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## **INTERSECTION OF TEACHERS' PERCEPTIONS AND STATE ECONOMIC STANDARDS**

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### **ABSTRACT**

*The need for basic economic education has never been clearer. For students to achieve the economic literacy required in a democracy, they need to be taught by teachers who have the knowledge and capacity to design appropriate standards-based economic curriculum. Scholarship points to the intersection between comfort and knowledge as prerequisite for the economic education desired. This paper presents a study of elementary school teachers' and their knowledge of and comfort with major economic concepts. Results confirm the necessity of continuing professional development for teachers to ensure that knowledge of, comfort with, and economic curriculum development are achieved.*

### **MAKING THE CASE FOR ECONOMIC EDUCATION**

In today's complex and global society, the need for basic economics education has never been clearer. Students (as well as their teachers) need economics and personal finance knowledge in order to become productive participatory members of a global society. But before students can be taught, their teachers need both the knowledge of and comfort with the teaching of economics. And that is where the professional development of teachers, via academic courses or in-service programming plays a key role.

The National Council on Economic Education (NCEE) in conjunction with State Councils on Economics has helped establish content standards

nationwide in economics for K-12 students. These national content standards provide a curriculum and instructional framework for teachers because, "There is universal agreement that education standards can be an important tool in improving student achievement. Standards also inform students and their parents what society considers essential knowledge that children should learn during their K-12 education." (Pacific Research).

NCEE also regularly conducts surveys to "determine the status of economic and personal finance education in the United States." When the surveys first began in 1998 there were 38 states (76%) with economics as part of their instructional standards. By 2002 those number had grown to 48 states (96%). These economic standards may stand alone or may be embedded into the social studies standards of that state. Of the 38 states requiring some form of economic education in 1998, 25 required testing of students' knowledge of economics. By 2002 this had increased to 27, with four states planning or developing testing protocols. (NCEE Survey of the States: Economic and Personal Finance Education in Our Nation, 1998, 2000 and 2002). In addition, the standards movement and the No Child Left Behind Act are playing a crucial role in economics education and as advocates for economic literacy goals for all children.

### **STANDARDS AND ACCOUNTABILITY IN INDIANA**

Indiana teachers are now required to develop standards-based curriculum in economics education. Under the Indiana General Assembly's direction, standards were designed that "are world-class, clear, concise, jargon-free, and by grade level" (Academic Standards - Social Studies 2001). The standards are benchmarked to content in the National Assessment of Educational Progress (NAEP) and the National Council for Economic Education Voluntary National Content Standards in Economics. Recommended by the Indiana Education Roundtable, the standards were developed by the State Board of Education in summer 2001. The goal of the social studies standards, as stated in the teacher edition of the Indiana Academic Standards for Social Studies, is "the development of informed, responsible citizens who participate effectively in our democracy." (Indiana

Academic Standards - Social Studies, 2001) To achieve this goal, the standards integrate knowledge with skills for inquiry, thinking and participation. The Indiana standards are organized around five content areas outlined by the National Council for the Social Studies. Those content areas are History, Civics and Government, Geography, Economics, and Individuals, Society, and Culture.

Throughout their school years, all students should be gaining the economic knowledge and skills to help them become well-informed about the world around them and to prepare them to be responsible and effective citizens of Indiana and the United States. To achieve this, NCEE has developed a scope and sequence from kindergarten to twelfth grade (see Appendix A). Key topics, concepts, and skills are to be introduced early, reinforced, and expanded. Indiana's standards, scope and sequence are based on the NCEE's Voluntary National Content Standards in Economics. They are stated in the teacher edition of the Indiana Academic Standards for Social Studies as follows:

*Kindergarten* - students explain how people do different jobs and work to meet basic wants.

*First Grade* - students will explain how people in the school and community use goods and services and make choices as both producers and consumers.

*Second Grade* - students will describe how people in a community use productive resources, specialize in different types of jobs, and depend on each other to supply goods and services.

