

GRANT PROJECT: VITAL: EARLY CHILDHOOD MATHEMATICS EDUCATION

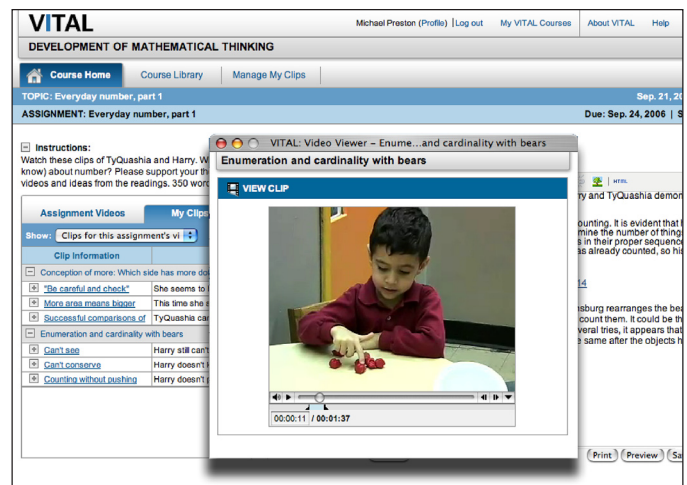
With generous support from the National Science Foundation, CCNMTL and Prof. Herbert P. Ginsburg of Teachers College are expanding and enhancing Video Interactions for Teaching and Learning (VITAL): A Learning Environment for Courses in Early Childhood Mathematics Education.

The VITAL NSF project comprises a model course in early childhood mathematics education and an innovative Web platform for delivering the curriculum, including syllabi, activities, videos, and lesson plans. The project's primary goal is to enhance undergraduate- and graduate-level mathematics education nationwide by addressing the need for improved teacher training at the early childhood level (pre-K through grade 3). During the five-year grant period, the project team will (1) create a model course in early childhood mathematics education suitable for undergraduates and graduate students, (2) redevelop the VITAL Web platform based on extensive user testing and formative evaluations, (3) test VITAL and the new course at partner universities around the country, and (4) conduct an evaluation of student learning outcomes.

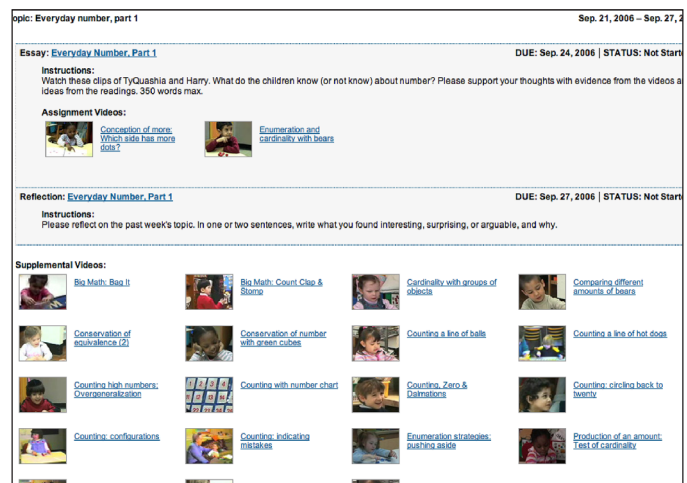
First released in 2003, VITAL is a Web-based learning environment for analyzing and writing about multimedia content. VITAL gives users ready access to video as well as tools for analyzing and communicating their ideas with the content. Its purpose is to provide a novel method of interacting with video through an interface that encourages close, repeated viewing of short clips, as well as an essay-writing space that allows users to integrate selections of video content with their writing. VITAL users can cite specific segments of video content the way one would cite text from a journal article or book, embedding source material as evidence to strengthen one's own explanation or argument.

Prof. Ginsburg uses VITAL extensively in his developmental psychology courses, assigning students weekly videos in addition to readings. With VITAL, students have frequent opportunities to make connections between theories and concrete examples in the videos, and to develop hypotheses that they can support with rich visual evidence. They compose weekly essays in VITAL that are "published" for review and critique by the professor and other students. Ginsburg reports that class discussions have greatly improved because students have already thought deeply about the content before meeting.

"Allowing students not only to view, but also to actively manipulate and comment on my video library previous to our classes has transformed my teaching and, I believe, my students' understanding of the course content," explains Ginsburg. "cational technology that allows me to more effectively teach my subject matter."



Students select segments of videos to cite in multimedia essays.



The digital library contains a wide range of video examples for close study.

CCNMTL is working closely with the Hunter College School of Education, where many of the teachers in the New York City public school system are trained. By the end of the grant period, May 2009, VITAL will be ready for distribution to teacher education programs nationwide.

"This is an exciting and groundbreaking new program that will revolutionize the way children are taught mathematics," notes James Neal, Vice President for Information Services and University Librarian at Columbia. "We are grateful to the NSF for supporting a program that will have a powerful impact on teachers and learners."



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