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The *Money Savvy Kids* Curriculum: Changing Hearts and Minds

This paper documents our first large scale use, in 2016-2017, of a pair of instruments rigorously developed and piloted during the 2015-2016 school year to validly and reliably measure elementary student attitudes and content knowledge about various aspects of financial literacy which the participants explored by participating in the Money Savvy Kids® program. This study draws upon results from a matched sample of 992 2nd and 3rd grade students from Washington State who took the content test prior to and immediately following participation in the program, along with 1268 2nd and 3rd grade students who similarly completed the attitude measure. Results from the content knowledge test indicated a sizeable (large effect size) gain in student knowledge on the test as a whole. Half of the attitude changes had small effect sizes, but attitudes towards investing changed with a large effect size, towards savings, with a medium effect size, and towards earning money also with a medium effect size, as in previous years, but this was the first study of this size at this age level with a demonstrably valid & reliable attitude measure. An unexpected finding is a possible relationship between the two measured attitudes that had the largest overall changes from pre to post-test, saving and investing money, and the two content areas having larger than average learning gains: saving and investing. We conclude having found empirical evidence that the Money Savvy Kids curriculum can provide the necessary knowledge and support and promote the desired attitudes that are a necessary pre-condition for informed and responsible financial behavior.

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1. Introduction

Money Savvy Kids is a curriculum developed in 2001 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 the work had to begin early. As with any fundamental content and skills, Susan Beacham (and others) stresses that economic and financial education should be taught early and often, much like reading and math. It can't wait until high school. Establishing good financial habits takes time (Consumer Financial Protection Bureau, 2015).

Working with several teachers, Susan Beacham gradually developed a curriculum called *Money Savvy Kids*. After lots of trial and error, use of good instincts, and careful listening to students and teachers, the curriculum was published in 2002. The complete Money Savvy Kids curriculum was developed for six levels, PK-6:

1. Level PK is suitable for PK.
2. Level A is suitable for K or 1st grade.
3. Level B is suitable for 1st or 2nd grade.
4. Level C is suitable for 2nd or 3rd grade.
5. Level D is suitable for 3rd or 4th grade.
6. Level E is suitable for 4th or 5th grade.

The research reported here focuses only on the lessons developed as part of the program for grades 2 to 5 (Levels B through E). Each of these levels includes eight lessons.

The lessons are fully scripted making them highly consistent with the research on effective teacher-guided instruction. Decades of research demonstrate that explicit instruction is more effective and more efficient than are the discovery or self-guided approaches (Clark, Kirschner, & Sweller, 2012).

The scripted nature of the curriculum also makes classroom implementation relatively easy. Each lesson begins with an introductory page in the teacher handbook outlining what will be needed for that lesson including extra props to bring to the classroom, what that lesson will achieve, and the terms introduced in each lesson. The *Money Savvy Kids* curriculum has been aligned to Common Core State Standards for math and English Language Arts as well as National Jump$tart Coalition Standards and National Council of Math Teachers (NCTM) standards and expectations in areas of problem solving, reasoning and proof, communication, connection, and representation. The curriculum also provides an approach to teaching math and social studies economic concepts enhancing existing mathematics and social studies curricula.

1. The History of Money – Lesson 1 traces the evolution of money in a lighthearted, easy-to-grasp way. From cattle to cowrie shells to modern-day coins and currency, students learn that money has taken the form of many things over time.
2. Where Does Money Come From - Lesson 2 explains the ways people earn money by doing different types of jobs and by selling their time, and that income is limited relative to wants. Wants are virtually unlimited, but limited income does not allow individuals to have everything they want.

3. Kids Can Earn Money, Too - Lesson 3 describes how businesses operate through two easy-to-grasp examples: a dog-walking service and a lemonade stand. They learn what an entrepreneur is and that businesses offer products or services in exchange for money.

4. Saving Money - Lesson 4 introduces students to the 4-chamber Money Savvy Pig bank which each student receives as part of this curriculum level. The students learn about saving, interest, short-term goals, and long-term goals.

5. Spending Money - Lesson 5 explores how students can be smart spenders. This lesson presents four strategies designed to help students spend wisely and helps them to develop critical thinking about purchasing decisions. The four strategies include making a spending list, prioritizing the spending list, giving the "gimmies" a time out, and comparing prices.

6. Donating Money - Lesson 6 lays out several easy donating strategies for students such as researching charities, choosing a charity, and making a giving board. They learn that donating can mean giving time or talent as well as money.

