# The Money Savvy Pig™ Goes to the Big City: Testing the Effectiveness of an Economics Curriculum for Young Children

MARK C. SCHUG
ERIC A. HAGEDORN

If children are to become economically and financially literate adults, economics and personal finance need to become a stronger part of the school curriculum. We would never expect adults to be competent at reading or mathematics if those subjects were not introduced early and repeated regularly in the school curriculum. In the same way, like a good savings program, economic and financial education ought to start early and be repeated often.

Parents are among the biggest supporters of increasing economics and personal finance in the school curriculum. The following are key findings from a 2003 survey of 625 parents, published by Northwestern Mutual Marketing Research.

- 40 percent of parents believe the most appropriate age to start teaching children about money is "before elementary school, under the age of 5"
- 71 percent of parents feel one should teach children no later than first grade
- 47 percent of parents had spent a good deal of time teaching their oldest child about money
- 100 percent of children ages five to seven own a piggy bank, change cup, or something similar
- 57 percent of parents had talked to their oldest child about the importance of saving versus spending

*MARK C. SCHUG is the director of the Center for Economic Education and a professor in the Department of Economics at the University of Wisconsin–Milwaukee. ERIC A. HAGEDORN is an associate professor in the Department of Physics and a member of the Physics Teacher Education Research Group at the University of Texas at El Paso.*

Economic concepts are traditionally an important part of the primary grade social studies curriculum. A perusal of current social studies basic texts (see, for example, Houghton Mifflin Social Studies 2005) confirms that that is the case. Concepts such as goods, services, producer, consumer, opportunity cost, and price are presented at more than one grade level during the primary grades. Yet, elementary teachers may be tempted to teach those concepts lightly or skip them entirely.

In this study, we report the results of an evaluation of a curriculum that starts young children on the road to financial and economic understanding. Called Money Savvy Kids™, the curriculum features eight lessons for the primary grades and an ingenious four-slotted piggy bank.

## Review of Research

Because teaching basic economic concepts—especially personal finance ideas related to money management—at a young age may be important to parents and is included in the traditional social studies curriculum, we find it mildly surprising that researchers have given little attention to the topic. Few studies have been conducted about teaching basic economic concepts to young children.

Why is there so little research? In part, that may have to do with the difficulties of measuring economic understanding at young ages. Multiple-choice test questions require a certain reading ability on the child's part. Interviews of young children take time to administer and are difficult to standardize. As a result, there are no nationally published, off-the-shelf knowledge tests or attitude measures that assess a child's knowledge of economics. At one time, the then Joint Council on Economic Education (now the National Council on Economic Education) distributed the *Primary Test of Economic Understanding*, written by D. G. Davison and J. K. Kilgore and published by the University of Iowa in 1974, but that instrument has been out of print for years.

Nonetheless, some studies have been conducted over the years on the economic learning of young children. Lawrence Senesh (1963) was a pioneer in the development of instructional materials for teaching economics at the elementary level. Larkins and Shaver's (1969) study of *Our Working World* materials showed that the economics test scores of first-grade students who studied economics were repeatedly and consistently above those of students who did not. Kourilsky, in a study of her Kinder Economy program, found that children who participated in the Kinder Economy significantly outperformed students in the control groups (1977). Laney (1989) conducted studies of young children's economic understanding and found that young students can learn economic concepts when exposed to carefully designed instruction. The learning was retained better by students who had real-life examples in class, rather than examples that depended heavily on vicarious experiences. Morgan (1991) used a "Yes or No" test to measure the effectiveness of a video program called *Econ and Me*. A sample of 300 students in the classrooms of teachers trained to use the program had posttest scores that were significantly higher statistically than their pretest scores.

A more recent study by Sosin, Dick, and Reiser (1997) adds new findings to the earlier studies, even though it includes students in the intermediate grades. The experimental groups in their study included several elementary classes divided between grades three, four, five, and six. The teachers in the experimental groups had special training in economic education and used curriculum materials developed primarily by the National Council on Economic Education. Eleven control groups were pre- and posttested, using a standardized test of economics. From the results, the researchers concluded that the students in the experimental groups learned significantly more economics, than students in the control groups. The most important variable explaining student learning was the extent to which economic concepts were taught. Ethnic and income backgrounds made little difference, and students' gender mattered very little. Boys scored slightly higher than girls. That suggests that if we teach it, they will learn.

