent on the teacher for formal interaction. A learner living anywhere in the world can pay fees through draft and get access to any course of interest through email and internet. One can refer to library resource in virtual system.

Using ICT in the classroom instruction, teacher educators would have enormous positive impact on different aspects such as,

- Teachers using ICT can plan and prepare lessons more efficiently and more effectively.

- Teachers become multi facilitators.

- It helps to promote interdisciplinary approach.

- Teaching-learning enterprise becomes more result-oriented.

- Assists teachers to monitor the needs of the pupil and to discuss the learning process.

- Build powerful teaching resources and module architecture.

In teaching the material and enriching their teaching career, all the above facets will assist.

The successful and productive use of ICT relies on educators / teachers who are professionally qualified. They should be able to understand and have a constructive outlook towards ICT and the

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promise of ICT. Four steps are carried out in the Teacher Preparation Curriculum to incorporate ICT material so that student teachers can use ICT resources in classroom teaching to facilitate integrated learning experiences when they become teachers in school to achieve specific learning goals of the subject matter topic. Those four stages are.

a.   Literacy in ICT

b.   ICT hardware and applications are used reliably and safely for training and learning practices.

c.   Pedagogy focused on ICTs, online assistance, networking and leadership, and

d.   Adopting creative best practices for the usage of ICT.

All of the above levels are very relevant for the efficient and successful application of ICT in teaching in the classroom. There is no question that ICT-integrated teaching lets a teacher successfully perform his / her task.

3.   USE OF ICT IN PRIMARY AND SECONDARY EDUCATION

There is understandable interest in the effect of ICT on teaching and learning because of the extensive use of Information and Communication Technology (ICT). While computing technology and the Internet are frequently believed to have the ability to transform both teaching and learning, teachers have been exposed to public pressure to use emerging technologies until they have a good understanding of their effect on student learning and classroom activities. Schools and laboratories are designed without proper study or exposure to the teacher's technical training.

Many findings suggest that preschoolers are "learning optimists" who strongly regard their own skills, underestimate the complexity of activities, and carry strong performance goals. Children begin to discern skill, initiative, and external influences to understand their success during middle childhood.

Enables more mobility for pupils, unlocking latent capacity for those with communication issues. It encourages students to show success in ways that conventional approaches would not be practicable and also encourages assignments to be customized to fit particular strengths and abilities.

4.   EFFECT OF ICT

Computers can enhance independent access to education for students. Students with special educational conditions are expected to perform activities that work at their own pace. Along with their sighted classmates, visually impaired students using

the internet will access details. Students with deep and various learning disabilities can connect more quickly. Students at school and in their groups use voice contact to build faith and social legitimacy. Increased ICT trust in students allows them to use the internet for school work and leisure activities at home.

5.   APPLICATIONS OF COMPUTERS IN EDUCATION

Just a few years ago, using computers in education primarily suggested a handful of teachers experimenting with email and web pages. In a relatively brief length of time, perceptions of computer-based education have changed from debates over the ability, or inability, of teach communities to be formed, to cautionary warnings that students will be deprived of needed educational opportunities if their classroom based courses do not make use of the computer technology.

Computer could be used in the classroom in different ways.

♦   As a Tutor: i.e., as an aid to the tutor. The computer can be used to provide instruction in a variety of strategies. Instruction using computers include drill and practice, tutorials, simulations, problem solving and instructional gaming.

♦   As a tool: i.e., as a medium of instruction: The availability of computers, databases and spreadsheets has helped the teachers to improve their efficiency and effectiveness.

♦   As a Tutee: i.e., as something to be instructed or programmed. The computer provides the student an unrepresented opportunity to have access to an uncontrolled responsive environment, which has an effect on the development of their intellectual and creative potential.

♦   As a Teaching Resource: As a teaching resource the computer can offer a number of interesting possibilities like,

•   Sound effects and analysis

•   static and dynamic imagery through computer graphics.

