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## DEVELOPMENT AND MANAGEMENT OF E-CONTENT

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### ABSTRACT-

Nowadays, students prefer online learning over traditional classroom instruction in this digital age. Every student today has access to the internet via any electronic device. As a result, compared to the old method of studying, access to e-material is very simple and much more practical. The Indian government is also making efforts to integrate new technologies into higher education. Every educational institution has built smart classrooms. Teachers are engaging their students with great zeal while using projector screens. This study discusses how to create electronic content, models of electronic content, standards and tools for creating electronic content, and initiatives taken by the UGC, MHRD, and INFLIBNET. In this paper, the role of librarians in the creation of electronic content is also covered.

**Keywords:** e-learning, e-content, INFLIBNET, SWAYAM, e-Pathashala.

### INTRODUCTION

According to Wikipedia, "education is the process of assisting learning," which is the process of acquiring knowledge, skills, values, beliefs, and habits? Technology has had a significant impact on the teaching and learning process in the modern day. Web-based technology is one of the main elements of technology. A worldwide trend is the growing usage of the internet and web-based technology in educational settings. The e-learning is one of the newest applications of internet innovation.

## **Globalization**

The population of the country is increasing, globalization is sweeping the globe, and Indian society is embracing novel strategies for development.

## **Digitization**

The world is rapidly heading toward digitization nowadays, so we must acquire new skills while utilizing cutting-edge technology. We used to spend our time in the library looking for knowledge in books, magazines, or journals ten to two years ago. The identical activity is carried out by our users, except nowadays they look up information online. India is quickly embracing blended learning methods that make use of ICT. As a result, education has evolved into a steppingstone that will help Indians reach a better future.

## **Impact of ICT**

### **i. Pressure on Teachers**

Due to easy access to the internet, all students today are knowledgeable about the material being taught in class. Therefore, a teacher is under pressure while instructing. So that well-trained teachers with the necessary knowledge, abilities, and commitment may foster in them a scientific and critical thinking that fosters learning and the development of cultural and social values. Modern technological advancements will enable it. ICT provides a number of opportunities, including the ability to capture, store, disseminate, and communicate a range of information.

The younger generation wishes to use better methods of education because of the intense competition and awareness of the time. Here, one recognizes that the moment is right to employ blended learning strategies that make use of technological resources & techniques. ICT-enabled educational systems should supplement traditional classroom instruction. This change to a digital classroom will give the students a far deeper and more informed experience.

### **ii. Digital Education**

Prior to now, the university's main responsibility was to produce and distribute information. But there is still a strong need to go beyond the traditional tasks for colleges in the modern era of knowledge-based societies. Therefore, in the ICT era, the introduction and use of e-learning would be the most crucial factors. ICT-driven e-learning has proven to be a blessing in modern times and has become a fundamental component of every sector. But in the modern day, it has evolved into digital education. Geographical barriers are rendered meaningless by digital education, which also encourages studying at any time and from any location without regard to one's age or ability level. These aspects are principally made possible by the multidimensional approach provided by educational digitization techniques. These technical breakthroughs include a variety of technologies, such as cameras, digital projectors, Virtual Learning Environments (VLE), Content

Management Systems (CMS), and Learning Management Systems, as well as recently developed Virtual Reality (VR), Augmented Reality (AR), and others (LMS). Massive Open Online Courses (MOOCs), blended learning simulation environments, adaptive training environments, and flipped classrooms are other fields that further broaden the parameters of education through the manner of digitization.

Technology's rapid growth and the abundance of fantastic and creative modern tools and equipment offer a remarkable potential to enhance educational outcomes. Teachers need to be aware of how to use technological tools and resources to enhance teaching and learning, increase instructional opportunities, and benefit millennial. In this e-content article, the researcher has examined every facet of e-content. That is, how e-content developed, what instructional models are employed by researchers to create e-content, and what challenges are encountered during the creation of e-content. The creation of e-content is influenced by approach as much as technology. Therefore, in order to receive the best outcomes from e-learning, it is essential that today's educators know both technique and technology. Here are some elements of accepting e-learning, how it affects learning results, and what challenges teachers encounter while using it effectively that have been taken from several study publications.