7. Investing Money - Lesson 7 introduces students to the concept of investing in a lighthearted, age-appropriate way. Students become familiar with basic investment terms and concepts including bear market, bull market, shareholder, stocks, and risk.

8. Family Money Press Conference: In this final lesson, students hold their own "press conferences" with members of their families or other adults in their lives asking questions to discover how the grown-ups earned income when they were young.

An important part of the *Money Savvy Kids* curriculum is the Money Savvy Pig, a unique take on the traditional "piggy bank." What makes the Money Savvy Pig distinctive? 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 is taught about the concepts embodied by the Money Savvy Pig and he or she receives one to keep. The Money Savvy Pig, along with the *Money Savvy Kids* curriculum, provides teachers and parents with a fun and engaging way to introduce children to the basic ideas in economics and personal finance.

Money Savvy Kids and the Money Savvy Pig are highly popular. Nearly 380,000 students in the lower 48 states have participated in the curriculum. Thousands of Money Savvy Pigs have been sold or distributed to schools across the nation at no cost due to the generosity of local and state donors. Moreover, the odds are good that you have seen the Money Savvy Pig at a school, bank, insurance company or other financial institution that wishes to promote economic and financial literacy. But you might not have realized that it was a key part of a well-developed and seriously researched curriculum for children. We are not talking about marketing research, but a rigorous ongoing attempt to find out just how this curriculum impacts both student attitudes about the various aspects of personal finance and their understanding of the requisite ideas.

2. Earlier Research on the Money Savvy Kids Curriculum

For roughly a decade the evaluation of the *Money Savvy Kids* curriculum relied on an attitude test developed by the Center for Economics Education at the University of Wisconsin–Milwaukee as a device to measure student beliefs about savings habits, handling money, the role of business, and so forth. The instrument, called the Money Savvy Kids Assessment, is a 10 item, Likert-scale instrument. A three-point response format was used: "agree" (value 3), "unsure" (value 2), and "disagree" (value 1).

Typically, our evaluation efforts indicated students' attitudes improving slightly after instruction, with reasonably positive (desired) attitudes before instruction on many items (Schug & Hagedorn, 2005). After similar results over the next decade, we realized we needed to investigate more deeply. We realized that while attitudes are important, so is solid evidence of content learning. With funding from an Elizabeth Morse Genius Charitable Trust, we developed and piloted a multiple-choice content test during the 2015-2016 school year at multiple sites. We also piloted a freshly designed attitudinal instrument. From the results of this pilot, we improved both instruments by eliminating items with poor psychometric properties.

Once poorer performing items were removed, we used these improved pilot instruments to evaluate program impact in Washington State for the 2016-2017 academic year. This study had nearly 1300 participants (N = 1299). Before sharing our methodological approach and results, we wish to carefully set the context for our study.

3. Review of Related Research

A search of the educational literature finds very few studies of elementary students learning financial literacy. This dearth of studies about teaching basic economic and financial concepts to children is possibly due to the difficulties of measuring economic understanding at young ages. Multiple-choice test questions require a certain level of reading ability on the part of the child. Interviews of young children take time to administer and are difficult to standardize. As a result, there are no nationally normed, readily available knowledge tests or attitude measures to assess a child's knowledge of personal finance and economics.

However, research going back as far as 1969 suggests that young children can learn economics. In 1963, Lawrence Senesh, a pioneer in economic education, developed the instructional materials *Our Working World: Families at Work* for teaching economics at the elementary level (Senesh, 1963). Larkins and Shaver's (1969) study used the *Our Working World* series to demonstrate that first-grade students who studied economics consistently performed better on economics tests than those students who did not study economics.

Kourilsky (1977), in a study of the *Kinder Economy* program, found that children who participated in the program significantly outperformed students in control groups. Laney's (1989) research used the *Mini-Society* program and found that young students can learn economic concepts when exposed to carefully designed instruction. He also found that students better retained economic knowledge when they were exposed to real-life examples in the classroom rather than examples heavily dependent on vicarious experiences. Morgan (1991) used a "Yes" or "No" response test to measure the effectiveness of the video program *Econ and Me*. A sample of 300 students taught in the classroom by teachers trained to use the program demonstrated a statistically significant gain in economic learning from pre-test to post-test.

