



DEVELOPMENT OF E-CONTENT FOR THE EMPOWERMENT OF THE SCHOOL EDUCATION THROUGH DIGITAL LEARNING

Bharati Chand, Ph. D.

RIE (NCERT), Bhubaneswar

Abstract

This paper explores the different aspects of use of e-content for development of digital learning. In the present educational world, Information and Communication Technology has great role to play in planning for teaching and learning to empower school education. It is the need of the hour to develop e-content to empower school education through digital learning. The new and modern education system involves modern information and communication technologies in the teaching-learning process for teaching the 21st Century students.

Keywords-*E-content, Digital Learning, E-learning, ICT,*



Scholarly Research Journal's is licensed Based on a work at www.srjis.com

Introduction

Education acts as an instrument to bring social transformation and national development. India's educational ethos needs major changes and reforms. So the content and processes of education are continuously renewed in order to make them in tune with the changing needs, aspirations and demands of the society. The transformation that school is going through warrants rejuvenation in the way we teach and what we teach. Structuring our schools and determining the content of our curricula, is the prime need of the hour. Students need to learn the skills that will help them in the job market as well as in the present-day society. They need to learn how to go through vast amount of information, make decisions of their own and work well with others. The learning process has been influenced by the expansion and evolution of computer, network, and multimedia technologies.

Information Technology acts as a vehicle for educational revolution. It has immense potential to upgrade today's educational system. It plays a significant role in development teaching, learning and training. It functions as a bridge between science of learning and art of teaching.

Empowering school Education through digital Learning

A School is a social institution which plays a major role in moulding the ideas, habits and attitudes of children with a view to producing well balanced personalities, physically strong, mentally alert, emotionally stable, culturally sound and socially efficient. Thus a well conducted school is a happy home, a sacred shrine, a social centre, a state in miniature and

bewitching Brindavan, all beautifully blended into a synthetic structure. The challenges for teachers is not only to impart knowledge and skills but also to make young generations fit for the dynamic society where the knowledge, culture, technology, attitude are changing.

India has to make several steps e.g. expansion of education system, adoption of new techniques such as multimedia and E-Content etc. which will visualize the concept of virtual classroom for empowering school education. In fact, packaging of knowledge through E-Content may enable teachers to contribute to knowledge field. Each teacher has some strength in that his/her subject area. S/he desires to express and share it. This technology provides opportunities to them to contribute in their respective strength areas. Unfortunately, existing materials and documents cannot be automatically transformed into e-content materials by just making them available from a Web site. A systematic and scientific approach is needed to develop quality content. Instructional Design is the teaching device that makes instruction as well as instructional material more engaging, effective and efficient. It is the branch of knowledge concerned with research and theory about instructional strategies and the process for developing and implementing those strategies.

Technological based development of e-content is emerging to be an innovative method which could help the learners visualize the content so as to make them be creative and productive learners. E-contents are basically a package that satisfies the conditions like i.e. minimization of the distance, cost effectiveness, user-friendliness and adaptability to local conditions.

E-content based Digital learning requires a combination of technology, digital content and instruction.

- **Technology:** Technology is the mechanism that delivers content. It facilitates how students receive content. It includes Internet access and hardware, which can be any Internet access device – from a desktop to a laptop to an iPad to a smartphone. Technology is the tool, not the instruction.
- **Digital Content:** Digital content is the high quality academic material which is delivered through technology. It is what students learn. It ranges from new engaging, interactive and adaptive software to classic literature to video lectures to games. It isn't simply a PDF of text or a PowerPoint presentation.
- **Instruction:** Educators are essential to digital learning. Technology may change the role of the teacher but it will never eliminate the need for a teacher. With digital learning, teachers will be able to provide the personalized guidance and assistance to ensure

students learn and stay on track – throughout the year and year after year – to graduate from high school. Teachers may be the guide on the side, not the sage on the stage.

Challenges of developing E-content

E-content means content in the electronic form. It is a combination of text, audio, video, images, animation with visual effects. Any digitized content that can facilitate the learning process and/or learning outcome can be termed as e-content. The philosophy behind this is that self-instructional materials try to bridge the gap between the teacher and the taught.

