St. Thomas UNIVERSITY

CAMPUS NEWS

Researching the Best Strategies to Teach - Education Professor Grant Williams Part of North American Research Project

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Williams taught science in the public school system for 20 years before earning his doctorate. He believes science can often overwhelm students because it deals with concepts that are either minuscule (like atoms and molecules) or gigantic (like the solar system) or completely hidden from sight (like magnetism).

"Kids just can't get their heads around it," he said.

"I'm interested in seeing what types of strategies really effective educators use when they're having discussions in their classes that help students construct a really solid understanding."

Williams is conducting his research with Dr. John Clement from the University of Massachusetts at Amherst. They recently received $340,000 from the National Science Foundation for their research project. Williams' portion of the grant is $25,000.

This is the first time a STU professor has received a grant from the National Science Foundation in the United States.

"The research looks at exemplary high school physics teachers and the kinds of instructional strategies they use when they're having conversations with their students: how they ask questions; how they respond to student questions; how they redirect students to one another rather than always coming back to the teacher. What kinds of conversational strategies do they use that help support students' understanding of these difficult concepts?" said Williams.

The data was collected in schools throughout the United States. After identifying teachers whose students developed higher than usual levels of understanding of complex science concepts as a result of the teaching, Williams and Clement set out to investigate the teaching strategies they used.

They videotaped these teachers in the classroom while teaching their students about electricity. They then reviewed the tapes with both students and the teachers to find out what they were thinking when they asked or answered specific questions.

From their findings, they identified 39 conversational teaching strategies and now hope to bring these strategies to universities so education students can benefit.

University students will learn about the strategies in class and then can apply them in the classroom during their teaching practicums in public schools.

Williams and Clement also hope to launch a website with their findings so science educators everywhere can benefit from their research.