Sosin, Dick, and Reiser (1997) conducted a study involving control and experimental groups in grades three, four, five, and six. Teachers in the experimental groups received economics training in economics and used curriculum materials developed primarily by the Council on Economic Education. Teachers in the control group did not receive the training or curriculum materials. Students in both groups were pre- and post-tested using a standardized test of economic knowledge. In analyzing the results, the research team concluded that students in the experimental group learned significantly more economics than students in the control group. The variable that most significantly explained the difference in learning between the groups was the extent to which economic concepts were taught.

Schug and Hagedorn (2005) conducted research using the *Money Savvy Kids* curriculum

to further understand young students' abilities to learn personal finance curriculum. This study involved 300 second- and third-grade students who were taught financial content by teachers trained to use the *Money Savvy Kids* curriculum. Analysis of the pre- and post-test results for these students showed they had a statistically significant gain in positive attitudes towards smart spending, saving, and use of banks. Hagedorn, Schug, and Suiter (2016) more recently published a study with similar results but with a much larger sample size and teacher librarians using the curriculum.

Suiter (2006) found that middle-school students who are taught personal finance and economics content in their mathematics classes perform better on economics tests than their counterparts not taught economics and personal finance in their mathematics classes. Additionally, the results of the study showed that the students who are taught economics and personal finance in their mathematics classes perform as well as their counterparts on a mathematics test.

Harter and Harter (2007) conducted a study to measure the effectiveness of the *Financial Fitness for Life* (*FFFL*) curricula published by the Council on Economic Education. The study focused on the use of *FFFL* in elementary, middle, and high schools in low- to moderate-income areas in a region of Kentucky. Teachers in the experimental group were trained to use the *FFFL* in their classrooms. Teachers in the control group were not trained and did not use the materials. Students in both groups were given pre- and post-tests carefully designed to match the content of the program. Based on pre- and post-test results for the over 300 elementary students in the experimental group and over 600 elementary students in the control group, the study concluded that students in the experimental group showed a statistically significant increase in financial knowledge.

Finally, two important reviews of research provide a good summary of what we know regarding the economic and financial education of children. Watts (2005) conducted a review of research on outcomes and effective program delivery in pre-college economic education. He noted that research in economics and personal finance shows that students can and do learn economics when their teachers understand the content and when they incorporate the use of high-quality educational materials in the classroom. Miller and Van Fossen (2008) conducted a review of research in economic education and concluded the "children's economic knowledge can be improved via direct, purposeful instruction" (p. 293). In other words, if we teach children basic economic and financial concepts, they do learn.

This conclusion is supported by a more recent study by Batty, Collins, and Odders-White (2015). The results of this quasi-experimental design study indicated that fourth- and fifth-grade students who participated in a relatively brief financial literacy program retained knowledge gains after a year.

4. Methodology

The content test employed in our repeated measures design (pre-instruction, post-instruction), consists of 27 multiple-choice items investigating student learning related to the seven lessons provided in the curriculum (See Appendix A for the item stems):

1. History of money (5 items)
2. Where does money come from? (3 items)
3. Kids can earn money too! (3 items)
4. Saving money (4 items)
5. Spending money (5 items)
6. Donating money (3 items)

7. Investing money (4 items)

Each item on the content test was dichotomously scored, a "0" if either incorrect or left blank, or a "1" if correct.

The attitude test, also given pre- and post-instruction, consists of 17 multiple choice items investigating student learning related to five of the seven curriculum areas (see Appendix B):

1. Earning (4 items)
2. Spending (2 items)
3. Saving (4 items)
4. Investing (3 items)
5. Donating (3 items)
6. General attitude towards learning about money (1 item)

The response choices for these items were: a smiley face (representing "I agree,"), a neutral face (representing "I'm unsure,") and a frowning face (representing "I disagree"). Smiling face responses were scored as a "3," neutral face responses as a "2," and frowning face responses as a "1." Items that were negatively worded, those where the appropriate response would be to disagree with them, were recoded for analysis, meaning if students agreed with them, the 3 value was replaced with a 1 (the lowest score) and vice versa.

