

## Moving Towards a Generic, Service-based Architecture for Flexible Teaching and Learning Activities

### Abstract

Modern, computer-supported learning must go far beyond simply delivering learning content in a one-fit-for-all approach to students. It instead should include a variety of didactic aspects and cognitive characteristics. Furthermore, diverse systems and information must be taken into account for individualized learning processes. In light of this information, the objective of this chapter is to delineate an open, distributed, and service-based architecture for flexible teaching and learning activities. Backed by relevant research strands in this context, an architecture for an enhanced e-learning system developed within the AdeLE research project shall be depicted and experiences gained so far will be discussed. Based on this, a proposal is given for a generic and flexible architecture for adaptive e-learning towards the end of this chapter.

### Keywords

Distance Education, Distance Learning, Distance Learning, Web-Based Education, Web-Based Learning, Web-Based Teaching, Cognitive Skills, Electronic Learning (E-Learning), Learner Goals, Didactic Goals, Preferred Media Type, Adaptive E-Learning, Information Processing, Educational IS, Adaptive System, Adaptation System, Learning Management System, Learning Content Management System, User Modeling, User Profiling, Dynamic E-Learning Knowledge Repository, Data Preparation, Data processing, Retrieval, User Behavior, User Characteristics, Eye-Tracking, Gaze Pattern Recognition, Learning Objects

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