Immersive Learning Environment with Integrated Interactive Video and Ubiquitous Technologies

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Abstract

Information technology is an integral part of daily life in many domains, including communication, computing, entertainment, and education. However, despite its pervasiveness, digitalization in various purposes and application in many human-based activities, it still plays the role of assisting and supporting people in manipulating and acquiring information. This study developed a ubiquitous learning environment based on the connection between digital and physical information. By using mobile learning technologies, including interactive video-based multimedia technology, GPS, GIS, and the electronic map service, learners can perform location-aware learning activities and experience corresponding appearances regarding a particular location. Accordingly learners can acquire new knowledge by participating in location-aware learning activities. We also demonstrate a ubiquitous learning activity of introducing the history of Tamkang University, Taiwan, and assess the effectiveness of the proposed ubiquitous learning environment.