

E-Content In Enhancing Academic Achievement

Dr. Vikas Sharma

Associate Professor, Sant Baba Bhag Singh University, Jalandhar, Punjab, India,
sbbsuresearch@gmail.com

Abstract

Technology has developed a lot in the recent times. Information and Communication Technology (ICT) is conceived to be one of the most advanced inventions in human history. It has the relevance to combines elements of benefits of different interrelated components such as computer, internet and other aspects of technology. Use of E-content is made for different aspects including teaching, learning, research, different professions and other associated fields. Modern man is expected to deal with new developmental aspects leading to build niche for future generations. It is clear indication that E-content is leading man to new podium for rising above the present level. Further, it is a general idea that man can only develop various professional competencies when profound stress is laid upon development of related ICT modules for E-Learning. Different nation across the globe has laid stress upon wise usage of E-content and E-learning. In recent times, the development of e-content has helped the students to learn in an effective manner and enhance academic achievement. It has provided beneficial outcomes and has been helpful in providing education through technology as a boon.

Keywords – ICT, Technology, Education, E-Content, Learning, Teaching, Professionals, Development

INTRODUCTION

E-Content is defined as digital text and graphics designed to appear on web pages. E-content is essentially a package that satisfies the conditions like minimization of distance, cost effectiveness, user friendliness, and adaptability to local conditions. E-content is a byproduct of the E-Learning process and Information and Communication Technology (ICT). Creating environment for e-learning and e-content is the need of modern times. It must be set up in accordance with the learning styles and levels of each student. The e-content creation is a systematic, scientific, and dedicated effort. Seven variables required for generating e-content are – educational and design criteria, sound criteria, photograph criteria, visual criteria, assessment, animation criteria, and technological criteria to generate E-content.

The 21st century is an era of acute modernization. Both teacher and student have to cope with the changes and challenges of the present world. Today's world, empowered by the whole lot of internet resources and satellite communication in every field of human endeavour, and especially in education, is bound to cause a kind of total transformation in the teaching-learning process, to make it smart in every way. The day is not so far when all Indian classrooms would have a computer. Each day instructing through computer would then happen to be a reality. The society is fast changing with technological advancements. By integrating technology, learner can be taken through different learning styles so that they can be benefited by learning through preferred learning styles.

E-content and e-learning help the learner to learn, to adjust and function in styles that make them more balanced learners. The education and technology plays an important role in the education of humans. The education and technology are two different concepts but the use of both resulted in the emergence of a new discipline called the educational technology. Educational technology makes the teaching and learning activities more enjoyable. Students learn by playing and enjoying these activities.

National Council of Educational Research and Training (NCERT) developed SATHEE application for online learning by the students. Application of Information and Communication Technology (ICT) in areas key to the country's development is a paramount importance to the educational planners. Technology has advanced so as the ICT and E-learning in the recent past has entered every sphere of life. Perhaps the revolution in new technologies by modernizing the old ones has actually turned the whole world into a global village, where information is easily accessible with the push of a button. Today each and every aspect of human life- be it living, working or learning are passing through an information technology invasion is touched by e-learning. With the introduction of technology, various aspects of life are witnessing a great change in planning, policy and execution aspect. We have seen tremendous change

in the use of ICT during last few decades which is gradually making its inroads in engineering, medicines, pharmaceuticals and corporate world etc.

The quality based professional courses being introduced by different higher educational institutions in the country will bring more growth in a country's social and economic order. Perhaps it is well known that the social growth and economic self-sufficiency of a nation depends upon the productivity level and the level of productivity of a nation is directly linked to the availability of its professionals which are educated through modern techniques. The importance of the same has been well acknowledged by the states all over the world where India is no exception. This has been so due to the changing political systems in some of the developed economies like Russia (formerly USSR) after its disintegration and its opening up to the world market and more so in developing country like India where economic reforms were introduced in the early 1990s. Hence this is specifically the period (after 1991) that Indian policy makers started laying more emphasis on revolutionising the education system to bring advancement through different modes particularly the ICT based teaching learning process. Identifying the advantage of Information and Communication Technology (ICT) in professional education, Indian government, from that time onward, has started making efforts to integrate ICT and E-learning in the whole education system in all institutions to modernise pedagogies.

