

## Can Students Learn Economics in U.S. History?

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### **Abstract**

Economic educators are divided into two main camps regarding economics in grades K-12. One group advocates that economics should be infused into related subjects. The second advocates that economics should be taught as a stand-alone course. This study focused on teaching economics in U.S. history. It used a pre- and post-test design to measure changes in the economic knowledge of 503 high school students. The scores of the treatment group showed statistically significant gains while the control group showed no change. This suggests that the deliberate teaching of economics in non-economics classes can enhance students' understanding of economics.

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### **I. Introduction**

For decades, economic educators have debated the best approach for including economics in the K-12 school curriculum. Is it best to infuse economics into other related subjects, such as social studies or mathematics? Or is it best to teach economics as a stand-alone course at the high school level, most often at grades 11 or 12?

This paper sheds some new light on this debate. It reports how the lessons from *Focus: Understanding Economics in U.S. History*, a 2006 publication by the National Council on Economic Education, influence student knowledge of economics when used by teachers trained to use the program. This study used a pre- and post-test design to measure the changes in knowledge of 503 high school students: 353 in the treatment group and 150 in the control group.

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\* A previous version of this paper was presented at the 2007 Association of Private Enterprise Education conference. The authors wish to thank Markus Savaglio for his research assistance.

The testing instrument was based on multiple-choice items adapted from the curriculum.

After participating in the *Focus: Understanding Economics in U.S. History* curriculum, students' average scores on a test of economic knowledge embedded in a historical context improved by more than 17 percentage points. This change was statistically significant. The control group showed no change. Based on these results, *Focus: Understanding Economics in U.S. History* appears to be a useful tool for teaching basic economic concepts in U.S. history courses. This suggests that the deliberate use of economics materials in non-economics classes can enhance students' understanding of economics.

## II. Related Research

Evidence from testing with large, national samples using a highly reliable and valid test shows that high school students who have taken an economics class score significantly higher in economic understanding than students who have not. A classic study by Walstad and Soper (1988) used norming data of the *Test of Economic Literacy* (TEL) to assess the economic knowledge of U.S. high school students. This study included 3,031 students who took the TEL as a pre- and post-test. Half of the students were enrolled in economics courses; the others were enrolled in either a consumer economics course or a social studies course such as government or U.S. history. On the pre-test, students in economics courses scored 44.9 percent correct on average. Students in social studies courses in which the teacher reported including economics scored 47.7 percent; students in social studies courses in which the teacher did not include economics scored 37.4 percent, and students in consumer economics classes scored 40.3 percent. The post-test results were essentially the same as the pre-test results for students in social studies courses with or without reported economics content as well as for students in consumer economics courses. Only the students taking a separate economics course showed a gain from the pre-test to the post-test (44.9 percent to 52.4 percent).

More recently, Walstad and Rebeck (2001) revised the TEL. The results are similar to those in earlier studies. On the most recent TEL, high school students who had taken a high school economics course scored 61 percent correct while students who had not studied economics scored 41 percent correct. The performance of students in

general social studies courses did not change significantly. Again, the completion of a high school economics course appears to be the only meaningful way to improve economic understanding. Walstad (2001) summarizes the research this way:

The evidence indicates that when attempts are made to infuse economics into other subjects, not much economics gets learned. Several national and state studies have investigated the contribution of an economics course to the economic understanding of high school students compared with a social studies course, such as U.S. history, or consumer economics course. The results showed that students who took an economics course significantly improved their economic understanding, but other courses provided little or no increase in economic understanding. Other courses in a social studies curriculum may prepare students for and complement learning in a separate course in economics, but they do not appear to be substitutes for it. (p.204–205)

The results of a recent, comprehensive review of research in economic education also concluded that the safest way to improve students' knowledge of economics is through a formal secondary course (Watts, 2006).

The National Council on Economic Education (NCEE) has been a strong advocate of both approaches. It favors the infusion of economics throughout the curriculum – especially social studies – as well as supports a comprehensive “capstone” economics course in grade 11 or 12. This seems to be a common-sense position. If economics is to be learned well, it needs to be taught early and often. After all, we would never imagine that students would learn mathematics if it was taught only once. Instead, students study mathematics many times. Following this assumption, the NCEE has developed a set of curriculum materials that emphasize the study of economics in other courses, especially social studies. Other studies of the infusion of NCEE curriculum materials have found student gains in test scores using a pre- and post-test experiment (Niederjohn and Schug, 2006).

This study addresses this question: Can deliberately infusing carefully designed economics lessons into a social studies course, such as U.S. history, result in gains in economic understanding?

