Understanding the social context for online learning

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The world of online learning is fascinating and so different from face to face. What are its characteristics? What kind of learning works best in these environments? And how do you take advantage of these characteristics when you are designing your online curriculum?

An online learning environment works most effectively to facilitate the examination of issues from multiple perspectives. People can take time to read, reflect, and respond. This gives a participant a sense of security to say what she really means. The combination of a certain anonymity coupled with a sense of connectedness allows people to open up and take risks to express their thoughts even in areas they are just learning. The environment motivates people to think rather than to take a fixed position—divergence rather than convergence (Zuboff, 1984).

Mathemagica, a five-year mathematics initiative funded by the Department of Education Star Schools initiative, is developing an innovative model for online professional development for K-8 math teachers. Our online professional development philosophy is captured in a statement from the NCTM discourse standards, “When teachers make public conjectures and reason with others about mathematics, ideas and knowledge are developed collaboratively, revealing mathematics as constructed by human beings within an intellectual community.”. One component of the professional development is rich multimedia math applets that empower both teachers and students to investigate mathematical topics. For example, one series will allow students to experiment with (and even invent) computational algorithms using base ten blocks, arrays, and number lines. Another component is a sequence of mathematical investigations using the applets combined with readings and reflective tasks that teachers work on collaboratively in teams of 8 facilitated by a moderator. The applets and professional development are being piloted with 50 teachers who have a wide range of skill in technology and inquiry math practice.

This paper and presentation will describe the design of an online learning environment used with teachers in a math professional development project. The model builds upon key understandings about the social dynamics of online learning. The session will include key characteristics and strategies as well as several vignettes that demonstrate the model’s effectiveness.

Mathemagica’s Web site
http://www.mathemagica.org