Man is living in the modern world surrounded by science and technology. Information and communication technology has gained so much importance in the last three decades that it is virtually impossible to think of its non-existence in all walks of life- be it corporate sector, health or education etc. It has emphatically made its inroads in different disciplines to strengthen professionalism- education to be more specific as we understand that education is the backbone of development of any nation. This has been so due to the changing market scenario at the national and global level where we need competent and highly professional human resources. It is beyond doubt that in the competitive economies only advanced nations with advanced technologies and their application in different areas of development have the scope of survival.

Human resources, particularly the youth in the developing countries have to be professionalized on the pattern of developed nations through educational courses in a manner that they develop professional skills to compete at different levels to take the country forward. The Covid-19 induced lockdown has infused usage of technology for study, learning environment and professional usage across globe.

The world have seen that Asian giants like China, Japan, Russia and Korea have done so by enabling their people particularly the youth to master the technological skills which have brought their countries in direct competition with the advanced countries- be it Germany, France or America. This has happened primarily due to the advancement of technology and its application in the modernisation of their education systems not only in areas of market oriented courses but also by introducing technology based professional courses along with new pedagogies to make teaching learning process as a student centred activity and making them professionally trained learners. Even world bodies like United Nations, particularly UNESCO, has laid emphasis on it when in its report (UNESCO- Towards Knowledge Societies, 2005) it said that technological revolution can change the face of the society by making it informative and knowledge oriented.

In the twenty first century, nations are now in competition with each other to take lead for the achievement of sustainable growth and development- be it social or economic. Therefore, survival of the states in emerging competitive economies depends upon the quality and professionalism of its human resources which they produce through system of higher professional education by following all those techniques and methodologies which place them at par with their counterparts in other parts of the world. Application of Information and Communication Technology (ICT) in areas key to the country's development is a paramount importance to the educational planners. Technology has advanced so as the E-learning in the recent past. Perhaps the revolution in new technologies by modernizing the old ones has actually turned the whole world into a global village where information is easily accessible with the push of a button. Today each and every aspect of human life- be it living, working or learning are passing through an information technology invasion. With the introduction of technology, various aspects of life are witnessing a great change in planning, policy and execution aspect.

Hence, it is important to prepare the youth for the world of practice. The pre-requisite for the growth of the society is to first make the youth relevant to society and the nation as both are changing very fast. For achieving the purpose, knowledge and professionalism are the essential determinant. Skilled and competent man power is the basic demand of a progressing society in global world. In today's knowledge society it does not matter what and how much one knows, what matters is that what actually one can do with what he or she knows. Exponential use of technology in the globalized world demands youth to be more skilful and accurate which are considered to be the most important elements of professionalism.

Uses of E-Content

In relation to professional education, use of Information and Communication Technology (ICT) and E-content related inventions can help the learner to be more professional, focused, skilful and aware. It has the potential to provide first-hand information with the help of which the youth can be prepared according to the global demands and trends being followed. E-content is becoming helpful in providing latest information about the happenings in the job sector and enabling the user to contact the globally established companies for employment purposes. E-content has blended professional education to help the youth not only to get better placement but also helped them to contribute for the upliftment of the society.

Therefore, professional education is considered to be the back bone of a country's growth and development. Professionalism in itself is the conduct, efficiency or skilfulness expected out of a person belonging to a particular profession. Focus of professionalism is not on the fact that what a person do but on how a person do in a better way. A number of different attributes together define a person as professional. Specialized knowledge, skills, competency, reliability, accountability, self-regulation, honesty and integrity are the basic attributes of being a professional.

Brock (Brock, 2009) has suggested seven dimensions of professionalism namely- knowledge, education, skills, autonomy, values, ethics and rewards. All these seven dimensions are interconnected and together they work behind the concept of professionalism. Today professional behaviour of the practitioner is very essential as the nature of job and related circumstances are changing rapidly. With the changing global scenario, demand for professional courses to produce need based professionals has increased manifold.