•   Text handling facilities

•   control of external devices and of learning progress

•   A variety of data capture techniques

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- Facilities for data archival, retrieval and dissemination.

- A means of achieving highly individualized instruction.

- facilities for pattern matching, computation and decision making.

♦ As a technique of Research: The fact that computers can perform complex numeral problems would account for their wide spread use in research. Problem solving which normally involves calculations extending for months can now be condensed to computer operations extending to just a few minutes. Solutions of problems using factor analysis used on social research, involving 30-40 variables often involve very complex transformations. This would require months of labour, if manual methods were used. Other parallel instances of this kind are research problems involving the solution of partial differential equations used in engineering, dynamic system analysis, modelling etc. computers have immense possibilities as a direct research technique.

In terms of information collection, retrieval and distribution, computers have played a significant part in data management, retrieval and distribution. In all advanced educational environments, the immense ability of computers to store, process and even view information is commonly used in libraries and information data centres.

A clarification on distance education is Internet-based education. The educational devices of the post office and television have been replaced by computers, modems and the Internet.

All the evidence available leads to the inevitability of making more use of technology in education. As shown so clearly in the previously stated Department of Commerce article, for some time, drastic change has been taking place almost unnoticed. "The Internet has" won "the battle for primacy of education by technology (Carroll, 2000). If it encourages open collaboration and the relational, constructivist approach to learning that has been the dominant transition of information theory, it displaces textbooks, CD-ROMS and other bundled learning material. For pupils, the Internet is also important because today's world of work, and definitely tomorrow, is all about learning. If their employees are "information employees" who are able to use technologies to boost their information and competitiveness (Carroll), employers will not succeed. In this world of study, students must be willing to participate. Textbooks are insufficient to present all the information that is accessible and important to students today. Online connectivity has become important and students understand that

outside the conventional classroom, they have more effective learning resources available than inside it.

For teachers and students, digital technology gives tremendous scope to operate in creative and fascinating ways. Many websites provide material, exercises, training courses, learning objects and tasks in diverse subjects in all grades. Many student teachers have pages for their classes to write regular entries.

Virtual Schools:

The most recent method is online training. It is also referred to as distant school, which comprises satellite classes, computer-based services, television video training, and correspondence or home study classes. Such strategies aim to shift learning resources out of a conventional clustered classroom.

Owing to considerations such as geographic location, classroom size, poverty and race / ethnicity trends, budgeting limitations, and substandard teachers, virtual schools can be a solution to inequities in educational resources that exist. Computer-based programming also offers students in low-income colleges, remote communities, and small towns with the same education for college courses and employment qualifications previously only open to students in well-funded urban and suburban city core colleges.

6. APPLICATIONS OF COMPUTER IN TEACHER EDUCATION

Teacher Education fails to deliver the requisite expertise, skills and respected framework to its students and to prepare responsible people for lifelong learning due to changes in the environment. Teacher education must simultaneously concentrate on increasing access, increasing internal performance, facilitating teaching learning, and enhancing classroom procedures in the latest emerging ICT to address these challenges. By keeping students well informed about the classes, improving teacher student interactions through e-mail chat sessions, online learning, discussion boards, journals, etc., improving active learning, exchanging ideas, offering instant input, facilitating rapid learning, and enabling successful mapping of learning paths, it facilitates the educational interaction between suppliers and consumers. It also encourages the teacher-educator to build or upgrade their lesson plans and also to find free animation and simulation to enliven their classes.

A new strategy for the introduction of technology in education has been initiated by the National Teacher Education Council (NCTE). Project

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XPDITTE (X-Elerated Professional Development in Incorporating Technology in Teacher Education) to provide all teacher educators around the country with professional development in technology integration. The goal of the project is to provide consistent professional development to all teacher educators from all recognized teacher education institutions across the country and to make information technology (ICTE) an integral part of the curriculum for teacher education.

In the teacher education curriculum, computer education was a required topic to equip teacher educators with the basic aspects of information and communication technologies, while at the same time encouraging teachers to equip themselves with the skills of using computers for ICT-oriented tasks by using computers as an associate in the classroom.