## E-CONTENT DEVELOPMENT

### A. What is e-content?

Electronic content (e-content), usually referred to as digital content, and is any content or information that is made available online or that is provided over a network of electronic devices.

1) e - content is defined as "digital text and graphics designed to appear on web pages" by the Oxford Dictionary.

2) e-content, in the words of Kumar et al. (2021) 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 creating e-content is not an easy task. It must be set up in accordance with the learning styles and levels of each student. Tekin and Polat (2016) recommended that professionals such as coordinators, educational psychologists, art directors, designers, environment compilers, content experts, educational sociologists, education technologists, team leaders, producers, scale and assessment specialists, as well as team leaders and producers, be involved in the creation of e-content. The e-content creation is a systematic, scientific, and difficult effort. Seven variables—educational and design criteria, sound criteria, photograph criteria, visual criteria, assessment, animation criteria, and technological criteria to generate e-content—were gathered by the researcher with the use of exploratory factor analysis.

### **Student's perception towards e-content**

Since e-learning is now widely used for both teaching and learning, consequently, it is crucial to comprehend how students view technology. The major priority is you as a student. The learner is at the centre of the teaching and learning process. **Azhari & Ming (2015)** in their study expressed the idea that instructors might make early modifications if they understood the students' perspectives on e-learning. In their research, the researchers cited the impact of gender on e-learning opinion.

### **Teacher's perception towards e-content**

Educators are the other essential part of the teaching and learning process. It is important to take into account the instructors' attitudes about innovation because they are also impacted by how innovations are implemented. In terms of the instructors' acceptance of e-learning, **Hsbollah et al. (2005)** claimed that teachers' sexual orientation and tenure have no bearing on this. According to a study conducted at University Utara Malaysia, lecturers' perceptions of the advantages of e-learning and their level of testing the technology before utilizing it are more likely to have an impact on their adoption.

### **Importance of e-content**

1. Teachers and students can use, reuse, and modify a wide variety of digital materials that are freely accessible online and come with few restrictions for their teaching and learning.
2. Students are migrating from textbooks to digital course materials because textbooks are too extensive.
3. It is well-liked because to its versatility in terms of studying time, location, and pace.
4. It comprises all types of material produced & distributed via various electronic mediums.
5. Available in practically all topics and educational levels.
6. It is simple to distribute and send.
7. By using well-designed and well-created e-content for teachers' pupils and others profit.
8. Having their programme available to teachers and students on campuses benefits educational institutions.
9. Beneficial for institutes of open and distance learning.

## B. Design & Development of E-content.

According to the study, the two pillars of e-content design are computation and communications. Without them, e-content design would not be possible. There is no magic formula for creating electronic material, but the researcher's "goal driven structuring technique" is an effective method for organizing electronic content. As a result, a model for "goal driven organization and evolution" of e-content was devised by the researcher. The five strata that make up this paradigm are programme, course, module, unit, and topic.

Model recommended for creating goals at each stage. Course objectives come first, followed by module objectives, unit objectives, and then specific topic objectives. It was given the name "objective driven structuring model" for this reason.

### i. Purpose

- To establish a society that is highly informed.
- Access to important and high-quality digital content
- E-content works well as a virtual teacher.

### ii. Design & Development

Design and development will be influenced by:

1. The type of content and the audience.
2. The standard and depth of the learning you want to produce

There are numerous models for instructional design accessible. The ADDIE model is the most typical and well-liked approach used for producing educational materials. Analyze, design, create, implement, and evaluate, for example. It was initially created by Florida State University for a programme to develop instructional methods for military training.

### Analysis

- To determine whether developed e-content is appropriate, the model's first phase is used.
- Examining the learner, task, content, and learning needs.