## Money Savvy Kids™

Money Savvy Kids™ is a curriculum developed by Susan Beacham, founder and CEO of Money Savvy Generation. A former Chicago-area banker, Beacham became convinced that children needed to improve their economic and financial education and that it had to begin early. Working with several teachers, she gradually developed a curriculum called Money Savvy Kids™. The curriculum includes the following eight lessons:

- The History of Money
- Where Does Money Come From?
- Kids Can Earn Money Too!
- Saving Money and Bank Field Trip
- Spending Money
- Donating Money
- Investing Money
- Family Money Press Conference

An important part of the Money Savvy Kids™ curriculum is the Money Savvy Pig™, which is a four-slot piggy bank. Rather than having one slot for all types of saving, it has four slots—one each for saving, spending, investing, and donating. Each child participating in the program receives a Money Savvy Pig™ to keep. The Money Savvy Pig™, along with the curriculum, provides teachers and parents with an amusing and interesting way to introduce children to the basic ideas in economics and personal finance.

## Method

In spring 2003, forty second- and third-grade teachers in the Chicago public schools received training in using the Money Savvy Kids™ curriculum. They participated in a one-day training workshop, organized by Money Savvy Generation. The teachers received the curricular materials (eight lessons) and a Money Savvy Pig™ for each of their students. The teachers were encouraged to implement the program in their classrooms during the following school year.

Economists at the University of Wisconsin-Milwaukee Center for Economics Education developed a survey instrument called the Money Savvy Kids™ Assessment (see appendix A). They designed an instrument using a ten-item, Likert-type scale with a three-point response format to measure students' beliefs about savings habits, handling money, the role of business, and so forth. The students used the following symbols to indicate their responses: a smiley face for *agree* (with a value of 3), a straight-mouth face for *do not know* or *am unsure* (with a value of 2, and a frown face for *disagree* (with a value of 1). After pilot testing, teachers administered the survey to students before and after using the Money Savvy Kids™ curriculum in class.

## Results

We were able to obtain 316 usable pretests and 388 usable posttests. Table 1 contains the average scores and standard deviations for each item of the assessment. We also examined the scores for statistically significant changes between the pre- and posttest scores. We show those results in table 2.

We observed statistically significant changes in the responses to seven of the ten items on the instrument. On item 1 (I know a lot about how to handle my money), 13 percent more students agreed with the statement on the posttest. On item 3 (It is important to have things I want when I want them), 16 percent more students disagreed with the statement, suggesting an increased willingness to forgo immediate gratification. The largest change in the responses was to item 6 (It is best to put the money you save in your room at home). Here, 25 percent more students disagreed that you should keep money in your room. Similarly, we observed a significant change in the responses to item 8 (It is important for families to keep money in real banks). Seventeen percent more of the students agreed with that item on the posttest. To us, that increase was an indication that the students had learned something about the importance of keeping savings in a bank.

TABLE 1. Item Response Averages and Standard Deviations for Combined Data

| | Pre | *SD* | Post | *SD* |
|---|---|---|---|---|
| Item 1 | 2.592 | 0.667 | 2.863 | 0.449 |
| Item 2 | 1.703 | 0.807 | 1.572 | 0.770 |
| Item 3 | 1.812 | 0.819 | 1.561 | 0.801 |
| Item 4 | 2.607 | 0.646 | 2.817 | 0.469 |
| Item 5 | 2.299 | 0.792 | 2.387 | 0.815 |
| Item 6 | 2.571 | 0.717 | 2.068 | 0.936 |
| Item 7 | 2.185 | 0.680 | 2.151 | 0.803 |
| Item 8 | 2.538 | 0.647 | 2.730 | 0.507 |
| Item 9 | 2.785 | 0.520 | 2.881 | 0.419 |
| Item 10 | 2.003 | 0.860 | 1.939 | 0.847 |

