

Educational Technology - A Paradigm in an Instructional Change

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Abstract - There is no doubt the modern society is based on technology. In every step of human life has an influence of technology for the progress of society. Without technology society is death. But what is technology? Truly it can be telling that technology is a device or is like a liver which reduces the human effort. Our modern society is born child of technology in every aspect of life has a role of technology, no doubt in case of education too. Educational technology can be defined as tools, technique and instruction of teaching which used to achieve the goals of education. It is no doubt that with the passing of time, it grows its own forms parallels with changing the nature and demand of society. To define the education technology different approach came into existence, like Hardware approach, software approach, system approach so on which define the structure of educational technology, but technology is not static rather dynamic. In modern (i.e. 21st century) era main focus of education technology is to provide online platform in teaching learning process with primitive instructional design. So different approach of teaching platform arises to provide resource of knowledge through NME-ICT and so on, during covid-19 era educational technology has change its dimension because main focus is that how to reach to learner? so in that case another path of technology open which not only spread the dimension of educational technology but also its shift educational technology or instructional technology from physical classroom towards virtual mode. To fulfil this scenario many virtual platforms also launched like google-meet, zoom, free conference, YouTube, and many other social media also work as the platform in education. Thus, education technology changes in a temporal scale. So educational technology must be change its own nature in future.

technology? Truly it can be telling that technology is a device or is like a liver which reduces the human effort. Our modern society is born child of technology in every aspect of life has a role of technology, Technology is a term which is very often defined in ambiguous terms. Therefore, it becomes essential to define technology. Technology is a concept that includes all those practices that are part of a cultural milieu (Vyasalu, 1977) which helps in converting the blueprint of development into a realised goal. Very often, technology is confused with techniques. Technique: is a specific method of producing a commodity whereas technology refers to the gamut of production processes in the economy in its socio-cultural context, i.e. technique is product-specific and technology is society-specific. (as cited. Varghese, 1983). Technology consists of techniques based on principles of science. But it should be distinguished from science: science implies 'know-why'; and technology denotes 'know-how' (Parameswaran, 1973). 'Know-how' was as important to the 'nomadic hunter' as is to the 'robot-man' with perhaps only difference being on 'know-what. In this sense, technology is as old as man himself and takes different forms depending on the necessities of the stages of development of societies. Technology develops with the development of societies, and therefore, it is difficult to talk of technologies independent of the society where they are produced and stage of development of that society. (as cited. Varghese, 1983). In this sense Educational technology also society specific educational technology defined as application of theory, principle, and Instruction of technology in education. Educational technology also depends upon on the nature of interaction in education and temporal sequence because of enhancement of technological paradigm. Thus educational technology has changed in different approach like Hardware

INTRODUCTION

There is no doubt the modern society is based on technology. In every step of human life has an influence of technology for progress for the society. Without technology society is death. But what is

approach, software approach, system approach and so on thus the structure of educational technology not static rather dynamic. In modern (i.e. 21st century) era main focus of education technology is to provide online platform in teaching learning process with primitive instructional design. So different approach of teaching platform arises to provide resource of knowledge like NME-ICT, swayam, sway-prabha, sakhsat, e-pathsala, e-pg-pathsal various televisionic platform like Gyan Darshan By IGNU, and so on but during covid-19 era educational technology has change its dimension main focus is that how to reach to learner? so in that case another path of technology open which not only spread the dimension of educational technology but also its shift educational technology or instructional technology from physical classroom towards virtual mode. To fulfil this scenario many virtual application platforms also launched like google-meet, zoom, free conference, so on YouTube, Facebook and many other social media also work as platform of education.

OBJECTIVES OF THE STUDY

1. To know the status of educational technology in respect of instructional technology
2. To define the changing paradigm of educational technology and instructional technology

METHODOLOGY OF THE STUDY

Present study is based secondary source of information and content knowledge of education, descriptive method is used to present this content

DISCUSSION

What is Educational Technology?

Educational technology is broader concept but there is a misconception among the people, learner, psychologist, Behaviourists, sociologist but the concept has changed time to time and has developed various approach of thinking in educational technology.

There are so many misconceptions about educational technology

- Engineering technology and educational technology are same

- Used of audio-visual aids in teaching is educational technology
- Programmed instruction is the educational technology
- Replacement of human teacher is educational technology

APPROACHES IN EDUCATIONAL TECHNOLOGY

Hardware Approach:

The first concept arrived in educational technology is technology in education or Hardware approach. According to this approach education is mechanization process where preservation and transmission and advancement of knowledge occurred through process of Hardware technique. Here there are three forms in teaching

- Videotape, tape recorder, CD, films and other devices are used as a kind of knowledge preservation
- Radio television projectors of various kind are used for transmit the knowledge among the learners
- Software package, computers are used for advancement of knowledge

So this hardware part is come in education as an educational technology.