E-contents are basically a package that satisfies the conditions like i.e. minimization of the distance, cost effectiveness, user-friendliness and adaptability to local conditions (SaxenaAnurag, 2011)

E-content is “the design (pedagogical and learning principles used to create the digital intervention) of the subject matter (E.g. Math, Science etc.) in question and the digital delivery mode (Computer, Video etc.) used(NUEPA, 2007).

It is defined as “digital text and images designed for display on web pages.” (<http://oxforddictionaries.com/definition/e-content>).

According to Selinger (2004), “e-content should be seen as a tool to improve the understanding, engagement and motivation of learners; to provide a safe environment for them to experiment and explore their conjectures; and to test their understanding using novel assessment methodologies based on trial and improvement; simulations and manipulation of models”. E-content can also be utilized as reusable learning objects. Wiley gave a working definition of learning object as “any digital resource that can be reused to support learning.”

Electronic content is also known as digital content refers to the content or information delivered over network based electronic devices. Wide varieties of digital materials that are of educational significance are available now-a-days. Some of the quality materials that are available free of cost or with minimum restrictions can be used, re-used and modified by teachers and students for their teaching and learning. These materials provide both teachers and students a greater interactivity and social collaboration. It is becoming popular because of its flexibility of time, place and pace of learning. It includes all kinds of content created and delivered through various electronic media.

E-content is available in many subjects and almost all levels of education. It can be used by wide variety learners with diverse needs, different backgrounds, and previous experience and skill levels. It can be shared and transmitted easily and promptly among unlimited number of

users around the world. Teachers, students and others get benefited by the use of well designed and developed e-content. It is basically a package that satisfies the conditions like minimization of distance, cost effectiveness, user friendliness and adaptability to local conditions.

E-content design, development and approach will depend upon the nature of the content and the learners. It will also depend on the quality and complexity the learning wishes to create. Various instructional design models are available according to our requirements. Most of the models involve the process of analyzing the learner needs and goals of the instructional material development, development of a delivery system and content, pilot study of the material developed, implementation, evaluating, refining the materials etc.

Elements of E-content

‘E-content’ is one of the recent techniques in the educational technology. E-content is a product of e-learning. The products bring solutions to facilitate quick and efficient development in education. Electronic content (e-content) or digital content is the information delivered over network based electronic devices or that is made available using computer network such as internet. According to Oxford dictionary ‘e-content is the digital text and images designed to display on web pages’. The e-content includes all kinds of digital content delivered through various electronic media with combination of sounds, images and text. Other salient features of e-content viz., bi-sensory learning experience, digital convergence of text, image, audio, video, animation etc. to create the effects of multimedia, accessibility, reusability, interoperability etc. are the supporting points in favour of the claim to give top priority to e-content development, among all academic endeavours.

The ultimate aim of e-content development is to create an information rich society where everyone, irrespective of caste, religion, race, region, gender etc., are empowered to create, receive, share and utilize information and knowledge . In the process of e-learning, structured and validated e-content can serve as an effective virtual teacher.

Text, pictures, sound, Video, Animations and Presentation are basic elements of e-content.

Text

Text is most important element of any e-content. Computers of any level can help create text files, though Word Pad and MSWORD to create formatted text. One can save text files in the following format: .txt .doc .htm .pdf.

Pictures

One could store pictures in various formats: .bmp .gif .jpg .png “.bmp” is an uncompressed format that stores pictures in millions of colours. This is the most popular format for exchanging pictures between different programmes. “.gif” is a compressed format that stores pictures in colours. This is a very popular format for displaying pictures in web pages. “.jpg” is a glossy format that stores pictures in millions of colour in very small file size, thereby making it most popular format for E-content.

Sound

There are various formats of audio that can be used a part of e-content. .wav .au .mp3 .mid “.wav” is most popular format of audio deployed in E-content. This offers multi-track audio both in uncompressed, compressed and sampling rates. “.au” is a compressed format of storing audio from Sun Microsystems. “.mp3” is a highly compressed format for storing voice and music. This is perhaps the most popular format storing and exchanging digital music today. “.mid” is a popular format of storing music.