### Design

The learning objectives are defined, the content is logically organized, the instructional and evaluation methodologies are specified, and the visual and technological design is prepared.

## Development

It is similar to creating a storyboard. It consists solely of scripting the complete course material. The graphic representation of the various scenes is used in movies to provide blueprints and content annotations.

## Implement

The learners are given resources at this stage. Documentation for comprehensive implementation is produced. This document should include the course syllabus as well as the hardware and software requirements for delivering the learning objectives.

## Evaluation

Formative and summative assessments are the two components of the evaluation phases. The material is amended throughout this process based on the input collected.

### Other Alternative Models:

- ❖ Dick & Carey Design Model
- ❖ Hannatin & peek Design Model
- ❖ Knirk & Gustafson Design Model

### C. Standards of e- Content

Most developers should abide by the e-content guidelines. These are engineering or technical specifications that aid in establishing standardization for creators of e-content. The electronic standards are published by official standard groups as the www consortium (W3c), the Internet Engineering task force ISO, etc.

### D. Learning Objects

It is a learning material that can be utilized again and is typically digital and web-based. According to IEEE, learning, educational, or training entity can be either digital or non-digital. A learning object is something that can help in teaching - learning process. For instance, a printed book, newspaper, report, or digital learning resources, etc.

### E. Re-usability of e-content

The reusability of e-content depends on three factors. They are pedagogy-related, nontechnical, and technical.

- The technical usefulness of electronic content concern for the many types of instruments employed to assist with e-content. These devices could include paperwork, including policies and guidelines kept in the repository.

• e-non-technical content's reusability is associated with the initiatives for standardization, protection of intellectual property, knowledge Organizational, managerial, and social transfer issues, etc., on reusability in education covers pedagogical, content, and scenario approaches. E-content is easily adaptable and reusable.

#### F. e-content Tools

There are numerous ways to make electronic information. Using a range of equipment and software Content creation and E-content development Learning and Management System (CMS), Management Method (LMS). Several open source, freeware, and proprietary software, free software, and so forth are accessible for the creation of e-content. Among the applications and technologies readily available, LibreOffice, Microsoft Office, and software. Package is simple for new users to utilize e-content creation.

#### G. Graphics, Audio and Video Creating and Editing.

Online, there are many editors and creators for audio, video, and graphics. Some are proprietary, while others are free.

- **Wevideo** is a cloud-based video editor and creator that enable us to easily and intuitively create and modify videos. You can easily adjust the different video segments, such as the transition, rapid and slow motion, adding effects, etc.
- **Magisto** is a simple-to-use video editor that can assist you in producing your video. After you upload the video, you can select one of the predetermined editing styles, add a music track, and add a title before the movie is prepared for download or social media sharing.
- **DrawPad** extensively used and well-known graphic. For all kinds of graphic design projects, it is a graphics editor and an intuitive tool for picture composition and manipulation. On your computer, you may produce paintings and sketches as well as logos, banner advertisements, billboards, diagrams, icons, and other web graphics.

#### UGC INFLIBNET'S DIFFERENT E-CONTENT DEVELOPMENT INITIATIVES.

- SWAYAM –Study Webs of Active Learning for Young Aspiring Minds.
- MOOCs-Massive Open Online Courses.
- CEC– Swayam Prabha- Consortium for Educational Communication
- Vidya-Mitra
- e-PG Pathshala



## SWAYAM

The "Study Webs of Active Learning for Young Aspiring Minds" (SWAYAM) project has been launched with the goal of granting access to the highest caliber educational resources across the nation. To ensure that every student benefits from learning content through ICT, SWAYAM offers an integrated platform and portal for online courses utilizing information and communication technology (ICT). This platform and site covers High School until all higher education subject and skill sector courses. A SWAYAM is:

1. Interactive e-content accessible from one location on the web and mobile devices for all courses from high school to university level.
2. A top-notch educational experience that can be had anytime, anywhere.
3. A cutting-edge system with simple access, monitoring, and certification.
4. Peer group contact and a platform for discussion to clear up ambiguities.
5. A hybrid delivery style that improves the standard of instruction in the classroom.

