ABSTRACT

When an instructor is able to identify, develop and apply appropriate digital media content that motivates learners and encourages them to learn, the process of learning is empowered. This study has identified multimedia digital content packaged in the format of video as the most preferred learning media by the learners. Content formats that had highest hit rate with accessed mean rate above 300 (discussion forums, video clips, and graphics) are discussed. The study revealed that learning becomes interactive and effective when a video is presented in the style of hypermedia. Learners’ perceptions rating indicated that learners perceived the video format as satisfactory, helpful in knowledge retention, motivational and an enhancement of learning. Available online authoring tools and supportive open content sites are identified and educators are encouraged to develop digital content in video format and disseminate them for teaching and learning.

INTRODUCTION

The phenomenal growth of mobile devices amongst learners in last few years, coupled with the development of various multimedia content and authoring tools excite educators and challenges them as well. Educators are constantly exploring ways in which digital content can be utilized via mobile devices for purposes of learning. They are trying to find out what digital content can transform learning in the
classrooms that are already invaded by mobile devices. Researchers in the area of educational technologies are also working hard to provide answers that are pedagogically acceptable. Software engineers are also working closely with instructional design experts to develop tools for authoring and producing digital content for learning. According to Hix and Hartson, (1993), Digital content that is pedagogically acceptable require:

1. To be prepared in the context of learning i.e. in accordance with the syllabus and learning objectives;
2. An appropriate medium for transporting it;
3. A method of packaging that is independent of medium or is supported by the delivery medium;
4. A delivery method/protocol that support multiple devices;
5. Application software that provides linkages for interactivity;
6. A method for evaluating if learning takes place.

Educators are faced with challenges of getting the right skilled workforce that can effectively use authoring tools to develop digital content for learning. While some contents are easy to create and post in learning forums, others require skills for creating them from scratch. Also, it is difficult for some teachers to identify the correct tools for authoring in a fast-changing technological environment. The following background knowledge is necessary when identifying tools for authoring multimedia content: - 
- a storage device which stores one or more multi-media assets and one or more program objects; 
- A display for displaying a plurality of timelines; 
- A graphical user interface that allows the user to place icons representing one or more multimedia assets on a first of the timelines; and 
- a processor for integrating multimedia content from the multimedia assets. This knowledge is necessary when establishing a multimedia authoring that is professionally acceptable even by secular media. However, there are many simple tools that teachers can use for educational multimedia content. It important at this point to note that pedagogical needs and learner preferences must always dictate the kind of media we choose, and not technology.

Research has revealed that it is often desirable to present learning content to a learner in multimedia format. However, the medium should also allow feedback from the learner by which learner’s learning may be assessed. The content given to a learner should be flexible enough to be altered based on the assessment outcome. This way, it assists the learner depending on the state of cognitive ability. Some media enhance content retention, especially visual images. According to Khosla et.al. (2015), Popular images are remembered more, these are familiar images that the learner can associate learning with. Known images balance the learner’s cognition, driving the learner to remember more. Also, the number of icons or illustrations that a learner is presented with assists with balance. Khosla at. Al. (2015) continues to state that smaller number of images per page are remembered more and cultivating images are also remembered more. This is a question of cognitive load balancing of the learner during learning. It is, therefore, important to include multimedia that stimulate learning within the instructional designs and courseware.

According to Hix and Hartson, (1993), the process of developing multimedia courseware is a six step star model that include: - Courseware specification; Instructional design; Multimedia designs; Integration; Implementation; and Evaluation. Courseware specification deals with identification of objectives of the material in the context of the learner; Instructional design deals with the pedagogical issues and is constrained by factors like device type, delivery technology and authoring tools; multimedia design and development deals with selection, design and production of multimedia components; Integration
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