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Financial Capability in Children

Effects of Participation in a School-based Financial Education and Savings Program

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Financial Capability in Children: Effects of Participation in a School-based Financial Education and Savings Program

A groundswell of interest in young people’s ability to understand and handle financial decisions has generated keen interest in financial knowledge and effectiveness of financial education. This study examines an innovative four-year school-based financial education and savings program, called “I Can Save” (ICS). Using a quasi-experimental design, the study examines quantitative and qualitative data to analyze program effects on financial knowledge. Children who participated in ICS scored significantly higher on a financial literacy test than comparison group students in the same school, regardless of parent education and income. Results suggest that children increase financial capability when they have access to financial education and it is accompanied by participation in meaningful financial services.

Key words: *financial education, financial capability, financial literacy, children, quasi-experiment*

Fueled by rising consumption among children and youth, and changing perspectives on the economic lives of children, there has been a groundswell of interest in financial education aimed at young people (Greenspan 2005; US Department of Treasury 2009).¹ Childhood is no longer considered a period of life shielded from the worlds of finance and economics (Webley, Burgoyne, Lea, and Young 2001, 22). As parents mediate fewer spending decisions, it is becoming more important for children to understand how to manage financial decisions (Chinadle 2008; Lucey and Cooter 2008; Lunt 1996; Lunt and Furnham 1996; Suiter and Meszaros 2005).

The current economic crisis has intensified appeals for financial education. Suddenly, the complexities – and perils – of modern financial life have come into full view. Although families are a primary source of financial socialization (Kourilsky 1977; Moschis 1985; Rettig and Mortenson

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¹ There is also international interest (New America Foundation, 2008; OECD, 2005; WSBI, 2009), but the focus of this paper is on the United States.

1986), family members cannot provide adequate knowledge and skills for making financial decisions as children grow older.

Observing the financial difficulties facing so many US families, scholars, policy makers, and educators view financial education as a way to help young people build knowledge and skills necessary for sound financial decision making, avoiding predatory financial services, and building financial well-being (Lucey and Giannangelo 2006). A growing number of states require financial education standards in public schools including 28 states that mandate implementation of personal financial education standards, up from 14 in 1998 (National Council on Economic Education 2007). Despite the growing chorus of experts recommending financial education begin early, it is less common in elementary school than in high school (Cohen and Xiao 1992; McCormick and Godsted 2006; Saul 1997; Suiter and Meszaros 2005).

Previous research has shown that adults benefit from combined financial education and savings programs (Fry et al. 2008; Schreiner and Sherraden 2007). This study examines a similar program for young children in an elementary school setting. The paper begins with a review of scholarship on the state of financial literacy among youth, research on effectiveness of financial education programs, and approaches to teaching financial concepts to young children. Following this is a description of the financial education and savings program called “I Can Save,” study methods, and findings. The paper concludes with a discussion of results and implications for research, policy, and practice.

Young children’s capacity to understand financial concepts

Children develop understanding of economic and financial concepts as they progress through successive developmental stages (Berti and Bombi 1988; de Clerq 2009; John 1999; Strauss 1952). Although young children’s financial understanding is unsophisticated, scholars suggest that they can understand concepts at a very young age, perhaps as young as four to six years (Harrah and Friedman 1990; Lau 1998; Roos et al. 2005). Elementary school age children can grasp basic economic concepts such as scarcity, production, specialization, consumption, saving, distribution, demand/supply, business, money, and barter (Buckles and Freeman 1984; Chizmar and Halinski 1983; Davidson and Kilgore 1971; Kourilsky 1977; Hansen 1985; Laney 1989; Larkins and Shaver 1969; NASBE 2006; Sonuga-Barke and Webley 1993; Sosin, Dick, and Reiser 1997). These concepts form the foundation of more sophisticated understanding in later years (Leiser 1983).

A range of social and cultural influences—including culture, media, schools, peers, and family—also affect children’s economic socialization (Beutler and Dickson 2008; Bodnar 2005; Furnham and Argyle 1998; Roland-Levy 1990). Learning depends on many factors, including sources and amounts of money that children control (Doss et al. 1995; Furnham 1999; Meeks 1998). Moreover, cross-cultural research in multiple countries suggests that children who participate in economic life and receive more education about banking are knowledgeable about economic concepts at an earlier age (Furnham and Argyle 1998; Roland-Levy 1990).

