Ubiquitous Learning Environments in Higher Education: A Scoping Literature Review

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Abstract : Ubiquitous learning and the use of ubiquitous learning environments herald a new era in higher education. Ubiquitous environments fuse together authentic learning situations and digital learning spaces where students can seamlessly immerse themselves into the learning process. Definitions of ubiquitous learning are wide and vary in the previous literature and learning environments are not systemically described. The aim of this scoping review was to identify the criteria and the use of ubiquitous learning environments in higher education contexts. The objective was to provide a clear scope and a wide view for this research area. The original studies were collected from nine electronic databases. Seven publications in total were defined as eligible and included in the final review. An inductive content analysis was used for the data analysis. The reviewed publications described the use of ubiquitous learning environments (ULE) in higher education. Components, contents and outcomes varied between studies, but there were also many similarities. In these studies, the concept of ubiquitousness was defined as context-awareness, embeddedness, content-personalization, location-based, interactivity and flexibility and these were supported by using smart devices, wireless networks and sensing technologies. Contents varied between studies and were customized to specific uses. Measured outcomes in these studies were focused on multiple aspects as learning effectiveness, cost-effectiveness, satisfaction, and usefulness. This study provides a clear scope for ULE used in higher education. It also raises the need for transparent development and publication processes, and for practical implications of ubiquitous learning environments.

Keywords : higher education, learning environment, scoping review, ubiquitous learning, u-learning

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