

Overview of KY Math Etext Project Math Curriculum Digital Conversion and Implementation Collaboration with Math Etext Research Center, University of Oregon

Background

In recent work at the University of Kentucky (SMART Project), researchers demonstrated successful use of current technologies (i.e., MathPlayer in tandem with Read & Write Gold) to render complex math textbook content accessible using MathML. In addition, UK has collaborated for the last two years with the NCSeT project at University of Oregon on issues and strategies for identifying, digitizing and delivering curriculum across grades and content areas at the middle school level (KY Etext Project) in Shelbyville, KY. This work has provided insight into the systemic processes, procedures and training needed for daily provision and use of accessible core content in digital format.

KY Math Etext Project

Findings from both of these initiatives set the stage for the KY Math Etext Project examining digital conversion and delivery of not just the textbook, but the complete 7th grade math curriculum. Classroom implementation will also include identification and resolution of the myriad of contextual variables inherent to student opportunity for meaningful and routine use of etext. This project is funded through the *Math Etext Research Center* (MeTRC) at the University of Oregon. The implementation site is Shelby West Middle School.

The KY Math Etext project will entail three phases. Phase I involves refining the technology used for electronic reading of complex math, developing a protocol for conversion of traditional math materials to digital format, and establishing a process for delivery and routine student use of math content on computer. Once this is established, Phase II will serve as a means for piloting school and student use of the digital math content to verify all issues are identified and resolved for ongoing implementation in a real world context. This will then lead to Phase III, which will provide opportunity for a full school year of student use of accessible math content and evaluation of possible impact on student performance.

Goal of each phase and research issues:

Goal: Phase I- Building the foundation for digital conversion, delivery and use of local math content (July 1, 2010- December 31st, 2010)

Research issues: What are the steps and processes for timely conversion of a traditional math curriculum into digital format (including use of MathML) for routine delivery in the classroom, and how should the student usage tools be configured for optimal student use?

Goal: Phase II- Piloting the use of digital math technology in real world contexts
(January 1, 2011- June 30th, 2011)

Research issues: What local hardware and software usage procedures must be in place and training provided to support routine use of math etext, and what are strategies that promote effective and efficient student use in general education settings?

Goal: Phase III- Investigating the efficacy of student routine use of an accessible MathML compliant digital version of math curriculum in school settings
(July 1, 2011- June 30, 2012)

Research issues: To what extent does routine year-round provision of a fully accessible math curriculum impact student performance as measured by math unit tests and or standardized assessment?

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Project Partners

Texthelp, Inc.- Manufacturer of Read & Write Gold software
www.texthelp.com

Design Science, Inc.- Manufacturer of MathPlayer software
www.dessci.com

Shelby County West Middle School, Shelbyville, KY
<http://www.shelby.kyschools.us/schools/west/>

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www.bluegrass-tech.org

Funding Source

Math Etext Research Center (MeTRC), University of Oregon
<http://metrc.uoregon.edu/>