



PERCEPOLIS: Pervasive Cyberinfrastructure for Personalized Learning and Instructional Support

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ABSTRACT

This paper describes PERCEPOLIS, an educational platform that leverages technological advances, in particular in pervasive computing, to facilitate personalized learning in higher education, while supporting a networked curricular model. Fundamental to PERCEPOLIS is the modular approach to course development. Blended instruction, where students are responsible for perusing certain learning objects outside of class, used in conjunction with the cyberinfrastructure will allow the focus of face-to-face meetings to shift from lecture to active learning, interactive problem-solving, and reflective instructional tasks. The novelty of PERCEPOLIS lies in its ability to leverage pervasive and ubiquitous computing and communication through the use of intelligent software agents that use a student's academic profile and interests, as well as supplemental information such as his or her learning style, to customize course content. Assessments that gauge the student's mastery of concepts are used to allow self-paced progression through the course. Furthermore, the cyberinfrastructure facilitates the collection of data on student performance and learning at a resolution that far exceeds what is currently available. We believe that such an infrastructure will accelerate the acquisition of knowledge and skills critical to professional engineering practice, while facilitating the study of how this acquisition comes about, yielding insights that may lead to significant changes in pedagogy.

KEYWORDS

Learning Technology, Personalized Learning, Cyberinfrastructure, Pervasive Computing.

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