The results from the content test are analyzed as a whole (raw test scores) and by lesson (section raw scores). The attitude test results are presented as subscale scores only. Our subscale scores were obtained by adding the responses to each attitudinal item on the subscale (with negatively worded items recoded) and divides the sum by the number of items on that particular subscale. As a result, all mean subscale scores are on the 1 to 3 scale. Descriptive statistics describing scores are provided along with inferential statistics that evaluate the likelihood that the changes observed were caused by simple chance or as we hypothesize, by participation in the *Money Savvy Kids* curriculum. For the raw test scores and lesson section scores, the non-parametric Wilcoxon Signed ranks test was used. Why? When comparing means (pre-test to post-test) from a matched sample, the appropriate parametric statistic is the paired samples t-test (Aron & Aron, 2003). However, an often overlooked assumption for using parametric statistics is that the data analyzed be normally distributed. As our data are not normally distributed, as indicated by both Kolmogorov-Smirnov and Shapiro-Wilk tests, we chose the more appropriate non-parametric test. This non-normality of data is common, particularly on post-tests where scores tend to be skewed to the left.

Any results indicating a statistically significant change from pre- to post-test were also analyzed using the effect-size statistic derived by dividing the Z value by the square root of the sample size. A statistically significant difference in means from pre-test to post-test indicates a high likelihood that the changes were not a result of chance and may be attributed to the *Money Savvy Kids* curriculum. The effect-size addresses the importance—or size—of the change (Cohen, 1992; Kirk, 1995). Obtained effect sizes will be categorized using the suggested rules of thumb: d = 0.1 is the threshold for a "small effect size", d= 0.3 is the threshold for a "medium effect size", and d=0.5 the threshold for a "large effect size."

Lastly, a normalized gain score, or Hake Index (Hake, 2001), was calculated for the content test. This index is a measure of how much of an improvement has been made from pre- to post-test in terms of the amount the students would have to improve from the mean pre-score to everyone getting 100% correct on the post-test. For instance, a Hake Index of 50% implies that the students improved half as much as they could have.

Before considering the results, it is important to note that the development of these two instruments, one measuring attitudes, the other measuring content knowledge, occurred independently. While both deal with similar topics of earning, spending, saving, investing, and donating; the attitudinal test was developed in consultation with experienced teachers of the curriculum, based upon an instrument we used for nearly a decade. The content test was developed in consultation with the curriculum designers, but was funded externally through a Morse Genius grant. Our intention in this study is to rigorously determine if the *Money Savvy Kids* curriculum had a positive impact on student learning as well as attitude. Our pilot study from the year before (2015-2016), suggested such an impact but focused on instrument refinement. This study makes use of both refined instruments with a sample of over one thousand elementary students. Since so few quantitative studies have been published with elementary students, let alone with samples of this size, we believe our study can be used to promote discussion and further research along these lines.

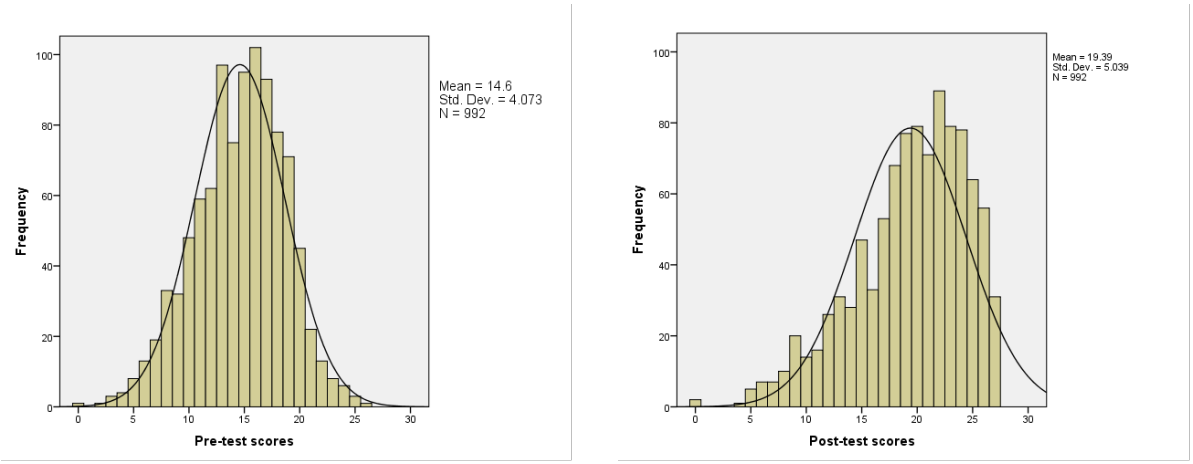
5. Overall Results

Content Test and Content By Sections

Of the 992 students for whom we had matched pre and post-tests, 358 (36%) were in the 2nd grade and 634 (64%) were in the 3rd grade. These tests came from 39 distinct schools with 57 teachers delivering the *Money Savvy Kids* curriculum and proctoring the testing.