*Third Grade* - students will explain how people in the local community make choices about using goods, services, and productive resources, how they engage in trade to satisfy their economic wants, how they use a variety of sources to gather and apply information about economic changes in the community, and how they compare costs and benefits in economic decision making.

*Grade Four* - students will study and compare the characteristics of Indiana's changing economy in the past and present.

*Grade Five* - students will describe the productive resources and market relationships that influence the way people produce goods and services and earn a living in the United States in different historical periods.

*Grade Six* - students will examine the influence of physical and cultural factors upon the economic systems of countries in Europe and the Americas.

*Grade Seven* - students will examine the influence of physical and cultural factors upon the economic systems found in countries of Africa, Asia, and the Southwest Pacific.

*Grade Eight* - students will identify, describe, and evaluate the influence of economic factors on national development from the founding of the nation to the end of Reconstruction.

*High School Level* - students will understand that productive resources are limited; students will understand the role that supply and demand, prices, and profits play in determining production and distribution in a market economy; students will understand the organization and role of business firms and analyze various types of market structure in the United States economy; students will understand the roles of government in market economy are the provision of public goods and services, redistribution of income, protection of property rights, and resolution of market failures; students will understand the means by which economic performance is measured; and students will understand the role of money and financial institutions in a market economy.

Teachers in Indiana are not only expected to design and implement economics curriculum that enhances this economic literacy, but they will be held accountable for the economic literacy of their students. To that end, the Indiana Department of Education will begin pilot testing of social studies, including economic literacy in 2003. Full testing was supposed to begin in grade 5 in Fall 2004 (covering the K-4 standards). This testing has now been put on temporary hold due to the state budget crisis. Testing for 7th grade is scheduled for Fall 2006 (covering the 5th and 6th grade standards - note that these will be the same students who were tested in Fall 2004). In Fall 2008 the final 9th grade tests are scheduled to be added and they will cover 7th and 8th grade standards these are the same students tested in 2004 and 2006).

### **WHAT TEACHERS NEED**

National goals, state legislative initiatives, and school corporation objectives are making economic literacy important. However, the burden for implementing standards falls on individual Indiana classroom teachers.

In-service efforts of corporations via workshops, completion of courses by classroom teachers, and even practica in economics education by undergraduate social studies methods students, assist in this effort. As stated in the article *Developing and Implementing Standards*, "Even where first class standards have been approved, the mechanism developed to implement these standards vary markedly in effectiveness." (Pacific Research). So even though standards exist, teachers are left to figure out how these standards play out in their classrooms. This may be especially true of economics because many of Indiana's elementary teachers have not had any formal training in economics, especially in the teaching of economics.

To correct that problem, the authors (Parkison and Sorgman) have been engaged in team-teaching a pedagogy-based survey course in economics education as well as running a Center for Economic Education at Indiana University Kokomo. Their published research demonstrates that teachers' economic literacy is enhanced, their comfort with economics is heightened, and confidence in their ability to develop and implement curriculum is increased as a result of their course. (Parkison & Sorgman, 1998; Parkison and Sorgman, 1999; Parkison & Sorgman, 2000; Sorgman and Parkison, 2002).

<b>Table 1: Teachers' Self-Reported Results of Learning</b>			
	Pre Course mean	Post Course mean	T-values for differences in means
Knowledge of Economic Concepts	2.00 (1.15)	3.96 (0.99)	4.58*
Comfort with Economic Concepts	1.85 (1.07)	4.12 (0.98)	5.64*
Comfort with Implementation of Economic Concepts	2.31 (1.44)	4.08 (0.89)	3.76*
Standard deviations in parentheses *denotes significance at the 1% level			

The authors' published research affirms the importance of the intersection of knowledge and comfort in enhancing teacher efficacy in teaching economics in the elementary school. It makes explicit that teachers' effectiveness in teaching economics education requires knowledge about economic concepts and comfort in working with those economic concepts.