The quality based professional courses being introduced by different higher educational institutions in the country will bring more growth in a country's social and economic order. Perhaps it is well known that the social growth and economic self-sufficiency of a nation depends upon the productivity level and the level of productivity of a nation is directly linked to the availability of its professionals which are educated through modern techniques. The importance of the same has been well acknowledged by the states all over the world where India is no exception. This has been so due to the changing political systems in some of the developed economies like Russia (formerly USSR) after its disintegration and its opening up to the world market and more so in developing country like India where economic reforms were introduced in the early 1990s. Hence this is specifically the period (after 1991) that Indian policy makers started laying more emphasis on revolutionising the education system to bring advancement through different modes particularly the ICT based teaching learning process. Identifying the advantage of Information and Communication Technology (ICT) in professional education, Indian government, from that time onward, has started making efforts to integrate ICT in the whole education system in all institutions to modernise pedagogies.

With the increasing demand for new kind of skills and competencies, especially the digital competency, in the world of work and employment, it becomes all the more important to not only to introduce and educate the youth with E-content related inventions but also enabling them to modernize the existing technologies particularly the ICT techniques and their judicious application. Gone are the days when face to face contact of teacher in fixed learning hours was basic requirement for effective teaching and learning. Online tutorial, audio/video conferencing are new modes of interaction between teacher and learner, are the order of the day and has become a new normal.

E-content for Learning and Academic Achievement

Today E-content is being integrated in educational process in various manners as e-learning, collaborative learning, blended learning, creative learning, evaluative learning, open and distance learning (Sharma,

2015). All these methods are contributing significantly not only in the quality improvement but also in making education more accessible. It is assumed that a well-blended education with technology can help to improve equality and availability of the education to the masses. Teaching and learning related requirements and conditions pointed out through many theories of learning such as Sensory Stimulation Theory from Laird 1985, Reinforcement Theory from Skinner 1957 and Facilitation Theory (Rogers, 1982) can be met with the use of E-content in an effective manner.

Laird (1985) in his Sensory Stimulation Theory stated that, "Effective learning occurs when the senses are stimulated". Senses play an important role in learning as according to Laird 75% of the sensual learning takes place through seeing the object and 13% takes place through hearing. Other than these 12% of the learning depends upon other senses like touch, smell and taste. The theory has its educational implications when it claims for stimulation of senses, as the use of ICT also targets at stimulating the sensory organs especially multi-sense organs like hearing and seeing and thus advocates the use of E-learning and E-content for teaching learning activities.

According to the Reinforcement Theory or also known as Operant Conditioning or instrumental Conditioning, given by Skinner, modification of learner is possible by introducing reinforcing stimulus. This theory states that behaviour is a result of consequences, as consequences motivates a learner to display or prevent a particular type of behaviour. The theory highlights the importance of active role of learner while learning, appropriate use of feedback and reinforcement by the teacher and careful planning of teaching strategies. It is on the basis of this theory that programmed instruction using E-learning is being developed and used. "Instructional designers creating online courses, have also started to realize that course lessons, modules and topics must do more than present blocks of content with quizzes or tests at the end of the instruction sequence" (Kincheloe; Horn Jr. 2007).

Similarly facilitation of Experiential Learning propounded by Rogers is of the view that educational process should be humane in approach. The teacher in the process of teaching and learning should act as a facilitator. The learner should have personal involvement and self-initiation in the process. Learning should be purpose based and democratic in nature where resources are available to the learner and should not have any unwelcome influence on the learner (Mangal, 2014). This theory has contributed in making the teaching learning process as more student centred, open and interactive in nature which provided base for online, virtual kind of learning using E-content.

The process of modernising the education system has been reflected in the 'National Policy on Education' (NPE 1986) which lay emphasis on the use of computer with advanced features for improving the quality of education (D'Souza, 2012). The Program of Action (1992) introduced after NPE (1986) became instrumental in the development of professional education in India by encouraging such courses which are job oriented. The program mentioned its desire to re-design its educational courses to encourage professional education- be it 'in-service' or 'pre-service', by introducing relevant technology in the field. Several steps have been taken to ensure access, equity, quality, relevance and excellence in the field of professional education so far. Henceforth Ministry of Human Resource Development (MHRD) has taken many initiatives to modernise the education system to meet the professional needs of the country.

