Towards Individualized Online Learning: The Design and Development of an Adaptive Web Based Learning Environment

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Abstract

The purpose of this study was to document the design and development of an adaptive system which individualizes instruction such as content, interfaces, instructional strategies, and resources dependent on two factors, namely student motivation and prior knowledge levels. Combining adaptive hypermedia methods with strategies proposed by instructional theory and motivation models, an adaptive online system was designed and developed through several iterations of design-based research, researchers have improved the adaptive system, and the adaptive strategies and learning theories underlying the design. This study documents the decisions made by its designers and discusses the design and development challenges which were encountered.