## SWAYAM-MOOCs

The most recent MOOC (Massive Open Online Course) to be implemented into our educational system is SWAYAM (Study Webs of Active Learning for Young Aspiring Minds). SWAYAM is a native MOOCs platform (web-based) that can operate multiple online courses concurrently and give concurrent access to a huge number of students at once, all without charging a registration fee (MHRD,2015). The SWAYAM platform aims to provide 2.5 lakh hours of interactive e-content in MOOC format for around three crore students throughout the country, offering more than 2,000 courses.

SWAYAM, on the other hand, focuses on creating text and video content that is compliant with Massive Open Online Courses (MOOCs) and developing a solid IT infrastructure.

## SWAYAMPBHA CEC

Initialization - The SWAYAM PRABHA is a collection of 32 DTH channels that use the GSAT-15 satellite to continuously broadcast high-quality educational programming. Every day, four hours of content are shown on television and are repeated five times, giving the students the freedom to watch it whenever is most convenient for them. The Channels are uplinked from Gandhinagar's BISAG facility. NPTEL, IITs, UGC, CEC, IGNOU, NCERT, and NIOS are among the organizations that offer the programming for these 32 DTH channels. The web portal that lists upcoming broadcast schedules and gives access to previously broadcast information is maintained by the INFLIBNET Centre.



## **Vidya Mitra - An integrated e-content portal**

The INFLIBNET Center is developing a portal to house all e-content projects as part of the "Vidya-Mitra: Integrated e-content Portal" programme, which is financed by the National Mission of Education through ICT. In the NME-ICT programme, there are more than 70 e-content initiatives being developed by various Indian Institutes in a range of academic areas.

A learner may readily access the needed information, including audio-visual learning material, textual material, multimedia enriched materials, etc. through a single interface thanks to the portal's facility to search and browse all e-contents hosted on the site.

## **e-PG Pathashala**

A project of the MHRD's National Mission on Education through ICT, which is carried out by the UGC, is e-PG Pathashala. INFLIBNET CENTER is given charge of the creation, upkeep, and administration of the portal. The development of high-quality, curriculum-based, interactive e-content in 77 subjects across all of the social sciences, arts, fine arts, and humanities, as well as the natural and mathematical sciences, linguistics, and languages disciplines is being carried out by subject experts working in universities and other R&D institutions across the nation. A Standing Committee for e-PG Pathshala on Content Development has been established by the UGC to oversee and manage the activities of content creation in the most effective and efficient way possible.

## **ROLE OF LIBRARIAN IN E-CONTENT DEVELOPMENT**

With the assistance of the faculty at their universities, librarians should take the initiative to create online information on a variety of topics. The creation of institutional e-contents is crucial. E-content usage from multiple e-sources must be tracked in accordance with NAAC requirements.

- All of the UGC's multimedia access programmes, including IndCat, VIDWAN, e-ShodhSindhu, e-PGPathshala, INFLIBNETs Institutional Repository, NLIST, OJAS, Shodhganga, Vidyamitra, and Infistats should be made available to patrons.
- By inviting specialists from INFLIBNET, librarians can conduct training sessions for their faculties on how to create digital content.
- Teachers should be encouraged to produce digital information on a variety of topics by librarians.
- The government has made it a priority to provide increasingly more facilities for people with impairments. Teachers and librarians should therefore take the initiative to make e-contents available to people with disabilities.

## CONCLUSION

Finally, it can be concluded that INFLIBNET is making tremendous efforts to generate e-content. As a result, students in far-off locations can also pursue education via distant learning. The compilation of all the materials in one place is made possible by the digitization of education. Therefore, in the digital age, it is necessary to make things much simpler for the students using online resources in the form of online material. The best option for this is to use open educational resources.

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