



DEVELOPMENT OF E-CONTENT IN NURSING EDUCATION

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Abstract:

Nursing education is rapidly changing to be more digital and accessible to meet the demands of learners and supply the healthcare staffing needs. Increasing use of computers in teaching and learning, content production in the electronic format is the need of the hour. E-content includes all kinds of content created and delivered through various electronic media like online courses and modules, virtual simulations, case studies, interactive tutorials and quizzes, digital resources and forums. E-content development in nursing education refers to the creation and design of digital content to support nursing students' learning and professional development. Development of e-content is a systematic approach which provides a step by step process for the analysis of the learners' needs, the design and development of the material. Most common and popular model used for creating instructional materials is the ADDIE model which stands for the five phases involved in the model. They are analyse, design, develop, implement and evaluate. Despite the challenges, e-content development in nursing education is crucial for providing high-quality, engaging, and accessible learning experiences for nursing students.

Keywords: E-learning, Nursing Education, E-content, ADDIE model, Information Communication Technology

INTRODUCTION

Rapid growth in technologies has changed the way we live, work, and learn. The swift on the field of informational communication technologies (ICT) force educational and other institutions to think about different ways of teaching and learning in both formal and informal environments and witnessed an increased focus on innovative methods of delivery in education system. It addition it is well known that our knowledge gained is getting out-of-date so life-long learning is becoming a necessity. As a consequence in the last decade, we are facing a rapid development and use of new educational approaches such as e-learning, simulations, virtual reality etc. brought a revolution to learning and instruction. Nursing education is rapidly changing to be more digital and accessible to meet the demands of learners and supply the healthcare staffing needs.

Technology has become an indispensable part of modern society, transforming various industries, including healthcare. In the nursing profession, the use of technology has had a profound impact on nursing education, shaping how nurses are trained, enhancing their clinical skills, and improving patient care outcomes. As technology continues to advance, nursing education has seen a significant shift; with new trends emerging all over the world is towards more individualized and flexible forms of learning. Increasing use of computers in teaching and learning, content production in the electronic format is the need of the hour.

E-content and its development

Electronic-content (e-content) which is also known as Digital Content refers to the content or information delivered over network based electronic devices or that is made available using computer network such as INTERNET. E-content includes all kinds of content created and delivered through various electronic media. It is a combination of text, audio, video, images, animation with visual effects that is delivered via internet, satellite broadcast or mobile technology.

E-content development in nursing education refers to the creation and design of digital content to support nursing students' learning and professional development. This includes online courses, modules, virtual simulations, case studies, interactive tutorials and quizzes, digital resources, online discussions and forums.

Aim of E-content Development in Nursing Education

Everyone in the society is empowered to create, receive, share and utilise information for their progress. Many important developments have occurred in education with the arrival of the net. Nowadays, even the youngest of persons are able to effectively use smart phones, internet, text messaging etc. Thus implementing an e-learning content has become an easy matter. Social media, message boards and other forms of online communication allow learners to stay in touch and conduct discussions on course materials, thus giving a feel of a community. Very well designed, developed and validated e-content will provide access to high quality meaningful digital content and serve as an effective virtual teacher.

Effective e-content development in nursing education can:

- Enhance student engagement and learning outcomes

- Provide flexible access to education for diverse student populations
- Support competency-based education and skill development
- Foster collaboration and communication among students and faculty
- Stay current with the latest research and evidence-based practices

Need for e-content development in Nursing Education

The need for e-content development in nursing education is driven by several factors, including:

1. **Enhanced Learning Experience:** E-content development provides an immersive and interactive learning experience, incorporating multimedia elements that cater to various learning styles. It allows learners to explore concepts in a more engaging and personalized manner.
2. **Flexibility and Accessibility:** E-content can be accessed anytime and anywhere, allowing learners to study at their own pace and convenience. This flexibility enables self-paced learning, remote learning, and access for learners with diverse needs.
3. **Engagement and Motivation:** Interactive elements like videos, quizzes, and simulations in e-content make the learning process more enjoyable and motivating. They encourage active participation and improve knowledge retention.
4. **Scalability and Cost-effectiveness:** E-content can be easily replicated and distributed to a large number of learners without significant additional costs. It eliminates the need for physical materials and reduces overhead expenses.
5. **Up-to-date content:** E-content can be easily updated, ensuring that students receive current and evidence-based information.
6. **Self-directed learning:** E-content promotes independent learning, preparing students for lifelong learning and professional development.
7. **Data analysis and feedback:** E-content provides insights into student learning patterns, helping educators refine their teaching strategies.

