

## Introduction: Advances in Teaching and Learning Technologies Mini-Track

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The Advances in Teaching and Learning Technologies Mini-Track presents research contributions that deal with theories, tools and their development, enabling platforms, communication media, distance learning, supporting infrastructures, user experiences, research methods, social impacts, and/or measurable outcomes as they relate to improving teaching and learning. In this respect, this mini-track is intended to include all aspects of learning from the original inceptions of theories and tools through the measurement of learning outcomes. Usage environments range from same-time, same-place to anytime, anywhere that increase interactions among the learners and the teacher/facilitator. The leaders of the Technology Supported Learning, Asynchronous Learning Networks, and Next Generation of Learning Platforms mini-tracks of HICSS36 have agreed to consolidate into this single, larger mini-track.

Our first paper presents a learning platform designed to provide run-time tailoring of collaborative distant learning environments based on a room concept to support five collaborative learning scenarios.

The second paper reports on empirical research about how individual differences such as preference for autonomy and anxiety about computers affect individuals' use of collaborative technologies. Conducted in an educational setting, this study measured the extent of participation in and satisfaction with a GSS-mediated group project.

The third paper presents an automatic method of segmenting lecture videos into topic units in order to organize the videos for browsing and provide search capability. The method makes use of the transcribed speech text extracted from the audio track of video to segment lecture videos into topics. This approach utilizes salient features such as noun phrase and combines multiple content-based and discourse-based features.

Our fourth paper presents an improved student examination process. The participatory exam process provides opportunities for students to learn from creating, reading, answering and grading exam questions. An on-line asynchronous learning network system facilitates the process. The paper presents the process framework, research model and experimental results. This paper has been nominated for the Best Paper Award.

Our fifth paper describes the design and evaluation of BRIX, an environment for online learning of second languages.

The sixth paper describes an information architecture that supports the dynamic composition of Web based lessons from a database of fine grained components that include explanations, interactive activities, worksheets, images, videos, audio, FAQ's, online questions and challenges.

The seventh paper offers an architectural overview of a knowledge-based, course engineering system: eCAD (electronic Course Analysis & Design).

The eighth paper provides the results of comparing the testing process between two sections of a graduate programming class, where one was an on-campus class and the other a distance class.

Our ninth paper presents the evaluation of an online test based on a case study of an e-Commerce course. The aim of the online test is to provide 'rich' feedback to students, a requirement of the learner-centered learning paradigm.

The tenth paper reflects the theoretical models for knowledge management from different perspectives. A school-specific approach is described based on a framework for information management and a system model for schools as social organizations.

The eleventh paper reports on a quasi-experiment conducted with undergraduate students who were taking a spreadsheet course. Four methods were compared to determine which produced the best performance as measured by near- and far-transfer knowledge absorption capacity and whether there were interactions with learning styles as measured by the Kolb Learning Style Instrument.

Our twelfth paper presents an approach to integrate advantages of both knowledge management systems and collaborative learning environments through Asynchronous Learning Networks. The results show evidence that the combination of discussion and voting seems an appropriate mechanism to support the learning from each other.

The thirteenth and final paper in the mini-track focuses on a Remote Interactive Laboratory environment allowing students at geographically remote sites to access and utilize devices including routers, switches, LAN analyzers, and simulators.