

A study on the effect of Educational Technology on teaching-learning process in Higher Education

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Abstract:

In the present era, educational technology has become an Integral part of teaching-learning process. Every day there is new gadget or software that makes teaching easier. Technology has opened new doors to untouched aspects of teaching and has tremendously affected every field of education included higher education. Technology in educational field is changing the traditional role of the teacher in the classroom. New educational technology has introduced many changes in the present educational system. It is playing an increasing role in the field of education. Interactive technologies have affected the very nature of teaching and learning process. As technology advances, it is used to benefit students of all ages in learning process. Technologies are helping in changing the educational environment. These technologies are electronic and computerized device and associated human interactive materials that enable the user to employ them for a wide range of teaching and learning processes. These technologies include computers, video, television, sensors, interface boxes, the internet, telecommunication, satellite connections and all the software and the materials which help the teachers to use them to teach their pupils. The purpose of the study is to show what are the function, role, and relationship between educational technology and teaching-learning process in higher education.

Keywords: *Higher Education, Educational Technology, Teaching-Learning process.*

INTRODUCTION:

The Association for Educational Communications and Technology (AECT) defined educational technology as "the study and ethical practice of facilitating teaching-learning process and improving performance by creating, using and managing appropriate technological processes and resources". It denoted instructional technology as "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for teaching-learning process". As such, educational technology refers to all valid and reliable applied education sciences, such as equipment, as well as processes and procedures that are derived from scientific research and in a given context may refer to theoretical, algorithmic or heuristic processes: it does not necessarily imply physical technology. Educational technology is the

process of integrating technology into teaching-learning programme in higher education in a positive manner that promotes a more diverse learning environment and a way for students to learn how to use technology as well as their common assignment.

Educational technology is an inclusive term for both the material tools *and* the theoretical foundations for supporting learning and teaching. Educational technology is not restricted to high technology but is anything that enhances classroom learning in the utilization of blended, face to face, or online learning.

RELATED STUDIES:

Jang and Tsai (2012), conducted a study to examine Taiwanese elementary mathematics and science teacher's technological, pedagogical and content knowledge (TPACK) with respect to current use of Interactive Whiteboards (IWBs) and to find out the associations between in-service teacher's TPACK and other factors.

N.Sahu(2013), studied on 'A study of the use of technology by the teachers of professional courses in the trams of the stages of concern and contributive factors' In the present era, technology has become an Integral part of our lives. Every day there is new gadget or software that makes lives easier. Making lives easier is not, however, the only role the technology plays in our lives. It is playing an increasing role in the field of teaching-learning process in higher education. Technology encourages student collaboration, project based leaning and higher order thinking.

L. Stosic(2015), studied on 'The importance of educational technology in teaching' and concluded that The presence of educational technology is growing in the teaching-learning process in the higher education. The new generation of kids come ready to work with these new technologies, which play an important role in children's learning and acquiring various cognitive knowledge so that educational technology must be incorporated into future curricula and how will be use the right strategies to apply educational technology in teaching-learning process.

Research Question:

What is the effect of educational technology on teaching-learning process?

OBJECTIVES:

1. To find out the functions of Educational Technology in teaching-learning process.
2. To assess the role of Educational Technology in teaching-learning process.
3. To study the relationship between Educational Technology and Higher Education.

METHODOLOGY:

The study is based on secondary sources of data. The main sources of data are different types of journals, books, newspapers, websites etc. This study dealt with the one research question in accordance with the objective of the study.

RESULT & DISCUSSION:

Functions of educational technology:

Educational technology is having a meaningful present and promising future in the field of education. It is contributing to the process and products of education at all levels and stages. Some of the important functions of educational technology are as following:

- Educational technology is having a meaningful present and promising future in the field of education. Educational technology tries to find out the different variables of teaching, their interlinks, theories of teaching, phases of teaching, principles and maxims of teaching etc. By developing the theories of teaching it helps in improving the quality of education.
- Educational technology analyses the process of learning and the related theories. It takes the help of various empirically established generalizations from psychology, sociology, physical sciences and engineering. It facilitates more learning in less time.
- Educational technology aims to analyze the process of teaching-learning. Various phases, principles and maxims of teaching are also analyzed by it. It tries to establish a better relationship between teaching and learning.
- The objectives of education are being reviewed and revised with the passage of time. Educational technology helps in fixing up the right objectives in the light of the changed circumstances and changed environment.
- The changed type of environment with new curriculum and new materials is to be handled by the teachers hence, right type of training to the teachers is essential. Educational technology helps in the training of teachers also. The use of video tapes and close circuit T.V. helps the teachers to remodel and reshape their teaching behaviors suitably.
- Only a suitable type of curriculum can help in the attainment of goals. Curriculum is the total teaching learning environment which has to be modified and remodeled in the light of latest thoughts. Educational technology helps in developing a suitable curriculum also.
- Teaching-learning materials hold an important place in the teaching-learning process. They have to be in accordance with the environment of the learners. Right types of materials will be able to modify the behavior of the learner suitably making him a fit person for the society. Educational technology helps in developing the required and desired type of teaching learning material.

