Multi-user GeoGebra for Virtual Math Teams

Gerry Stahl and Arthur Powell

Abstract. Designing a software environment for online learning of mathematics in small collaborative groups requires innovation in multiple dimensions. There has to be generic support for collaborative learning at a distance and also special functionality for mathematical work and communication. We combine the Virtual Math Teams environment with a multi-user version of GeoGebra. We also develop curricular activities through an iterative process of evaluating the discourse that is stimulated by drafts of the activities in prototypes of the technology. We will be providing professional development of math teachers to facilitate student-centered collaborative learning.

Integral to our development of an environment designed to promote significant mathematical discourse is the evaluation of the discourse of groups of teachers and of students using the system. We use multiple approaches to analyzing the interaction of small online groups of people engaged in exploring geometry together, guided by a set of curricular activities.