### **RESEARCH PROJECT: INDIANA UNIVERSITY KOKOMO AND PARTICIPATING AREA SCHOOLS**

Indiana University Kokomo is located in north central Indiana. It is a commuter campus serving eleven counties. The Division of Education has an undergraduate elementary education degree and secondary certification in four content areas. Upon completion of the social studies certification program, the students are eligible for an Indiana Teacher's License for grades 5-12. The education degree and social studies certification program both require at least one course in economics. In fact, IU Kokomo is the only teacher education program in the state of Indiana which requires an economics course for all elementary education majors.

The authors designed and administered a survey protocol based on National Council for Economic Education key economic concepts (see Appendix A) to better understand the relationship between teachers' knowledge of economics and their comfort with economics and implementation of economic concepts for teachers. The elementary schools surveyed in Spring 2003 were in the Indiana University Kokomo Teacher Education Program service area and are the schools where the majority of practica and student teaching placements are made.

While a test of the actual economic knowledge base of the surveyed teachers' would have been valuable, we chose to ask teachers to self-report their knowledge of the concepts in the standards that will be expected of them to cover. The major hypotheses that guided the study were drawn from the author's published research and anecdotal commentaries by teachers who feel the pressure of meeting state standards, but have low knowledge and comfort levels in teaching economics in the elementary grades. Additionally, comments by elementary undergraduates who develop and implement

economics-based social studies curriculum confirm that their classroom teachers seem to have little understanding of economic concepts and how to implement the standards expected. However, it must be noted that most teachers commented that they want to meet standards and deepen their economic knowledge base. Some welcome practica for that very reason, while others take the authors' campus-based course in economics education to build economic literacy and enhance comfort with standards-based economics education.

### DATA

The basic economic concepts used in the survey of knowledge and comfort were taken from the NCEE's Voluntary National Content Standards in Economics. Those concepts were the basis of the Indiana economic standards. Additionally, they are used when assessing economic knowledge in NCEE reports. They are organized around grade levels to show which concepts are introduced and reinforced at the various grade levels. As seen in Appendix A, the economic concepts progress from simple micro concepts such as scarcity and opportunity cost to macro concepts such as international trade. Teachers were asked about each of these concepts and then their overall knowledge and comfort scores were calculated by averaging.

<b>Table 2: Average Knowledge and Comfort Score for area teachers</b>		
Population	Mean Knowledge	Mean Comfort
Overall	2.39 (0.973)	2.47 (0.962)
*standard deviation in parentheses		

The variables in the survey (knowledge and comfort) suffer from two major data flaws: they are self-defined by the teachers and self-reported by the teachers. We did not have an independent measurement of teacher knowledge in that no nationally normed test of economic knowledge was given. We also asked the teachers to self-report how comfortable they felt in teaching the economic concepts.

## HYPOTHESIS ONE

It was hypothesized that there would be a strong correlation between comfort and knowledge. The authors have published a number of articles which demonstrate that the results of an economics education course team-taught by faculty in business and education results in increased knowledge and increased levels of comfort with economics concepts and their implementation. The new data were analyzed to see if there was a correlation between levels of knowledge and comfort for teachers in the university's service area.

This hypothesis was proved in that Knowledge (the independent variable) and Comfort (the dependent variable) were closely and positively correlated.

N = 70    Pearson's r value = 0.94

The Pearson's r value indicates a strong and positive correlation. This is predictable since it is difficult to feel comfortable teaching a concept unless one has the understanding of that concept. In essence, teachers' who reported a high knowledge level were very likely to have a high comfort level and visa versa. We also looked at various subpopulations and their mean knowledge and comfort scores. An example is shown below but none of the demographic subpopulations of gender, school type, grade level taught etc. were statistically significant.

<b>Table 3: Average Knowledge and Comfort Scores for area teachers Sorted by grade level taught</b>		
Population	Mean Knowledge	Mean Comfort
Overall	2.39 (0.973)	2.47 (0.962)
Grades K-3	2.52 (0.979)	2.43(1.026)
Grades 4-6	2.60 (1.016)	2.50 (0.977)
*standard deviation in parentheses		



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In essence, teachers' who reported a high knowledge level were very likely to have a high comfort level and visa versa. Thus, a strong case can be made for increasing teachers' knowledge base in economics and economics education.