- The teaching-learning strategy has to be the right one which should be according to the material and is capable of causing effective learning. The different strategies are being evolved by educational technology.
 - Audio visual aids have always played an important role in the teaching - learning process. The software, hardware aids, computers assisted instructions and other such equipment and appliances are being used successfully in teaching-learning environment and they are helping in attaining the goals of educational technology. Educational technology helps in developing these aids.
 - Educational technology identifies the needs of community. It helps in providing equal educational opportunities to backward, disadvantaged and deprived sections of the society. It helps education to reach the remotest corner of the society.
 - Educational technology identifies the needs of classroom behavior. As the mass education has reduced the standard of education, the use of educational technology can maintain and improve the standard by use of teaching aids and programmed instruction material. Educational technology can inspire the students in the class room for self-learning.
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- Correspondence courses are being offered by number of universities. The educational technology has been used through instructional materials, personal contact, programs, student response sheet and radio telecast instructions.
 - The effective utilization of radio and T.V. educational programmers has been undertaken. The UGC and National Open Universities are successfully developing various programs. Many states have been successful to integrate radio broadcast with teaching in schools.

The most significant development of educational technology is computer assisted education and development of language laboratories for teaching Indian as well as foreign language like English, German, French, and Russian, etc.

Thus, education technology is being used for achieving the macro and micro objectives of education in our country. It helps in locating the problems and remedying the draw-backs in different areas of education. Evaluation of teaching-learning process is also made better because through feedback, things are improved thoroughly. It has brought revolution in the field of teaching-learning process in education.

Role of educational technology:

Technology can serve as a strong catalyst for change at the class room, school and district level. Technology is proving to be beneficial in many fields of life and education. Its role can be described as following:

- Technology improves pre service teachers' training by providing access to more and better educational resources, offering multimedia simulations of good teaching practices, catalyzing teachers to trainee collaboration and increasing productivity of non-instructional tasks.
- Technology also enables in-service teachers by providing professional development opportunities and individualized training opportunities.
- Technology helps teachers to acquire and update knowledge. Consequently, there is a shift in their role from being the soul source of knowledge and instruction to being a facilitator of student's learning, which is acquired from many sources.
- Technology is helpful as a powerful tool for problem solving, conceptual development and critical thinking. It involves the person using technology to gather, to organize and analyze information and using this information to solve problems.
- Access to internet has opened doors to global learning. Teachers as well as students can use this facility. It is ocean of knowledge. Sitting at a place they can have access to libraries, dictionaries and the latest information, which is not available in the text books. Thus, it gives freedom to learn at the learners' own interest, pace, time, energy and money.
- Besides this internet has diminished the distance among the people of the world. People can share their ideas and can have a discussion over a prominent issue. E-mail provides the facility to connect with others in a short period of time.
- Using technology students can spend less time in doing calculations and more time in creating strategies for solving complex problem and developing a deep understanding of the subject matter.
- Technology also encourages student collaboration, project based learning and higher order thinking. It makes students more engaged and more active learners, because there is a greater emphasis on inquiry and less on drill.
- Technology helps the teachers meet the individual learning needs of their students more effectively and to provide learning experience ranging from remediation to enrichment.
- Technology accelerates and enriches basic skills development in reading, writing mathematics and the sciences. It can engage the students in real life applications of academics.
- Technology is also helpful in availing professional development opportunities by the teachers. With the help of internet teachers can get access to different professional development opportunities such as software or internet workshops and graduate level courses in educational technology.

- Technology helps in accomplishing the administrative tasks. Teachers may use technology tools for record keeping, scheduling, monitoring and reporting student's progress and managing daily practice.
- Technology also provides learning experiences that are less dangerous than the reality might be. A film or video tape of complicated laboratory experiment may give students insights into all aspects of the experiments while avoiding the possibility of accidents or explosions or the waste of materials.
- Educational technology has numerous advantages in facilitating and motivating learning. Direct experiences through various media and technology make the subject clearer and the learner is motivated to learn.
- Technology may also provide learning experiences that are more pleasant and convenient than the traditional lecture, textbooks or classroom discussion.
- Representing and communicating complex problem situation is an important function of technology. Technology can incorporate graphics, video, animation, and other tools to create problems that can be explored repeatedly. Multimedia representations are easier to understand than problems presented as text. Technology helps in creating an environment that makes flexible exploration possible.
- Technology helps in summarizing and presenting the findings. Findings which are published on the World Wide Web are accessible by several people and the feedback is also easily available.
- Different types of educational software are designed and developed to help children or teenagers to learn specific subjects. Pre-school software, computer, simulators, and graphic software make learning easy.
- "Information Explosion" and "Population Explosion" both are bringing changes in the developed and developing countries and have posed critical problems for education. Both quantitative expansion as well as qualitative improvement of education can be facilitated and accelerated with the help of educational technology.

Thus, it can be said that technology is playing important role and its use in education is helping to maximize learning experiences and making teaching learning process more effective and interesting.

