An innovative approach for developing and employing electronic libraries to support context-aware ubiquitous learning

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Abstract

Purpose- This paper aims to propose an innovative approach to assist teachers in using electronic libraries to develop learning activities for context-aware ubiquitous learning, in which the learning system can detect students behaviors and guide them to learn in the real world with personalized support from the digital world.
Design/methodology/approach - An electronic library with context-awareness metadata for supporting learning activities conducted in real-world environments is presented. Furthermore, a systematical procedure for guiding teachers in employing the electronic library to develop learning activities is proposed based on an innovative approach.
Findings - From a practical application conducted on an elementary school, it is found that, with this innovative approach, electronic libraries not only have the potential in supporting traditional in-class or online learning activities, but also can assist teachers and digital content workers in developing high quality learning activities and related digital learning materials to support outdoor learning.
Research limitations/implications - The finding of this paper implies that, to promote the utilization rate of electronic libraries for more specified purposes, more features of the application domains needed to be considered while design the database schemas of the electronic libraries.
Practical implications - From the feedbacks of teachers and digital content workers, it is found electronic libraries have high potential for supporting outdoor learning activities for “Science” and “Social Science” courses with proper database schema design and the provision of user guidance.

Keyword：Electronic library, Artificial intelligence, Ubiquitous learning, Repertory grid, Knowledge engineering