### **HYPOTHESES TWO AND THREE**

Since the new standards-based requirements in economics for Indiana teachers were implemented only in 2001, it was hypothesized that the veteran teachers would be less knowledgeable about and comfortable with economics education and economic standards. The teachers surveyed averaged 13.9 years of teaching experience in a region where IU Kokomo is the only campus in the state that requires an economics course for undergraduate elementary education majors. Therefore, it is hypothesized that the teachers were unlikely to have had a course in economics or exposure to standards-based economics curriculum. Since these teachers are the educators that Indiana University Kokomo elementary methods students are likely to work with when they implement required standards-based curriculum in the social studies methods course, their economic literacy and comfort with economic concept were important.

There were two hypotheses tested. The first was that the mean of economic knowledge levels for teachers with less than five years in teaching would be greater than the mean of economic knowledge levels for teachers with more than five years teaching. The second was that the mean of comfort levels for teachers with less than five years teaching would be greater than the mean of comfort levels for teachers with more than five years in teaching. While both of these hypotheses were true, they were not statistically significant at any level of significance.

Looking at the data, especially the standard deviations, make it quite clear why that is the case. Although more recent teachers clearly had higher knowledge and comfort levels, there was such wide variation within each subpopulation that the standard deviations far outweighed the calculated differences in means. This may imply that even new teachers' need

additional professional development in economics, economics standards, and economics education.

<b>Table 4: Average Score of Knowledge and Comfort Sorted by years of experience</b>		
Population	Mean Knowledge	Mean Comfort
Up to and including five years experience	2.52 (1.05)	2.55 (1.09)
Over five years experience	2.45 (0.899)	2.30 (0.873)
*standard deviation in parentheses		

### **EFFECTIVE MECHANISMS TO ENSURE STANDARDS ARE MET**

Compliance with economic standards clearly lies with the classroom teacher. That requires they possess both an understanding of standards and capacity to develop curriculum. Thus, they may need help in understanding the standards and developing standards-based curriculum. To that end, the National Council for Economic Education (NCEE), its affiliated state councils, and its 275 university based Centers for Economic Education provide training to approximately 120,000 teachers who teach 8 million students. NCEE courses and curriculums are one method of giving teachers both the knowledge of economics and the comfort with the teaching of economics. Indiana University Kokomo is a Center for Economic Education, accredited by NCEE, and provides such opportunities. The Indiana Site Review Team visited Indiana University Kokomo in November 2002 and cited our courses as a strength for the Center. They noted, "These popular courses integrate economic content and pedagogy, and are a model for other Centers for Economic Education." Our format is a unique team-taught partnership and pairing of an economist who finds public school instruction intriguing and an educator who understands the importance of correct economic content. The course is designed to enhance undergraduates' economic literacy and to develop standards-based economic and

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age-appropriate curriculum. This course has resulted in many teaching awards and published research for the two instructors confirming that the goals of increased economic literacy and development of economic curriculums were achieved.

## CONCLUSIONS

Elementary children need informed teachers who can design and implement appropriate curriculum. Without that, their teachers will be like the adults in the Foundation for Teaching Economics and the Gillette Company survey, reported in the Indianapolis Star on July 5, 2003, "91% of them said they apply basic economic concepts each day, but only 25% could answer questions about those concepts." (p. B-7)

Published research on these economic courses provide ample evidence that teacher comfort is increased, teacher knowledge is expanded, and teachers are more ready to implement the economics in their classrooms. One classroom teacher who took the course said, "This class stimulated me to think about implementing as a part of my curriculum. I would not have done as much with econ in my room! And the kids loved it!" Another teacher noted, "I really enjoyed the class and learning not to be afraid of economics. I enjoyed the instructors and their openness to us trying a variety of lessons. I enjoyed interacting with other educators and seeing what they did and learning from them."

Economic standards have been set and are here to stay. To ensure that they are met, professional development in economic education is vital. Without professional development, the content needed and the comfort required will not be in place.

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