Video

Video is perhaps most important elements of e-content development. One of the most widely adopted internet technologies for use in instructional settings is video streaming. There are some video file formats, such as Web M (.webm), Windows Media Video (.wmv), and Ogg Video (.ogv), each of which can only contain a few well-defined subtypes of video and audio coding formats, making it relatively easy to know which codec will play the file.

Animation

There are animation techniques for using e-content like flc .swf .gif “.flc” is an old 2D animation format from AutoDesk. “.swf” is a recent format from Macromedia to store Vector based 2D animations. Some programmes also render 3D animations in this popular format. “.gif” can also animated frames.

Simulation

This realtime interactive E-content element can work as a virtual lab. Suddenly, teaching Mathematics, Physics and Chemistry with this new aid has made learning more interesting. One can design, store and display simulation applets in various formats: .swf .jar “.swf” is fast becoming a format for displaying simulation content. This is widely used because of 95% of desktops have access to Flash player. “.jar” is format that stores Java based interactive applets providing simulated contents.

Presentations

Electronic Presentations have become a standard tool and considered as a good teaching/learning aid. The most popular format is PowerPoint from Microsoft. The module would require that text of subject content is divided into smaller chunks for better understanding by the learner. Hence, every content needs to be divided into module, unit, and granule. It is called chunking of content.

Design and Development of E-Content

Instructional Design is the process of systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. There are three learning theories based on Cognitivism, Constructivism and Behaviorism support the Instructional Design as backbone. Cognitivism envisages the organization of the content, storing and retrieving of the content. Constructivism supports the learner centered holistic approach in e-learning. Behaviorism stresses the reinforcement, retention and transfer of knowledge in the e-Content development.

E-Content is digital information delivered over network-based electronic devices, i.e .symbols that can be utilized and interpreted by human actors during communication processes, which allow them to share visions and influence each other's knowledge, attitudes or behavior. It allows for user involvement and may change dynamically according to the user's behavior.

To be meaningful e-content must be able to make a difference i.e. from being unknown to known, from being known to being better understood, from being understood to providing enlightenment, from being just stored knowledge something that is shared and made available to other.

Different phases in E-content development

1.The Analysis Phase

It is the most important stage as it identifies our current situation comprise of subject experts, target audience and their skills, objectives, budget of the e-content, delivery methods and its constraints with due dates.

2.The Design Phase

This stage involves the complete design of the learning solution. It helps to planning of an e-content preparation. The issues like use of relevant software; required skills; creative and innovative interactions of subject contents like texts, pictures, videos and suitable animations

are addressed. Applying instructional design effective for online (choosing appropriate teaching strategies; presentation considerations; and building in scaffolding that will support the learners move to independent thinking as they become more familiar with the topic and the medium which is very important to do when learners are not in a face-to-face situation

3.The Development Phase

It concerns the actual production of the e-content design. It helps to create the e- content by mixing of texts, audio, video, animation, references, blogs, links, and MCQs (multiple choice questions) with some programming specifications like home, exit, next etc.

4.The Testing phase

It helps to administer the e-content in the actual educational field. In this phase, the spelling mistakes, content errors, clarity of pictures, relevant videos, appropriate audios, timing of animations, and hyperlinks are tested.

5. The Implementation Phase

It helps to administer the e-content to the target audience. This phase explains how to install and how to use it and their difficulties experienced while using e-content. It checks the product accuracy and quality maintenance.

6. The Evaluation Phase

It helps to satisfy the e-content and its effectiveness. This phase considers feedback from both learners and instructors. After the feed-back reactions, the e-content is designed again as post-production for effective delivery of e-content. Evaluation is a positive step that can provide feedback on the effectiveness of product; this will enable fine-tuning of the product. It also provides valuable feedback to the production team on ways future developments can be improved.

Conclusion

E-content development is the heart of teaching learning process. Learning through e-content encourages critical and active learning. With e-content materials, the learner and teacher will understand that he or she is changing from a provider of facts to the one who facilitates a learning environment. E-content is packaging of knowledge in electronic form which can be retrieved by the use of electronic devices. Although content development plays a key role in e-learning, it is undoubtedly not an easy process. It requires expert knowledge in the subject area, patience in creating the necessary objects that make up quality and a high sense of creativity in structuring and sequencing the topics to make a complete whole. From this we can predict that e-Content production enriches the e-learning in a dynamic way to empower school in the 21st century..