The programme's effect was controlled by the student teachers' success by their participation of both theoretical and functional components. Due to the overwhelmed teacher education programme in the recent past and the lack of time to introduce ICT-oriented teaching practice in educational colleges, the effect of computer education on the teacher education programme in educational colleges needs to be identified. The number of teacher educators employed in college education was reduced in previous studies in the field of education concerned with the contribution of computers to the teaching learning process. The investigator thus makes an effort to research the experiences of teacher educators in the application of computers to the teaching learning process.

7.   REVIEW OF LITERATURE

Qurat-ul-Ain, Shahid, F., Aleem, M., Islam, M. A., Iqbal, M. A., & Yousaf, M. M. (2019), studied on "A Review of Technological Tools in Teaching and Learning Computer Science". The technology acts as a catalyst in which there are many improvements in learning processes, instructional methodologies, study arena, job climate, and information and knowledge use.. This paper offers a thorough overview of some of the more common methods of teaching (collaborative, constructive learning, problem-based, inductive teaching method) and technical technologies, i.e. computer-based (ICT, CAI, CBI), games-based (serious games, web games, microgames, video games), smartphone-based (laptop, PDAs, laptops, mobile phones), online learning tools (flipped classroom, web M, video games) (Videos, MCMs, MAMCM).. Although the strength of each particular technique is something that is faced with differing degrees of proof, it has been found that teaching with the aid of technical technologies is usually more successful or at least equivalent to conventional teaching methods

Olivera Iskrenovic-Momcilovic (2018) studied on "Using Computers in Teaching in Higher Education".

This paper explains the benefits of teaching using computers, but also the challenges that emerge, as well as the possibilities for avoiding them. The primary purpose of the research is the development of photographs that illustrate the use of computers in higher education. The paper presents the findings of a survey conducted on the use of computers in teaching by students of the Faculty of Education in Sombor (Serbia). A sample of 126 respondents contains students from all research programmes in the last year. The findings suggest that students and professors have a favourable outlook towards the use of technology in education and the diffusion of information by computers.

Neetu Dabas (2018) "Role of Computer and Information Technology in Education System". In the information age, computers are playing an important role. They have a tremendous influence in many fields, undoubtedly in education, in order to enhance both the level of learning and teaching. In order to increase the efficiency of the education sector, different tools and innovations have been used. In order to make learning successful, prospective students, as well as in-service teachers, need to be aware of the effects of computers on education as well as their subject areas. This would allow teachers to understand the interconnected innovations that help with their teaching in the classroom. This paper would explore the diverse applications of computers that make efficient learning and teaching methods effective.

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Schindler, L.A., Burkholder, G.J., Morad, O.A. et al. (2017) studied on "Computer-based technology and student engagement: a critical review of the literature" Many facets of life and business have been invaded by computer-based technology, but there is little awareness of how it can be used to facilitate student participation, a notion that attracts strong interest in higher education because of its correlation with a variety of promising academic results. The purpose of this article is to provide a critical overview of the literature of the past 5 years on how student engagement is influenced by online

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conferencing apps, blogs, wikis, social networking platforms (Facebook and Twitter), and interactive games. Overall the results provide tentative evidence that computer-based technology affects student participation, but to validate and expand on these findings, further research is required.

Sun, A., & Chen, X. (2016) studied on "Online education and its effective practice: A research review ". This paper analysed 47 published studies and research on online teaching and learning since 2008, mainly focusing on how ideas, strategies and evaluations relate to the online learning environment, using a qualitative content analysis approach. The aim of this paper is to offer realistic advice to those looking to create online courses so that in the implementation process they can make educated decisions. Based on the results, the authors concluded that successful online teaching depends on 1) well-designed content of the course, inspired engagement between the teacher and students, well-prepared and completely supported instructors; 2) development of a sense of online learning community; and 3) rapid technological innovation. In doing so it is hoped that this would intensify a continuing dialogue on successful methods that can boost the progress of universities and faculty in the transition to online teaching.