Financial literacy among children and youth

Despite children’s ability to learn financial concepts, overall, studies underscore low levels of financial literacy. Although there are no large sample studies of financial literacy among young

children, results of financial literacy tests in high school and college suggest a lack of financial education. Lewis Mandell (2008b) – who has analyzed bi-annual financial literacy tests conducted by the Jump\$tart Coalition for Personal Financial Literacy between 1997 and 2008 – reports low levels of financial literacy among high school seniors. In fact, despite growth of financial education in high schools, mean financial literacy scores fell between 1997 and 2008, from 57 percent to 48 percent (considered well below proficient) (Mandell 1998, 2008b). Although some researchers suggest that the Jump\$tart findings may be subject to social bias as well as other reliability and validity problems (Lucey 2005), other studies show similarly low levels of financial literacy among high school students (Charles Schwab 2007; NCEE 2005; Valentine and Khayum 2005).

Studies show that levels of financial literacy tend to be correlated with socio-economic background. Youth from more educated families, non-minority youth, youth who plan to attend college and aim for professional careers, and youth who expect to earn higher incomes score significantly higher on financial literacy tests (Mandell 2008a; Mandell 2008b; Mandell and Klein 2007). Valentine and Khayum (2005) find that urban and rural youth from five high schools who have higher incomes, savings accounts, college aspirations, and part-time employment perform better on a high school financial literacy quiz.

Effectiveness of financial education

Low levels of financial literacy among young people also raise questions about the effectiveness of financial education in increasing financial knowledge and skills, improving financial behavior, and contributing to overall healthier financial outcomes (Hathaway and Khatiwada 2008). Financial education programs vary in content, but typically include spending, planning, budgeting, earning, saving, managing financial risk, investing, taxes, credit and debt, and bill paying (Godsted and McCormick 2007; Jacob, Hudson, and Bush 2000; Lopez-Fernandini and Murrell 2008).

Studies of elementary school financial education programs tend to have positive outcomes, while results from high school programs show mixed results (ASEC 1999; Bernheim, Garrett, and Maki 2001; Danes and Haberman 2007; Huddleston, Danes, and Boyce 1999; Mandell 2009). This discrepancy may be due to the fact there are far fewer studies of financial education with young children, especially in the United States, and overall, studies involve very small numbers of subjects.

In an early study, first graders participating in an economics curriculum learned economic concepts and performed significantly better on economics tests than students who did not participate in the curriculum (Senesh 1964; Larkins and Shaver 1969).² Marilyn Kourilsky's influential 1977 study found that five and six year olds in 4 classrooms who participated in Kinder-Economy, showed significantly higher mastery of basic economic concepts in a post-assessment, compared to students in 4 control classrooms (Kourilsky 1977). Another study found that test scores of children in classrooms with teachers who were trained in using an economics video had higher scores than other children (Morgan 1991).

A more recent study of 25 third graders who received 20 hours of financial education, found that the children learned and retained key concepts about banking significantly more than the 33 study

² Because there is relatively little evidence about the effectiveness of financial education curricula with young children, we also include some studies that address economics curricula in this section.

controls (Berti and Monaci 1998). Positive results using a pre-post design persisted in a second post test administered four months later (Berti and Monaci 1998). Another study with third graders, using a pre-post test design, found a positive impact on the 15 treatment children's financial literacy from reading storybooks about money compared to 16 controls (Grody, Grody, Kromann, and Sutliff 2008). A pre-post study with over 300 second and third grade children participating in Money Savvy Kids™, taught by classroom teachers trained to use the curriculum, found positive results. Each child received a piggy bank with four slots (for saving, spending, investing, and donating) and eight financial lessons. Analysis of pre- and post-tests showed statistically significant improvements in knowledge and attitudes (Schug and Hagedorn 2005).

Three other studies focus on slightly older children. A recent study tested the *Financial Fitness for Life* (FFFL) curriculum with students in elementary, middle, and high school in Eastern Kentucky. After one year, using a pre-post test design, students in all grade levels increased financial knowledge (Harter and Harter 2007). When compared to students in comparable control groups for middle and high school grades³, results showed a significant increase for those receiving the FFFL curriculum (Harter and Harter 2007). Junior Achievement's *Economics for Success* program, which also uses a pre-post design, showed significant improvement in attitudes, knowledge, and confidence about personal finance among 300 middle school students in five states (Diem, Burke, Bessell, and Coyne no date).