TABLE 2. Significantly Changed Item Response Averages and Effect Size of Changes

| Item | Mann-Whitney *U* value | Exact two-tailed significance | Effect size |
|---|---|---|---|
| 1. I know a lot about how to handle my money. | 49227.5 | .000 | 0.49 |
| 2. Saving money is greedy. | 55751.5 | .026 | –0.17 |
| 3. It is important to have things I want when I want them. | 49733.5 | .000 | –0.31 |
| 4. It is important to save for the things that I want to buy in the future. | 51105.5 | .000 | 0.38 |
| 6. It is best to put the money you save in your room at home. | 43351.5 | .000 | –0.61 |
| 7. Businesspeople help others by providing them with goods and services. | 49085.5 | .000 | 0.33 |
| 8. It is important for families to keep money in real banks. | 52536.0 | .001 | 0.20 |

## Limitations of the Study

This study has several limitations. First, the study would be stronger if we had been able to use a nationally normed and validated instrument to measure knowledge and attitudes at those grade levels. Second, it is difficult to obtain data from children in these young age groups because they are unaccustomed to completing surveys. For example, we noted that the children filled out many of the surveys in a manner that suggested that they were creating an artistic pattern, rather than responding to the items. Such surveys were eliminated from the data set. In light of that factor, we suspect that the data and conclusions drawn from the data underestimate the learning gains resulting from the Money Savvy Kids™ program. Although we observed significant changes in knowledge and attitude, we do not know if the students will actually change their financial behaviors.

## Conclusion

Overall, from the results of this study, we concluded that the Money Savvy Kids™ curriculum has a positive affect on students' attitudes and knowledge about spending, saving, and investing. Economic educators have long argued that, in order to produce an economically literate generation, principles of financial and economic education need to be taught early and often. Parents appear to concur with this conclusion. This study provides additional evidence to support claims that young people can learn the basic ideas of economics and personal finance when they are presented to them in an engaging and well-organized way.

*Key words: economics for young children, success in teaching economics to young children*

## APPENDIX A
## Money Savvy Kids™ Assessment

*Directions:* Teachers, please read each of the following ten sentences together in class. Explain the following directions to the children. If you agree with the statement, use your pencil to circle the face with the smile. If you do not know or are unsure about the statement, circle the face with the straight mouth. If you disagree with the statement, circle the face with the frown. Please circle only one face for each question.

| *Sentence* | *Agree* | *Don't know* | *Disagree* |
|---|---|---|---|
| 1. I believe that I know a lot about how to handle my money. | ☺ | 😐 | ☹ |
| 2. I believe that people act selfishly when they save money. | ☺ | 😐 | ☹ |
| 3. I believe that it is important to have the things I want when I want them. | ☺ | 😐 | ☹ |
| 4. I believe that it is important to save money for the things that I want to buy in the future. | ☺ | 😐 | ☹ |
| 5. The thing that I enjoy most about earning money is getting to spend it right away. | ☺ | 😐 | ☹ |
| 6. It is best to save your money in a secret place in your bedroom. | ☺ | 😐 | ☹ |
| 7. I believe that some places to put my savings—such as banks—are safer than others. | ☺ | 😐 | ☹ |
| 8. I believe that businesspeople help others by providing them with goods and services to buy. | ☺ | 😐 | ☹ |
| 9. It is important for families to keep money in real banks. | ☺ | 😐 | ☹ |
| 10. I believe that saving money helps me but does not help anyone else. | ☺ | 😐 | ☹ |

## REFERENCES


Davison, D., and J. Kilgore. 1974. *Primary test of economic understanding: Examiner's manual.* Iowa City: University of Iowa.

Kourilsky, M. 1977. The kinder economy: A case study of kindergarten pupils' acquisition of economic concepts. *Elementary School Journal* 77:182–91.

Laney, J. D. 1989. Experience- and concept-label-type effects on first graders' learning, retention of economic concepts. *Journal of Educational Research* 82:231–36.

Larkins, A. G., and J. P. Shaver. 1969. Economics learning in grade one: The USU assessment studies. *Social Education* 33: 958–63.

Morgan, J. C. 1991. Using *Econ and Me* to teach economics to children in primary grades. *The Social Studies* 82 (5): 195–97.

Northwestern Mutual Marketing Research. 2003. Teaching kids about money. Milwaukee, WI: Northwest Mutal Life Insurance Company.

Senesh, L. 1963. *Our working world: Families at work.* Chicago: Science Research Associates.

Sosin, K., J. Dick, and M. L. Reiser. 1997. Determinants of achievement of economics concepts by elementary school students. *Journal of Economic Education* 28 (Spring): 100–21.