The change in the mean raw score across all lessons changed from 14.6 (SD = 4.1) on the pre-test to 19.4 (SD = 5.0) on the post-test. This implies that on average, students on the pre-test got 15 items correct and on the post-test, 19 correct. This change in raw score is statistically significant at less than one chance in a thousand and has a large effect size of 1.1. The Hake index indicates how much improvement the students made on average, compared to how much improvement they would have made if they had all answered every question correctly on the post-test. For this sample, the Hake index was 0.39, which implies the participants improved 39% of what they could have. Histograms for the pre-test and post-test are provided in Figure 1.

Figure 1 Distributions of Scores on Pre- and Post-Tests



To summarize the student learning for each lesson, the raw scores for each item in each lesson were summed and then converted to a scale of 100. The means and standard deviations for these lesson scores are presented in table 1. The non-parametric Wilcoxon Signed Ranks Test was used to determine the likelihood that the changes from pre- to post-test scores occurred purely by chance or as we would hope, because they participated in the program. The appropriate Cohen effect size for the change from pre- to post-test with a matched sample was also calculated. These results are presented in Table 2.

Table 1 Descriptive Statistics for Normalized Lesson Scores

Lesson	N	Pre-test score	SD_{pre}	Post-test score	SD_{post}	Correlation	Mean change
History of money	991	44.9	20.8	67.7	26.5	0.262	22.8
Source of money	992	65.3	27.5	81.4	24.3	0.313	16.1
Kids can earn	992	78.8	28.3	85.5	24.5	0.337	6.7
Saving money	992	54.6	22.5	79.0	22.7	0.302	24.4
Spending money	992	43.9	23.7	58.4	26.2	0.377	14.5
Donating money	992	70.7	32.9	80.6	28.7	0.440	9.9
Investing money	992	38.2	25.6	62.4	29.3	0.252	24.2

Table 2 Wilcoxon Signed Ranks Results With Effect Sizes for Lesson Score Improvement

Lesson	Z	p	Effect size	Interpretation of effect size
History of money	19.2	0.000	0.79	large
Source of money	14.6	0.000	0.53	large
Kids can earn	6.9	0.000	0.22	small
Saving money	21.0	0.000	0.91	large
Spending money	14.6	0.000	0.52	large
Donating money	9.2	0.000	0.30	medium
Investing money	18.3	0.000	0.72	large

As table 2 shows, the change in lesson scores from pre- to post-test changed with statistical significance for all seven lessons. The probability that such changes occurred purely by chance is less than one in one thousand. The changes in mean lesson scores for the: 1) history of money, 2) source of money, 3) saving money, 4) spending money, and 5) investing money lessons had large effect sizes. The changes in mean lesson scores for the donating money lessons had a medium effect size. Only the "kids can earn" lesson score changed with a small effect size but note that this lesson score on the pre-measure was 79.9 – the largest of all the lessons.

Attitudinal Measure by Subscale

Of the 1,299 students for whom we had matched pre- and post- attitudinal measures, 21 (1.6%) were in the first grade, 529 (40.7%) were in the second grade, and 749 (57.7%) were in the third grade. The 21 first-grade students were filtered from analysis in this study as they only completed the attitude test. Table 3 provides descriptive statistics on the attitudinal subscale scores on both the pre- and post-test, dealing with missing values analysis by analysis. This implies that when data were missing, only the matched data for each specific item that was missing was removed and not the entire case. If one removes cases that had any missing data, the sample size reduces to 994 and the results are shared in Tables 5 and 6. Despite slight changes in the descriptive statistics, the statistical inferences were nearly identical between the larger more inclusive set of data and the smaller more conservative set.