Pardeep Thakral, (2015) studied on "Role of ICT in Professional Development of Teachers, Learning Community". The incorporation of information and communication technologies into education is the most striking and most current breakthrough in the world of education. The unexpectedly growing need for knowledge and expertise should be dealt with by educational institutions, managers, and instructors. Just the same large blackboards, an overhead projector and video-graphed principles should not be counted on because either the curriculum transaction is weak or the instruments used in its transfer lack implementation and abilities. In addition to the increasing variety of peripherals, which include film, CD-ROM and electronic communication media, technical tools that are especially accessible for teaching and learning include computer hardware and software.

C Jyoti Bhalla (2013) studied on "Computer Use by School Teachers in Teaching-learning Process". It is the duty of developed countries not only to provide computers for classrooms, but also to cultivate the practice of infusing a number of ways in which computers can be integrated among the end-users of these resources in teaching and learning. Previous studies lacked a thorough study of the manner and degree of teachers' electronic use. The present research explored a systematic study of the use of computers by 300 teachers from Central Schools in India. A questionnaire was created to this end that identified important measurements for the use of computers by teachers: Computer Aided Learning (CAL), Computer Controlled Instruction (CMI) and Computer Assisted Instruction (CAI). The results showed that teachers also used computers to upgrade subject awareness and teaching skills to create lesson plans, to prepare additional educational content, to alert related information through the internet, to prepare question banks.

Shaik Fehameeda, Humiera Jawad (2012) studied on 'The Effectiveness of CAI program in High School Biology'. In order to make learning more exciting, efficient, creative and demanding, this experimental research is an attempt to investigate the utility of computer technology in the teaching and learning process. In information transmission, the teacher has to play a tremendous role. To increase the standard of education, increased measures on the part of teachers are required. The goals of the study were that the study had the following objectives: (1) to prepare the CAI curriculum for a single biology unit at secondary level; (2) to introduce the programme for students of Standard IX as an evaluation and control group; (3) to establish a significant difference between the pretest marks of the two classes; (4) to establish a significant difference between the post-test marks of the two groups. The results of the analysis were the product of the 't' value showing that the post-test scores on the achievement test are slightly higher than the pre-test scores, indicating that the CAI software is successful.

8. CONCLUSION

Studies have found that there has already been no improvement in the use of computers in the education system. Due to certain challenges, such as the lack of hardware and software, the lack of expertise for using machines, the lack of time to plan lessons, etc., few teachers actually and effectively use computers to integrate their teaching. The factors determine and impact when teachers in schools can use computers. There is also a long way to go to actually attain the target we want and expect machines to be used well in education, forming the different study outcomes. Using computers for educational purposes in college is unavoidable. Studies have demonstrated that while digital access has improved over the last few years, computers are also not as likely to be incorporated into the classroom as we like. In fact, there are several other reasons that influence teachers to use classroom computers. There is insufficient time for computer-based lessons to be created, inadequate training programmes to improve the awareness of teachers about computer use, etc. Therefore, states, schools/districts, and teachers need to collaborate together to create appropriate strategies and approaches to incorporate good computers into school curriculum and instruction to ensure that the introduction of computers can be the everyday learning of students. Good adaptation can only take place when teachers

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start to think differently about the machine teaching and learning process. While the target is not so easy to achieve because it is not possible to solve these problems in a short time, we do need to do our best.

The incorporation of electronic education into teacher education has been a programme, but not in a real sense, in view of this situation. In spite of its relevance in information learning and sharing, Computer Education has not achieved its due attention.

It is also noted that many of the variables selected for the analysis do not have a large effect on the expectations of the use of computers in teacher education.

This study therefore concludes that the introduction of computers in teacher education is yet to be successfully applied, tracked, promoted and updated from time to time in the field of teacher education, to go on par with the advanced nations in the world.

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