Despite these promising results, there is too little research to draw conclusions about the effectiveness of financial education programs for children (Fox and Bartholomae 2008). Studies use small and non-representative samples, non-standardized measures, and many are of relatively short duration. Finally, studies tend to focus on changes in financial knowledge and attitudes more than skills and behavior. In short, we know relatively little about the long-term effects of early financial education.

Experiential education and financial capability

Financial educators and scholars have learned that people, especially young children, are more excited by and may learn more when financial education curricula are experiential, include discovery and other experiential applications, take advantage of teachable moments, and target teaching techniques for diverse learning styles and diverse groups (Ajello et al. 1987; Laney 1989; Kourilsky 1977; Kourilsky and Carlson 1996; Fox and Bartholomae 1999; Fry et al. 2008; Hilgert, Hogarth and Beverly 2003; Lopez-Fernandini and Murrell 2008; Lucey and Giannangelo 2006; Varcoe et al. 2002). Financial education that demonstrates relevance to students may be more effective in motivating learning and improving retention (Mandell and Klein 2007; Russell et al. 2006).

Participation in meaningful financial services may be a particularly effective form of experiential education. Giving students access to financial services alongside financial education may help students develop "financial capability" (Johnson and Sherraden 2007). The idea of financial capability is that young people who have access to meaningful financial services will have more

³ Students in the control group received other financial education in the general curriculum.

motivation to learn and develop a better understanding of personal finance.⁴ Financial capability not only requires knowledge, but also the ability and opportunity to act on that knowledge. As Lucey and Giannangelo suggest, students should be offered “both the practice and the hope necessary for success” (2006, 271). In other words, when children and youth make a tangible connection between financial education and participation in financial services they may learn and retain more (Beutler and Dickson 2008; Grody et al. 2008; Johnson and Sherraden 2007; Webley et al. 2001). The idea of financial capability is grounded in the idea that children’s social and economic environment helps to shape economic beliefs, attitudes, and values, as well as knowledge and behavior (Leiser and Ganin 1996).

Although seriously understudied among young children, there is initial evidence suggesting that inclusion in financial services may contribute to financial knowledge and improved financial behavior among older youth. A large sample of college alumni finds that experience owning bank accounts and investment assets are associated with higher investment knowledge and rates of saving (Peng, Bartholomae, Fox, and Cravener 2007). Mandell finds evidence of a link between owning a savings account and higher (but not “passing”) financial literacy scores, but does not find a link between students who own stocks in their own names or own credit cards (2001, 2008b). Connections to financial services professionals also may reduce negative financial behaviors (Bowditch 2005). From the elementary to high school level, a growing number of school banking programs, many in collaboration with local credit unions, reflect the idea that if children have an actual account, they will learn and retain more financial knowledge and skills (Credit Union National Association 2009). Unfortunately, few programs have been systematically studied.

In sum, despite substantial evidence that experiential learning methods works with young children, there is little research on incorporating financial services and building financial capability. However, theory and empirical evidence suggest that programs that incorporate access to financial services may increase effectiveness of financial education curricula.

This paper aims to fill the gap in research on children and financial capability, exploring possible links among financial education, financial participation, and financial knowledge in an elementary school-based financial education and savings demonstration called “I Can Save.” Using a quasi-experimental design, we ask two questions: (1) Do young children gain financial knowledge and understanding resulting from participation in a financial education curriculum? (2) Do children learn more when they also participate in a savings program?

“I Can Save” Program

“I Can Save” (ICS) explored the effects of matched savings and financial education on elementary school students. An initiative of a university-community partnership dedicated to increasing financial assets, academic engagement, and expectations for higher education among young children. ICS operated from 2003 to 2007 and was a collaborative of a public school district and a non-profit organization (Sherraden et al. 2006). ICS took place in an Midwestern urban elementary school that serves a predominantly African American (90%) student body of mixed incomes (approximately

⁴ This is different than the typical use of “financial capability”. For example, B. de Clerq defines teaching financial capability as “primarily about developing appropriate attitudes towards money, as well as skills and confidence to use them, instead of learning about financial products and services” (2009, 4).

50% of students qualify for free and reduced lunch) (greatschools.net, 2009). In fall 2003, all 75 students in kindergarten and first grade were invited to join ICS, and 74 enrolled. Children in ICS received financial education and incentives for saving, including a \$500 “seed” deposit and a one-to-one savings match for all deposits into the account up to a total of \$1,500.