The 'National Education Policy' (NEP) 2020 stressed upon enhancing the academic achievement of the learner. Learning through e-content helps in long term retention and effective learning. Dhiman and Gera (2023), investigated the effect of blended e-learning on cognitive absorption, behavioural intention and academic achievement of 60 senior secondary school students of Commerce stream and found that the blended e-learning resulted in an increased cognitive absorption, behavioural intention and academic achievement of students in comparison to traditional teaching.

Centrally sponsored scheme like National Mission on Education through Information Communication Technology (NMEICT), introduced in 2009 emphasized to use the potential of ICT in teaching learning process. The mission is focused on various objectives, out of which few can be mentioned as:

- Maximum utilization of available resources
- Making learning resources accessible
- Providing platform for pooling and sharing knowledge resources
- Nurturing scholars and researchers
- Increasing connectivity

- Multi-lingual content development
- Improving teacher training process and content
- Providing e-learning support
- Making content matter affordable
- Developing devices for achieving convergence.

While discussing the use of Information and Communication Technology (ICT) in professional institutes, it is also important to notice that what kinds of ICT tools are available and how they are being used by the teachers as well as learners. To secure India's berth in competitive economy, it is important to use standardized ICT tools of learning (Somayaji; Somayaji 2006). It will lead to develop judicious E-content for learning. Judicious and creative use of the E-content during teaching, learning and training process in professional institutes is also of great importance. According to Ashok and Kavitha (Kavitha and Ashok, 2015), "ICT, if used creatively can make a big difference in the way teachers teach, and students learn and can help students acquire 21st century skills like digital literacy, innovative thinking, creativity, sound reasoning and effective communication."

It is also important to keep in mind that E-content is a supplementary source of knowledge and not everything. The downloaded data with the help of E-content for teaching learning purpose should be authenticated by the text and reference books as sound knowledge base is utmost essential. No doubt E-content is helpful in producing better informed and aware learners who can take up new challenges emerging in global society, but if it is supplemented by the text and reference books then it can add more information to the student's knowledge. Therefore, in the enhancement of knowledge, E-learning and E-content has equally important role to play.

E-content for Professional Growth and Development

The term Information and Communication Technology (ICT) is an umbrella term which contains communication technologies like internet, E-content, E-learning, wireless network, mobile phones and satellite communication enabling people to have access to information of different developments taking place all over the world. The concept of ICT has evolved gradually from the nomenclature of Computer, Computer Technology and Information Technology during last few decades. Charles Babbage during 1833-1871 designed first automatic computing engine (Bullock, 2008). The invention of computer initially was used for defence purposes which gradually became popular in early 1980s when the technology became affordable and available for the general masses (UNPAN, 2009). After the term 'Computer', we find the use of the term 'Information Technology' as early as in 1958 in Harvard Business Review published article "Management in the 1980's" (Leavitt; Whisler 1958). By the end of 1980's the term Information Technology or IT replaced the term Computers; giving due importance to storage, creation, retrieval and communication related activities. Around 1992 the term Information and Communication Technology (ICT) replaced the nomenclature IT when email facility became available to the consumer market. The intention behind this paradigm shift has been to enable people have better and fast information by developing new competencies which were missing earlier.

With the introduction of ICT in general and education in particular it has enabled the teachers as well as the learners to satisfy their immediate teaching and learning related needs. To substantiate this argument Yashothapriya (2010) has stated that various devices being applied under ICT are enabling the learner to immediately store, retrieve, manipulate and receive information according to one's needs. Several communication devices are included in the term ICT such as satellite communication systems like Educational Satellite (EDUSAT), Indian National Satellite System (INSAT), video conferencing, Cloud computing, World Wide Web (www), Radio Frequency Identification (RFID) technology, web 2.0*, blogs**, wikis*** and social media. Pointing out the vast area and activities included in the term ICT, Roy (Roy, 2015) stated, "ICTs are electronic collection, editing, storage, distribution and presentation of information." The E-content is currently developed with an aim to provide child-centered learning. E-content becomes more valuable with outburst of Covid-19. Masses were forced to remain indoor, with in-door learning for students. It facilitated the way for development of E-content for learning and education.

