

# Effects of Problem Based Economics on High School Economics Instruction

*For decades, economists, educators, Nobel laureates, and business leaders have advocated for economic literacy as an essential component in school curricula. At the federal and state levels, economics has received increasing attention as a critical content area for K–12 education. Forty-eight states now include content standards in education, with 40 requiring their implementation, and 17 requiring a course in the subject for graduation. While there is growing agreement on the need for some economics content in K–12 education, there is less consensus about where it fits into the curriculum, effective ways of teaching it, and how much subject area background should be required of classroom instructors.*

A new study prepared by the Regional Educational Laboratory West (REL West) at WestEd assesses student-level impacts of a problem-based instructional approach to high school economics.<sup>1</sup> With problem-based instruction, in contrast with the more typical textbook and lecture-driven approach, teachers use an inquiry-based method, posing specific, real-world economic problems as the basis for a set of disciplined, analytic steps. The intent is that students learn to contextualize, understand, reason, and solve problems using analytic skills that are being developed as part of the curricular approach. The REL West study was designed as an in-school, randomized controlled trial that tested the effectiveness of a Problem Based Economics (PBE) curriculum developed by the Buck Institute for Education on student learning and problem-solving skills. It found a significant positive impact for students of teachers who received professional development and support in PBE compared with their peers.

## **Experimental Design and Field Implementation**

Implemented from summer 2007 to spring 2008, the study targeted high schools in rural and urban areas of both California and Arizona, two states where economics is a required course for graduation. Student achievement outcomes were the study's primary focus. Specifically,

it examined whether the Buck Institute's PBE curriculum improved grade 12 students' content knowledge as measured by the Test of Economic Literacy (TEL), a widely accepted, standards-aligned test used across the United States, along with students' problem-solving skills in economics as measured by a performance-task assessment. In addition to these student outcomes, the study examined changes in teachers' content knowledge in economics, their pedagogical practices, and satisfaction with the curriculum.

Study participants included economics teachers who were randomly assigned to an intervention or control group. A professional development intervention consisted of a 40-hour economics course for teachers, held over five days in the summer of 2007. Participating teachers agreed to teach core concepts in economics, as identified by national economics standards, using the curricular materials provided. The counter-

*The case for economic literacy is obvious. High school graduates will be making economic choices all their lives, as breadwinners and consumers, and as citizens and voters. A wide range of people will be bombarded with economic information and misinformation for their entire lives. They will need some capacity for critical judgment. They will need it whether or not they go to college.*

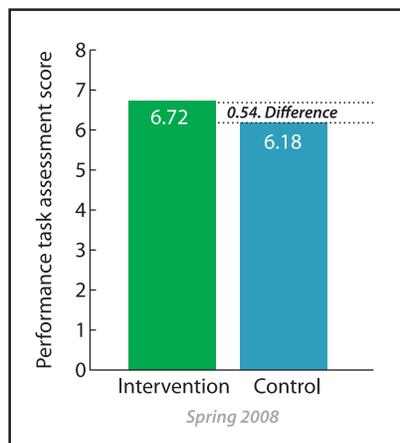
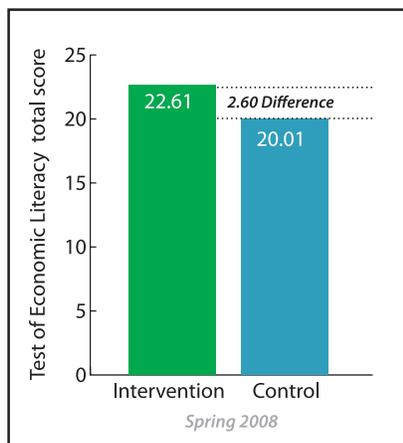
— Nobel laureate and Yale economist James Tobin ("Economic Literacy Isn't a Marginal Investment," *Wall Street Journal*, July 9, 1986)

factual for the study was the typical instruction in high school economics classrooms. Teachers in control schools participated in their regular annual professional development activities during the 2007/08 academic year and continued their usual instructional practices in economics classrooms. The analysis for this study compared the outcomes for students and teachers in the intervention group with their counterparts in the control group after the students' economics course had been completed in spring 2008.

## Key Findings

### STUDENT LEVEL

- \* Students whose teachers had received professional development and support in PBE (model-adjusted mean score = 22.61) outscored their control group peers (model-adjusted mean score = 20.01) on the TEL by an average of 2.6 test items (effect size = 0.32), a statistically significant finding.
- \* The outcomes on student measures of problem-solving skills and application to real-world economic dilemmas also showed significant differences in favor of the intervention group (model-adjusted mean score for the intervention group was 6.72 versus 6.18 for the control group; the difference of 0.54 corresponded to an effect size of 0.27).



### TEACHER LEVEL

- \* No statistically significant difference was found between the intervention and control groups on teachers' knowledge of economics.
- \* No statistically significant difference was found in teachers' pedagogical style with the survey measures used.
- \* A statistically significant difference was detected in favor of the intervention group teachers on a measure of satisfaction with the teaching materials and methods.

### Benefit to Students

The study found that students benefited from the combination of the Problem Based Economics curriculum, the associated professional development program, and the support for teachers that was provided as part of the study's implementation. In addition, teachers who used the curriculum were more satisfied with the Problem Based Economics materials than those who used standard teaching materials. Educators may be looking for ways to strengthen their economics education programs; this study may provide useful information to curriculum specialists and teachers interested in alternative approaches for providing instruction in a required component of the high school curriculum in their state.

View the full report at <http://ies.ed.gov/ncee/edlabs/projects/project.asp?ProjectID=89>

<sup>1</sup> Finkelstein, N. (Principal Investigator), Hanson, T., Huang, C.W., Hirschman, B., & Huang, M. (2010). Effects of Problem Based Economics on high school economics instruction (NCEE 2010-4002). Washington DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory West.

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