By incorporating e-content development in nursing education, educators can create a more inclusive, engaging, and effective learning environment that prepares students for success in the healthcare industry.

Types of e-content used in nursing education:

The following types of e-content can be used to engage nursing students in interactive and immersive learning experiences to enhance their knowledge and skills.

1. Virtual lectures: Recorded or live video lectures on various nursing topics.
2. Interactive simulations: Virtual scenarios that mimic real-world nursing situations.
3. Online modules: Self-paced learning modules covering specific nursing topics.
4. Podcasts: Audio recordings on nursing-related topics.
5. Webinars: Live or recorded online presentations on various nursing topics.
6. E-books and digital textbooks: Electronic versions of nursing textbooks.
7. Online case studies: Real-life scenarios used to teach nursing students critical thinking and decision-making skills.
8. Virtual labs: Online environments where students can practice nursing skills virtually.

9. Animations and videos: Visual aids used to explain complex nursing concepts.
10. Gamification: Interactive games and activities used to teach nursing concepts.
11. Online discussions: Forums and chat rooms where students can discuss nursing topics with peers and instructors.
12. Virtual reality experiences: Immersive experiences that simulate real-world nursing environments.

E-content models for Nursing Education

There are some e-content models for nursing education which can be combined and tailored to suit specific nursing education needs, promoting effective learning and professional development.

1. Linear Model: A straightforward, sequential approach, presenting content in a logical order.
2. Non-Linear Model: A flexible, interactive approach, allowing learners to navigate through content as needed.
3. Modular Model: Breaking content into smaller, self-contained modules, focusing on specific topics or skills.
4. Microlearning Model: Bite-sized learning chunks, providing concise information and skills.
5. Storytelling Model: Using narratives and scenarios to present content, making it more relatable and engaging.
6. Gamification Model: Incorporating game design elements, encouraging learners to engage and interact with content.
7. Simulation-Based Model: Virtual simulations mimicking real-world nursing scenarios, promoting practice and application.
8. Case-Based Model: Presenting real-life cases or scenarios, requiring learners to analyze and apply critical thinking.
9. Collaborative Model: Fostering peer-to-peer learning, encouraging learners to share experiences and knowledge.
10. Adaptive Model: Adjusting content and difficulty levels based on individual learners' needs and performance.

Development of E-content

The systematic approach provides a step by step process for the analysis of the learners' needs, the design and development of the material. The steps in e-content development are:

1. Analysis:
 - Identify learning objectives and outcomes
 - Define target audience and their needs
 - Conduct a content gap analysis
2. Design:
 - Develop a content strategy and plan
 - Create a storyboard or prototype
 - Define the content structure and format

3. Development:

- Create the content (text, images, multimedia)
- Design and develop interactive elements (quizzes, simulations)
- Ensure content is accessible and usable

4. Review and Revision:

- Review content for accuracy and quality
- Revise and edit content based on feedback

5. Production:

- Finalize content and prepare for delivery
- Convert content into suitable formats (HTML, PDF, video)

6. Testing and Quality Assurance:

- Test content for functionality and usability
- Ensure content meets technical and accessibility standards

7. Implementation:

- Publish and deploy content in the desired platform (LMS, website)
- Configure content for delivery and tracking

8. Evaluation:

- Monitor content usage and learner engagement
- Assess content effectiveness in achieving learning objectives
- Gather feedback for future revisions

9. Maintenance and Update:

- Regularly review and update content to ensure currency and relevance
- Ensure ongoing accessibility and usability

These steps help to ensure that e-content is developed in a systematic and effective way to support learning and achievement of learning objectives.