Software Approach:

The second concept is known as software approach or instructional approach or constructive educational technology. According to this approach teaching is an art and science a content should be delivered in different level so teaching of the student it is more important to know the student, know the knowledge about the student, How the student learn? So theory of instruction, teacher behaviour, and programme of instruction is more important for reaching the learning objective. Technological devices could not fulfil the objectives without knowing the knowledge of learning. So technique of teaching, methodology, and task of teaching and learning is more important for the bases of learning. This approach is known as software approach.

System Approach:

Only Hardware Approach or Software Approach cannot fulfil the Educational Technology rather it is the combination of both. So educational technology is the technology where Systematic Application of scientific knowledge about teaching learning and condition of learning are used to improve the efficiency of teaching and training.

System is a set of combination or function of input, process and output. Each and every part of the system is the subset of the program and each subset help in the program to reach the learning outcome. So Educational technology is nothing but a systematic approach where instructions are followed for reaching the learning objectives.

FORMS OF EDUCATIONAL TECHNOLOGY

Three forms in Educational Technology-

1. Teaching Technology
2. Instructional Technology
3. Behavioural Technology

1. Teaching Technology:

Teaching technology is the application of philosophical, sociological and scientific knowledge to teaching for achieving some specific learning objective. Teaching is the art and science so teaching can be constructed so it is also known as Constructive Educational Technology. Teaching can be organized from Memory Level to Reflective Level, cognitive, affective, and psychomotor domain can be achieved by this teaching technology. There are four steps in teaching technology-

1. Planning of teaching
2. Organization of teaching
3. Leading of teaching
4. Controlling of teaching

2. Instructional Technology:

Instructional technology is the application of philosophical, sociological, and scientific principal and knowledge to instruction for achieving the specific objective of learning. It is based on psychological laboratory experiment. Programme instruction is the basic example of Instructional technology. A learning content can be delivered in split into small slice and a single content can be delivered in a sequence through instruction.

3. Behavioural Approach:

Psychology is the science of changing behaviour but in educational technology doesn't tell about change of behaviour. Technology that applies can bring change among the learner through instructional technology. Rather it is applied to change among the teacher behaviour. Thus behavioural technology is the application of scientific knowledge in modification of teacher's behaviour.

PARADIGM IN EDUCATIONAL TECHNOLOGY

The paradigm in educational technology comes in the 21st century skills among the students to enhance the skill and knowledge among the students not only focus the subject knowledge of the students but also enhancement of pedagogical knowledge among the teacher and student is necessary in that case pedagogical skill and subject knowledge skills working in developing the educational technology. To developed such skills among the teacher and students there are some government initiative those are help in development and enhancement of knowledge i.e. - National mission of educational technology -ICT (NME- ICT) which work through the link up of SWAYAM, Swayam Prava, E-PG-Pathshala, E-Pathshala, and educational broadcasting channel like, IGNU, NCERT telecasting channel and different National resource centre those are provided the online platform in teaching knowledge and advancement and supplied the knowledge to the needy in every parts of the country.

SALIENT FEATURES OF NATIONAL MISSION FOR EDUCATIONAL TECHNOLOGY-ICT (NME-ICT)

- To maximum advantage and potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Education Institutions in any time anywhere mode.
- To enhancing the Gross Enrolment Ratio (GER) in Higher Education and also achieving the three cardinal principles of Education Policy viz., access, equity and quality to all colleges and universities.
- To providing low cost and affordable access-cum-computing devices to students and teachers and

providing high quality e-content free of cost to all learners in the country.

The Mission has two major components:

1. providing connectivity, along with provision for access devices, to institutions and learners;
2. Content generation.

SWAYAM:

SWAYAM is programmed initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality.

objective:

- To make an effort to take the best teaching learning resources to all, including the most disadvantaged.
- It also seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

This is done through an indigenous developed IT platform that facilitates hosting of all the courses, taught in classrooms from 9th class till post-graduation to be accessed by anyone, anywhere at any time. The courses hosted on SWAYAM are in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology. In order to ensure best quality content are produced and delivered, nine National Coordinators have been appointed. They are AICTE for self-paced and international courses, NPTEL for engineering, UGC for non-technical post-graduation education, CEC for under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students, IIMB for management studies and NITTTR for Teacher Training programme. Swayam Prava also working in the process with the 32 DTH channels.

