International Society for the Scholarship of Teaching and Learning (IS-SoTL), Vancouver

Enhanced Learning Technology in Quantitative Economics

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Summary text:
Students often feel they are short on quantitative skills for their courses in economics as well as other disciplines. This SOTL research explores ways that learning technology can help students overcome their learning difficulties as well as psychological fears of mathematical skills. The research uses surveys to identify problem areas before developing remedial measures. The computer plays an important role by working with students as an automated tutor.

Abstract text:
In spite of having taken prerequisites, students often feel they are short on quantitative skills for their courses. They realize that somehow they had not, for various reasons, learned these skills properly as they should have, and now there is little time for catch -up in the busy curriculum. This inadequacy continues to grow class after class until it develops into a serious learning difficulty: no matter how hard they try, they are unable to understand the course materials; they end up relying on rote memorization instead of logical thinking, and eventually lose both confidence and interest in the subject. The objective of this SOTL research is to explore ways that learning technology can help students overcome their learning difficulties as well as psychological fears of mathematical and high - order problem -solving skills. It also aims to enhance teaching by course instructors in economics as well as other disciplines. The research begins with surveys of both students and instructors to identify specific problems in mathematical background preparation students will most likely encounter. These survey data can be used as a blueprint to develop remedial measures such as learning modules, automated review testing, and case studies teaching problem-solving skills. Students learn to analyze realistic situations, apply economic theory, and use software to generate solutions, simulate changes and discuss results. The computer helps ease the learning process by acting as an automated tutor patiently working with students as long as they need.