



# Technology in Modern Education


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## Abstract:

Change is the very breath of human existence. Human Civilization is the product of continual renewal of experiences. Education is both cause and effect of such renewal and this is synonymous with life. The streams of changes are reflected upon education as a process of life and as a discipline. Now, we, the students of education are concerned with some of the prominent aspects of modern educational world, which can be described as Educational Technology. Globally the role of modern technology in education has evolved dramatically over the last decade. From virtual classrooms to AI-powered learning platforms, today's classrooms are no longer confined to chalkboards and textbooks. As the world embraces digital transformation, education systems are increasingly leveraging innovative tools to enhance both teaching and learning experiences. The impact of modern technology in education is far-reaching. It has transformed how knowledge is delivered and received, making learning more dynamic and accessible. Students today are digital natives, and incorporating technology into classrooms makes education more relatable and effective for them. With tools such as virtual labs, students can conduct experiments remotely, gaining hands-on experience without needing a physical lab. The impact of AI on education is especially significant—AI-powered platforms can identify individual learning gaps, track progress, and recommend personalized resources to support academic growth. These intelligent technologies help adapt instruction to each learner's pace and style. Moreover, assistive tools are enabling inclusive education for students with disabilities, ensuring equal opportunities in both physical and virtual classrooms. These advancements are not only improving academic performance but also fostering life skills like adaptability, curiosity, and digital literacy, preparing students for the future.

**Keywords:** Modern Education, Technology, Globally, Future, institution.

## Details

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experiments remotely, gaining hands-on experience without needing a physical lab. The impact of AI on education is especially significant—AI-powered platforms can identify individual learning gaps, track progress, and recommend personalized resources to support academic growth. These intelligent technologies help adapt instruction to each learner's pace and style. Moreover, assistive tools are enabling inclusive education for students with disabilities, ensuring equal opportunities in both physical and virtual classrooms. These advancements are not only improving academic performance but also fostering life skills like adaptability, curiosity, and digital literacy, preparing students for the future.

Globally viewed, since the days of Sophists, Socrates, and ancient Indian educators up to this day, educational world has been marked by a few very remarkable trends. Philosophy acted as the fountainhead of all these trends—psychological, scientific, sociological and democratic. Now all these trends tend to coverage into one trend and that is, technological trend. So this is never new, this is the offshoot of all ideas and thoughts in a new apparel. We shall discuss in the briefest way only the main features of such a trend, before which we should be clear about its connotation.

It is true that there is no universally-agreed-upon definition of educational technology. Initially, the term 'technology' had connotations associated with engineering, gradually this was related with psychology and the theory of learning and naturally educational world has been closely linked with the process as envisaged by the Technological advancement. However, we should define 'Educational Technology'. Of different definitions given by different authorities. We may choose definition, given by the Commission on Instructional Technology, USA. According to the Commission, 'Educational Technology' is a systematic way of designing, implementing and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication and employing a combination of human and non-human resources to bring about more effective instruction.

It is clear from such a definition that Educational Technology has a vital role to play in increasing the quality of learning, in decreasing the time taken by the learners to attain desired goals, in increasing the efficiency of teachers in terms of numbers of learners taught, without reducing costs, without affecting quality. So this raises the quality of education and serves the purpose of greater quantity and there is involvement of both human and non-human resources, Such a trend is a blend of two-mind and machine, of course recognizing the domination of mind over machine.

Historically considered, Socratic Method is a valuable teaching technique which still gets appreciation crossing the barrier of time. Mention may be made of Swiss School Master, Pestalozzi and his object method, Froebel's gifts and occupations, Frederick Herbart's five steps in teaching, Madam Montessori's Didactic apparatus, John Dewey's Laboratory method and other such techniques of teaching with human and non-human resources, as shown by Rabindranath Tagore, M. K. Gandhi and others. Technological trend got an explosive impact when Skinner and his followers put forward and elaborated the scientific mechanism of learning known as stimulus and Response Theory, which added new dimensions in learning, that is, programmed learning dominating the world of education and psychology in the 1960's. The fundamental idea of Programmed Self-instructional materials was described in 1912 by E. L. Thorndike. This was further enriched by Sidney. L. Pressey, a psychologist of Ohio University, Robert Mager and Gagne, B. F. Skinner gave this a final shape. From their studies it has been revealed that programmed learning involves controlled, carefully specified and skilfully arranged learning experiences. They are self-instructional and self-corrective. The essential ingredients of programmed learning are the use of small steps, the high degree of interaction with the programme and the linear nature of sequence. Programmed learning, an application of the behavioral sciences and technology in education, satisfies the need for education explosion in the context of 'knowledge explosion' and 'population explosion' which are trying to change the web of life. This way also blends the automation and individualization of instruction.