E-PG. PATHSHALA

e-PG Pathshala is an initiative of the MHRD under its National Mission on Education through ICT (NME-

ICT) being executed by the UGC. The content and its quality being the key component of education system, high quality, curriculum-based, interactive e-content in 70 subjects across all disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences, linguistics and languages have been developed by the subject experts working in Indian universities and other R & D institutes across the country. Every subject had a team of principal investigator, paper coordinators, content writers, content reviewers, Language editors and multimedia

Sakshat:

Human resource ministry is planning to set up vocational education programme named, Sakshat, which is one stop education portal for 50 crore users. The programme was formally launched by the President A. P. J. Abdul Kalam on Oct 30, 2006. The University Grants Commission has also accepted the proposal of this programme. The portal of this programme is also available. The Commission will provide broadband connectivity to approximately five lakh college teachers of central and state universities. UGC, AICTE, IGNOU, NCERT, KVS, NVS, CBSE, IITs and IISc has developed the content links for Sakshat and provide wide range of knowledge resources, educational views, examination alerts, sample papers and other useful links on the web. The portal has five functional modules, e-books, e-journals, digital repository and digital library. The links of various Olympiads would also be provided in this programme. Even students can interact with their teacher in real time and as well as access e-mail, web blogging, web casting, and online chat and discussion forum.

All of these seeks to bridge the digital divide, i.e. the gap in the skills to use computing devices for the purpose of teaching and learning among urban and rural teachers or learners in Higher Education domain and empower those, who have till now remained unaccustomed by the digital revolution and have not been able to join the mainstream of the knowledge economy. This plans are help to focus on appropriate pedagogy for e-learning, providing facility of performing experiments through virtual laboratories, on-line testing and certification, on-line availability of teachers to guide and mentor learners, utilization of available Education Satellite (EDUSAT) and Direct to Home platforms, training and empowerment of

teachers to effectively use the new method of teaching learning.

APPROACHES TO E- LEARNING THROUGH SYNCHRONOUS, ASYNCHRONOUS, AND BLENDED MODE

Synchronous teaching:

Teaching learning process takes place in real time as the communication between teacher and students require to be both in present. Here instructor i.e. teacher can be instructing their student from his locational place. Here students are time dependent to the expert. Most of chats, video-audio conferencing, live web broadcasting etc. come under the synchronous technology.

Asynchronous teaching:

Event are time independent and self-paced. In asynchronous teaching mode students are self-spaced. Instructor or teacher provides his instruction or teaching in own dependent time student can access it on his/her own time. Here student's autonomy is given, e-learning through e-mail, Discussion forum, wiki, Blogs, swayam learning content also is the example in such kind of teaching

Blended learning:

A teaching practices with the combine of online practices and classroom teaching practices such kind of teaching are comes as blended teaching and output of this teaching termed as blended learning. It is also called Hybrid learning.

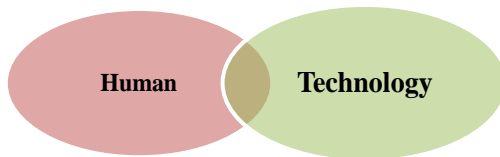


Fig: Blended Teaching Mode

Covid-19 and E- learning Platform: A instructional Change:

We know that Education is dynamic process during Covid-19 education process was stuck down, teacher, student or school children are not meet in the class room for their learning purpose. So what should be the solution for it? Early in this paper it was maintain that technology is need specific, its depends upon societal

needs as the needs change technology should adopt its change through technological mechanism as a result remote learning possible. To fulfil educational needs of the student's different online platform spread its own web and people are habituate with mobile learning, web-based learning, learning through various educational application.

Advantage of online teaching & learning process:

1. Remote access: one can easily access and join in the learning platform through virtual mode
2. Easily access: learner can easily learn in audio-video mode
3. Flexibility- flexibility in learning
4. Reduce cost in education:
5. Large lumber of engagement through one platform: a large number student can join in a single platform
6. Effective teaching

Disadvantage:

1. Accessibility- it is easily accessible for the adult learner but for child learner the way online teaching is not effective.
2. Accountability: due to digital divide all person will be not able to adopt the technology easily
3. Lack in feedback process: in online learning mode teacher cannot able to get accurate feedback
4. Observation: we cannot observe the student behavior directly so there may be gap in expected out and out comes achieve by the learner
5. Problem based fact cannot be taught by online or virtual mode
6. Internet issue is the barrier in process though internet is available in every place of the country but in case of small remote village of India still face internet issue.
7. Lack of affordability of student to purchase technology device
8. Misuse of electronic gadgets in the young generation.

CONCLUSION

Educational technology though is an applied branch of education and technology but it doesn't mean only use of scientific method and technique in education. Educational technology is a scientific method for teaching process, how a teaching can be more effective and useful with the help of the technology of teaching,

thus educational technology is not a machine rather it is the tools and technique of teaching and instruction. With the help of that instruction teaching can made more flexible and communicable for the learner. In modern decades though we emphasis upon technical tools in educational setting as the effect of educational technology but must remind in our mind that educational technology is a society specific and related to social change as the society change educational technology change to meets to needs of society, when such thing is not happened means if society progress is less than the technological progress or the technology unable to adapt its forms with the increasing needs of society then Digital divide occurs.

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