### III. Method

This project evaluated high school student knowledge about economics and U.S. history before and after classroom use of *Focus: Understanding Economics in U.S. History* materials. This curriculum was carefully designed to include lessons that stressed economic concepts at key points in U.S. history. The lessons were developed to meet national content standards in both economics and in history. The Table of Contents is included in Appendix 1.

This study used a pre- and post-test design with a treatment group (those who used *Understanding Economics in U.S. History*) and a control group (other students who did not participate). In total, eight teachers from seven schools were recruited for the project. They all received training in Fall 2007 on the use of the materials and a briefing on the test instrument. They returned to their classrooms in Fall 2007 and administered pre-tests before teaching the materials. After completing the lessons with their students, participating teachers mailed back the post-tests. Each of the recruited teachers taught multiple sections of U.S. history, allowing them to assign one of their sections the control group (which was not exposed to the *Understanding Economics in U.S. History* materials).

At the end of the assessment project, there were 503 complete and useable pairs of pre-and post-tests. This sample size was sufficient to make statistically significant conclusions possible. The final sample included 353 students exposed to the *Understanding Economics in U.S. History* materials and 150 students in the control group.

### IV. The Instrument

This project used a 31-question knowledge test on economics and U.S. history. The test was not intended to measure the economic concepts commonly covered in a high school economics course. Instead, it was designed to measure economics concepts taught at key points in a U.S. history course. Among the concepts included were opportunity cost, factors of production, productivity, characteristics of a market economy, specialization, division of labor, trade, and factors of economic growth. See the Appendix for a list of sample test items. A complete set of test questions is available from the authors.

The test was refined in several steps before administration. The authors circulated drafts internally between their Centers for

Economic Education to determine strong and weak questions. A pilot test was administered to 150 students in the spring of 2006 to identify any problems with the questions.

A reliability test was run on the pre- and post-tests using Cronbach's Alpha. Among testing authorities, a general guideline is that a Cronbach's Alpha of 0.70 or above is acceptable. Cronbach's Alpha values of 0.782 for the treatment group, 0.771 for the control group and 0.738 for the overall group were calculated for this test, confirming that the test development process resulted in sufficient reliability.

**Table 1: Descriptive Statistics for the Pre- and Post-Test**

Group	Mean Score Before U.S. History	Mean Score After U.S. History	Change in Predicted Direction?	Paired sample t-statistic	p-Value (2-Tailed Test)
Control Group	13.26 (4.24) n=150	13.66 (4.33) n=150	Yes (no statistically significant change)	-1.465	p=0.145
Group that Used U.S. History	13.49 (4.65) n=353	18.85 (10.57) n=353	Yes	-9.977	p<0.000

## V. Knowledge of Economics and U.S. History Test Results

Table 1 shows the results of the 31-item test of knowledge of economics and U.S. History, including the results of statistical t-tests designed to show whether the change in knowledge went beyond what could be attributed to chance. For the overall test, students exposed to the *Focus: Understanding Economics in U.S. History* curriculum saw a statistically significant increase in their knowledge of economics and U.S. history. In contrast, the control group showed no statistically significant change in knowledge.

The 353 students in the experimental group who took the pre-test scored an average of 13.49 out of 31 questions correct, or 43.5

percent. After participating in lessons from the *Focus: Understanding Economics in U.S. History* curriculum, the students scored an average of 18.85 out of 31 questions correct, or 60.8 percent. This amounted to an improvement of just more than seventeen percentage points (or just more than five more questions correct). This change was statistically significant with a p-value  $<.0001$ . Standard deviations are included in parentheses in Table 1.

## VI. Conclusion

Several important studies in economic education have raised doubts about using infusion as a strategy for teaching economics. Until now, research has suggested that strengthening the position of the high school economics course yields significant gains in economic understanding and is the preferred curriculum strategy. This study presents evidence that infusion may make a valuable contribution to economic understanding. This study implies that a careful infusion approach can complement the economic understanding of young people, which may be enhanced further if they also complete a high school economic course. For infusion to be successful, however, teachers must be trained, and they need to use lessons designed to include appropriate economic concepts in the curriculum. Based on these results, *Focus: Understanding Economics in U.S. History* appears to be a useful tool for improving economic understanding at the secondary level. Since this study focuses on only one set of curriculum materials, other studies using other material with a similar design would add and perhaps fine tune our results regarding *Focus: Understanding Economics in U.S. History*. It would also be worthwhile if additional studies focused more fully on the role that teacher training plays in this sort of study.