Table 3 Descriptive Statistics for Attitudinal Subscale Scores (Missing Values Analysis by Analysis)

Attitudes towards	N	Pre-test score	SD_{pre}	Post-test score	SD_{post}	Correlation	Mean change
Earning money	1216	2.40	0.389	2.61	0.349	0.257	0.22
Spending money	1241	2.20	0.533	2.31	0.530	0.276	0.10
Saving money	1202	2.41	0.440	2.65	0.395	0.329	0.24
Investing money	1194	2.14	0.489	2.52	0.476	0.168	0.38
Donating money	1237	2.40	0.650	2.52	0.595	0.337	0.11
Learning about money	1230	2.69	0.609	2.82	0.473	0.276	0.13

Table 4 Wilcoxon Signed Ranks Results With Effect Sizes for Attitudinal Improvement

Lesson	Z	p	Effect size	Interpretation of effect size
Earning money	15.4	0.000	0.44	medium
Spending money	5.4	0.000	0.17	small
Saving money	15.5	0.000	0.47	medium
Investing money	18.2	0.000	0.60	large
Donating money	5.4	0.000	0.14	small
Learning about money	6.8	0.000	0.20	small

Table 5 Descriptive Statistics for Attitudinal Subscale Scores (Missing Values Listwise)

Attitudes towards	N	Pre-test score	SD_{pre}	Post-test score	SD_{post}	Correlation	Mean change
Earning money	994	2.41	0.390	2.62	0.346	0.226	0.21
Spending money	994	2.21	0.529	2.31	0.522	0.255	0.09
Saving money	994	2.41	0.443	2.65	0.397	0.346	0.24
Investing money	994	2.14	0.484	2.52	0.476	0.159	0.37
Donating money	994	2.40	0.650	2.52	0.595	0.340	0.12
Learning about money	994	2.69	0.609	2.82	0.473	0.255	0.15

Table 6 Wilcoxon Signed Ranks Results With Effect Sizes for Attitudinal Improvement

Lesson	Z	p	Effect size	Interpretation of effect size
Earning money	13.6	0.000	0.43	medium
Spending money	4.3	0.000	0.16	small
Saving money	14.0	0.000	0.47	medium
Investing money	16.5	0.000	0.61	large
Donating money	5.0	0.000	0.16	small
Learning about money	6.8	0.000	0.18	small

6. Limitations

This study has several limitations. It would be stronger if we could match each student's content test responses with their measured attitude responses. As the two tests were developed independently, utilized different response formats, and included three areas that do not overlap, we would have to carefully plan how to investigate any relationship between learning and attitude change. Future research along these lines could begin with a factor analysis of the attitudinal data to determine which items seem to address which financial details. Once clear attitude factors related to saving or investment are identified (along with which specific items measure that most effectively), possible hypotheses about relationships to learning gains could be investigated.

While we have carefully developed our instruments, this study would be stronger if we had been able to use a nationally normed and validated instrument to measure knowledge and attitudes at the elementary grade levels. A different approach to this measurement concern would be to apply Rasch analysis to our existing data and see what conclusions we could draw about our instruments from the results of this more stringent measurement analysis.

An improvement to the curriculum that would very likely impact knowledge gains would include improving the training of the participating teachers. In previous years, changes in student attitudes could be statistically linked to the individual teachers, and with our new

content test, this could also be done with learning.

Future studies that would further support our claims include conducting a retention study and carrying out a quasi-experimental study with treatment and control groups. While a retention study is a future intention, we are currently carrying out the quasi-experimental study in Washington State with a control group as demographically similar to our treatment group as possible. In an experimental study individual students are randomly assigned to treatment and control groups. In a quasi-experimental study, groups of students (classes or schools) are randomly assigned to treatment or control. In an educational setting, experimental studies are logistically very difficult.

7. Conclusions

The results of this study demonstrate that participating students, on average, had significantly higher scores on the post-test than on the pre-test, which suggests the efficacy of the *Money Savvy Kids*® curriculum for teaching various aspects of financial literacy. The learning gains students made, when broken down by lesson topics, had large effect sizes for five of the seven lessons (the history of money, sources of money, saving, spending, and investing), a medium effect size for donating money, and a small effect size for "kids can earn."

As we found in previous studies, where student attitude changes were small, enough students held the "desired" attitudes towards learning about money, donating money, and spending money, *before instruction.* This led to the mean attitude scores being greater than 2.0 (remember scores of "1" imply disagreement, "2" imply uncertainty, and "3" agreement). While this may be a "technical rule of thumb" interpretation, mean scores greater than 2.0 indicate more students agree with the statement than are unsure or disagree. Graphs of frequencies of responses to individual items before and after instruction make this easier to discern but were omitted from this paper due to space considerations.

While small changes in attitudes or appropriate attitudes being held before instruction may beg the question, what is the benefit of the curriculum in terms of changing attitudes? In previous years we have argued that whether students held the desired attitudes before instruction or not, learning about the related topic and showing even small changes in attitude may very well indicate that the desired attitudes are held more robustly – something a retention study or a student focus group study might shed light on.