However, the main concerns of Educational Technology have crossed through some well-marked stages. Prof. Lewis Elton in 1977 identifies three broad lines along which the field of educational technology has evolved, namely, mass instruction,

individualised learning and group learning In each case he identifies three broad over-lapping stages-Research phase, the phase progressing towards a development and in the final phase techniques start to achieve wide-spread use.

Now let us point out some of the aspects of education which are being effectively influenced and benefited by such a trend.

The modern curricular pattern, methodology, the use of techniques, the evaluative process is carrying the very gifts of the new trend-the technological trend. Let us have a very brief view about the aspects.

The systematic approach to education-formal, informal and non-formal spheres, the first concern of an educator should be the structuring the 'what' or the contents of education, which are specifically designed with the vision of the aims and objectives. Benjamin Bloom, an American thinker, contends that the objectives of education are attainable in three distinct areas cognitive domain, affective domain and psycho-motor domain corresponding to knowledge, attitudes and motor skills. Contents or curricula also consider other factors-like, vocational needs, cultural view, social factors, student factors and teacher factors.

The learning materials are generally of several forms-textual, in the form of set of books, custom designed materials, programmed instruction, correspondence materials for reading as used by open universities and open schools. The recent use of audio-visual aids, like television, where different programmers are exhibited, tape slide programmers, video-cassettes, the use of suitable replay equipments are the marks of technological trend in course content level.

Methods of teaching have been tremendously influenced and enriched by the modern technological equipments. Upon all the stages from pre-primary to the higher, computer technology has an outstanding impact. In the advanced and even in the advancing Third World Countries, computerization of education has taken place. Besides, televisions, radios, micro-computers serve not only instructional purposes in schools but also as aids in conducting research and performing administrative functions. These micro-computers are the product of early 1980s. The modern Teacher's Training techniques like, Micro teaching, Flanders's Interaction Analysis, Self-paced learning system are some of the by-products of Educational Technology. Here one question is raised: Is there no room for a teacher in such a system of learning? There is every reason to assert that books and teachers will never lose their importance. But at this stage of Education explosion teachers should consider the computers as dynamic contributor to learning process. Rather computers have triggered educator's awareness. Computer literacy should be spread all over the country, so that effective teaching and learning can be executed.

For making assessment system and evaluation procedure more scientific and for making examination more reliable, valid, objective and effectively usable, the techniques like project assessment, assessment of laboratory work, skill tests, situational assessment, self and peer assessment procedures may be used. All these depend upon efficiency of the teachers who are the manipulators of environment. They require pre-service training in the techniques of modern education.

From this discussion it has been revealed that the modern educational world has shifted its attention from some rigid conventional teaching to the experiences of a learner or a group of learners. This approach is mathetic approach, that is, learner centric approach. For the fulfillment of such an objective and for educating all qualitatively and quantitatively, let us welcome the trend discussed so far.

The role of technology in modern education is both transformative and multifaceted, offering immense opportunities while posing significant challenges. It has redefined teaching and learning processes by introducing innovative tools, fostering personalized education, and enabling access to a wealth of information. Technology has bridged geographical gaps, facilitated collaboration, and provided learners with skills essential for the 21st century. However, its integration into education is not without challenges. Issues such as the digital divide, data privacy concerns, the over-reliance on technology, and the need for digital literacy among educators and learners require thoughtful solutions. Furthermore, the effectiveness of technology in education depends on striking balance between innovation and human interaction, ensuring that the essence of holistic

learning is preserved. Moving forward, addressing these challenges calls for collaborative efforts among policymakers, educators, technologists, and communities. By fostering inclusive access, promoting ethical use, and equipping educators with the necessary skills, the potential of technology in education can be fully realized. With strategic implementation and continuous adaptation, technology can serve as a powerful enabler, paving the way for an equitable, efficient, and future-ready education system.

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