Research and Development of CAIBuilder: an Innovative Authoring Tool for Creating E-Courseware Easily

Chailerd Pichitpornchai

Abstract

Objective: In recent years, educators have increasingly adopted e-learning. Unfortunately, most e-coursewares or Computer-Aided Instructions (CAI) could not always fulfill educators’ needs. This results in a need to develop their own e-courseware by using available electronic authoring tools; however, there are difficulties in using these tools. The present study was intended to research on the difficulties in using authoring tools and to identify features needed by educators, the results would be used to develop an innovative CAIBuilder software.

Methods: Waterfall model, human-computer interaction and object action interface model have been employed in designing and implementing CAIBuilder. The software was written with ToolBook OpenScript. The beta version was tested, bugs were fixed and additional features were coded. The final version was used to conduct two workshops for fifty-three non-programmer university educators. Pre-test and post-test questionnaires were distributed to collect demographic data, knowledge, concepts, skills, experience, and confidence on creating multimedia applications, including key features of CAIBuilder.

Results: The results were analyzed and presented in percentages, and the Wilcoxon signed rank test was used for comparison. The results demonstrated that over 85% of non-programmer educators found CAIBuilder was user-friendly, easy to learn, and also powerful. The Wilcoxon signed rank test at a significant level p < 0.0001 indicated that, after the CAIBuilder workshops, over 80% of participants had increased their knowledge and confidence in creating multimedia applications by themselves, creating computerized test items, navigational controls and program flows. The Autonomic Nervous System and Physical Modalities are two examples of interactive e-courseware implemented by using CAIBuilder. and they have been Currently, they are being used in the teaching of physiology and physiotherapy to medical students at the Faculty of Medicine, Siriraj Hospital.

Conclusions: CAIBuilder is an innovative electronic authoring tool of choice for non-programmer authors to create an interactive e-courseware of good quality with feedback in a reasonably quick time frame without programming.

Keywords
authoring tools, a developer can develop a whole application saving more time than when coding with hand using text editors. Most authoring tools have made application development across all platforms a very easy task that you don’t need the help of an expert in programming to do all the work for you. For programmers, authoring tools are like catalyst because they speed up the rate of application development, and deployment are made easy.

Importance Of Authoring Tools.
1. They make development of applications easy and durable.
2. They are time savers – they save the duration of time a developer needs to develop applications.

12. Adobe Captivate: an e-learning authoring tool developed by Adobe to ease creation of coursewares for organizations. E-Learning authoring tools are simple tools to create online course content. Developing e-learning course, there is a need to follow the phases of development which are analysis, design development and updating. In analysis phase usually the author of the course start to make brainstorming and think about the aim and objectives in pedagogical way. The definition of “Authoring tool” is a program that helps you write using hypertext or multimedia applications and enable you to create a final application merely by linking together objects, such as a paragraph of text and illustration. Improving a... Courseware development concerns the design and development of appropriate electronic materials for teaching and learning. This includes the use of authoring tools and scripting languages to develop multimedia educational materials including databases, file systems and website development. The Courseware Developer works with an instructional designer, subject matter experts and graphic designer to ensure quality and accurate development and implementation of design and final products (teaching and learning material). Contact the Centre for Innovative Educational Technology (CIET). Centre for e-Learning Corner Kaizersgracht and Tennant Street Cape Town. Tel: +27 21 464 7242.