Various instructional design models are available according to the requirements. Most common and popular model used for creating instructional materials is the ADDIE model. This abbreviation stands for the five phases involved in the model. They are analysis, design, develop, implement and evaluate.

Analysis: It is the first phase of this model meant for examining the suitability of the e-content to be developed. It is related to analysing the learning needs, context, learner, task and content. Analyzing the learning needs is identifying the needs from the perspective of different learners, teachers, subject experts, practitioner, policy makers etc. Needs are to be clearly stated.

- **Contextual analysis** is collecting data related to the context of learning such as learning environment. Whether the e-content developed is for the individual or group, formal or informal, facilitated or self-learning etc.
- **Learner analysis** is collecting data related to learners' academic levels and attributes such as skills, motivation, visual literacy, language competency, learning styles etc. It helps to know about the learner.

- **Task analysis** is stating the purposes of developing the e-content. Deciding whether that is developed for educating, training, creating awareness, developing skills etc.
- **Content analysis** is nothing but preparing a content outline. Good content comprehension is required before designing and developing content. It includes verifying the content with respect to cognitive appropriateness, factual accuracy, completeness etc. It also includes classifying the content into facts, concepts, principles, processes and procedures.

Design: It is concerned with defining the learning objectives, structuring the content logically, specifying the instructional and evaluation strategies, and preparing for visual and technical design.

- **Learning objectives** are to be defined in clear, realistic and measurable terms. Learning objectives are the statements that describe what the learner will be able to do at the end of the course or program. Learning objectives should specify performance and communicate their purposes. Prepare a detailed content outline in which content is thoroughly analysed and logically organised. Content is to be structured logically following simple to complex, known to unknown, concrete to abstract, general to specific etc.
- **Instructional strategies** are to be stated clearly. Depending on the learning style and nature of the content we have to decide the appropriate instructional strategy. Appropriate media mix that is combination of audio, video, graphics, animation; simulation etc is to be decided.
- **Learner evaluation** strategies such as practice, computer marked or tutor marked assessments, pretest, post-test, remedial tests etc are to be specified. We have to decide about the formative and summative assessments. Make sure that content, assessment tests and exercises match the objectives stated. Provide the information and knowledge required to meet the learning objectives.

Development: It is related to the creation of story board. In e-content development the story board describes step by step script of the final outcome of the e-content i.e. story board is created to provide a blue print of the course with each and every detail along with the content notes. The story board is created based on the objectives and instructional strategies. Here the developers create and assemble the content assets and learning objects. Programming and integration of all media elements into a cohesive multimedia package are the part of this phase.

Implement: In the implementation phase, materials are distributed to learners. A comprehensive implementation strategy document is developed. This document should cover the course curriculum, learning outcomes, method of delivery in terms of hard ware and soft ware requirements and testing procedures. Ensure that the web site is functional if the material is on the web site.

Evaluation: The evaluation phase consists of two parts i.e. Formative and summative evaluation. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation determines the adequacy of the distributed materials in achieving the course objectives. Material is to be revised at all the stages based on the feedback received.

Challenges in e-content development in nursing education

- ❖ **Inexperienced teachers:** Teachers who lack experience with e-learning may struggle with using software, uploading files and sticking to a schedule.

- ❖ Ineffective learning: Problems with ineffective learning include absenteeism, poor interaction, teacher-centered teaching and lack of visual aids.
- ❖ Academic malpractices: Malpractices in online exams can be prevented by ensuring online test security.
- ❖ System problems: Issues with internet connectivity and hardware and software facilities can hinder e-learning.
- ❖ Inappropriate evaluation: Chances of malpractices in online exams undermines the credibility of the learning process.

In conclusion, e-content development in nursing education is crucial for providing high-quality, engaging, and accessible learning experiences for nursing students. By leveraging various formats, tools, and facilities, educators can create interactive and immersive content that enhances knowledge, skills, and attitudes in nursing practice.

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