Relationship between educational technology & higher education:

Technology has an important impact on all aspects of higher education worldwide. It brings new opportunities and means for improving access and the quality of higher education. Yet, for various reasons the inclusion of how to use technology to improve higher education is uneven

from region to region, country within a region, and institutions within a country. Thus, while recognizing and pursuing the important potential to bridge divides and to reduce inequalities in terms of access to knowledge and information, it is important to acknowledge that the risk of exacerbating existing or creating new inequalities is equally high as it requires means, necessary infrastructure and human skills to harness the potential of technology in higher education.

At the dawn of the twenty-first century, new and rapidly improving technologies are in the process of transforming higher education. Each year since 1994, the Campus Computing Survey has shown increased use in college classrooms of technology-dependent resources such as e-mail, the Internet, course web pages, and computer simulations. Technology has the potential to revolutionize the traditional teaching and learning process. It can eliminate the barriers to education imposed by space and time and dramatically expand access to lifelong learning. Students no longer have to meet in the same place at the same time to learn together from an instructor. Fundamentally, modern technologies have the ability to change the conception of a higher education institution. No longer is a higher education institution necessarily a physical place with classrooms and residence halls where students come to pursue an advanced education.

Computers and telecommunications are the principal technologies reshaping higher education. Due to advances in each of these domains, electronic mail, fax machines, the World Wide Web, CDROMs, and commercially developed simulations and courseware are altering the daily operations and expanding the missions of colleges and universities.

Technology can also help to make higher education a much more interactive and collaborative process. Email, course-based websites, and computer-based chat rooms are some of the technology-enabled resources that facilitate communication and teamwork among students. Research by education scholars has shown that collaborative learning opportunities enhance recall, understanding, and problem solving. Technology can greatly ease the work of collaborative design teams, peer writing groups, and other types of collaborative learning groups, even among students who do not live in the same geographic area and who cannot meet face to face.

Technology's potential to lower the cost of higher education has been one of its principal appeals. The ability of computers and telecommunications to reach large audiences with the same high-quality educational programs has raised hopes for economies of scale never possible in the very labor-intensive traditional forms of instruction. To date, technology's promise to lower instructional costs has not been realized. Developing the infrastructure to support technology-mediated teaching and learning has been a very expensive proposition. The possibility remains, however, that new, advanced technologies may eventually lower the costs of higher education as researchers and educators learn how to blend technology-delivered and traditional instruction in a more cost-effective manner.

BARRIERS:

Several factors have been identified which have been supposed to be a hurdle in technology use. These factors are given below:

1. Shortage of training teacher.
2. Lack of proper updating software.
3. Techno-phobia.
4. Lack of funds.
5. Shortage of times.
6. Infrastructure and lack of equipment.
7. Lack of updating and renewal of courses and training programme etc.

Thus, due to these barriers technology can neither be fully utilized nor it can take the education to its heights

SUGGESTIONS:

To improve the quality of higher education it is needed to take the full advantage of technology in education. To achieve this goal there are some suggestions which can be helpful in promoting use of technology. The suggestions are given below:

- Faculty members need to feel that effective use of technology is expected for all appropriate courses and situations. The attitude of teachers should change and management should make provisions for the proper use of technology that are available for improving quality of higher education.
- There should be support from the institution, as well as encouragement to use model teaching that takes advantage of educational technology. Administrative support can be in the form of funding, or in restructuring schedules.
- Not only the equipment, material, hardware, and software should be made available but also necessary provisions should be made for their effective utilization in the field of educational system.
- Teachers must be adequately trained to use technology. Teachers' training and continuing education is needed. Teachers should know how to operate the technology and how to integrate it into the curriculum. Training sessions, workshops can be arranged for in-service and pre-service teachers.
- Technological resources must be sufficient and accessible. There should be accessibility of new technologies to both teachers and students.

- Effective technology use requires long term planning and support. Such a plan should consider funding, installation, integration of equipment and ongoing management of the technology. The plan should also express a clear vision of the goals of technology integration.
- Educational Technology should be integrated into the curricular and instructional framework; technology cannot exist in isolation. The individual student and his ongoing need within the learning process must also be carefully considered.
- Parents and community members can help in motivating the technology use in the neighborhood schools. All can help in providing technical support.
- Support from government is crucial in this regard. Adequate funding and appropriate policy making can help to assure that technology is accessible to all on an equal basis.

SINGNIFICANCE OF THE STUDY:

This paper will provide an opportunity to identify the factors that affect teaching-learning process in higher education faculty's technology use. By knowing the factors and controlling them it will be possible to motivate teachers to increase the technology usage. They can be encouraged to update their skills through refresher programs and workshops. They may even be encouraged to choose for on-line courses to learn the right use of technology. Study of different stages of concern will give them insight into the benefits of awareness, management and collaboration for use of educational technology of teaching-learning process in higher education.

CONCLUSION:

According to the above overall result discussion, the twenty-first century educational technology have created major effects on teaching-learning process in higher education. But too much problems have occurs for application of technology on teaching-learning system. Such as lack of proper updating software, funds, times, training teacher etc. Yet we cannot deny the use of this technology in any way, in the present era. Because educational technology has tremendously affected every field of education with higher education. Technology in educational field is changing the traditional role of the teacher in the classroom. So parents, community, government all members and sector should be help in motivating the use of technology in teacher and students.

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