In general terms ICT and E-content covers a broad set of functions and items including audio/video interaction, network, hardware/software aspect and various services associated with them. E-Content and ICT are not only a set of tools to collect, disseminate, save, share, retrieve, analyse and process information in digital form but according to Anderson (2007), there has been a paradigm shift in the transmission of information and knowledge particularly since 1990s as it enables to collaborate, contribute and communicate which has helped to change the trend of transmitting information from one person to many persons (Gouseti, 2014). It has the potential to accelerate, improve and innovate new things in accurate and creative manner.

We have seen that revolutionary integration of ICT and E-content in education in the form of teaching and learning processes as we find variety of ICT products available and having relevance to teaching learning process such as tele-conferencing, email, audio conferencing, television lessons, radio broadcast, interactive radio counseling, interactive voice response system, CD-ROM and many such devices. This has enabled the education to reach far off places in different difficult areas generating debates, discussions and even competitions among people to be better informed, knowledgeable and making them relevant to the society.

It is widely known that expanding the reach of technology empowers the human resource in every sphere. In the twenty first century, when the use of ICT and E-content in routine life is increasing by leaps and bounds, its impact can be observed everywhere. Education is no exception to the process and has evolved a lot with the introduction of ICT and E-content in the various aspects of teaching learning process. In education, E-content is bound to come in as a tool to strengthen human learning skills. Universal access to education, equity and quality in education, professional growth of teachers, efficient educational management and learning at learner's pace are the few aspects where E-content can help to address various challenges effectively. E-content is being integrated in the process of teaching and learning using various methods such as e-learning, collaborative learning, blended learning, creative learning, evaluative learning, open and distance learning.

In the world of digital technology with growing access to information, teaching learning process cannot be contended with transmission of limited knowledge in fixed hours. To become compatible to the ever expanding knowledge, it is essential to equip oneself with the latest technological inventions available. In the world of digital media and swift information new paradigm and technology are bound to affect the educational process. E-content is proving to be of great help in creating inclusive type of learning everywhere. In the modern set up, E-content is helping to bring educational change and reform in intelligent and sustainable manner.

By increasing the accessibility, affordability and participation in sharing and building knowledge, technology has completely changed the educational scenario. Speedy access to information, choice of pedagogy, how and to whom the information to be delivered everything has evolved in a much better way. It is assumed that E-content has the potential to innovate, accelerate, motivate and engage students which enable them to relate the Institutional experience to the work place.

With the introduction of Information and Communication Technology (ICT), the teaching learning process has become more interactive in nature. It has contributed in shifting the focus of teaching learning process from teacher to learner, where the teacher acts as a facilitator only. Primarily it is now the learner who decides what, when, where and how to learn (Oliver, 2002). Other aspects like curriculum, communication, administration and research work are also becoming more feasible and reliable with the help of ICT. Sensible use of ICT and E-content can help to create such infrastructure that can support lifelong learning and develop higher order skills among the learners.

Today ICT and E-content is contributing significantly not only in the quality improvement but making education more accessible in general and higher professional education in particular. With the increasing demand for new kind of skills and competencies, especially the digital competency in the world of work, it has become all the more important to educate and introduce the youth with ICT (Punie; Redecker, 2010) This is the reason that the nations providing such kind of quality professional education are front runners in the changing world scenario.

In the twenty first century it can be said that a nation who is not making efforts to integrate ICT and E-content in higher professional education is not doing academic justice to its youth to compete and

survive in global competition. To meet the global challenges, new kinds of skills and abilities are needed to train the youth. West, Darrell, (2012) while highlighting the need and importance of E-content based teaching and learning has stated that in a globalized world student now do not compete for jobs with their own natives but with their counterparts in other part of the world as well. Hence in order to compete with them they need to have specialized skills which could place them professionally better.