An unexpected finding of this study, discovered by serendipity not by design, was that the two largest attitude changes (investing and saving) were in areas where the students demonstrably learned new things about those topics. The two attitudinal changes with the two highest effect sizes (0.60 and 0.47) were related to investing and saving money, respectively. Looking at the content results for improvements in understanding, learning about saving had the largest effect size (0.91), and investing had the 3rd highest effect size (0.72). (The 2nd highest effect size was on the History of Money, which has no attitudinal counterpart). Stepping back from the details, doesn't it make sense that a change in understanding could lead to a change in attitude?

Finally, and most importantly, this study reveals that children can make simultaneous progress toward becoming financially literate and toward holding more positive attitudes about what they have learned. This finding is important, and we have tried to communicate that with our title's reference to changing hearts and minds. 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. It's ironic that an early negative experience with mathematics, then repeated semi-regularly, has had a pervasively negative impact on student

attitudes towards math.

The empirical results of this study are far too positive to end on an ironic note. We have found empirical evidence that the *Money Savvy Kids* curriculum can provide the necessary knowledge and support and promote the desired attitudes that are a necessary pre-condition for informed and responsible financial behavior. In a nation of limited financial literacy, this is at least a candle in the darkness. Perhaps there's something to the quip that good personal savings programs and economic/financial education should both be started as soon as possible and contributed to as often as possible.

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Appendix A Item Stems for Money Savvy Kids Knowledge Test

Lesson 1: History of Money

1. Which of these is currency?

2. Which is an example of a good?

3. What is an example of a service?

4. Samantha liked John's pen. John liked Samantha's colored pencil. They decided to switch so John got the colored pencil and Samantha got the pen. What is this called?

5. Allen goes to the grocery store to buy milk. He gives the cashier money to pay for the milk. The cashier gives Allen the milk. What is this called?

Lesson 2: Where Does Money Come From?

1. Where do most adults get money?

2. Adults trade time at work for

3. When Kathy places money into her bank account, she is making a

Lesson 3: Kids Can Earn Money, Too!

1. Alex started a new business cleaning garages for neighbors. Which of these is Alex?

2. The amount of money Tommy pays for a bag of popcorn is called the

3. Restaurants, lemonade stands, and hardware stores are all

Lesson 4: Saving Money

1. The bank pays Jessie for keeping money in a savings account. What is this payment called?

2. The smartest place to save your money is

3. The best example of a long-term saving goal is setting money aside for a:

4. The best example of a short-term savings goal would be setting money aside for a:

Lesson 5: Spending Money

1. Josh bought a new shirt at the store. Which of these is Josh?

2. When Maria borrowed money from a bank, she received a

3. The amount of money Bonnie owes is called her

4. Lucy is trying to make a smart decision about spending. What advice will you give her?

5. James always uses a credit card to buy gas for his car. When he uses a credit card, he is

Lesson 6: Donating Money

1. Rudy gave $10 to an animal shelter. He was

2. Renee volunteered to sing songs at a nursing home on Saturday. She was

3. Which of these is a charity whose main interest is in receiving donations?

Lesson 7: Investing Money

1. Which of these is a smart reason to invest?

2. Stocks are

3. Juan bought 10 shares of stock in a new company but he is worried that he might lose money. What is Juan's problem called?

4. Alicia bought 20 shares of stock in Walt Disney Company. What is Alicia now?

Appendix B. Money Savvy Kids Attitudinal Measure

Students were asked to choose which of the three faces

best reflected their response to each item.

1. Getting money is easy. Just put a card in the cash machine and out it comes!
2. I can earn money at my age.
3. Earning money makes me happier than getting money as a gift.
4. Owning a business is not a good way to earn money.
5. Spending money leaves less money for me to save.
6. TV commercials make me want to spend more money than I should.
7. Banks are safe places to save my money.
8. A smart place to keep money is in a secret hiding place in my room.
9. I don't understand what banks do.
10. I am not interested in having a savings account at a bank.
11. I am not interested in investing my money.
12. I want to invest my money in businesses that earn profits.

13. I want to invest my money to earn more money.
14. Giving my money to people who really need it makes me happy.
15. Earning money is hard so I am not giving my money away.
16. It pleases me to give my money to groups I care about.
17. I like learning about what to do with my money.

If you use this instrument, consider telling us about what you find. Please email Eric Hagedorn at hagedore@matc.edu