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Research Title & Subtitle
Cognitive Constraints on Using Collaborative Learning Portals:
Investigating Their Effects in OnCoursre CL

Abstract

Recent educational research has emphasized the benefits of collaborative learning. Previous research reported on the positive effects of collaborative learning (CL) on student achievement, and the computer support of this collaborative learning has lead to the development of the area of Computer-Supported Collaborative Learning (CSCL). Currently, collaborative learning portals have been employed in educational institutions as one of the most effective CSCL tools. They foster a collaborative learning environment and allow students and instructors to communicate and share information. Collaborative learning portals help teachers and students attain more fundamental educational objectives; responsibility for learning is explicitly placed with the students, teachers can provide better coverage of material, teamwork experience is promoted, and students learn to handle time management. In addition, using collaborative learning portals is also motivated by economic considerations. They provide students and instructors with communication tools, which diminish the need for campus group meeting rooms. It is possible for students to work at any hour of the day according to their own preferences. Moreover, collaborative learning portals help eliminate duplicated efforts both in the technology infrastructure and the work required to place content and services on the Web, and reduce a duplication of requested information. This study investigates how cognitive limitations affect the user. More specifically, based on the observations of novices using the OnCourse CL portal, this study investigates the effects of cognitive load on user performance and error patterns.

Research Questions / Hypotheses

RQ1: Do measurements of the performance of novice users of OnCourse CL, under cognitive load, provide a better metric than those under controlled observation and, if so, in what way are the measurements better?

H1: Subjective measures of disorientation correlate better with user performance scores under cognitive load than under controlled observation.

RQ2: How does cognitive load influence the error patterns of novice users of OnCourse CL?

RQ3: From the error patterns found in the experiment, what design recommendations would help learning portal designers' to create usable learning portals?

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