The ability to think critically, communicate effectively and work collaboratively is need of the hour and to develop all these abilities, integration of E-Learning in the teaching learning process of professional courses is the only answer. The sustainable growth and development of a nation depends upon the strong educational system being run by the state. In the era of knowledge and technology, role of E-content in higher professional education is unavoidable.

E-content in Recent Times

E-content in the field of Information and Communication Technology (ICT) has proved a boon for the mankind. It is a real time environment which helped all to attain substantial growth. The growth for both professionals and layman was considered alike to be at peak with growth of ICT and E-content. With the growth of internet and spectrum for data transfer, the possibility of online classes increased. The sudden outburst of Covid-19 had given a tough time to all across the globe. The work and education came to a halt with all of a sudden. It was only with the help of internet and smart phone technology that the idea of work from home came to reality. The use of E-content has been beneficial for all with a clear option of continuing work from home. It provided option of maintaining social distancing to avoid contracting the deadly virus. With the induced lockdown, it was the order of the day to avoid physical contact.

It was only with the boon of E-content that students were able to study and teachers were able to provide education. Professional attitude has changed with expand of technology. People were able to deliver services in a proper way only with help of technology. It was a testing time for the entire mankind. The lockdown process however had several pros and cons, but still the phase was passed out with the help of science and technology. Had the technological developments not reached at the present status, it would have been much difficult to pass through the world endemic period. So E-content was much helpful in providing desired relief for all. It is a well sought after idea that the use of technological innovations has always been helpful for mankind. Humans are blessed one to have such helpful things at the real time. Information and Communication Technology (ICT) and E-content have been the real source of finding use of technology in human life with wider implications. It saved humanity through tough times to the level of extreme pandemic situation across the globe. Data and information sharing has been easy with the inflow of E-learning and E-content. It paved way for financial and commercial workout, which in turn was the real force behind providing daily commodities especially grocery and other perishable items upon regular basis approachable to all. Several regular work related operations has been carried out with the help of technology only. All nations across the globe faced stringent time during such emergencies and it proved meticulously detrimental to the world economy. However the implication of and E-Learning steered the way through tough waters. The simmered situation was controlled only with combined efforts of humanity with implications of and E-learning.

E-learning is the real outcome of the past developments of mankind. With the proper usage of E-learning man can cross barriers beyond time and can solve unsolved mysteries of the universe. For instance, new milestones can be created in the field of medical science, health, business, defence, space exploration including time distance quagmire, origin of universe and other related aspects. It is believed that information and communication technology will help to gain upper hand in several unknown fields. It is expected to deliver beyond human expectations with long term and sustainable gains. The wise use of E-learning will pave the way for better survival of human race in future.

As at present, man has been trying to master the powers of nature, but the only tool helpful in this field will be the information and communication technology. The delivery of information to the right place in real time is the true usage of technology. If the correct information is communicated properly only then the purpose of technology is fully met. It is the sole idea upon which entire information and communication technology is based. The current technological developments are just the beginning

of the entire show of E-learning in future. As of now, we can expect virtual and real time information sharing, but in future it will deliver several newer aspects per excellence. E-learning is hoped to pave the way for human developments in times to come with vigour and zeal so as to excel beyond expectations.

CONCLUSION

To conclude, it can be stated that the world has changed a lot in recent times. It is unavoidable to not to use Information and Communication Technology (ICT), E-learning and E-content for overall development of the individual, the nation and the world as a whole. The world has become a global village and one must comply with the challenges met at present. It is indispensable that one is not using E-content in one form or other form. The requirement is to divert all efforts in a way to facilitate human learning and development. Professional development of man is necessary but one must adhere to modern developments. The use of E-content for teaching, learning, research, defense, weather monitoring, space exploration, geoid study and other unexplored areas is a must. It is well conceived that one should use newer inventions for getting better results. It is hoped that E-content is having the required potential to bring new harbinger in human society.

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