



By: Kristin Todd

**Sometimes  
you have to see it  
to believe it.**

That is exactly the premise behind the interactive teaching methods of several economics professors, whose classes embody active learning through direct application of lecture material and classroom interaction.

# Beyond Theory: Experimental

For students in Charles North's class, it's all in how you play the game.

"Game theory is a theoretical construct of how people interact," said North, associate professor of Economics, who teaches a game theory class complete with classroom interaction. "When students actually play these games in class, they see the theory in action—warts and all."

Game theory overlaps with behavioral economics and explains logistics of the market and how a person's strategic decisions may affect another's maximum payoff. North said that game theory occasionally produces poor predictions about people's behavior, and playing the games shows students why, in a way that classroom discussions cannot.



Several professors use experimental economics, which mimics the scientific method through the use of controlled variables. These interactive teaching methods are not without merit. Vernon L. Smith, who shared half of the 2002 Nobel Memorial Prize in Economic Sciences, completed research over experimental economics to prove it as a sustainable method in economic analysis.

**Understanding an economic theory is different than actually believing in the theory;** therefore, don't be surprised to see paper airplanes flying around in Tisha Emerson's principles of microeconomics class. This is not the action of misbehaving students, but an illustration of a production theory.

Emerson, assistant professor of Economics, uses interactive teaching methods such as the paper airplane experiment throughout the semester. Within each experiment, key variables of interest are changed in order to show their effects in markets.

"We don't discuss the theory before an experiment," Emerson said. "Through participation in and then discussion of the experiments, students see first-hand how the theory works. This type of teaching is also effective for class participation and interaction."

Economics

Another experiment Emerson usually conducts in her classes is a price control experiment, which shows how raising the minimum wage can lead to a higher unemployment rate.

"The students start to see trends through the experiments," she said. "If they remember participating in the experiment, then they recall the theory, and it boosts overall retention."

Emerson discussed experimental economics in a paper she co-wrote with colleague Beck Taylor (now dean of Sanford University School of Business) entitled, "Comparing Student Achievement across Experimental and Lecture-Oriented Sections of a Principles of Microeconomics Course," which was published in the Southern Economic Journal in 2004. Through extensive research, Emerson and Taylor found that students who completed experimental sections of a microeconomics class "experienced higher gains in Test of Understanding in College Economics (TUCE) scores but differed little on other qualitative outcomes" compared to students who took traditional lecture-oriented classes.

"The use of games and experiments seems to be catching on as an effective teaching pedagogy," Emerson said.

Kimberly Mencken, lecturer in Economics, uses a mix of experimental economics and game theory to explain corporate behavior in her microeconomics classes.

Mencken said she illustrates buyers and sellers through the selling of concert tickets. The students participate in continuous rounds of trading to reveal the trends of a realistic market.

"It's good to do rounds of continuous trading," Mencken said. "Students can look at the prices and see them converge at a market equilibrium."

Mencken said her classes are far from ordinary on days that experiments are conducted.

"The students are always smiling on experiment days," Mencken said. "They can get rowdy, but I encourage them to really sell the product."

Mencken said she taught a few classes without the use of experiments as a study with Emerson. "I definitely think the students who didn't complete the experiments missed out in a way," she said. "The first semester I was at Baylor, I did the lecture approach. Later I decided to try incorporating experiments with the students, and now I can't imagine lecturing for an hour and a half like I used to. I think the experiments are valuable."

If experimental economics is deemed valuable, then how much value does a green, stuffed frog have? John Pisciotta, associate professor of Economics, would say that on a scale of 1-10, one of his students ranked it at 10, making it pretty valuable.

Pisciotta's students participate in an experiment showing the benefits and values of trade on the first day of his microeconomics class. Each student is given a brown lunch sack with an item, usually purchased at a dollar store, to trade at his or her discretion.

The experiment is conducted in three rounds where students rank the value of their item, compare it to other students' items, and then have the option to trade the item for something they perceive to hold a higher value.

"I conduct this experiment the first day of class as a mixer where students will interact,"

Pisciotta said. "Typically the nature of trade is mutually beneficial, and the students can see that illustrated through the experiment."

Pisciotta said he started using experimental economics techniques about four years ago to "enhance and supplement" his classes. Students now participate in an experimental activity about every two weeks.

"I decided to take the plunge and make my class a more positive experience," he said. "It has changed the feel of the class in a substantial way. My classes are serious and challenging, but I want positive interaction among students."

Pisciotta said it was important that the positive interaction in the classroom carry over to his role as a professor.

"I don't want my students to feel isolated," he said. "I view myself as their coach. It's the students' initiatives and efforts that count most, but I want them to succeed."

Steve Green, department of Economics chair, said in the future he hopes to have a market simulation center at the business school to maximize students' learning experiences in understanding markets.

"Sometimes the experiments are difficult to complete in our classrooms with the tiered floors and bolted down tables," he said. "It would be wonderful to have a market simulation center with a trading floor. Students could work with computerized devices to record trades and see market information immediately. Students are more likely to understand and remember the lessons of a market simulation when the professor is able to convey those lessons quickly, rather than taking a couple of days to compile and analyze the trade data."

Green said the interactive teaching methods are beneficial for economics students.

"It's always good to try new things, but you must have confidence in what you're teaching," he said. "We're constantly evaluating these techniques, but I think we'll see more of this as a trend in the teaching of Economics."

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