Introduction to Learning Analytics and Networked Learning Minitrack

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This minitrack, new for HICSS 45, addresses an emerging area of research that seeks to harness the data generated through user online activities in support of learning in education, work and other social settings. Papers that complement this minitrack fall under areas of learning research more recently referred to as learning analytics. Synergistic areas include networked learning, technology enhanced learning, CSCL, ubiquitous and mobile learning; and computational approaches of educational informatics, educational data mining, academic analytics, and social networks analysis applied to learning contexts.

To date, studies have largely focused on making visible social interactions that were, until now, difficult to perceive in online settings. Thus, we find attention to extracting and evaluating patterns of participation and interaction through examination of online conversations as a major component of this area of work. At the same time, the data resulting from conversations and interactions provides input for testing theories of knowledge construction, group practice, and learning networks. The outcomes expected from learning analytic systems are to provide a better understanding of in-class processes that support learning, support research into learning, and, at another level, provide a view that administrators can use for program planning and evaluation.

It is perhaps a reflection on the state of the art that the four papers in the minitrack address methodological issues. The papers explore the kinds of data that result from learning systems, what outcomes these may show, and what metrics make sense for learning.

Wise & Chiu, in Patterns of Knowledge Construction: Statistical Discourse Analysis of a Role-Based Online Discussion Forum, use postings in an online class discussion to examine and test a model of knowledge construction (KC). Of particular interest are ‘pivot points’ that signal changes in discourse; and how assigned roles affects KC patterns and pivot points.

Suthers & Desiato, in Exposing Chat Features through Analysis of Uptake Between Contributions, also look at important turning points in conversations, that they call ‘uptake’ points. They test algorithms for detecting important transitions, using human analysis to assess the algorithms for future refinement.

Haythornthwaite & Gruzd, in Exploring Patterns and Configurations in Networked Learning Texts, continue the exploration of interaction patterns, using the simple data of message headers to examine threading behaviors and pairwise interactions in eight online classes.

Schmidt & Laffey, in Visualizing User Behaviors in a 3D Virtual Learning Environment: A Preliminary Study, take us into virtual worlds, continuing the focus on interaction by examining speech and avatar movement in an environment supporting students with autism spectrum disorders.