Referencess

- Aggarwal, J. C. (1996). *Teaching of History*. New Delhi, Vikas Publishing House Pvt. Ltd.
- Anandan, K., &Gopal B. V. (Sep 2011). *Information and Communication Technology in Classroom Instruction*.*Edutracks*, v11 n1, p9-10.
- Arora, K. L. (2006). *Teaching of History*.Ludhiana, Tandon Publications, p1-2.
- Best W. John. & Kahn V. James.(2014). *Research in Education*. Delhi, PHI Learning Private Limited. Chennai. [5] Dinesh Kumar., &Amit Singh, (Jan 2013). *Computer Technology as an Interactive Teaching System a New Trend in Education*.*Edutracks*, v12 n5, p15-18.
- DurgaPadhiyarm, (2014). *Educational Technology*.New Delhi, Cyber Tech Publication, p1.
- Elizabeth Joshua., &Ancy George, (Jan-Mar 2014). *Interactive Multimedia: The Pinnacle of Education*. *Journal of Educational Research and Extension*, ISSN 0973-6190, v51 (1), p22-26. [8] Golden, S. A. R. (2016). *Rural Students' attitude towards English as Medium of Instruction in Higher Education—An Analysis*. *International Journal of Research*, 3, 1-10.
- Golden, S. A. R. (2017).*Attitude of Students and Teachers towards E-Learning-An Analysis*. *Recent Research in Social Science & Humanities*, 1, 5-10.
- Golden, S. A. R., &Regi, S. B. (2013).*Mobile commerce in modern business era*. *International Journal of Current Research and Academic Review*, 1(4), 96-102.
- Bascelli, D. (2005). "Making Work Real: Building Virtual Learning Communities". In P. Kommers& G. Richards (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA) Montreal, Canada June 27*.
- Biggs John (2003). *Teaching for Quality Learning at University*, second edition. Berkshire, UK: The Society for Research into Higher Education & Open University Press.
- Bruner, J (1960). *The Process of Education*: Cambridge, Mass: Harvard University Press.
- Caladine, Richard. *Enhancing E-Learning with Media Rich Content and Interactions*. New York: Information Science Publishing, 2008. Print.
- Elton, Lewis, (1999). "New ways of learning in higher education: Managing the Change", *Tertiary Education and Management* 5, 207-225.
- Ginsberg, H. and Oppen, S. (1987) *Piaget's Theory of Intellectual Development*. Englewood Cliffs, NJ: Prentice Hall.
- Gupta Asha. (2008), *Education in the 21st Century : Looking Beyond University* Shipra Publications, Delhi.
- Kumar, Satendra. *The Impact of ICT on ELT: An Innovative Methodology*. Jaipur: Yking Books, 2013. Print.
- Laurillard Diana (2006) "E-learning in Higher education" in (Paul Ashwined.) *Changing Higher Education: The Development of Learning & Teaching*: London, RoutledgeFalmer.
- Marton, F. and Booth, S. A. (1997).*Learning and Awareness*. Hillsdale, NJ: Lawrence Erlbaum
- Singh, P.P., and Sandhir Sharma. *E-Learning: New Trends and Innovations*. New Delhi: Deep & Deep Publications, 2005. Print.
- Sharpe, Rhona and Benfield, Greg (2005), "The Student Experience of E-learning in Higher Education" *Brooke's eJournal of Learning and Teaching*, 1 (3).
- Sharpe, R. (2008) "Learning from the learners' experiences". *Keynote at the e-learning@Greenwich conference*, University of Greenwich , 8 July.
- Van Dusen, G.C. (2001). *Digital dilemma: issues of access, cost, and quality in media-enhanced and distance education*, Jossey-Bass Inc, California
- Vygotsky, L.S. (1978). *Mind in Society*. Cambridge, MA: Harvard University Press.
- Watkins, Ryan. *75 e-Learning Activities: Making Online Interactive*. San Francisco: Pfeiffer, 2005. Print.s