## References

- Niederjohn, M. Scott, and Mark C. Schug. 2006. "An Evaluation of *Learning, Earning and Investing: A Model Program for Financial Education.*" *Journal of Private Enterprise*, 22(1): 196–208.
- Walstad, William B., and John C. Soper. 1988. "A Report Card on Economic Literacy of U.S. High School Students." *AEA Papers and Proceedings*, 78(2): 251–256.
- Walstad, William B. 2001. "Economic Education in U.S. High Schools." *Journal of Economic Perspectives*, 15(3): 195–210.
- Walstad, William B., and Ken Rebeck. 2001. *Test of Economic Literacy*. New York: National Council on Economic Education.
- Watts, Michael. 2006. *What Works: A Review of Research on Outcomes and Effective Program Delivery in PreCollege Economic Education*. New York: National Council on Economic Education.

## Appendix 1

*Focus: Understanding Economics in U.S. History*  
National Council on Economic Education  
Table of Contents

1. The New World Was an Old World
2. Property Rights Among North American Indians
3. Why Do Economies Grow?
4. Understanding the Colonial Economy in a Global Context
5. Indentured Servitude: Why Sell Yourself into Bondage?
6. Specialization and Trade in the Thirteen Colonies
7. The Costs and Benefits of American Independence
8. Problems under the Articles of Confederation
9. The U.S. Constitution: Rules of the Game
10. Rising Living Standards in the New Nation
11. How Did Cotton Become King?
12. Francis Cabot Lowell and the New England Textile Industry
13. Improving Transportation
14. Investing in American Growth
15. Why Did the Indians of the Great Plains Invite White Americans onto Their Land?

16. Andrew Jackson and the Second Bank of the United States
17. Fee the Enslaved and Avoid the War
18. Why Did the South Secede?
19. Economic Analysis of the Civil War
20. Was Free Land a Good Deal?
21. The Changing U.S. Economy
22. The Demand for Immigrants
23. Bigger Is Better: The Economics of Mass Production
24. Industrial Entrepreneurs or Robber Barons?
25. The Economic Effects of the 19<sup>th</sup> Century Monopoly
26. Could the U.S. Economy Have Grown Without the Railroads?
27. Free Silver or a Cross of Gold
28. Money Panics and the Establishment of the Federal Reserve System
29. Who Should Make the Food Safe?
30. Whatdunit? The Great Depression Mystery
31. Did the New Deal Help or Harm Recovery?
32. We Shall Not Be Moved
33. When the Boys Came Marching Home
34. Women in the US Workforce
35. The Economics of Racial Discrimination
36. The No-Good Seventies
37. The Hispanic Americans
38. The Knowledge and Technology Based Economy of Today
39. World Trade after World War II: The EU, NAFTA and the WTO

## **Appendix 2: Sample Test Items**

1. The opportunity cost of making a choice is what is given up. Pueblo Indians chose to spend most of their time raising crops and keeping their irrigation systems working properly. One opportunity cost of this choice was:
  - A. corn, beans, and squash
  - B. too little free time
  - C. acquiring meat and hides by hunting
  - D. unemployment
  
2. Among American Indians, the horse was a good example of:
  - A. private law
  - B. common law
  - C. common ownership
  - D. private ownership
  
3. Economic reasoning suggests that the chances for a nation to grow economically are substantially improved when the:
  - A. nation has vast natural resources
  - B. rules of economic system reward productive behavior
  - C. nation is located north of the equator
  - D. rules of economic system reward consumption
  
4. What consequence follows if each nation, region and individual specializes in producing that good or service for which it possesses a comparative advantage, and then engages in trade?
  - A. Total production increases
  - B. Employment falls
  - C. The overall economy falters
  - D. None of the above
  
5. One result of allowing states to place tariffs on goods from other states would be:
  - A. decreasing the production of goods and services
  - B. increasing the production of goods and services
  - C. prices on goods would be little changed
  - D. prices on goods would be decreased

6. In America early in the nineteenth century, wooden plows were replaced by cast-iron plows, which made deeper furrows and were easier for a team of horses to pull. What do you think happened to grain prices and to the quantity of grain produced?
- A. Prices were higher and the quantity of grain produced was larger.
  - B. Prices were higher and the quantity of grain produced was smaller.
  - C. Prices were lower and the quantity of grain produced was larger.
  - D. Prices were lower and the quantity of grain produced was smaller.
7. In the pre-Civil War period, bankers increased the quantity of money in circulation when they
- A. took deposits of gold and silver from their customers.
  - B. made loans by issuing bank notes backed by the gold and silver in their vaults.
  - C. lent gold and silver coins to their customers.
  - D. redeemed their notes and checks by paying the Bank of the United States in silver and gold.
8. In free markets, individuals compete for profits and customer sales. This competition leads to
- A. poor consumer service.
  - B. eliminating the costs associated with attractive packaging and consumer marketing.
  - C. innovation in product design and performance, and the introduction of cost-cutting technology.
  - D. a decrease in the demand for patents and copyrights.

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