Financial education for ICS children, the focus of this paper, included classroom-based curricula and a once a week voluntary after-school “I Can Save” Club during the academic year. The goals for financial education were to (a) increase knowledge of basic financial and economic principles; (b) learn how to earn, manage, and save money; and (c) build aspirations and expectations for post-secondary education and training. In-school financial education included one half-hour lesson per week from *Financial Fitness for Life*® or *Wise Pockets World*® (CEEE, 2005). In year 1, classroom teachers handled all classroom financial education lessons. Teachers received one day of training by staff of the Center for Entrepreneurship and Economic Education at the University of Missouri – St. Louis, and ongoing support by program staff. In subsequent years, however, as children advanced to higher grades, teachers preferred not to teach financial concepts (except material in the regular curriculum), and responsibility for financial lessons shifted to ICS staff. By year 4, ICS staff conducted all in-class sessions.

ICS Club met for one hour after school most weeks throughout the four years. Club activities included games, refreshments, and, beginning in Year 2, monthly field trips to deposit savings in the bank. Children received one dollar for attending each weekly ICS Club session. Over time, participation in ICS Club declined as some children chose to participate in other after-school activities and many children (32) moved out of the school (Table 1).

Table 1 shows the total number of ICS Club sessions by topic across the four academic years. Two sets of *Financial Fitness for Life* curricula (grades K-2 and 3-5) have four thematic lessons each, including money management (13% of curriculum), income (19%), saving (19%), spending and credit (48%) (Hopkins and Wright 2001; Suiter 2001).⁵ ICS Club deviated from these percentages with fewer sessions on spending and credit and more on savings.

ICS also offered financial education workshops for parents, on topics such as financial values and goals, budgeting, spending, debt, credit, advocacy, taxes, and college savings. A total of 20 workshops were offered to parents over four years. In total, 48 parents participated in at least one of these sessions and 44 participated in more than one. Of those participating, parents attended an average of five sessions. In addition, 11 parents accompanied the children to the bank during ICS Club over the four years of the program. For participating in financial workshops and research surveys, ICS deposited \$25 (which was matched) into their child’s account.

⁵ Percentages are based on total number of lessons in the K-2 and 3-5 curricula because ICS used both.

Table 1. ICS After School Club Participation

Academic year	Grade levels	Club Curriculum Sessions					Club Participation	
		Total number of sessions	Money management	Income	Savings and investment	Spending	Number of participants	Number of participants who moved (cumulative)
2003-2004	K-1	15	1	7.5	4.5	2	37	-
2004-2005	1-2	27	0	14	9	4	46	4
2005-2006	2-3	28	9	5.5	4.5	9	38	9
2006-2007	3-4	28	4	3	14.5	6.5	24	21
2007-2008 ^a	4-5	9	1	0	6	2	22	32
Total (%)		107	15 (14%)	30 (28%)	38.5 (36%)	23.5 (22%)		

^a Number of students who participated in ICS through the first semester of school in this academic year. The program ended in December 2007.
Source: Beyond Housing (October 2007).

Study Design and Research Methods

Study design

The study uses a quasi-experimental design, with a treatment group of students in ICS who were in kindergarten and first grade in a public elementary school in the 2003-04 school year (n=72), and a comparison group of students in the second and third grade at the same school in the same year (n=23). Children who transferred into ICS classrooms after the 2004-05 academic year were not invited to participate in ICS, therefore, after this time, there were increasing numbers of non-study children in the ICS cohorts. At the same time, children also transferred out of the school. By 2007, when the program ended, only 38 children in ICS remained from both the third and fourth grades. The number who were not part of either the treatment or comparison groups had grown to 55 (the “non-study” group).

The treatment group received in-class financial education curricula. They were also invited to participate in the weekly one-hour after-school ICS Club and they received a savings account with incentives. Students in the comparison group did not receive in-class financial education, nor did they participate in ICS Club or have an ICS savings account.

Baseline information on treatment and comparison groups reveals that the two groups are similar in children’s age and parents’ characteristics, such as age, race, and education and income. They differ, however, on marital status, race, and gender. The treatment group has more female and African American students; parents of comparison children are more likely to be single mothers. As the program developed, there were no other observed differences between the two groups except the ICS program.

Data collection

The study uses several methods for data collection, including a test of financial knowledge, interviews with children, teacher focus groups, and program data. The Human Subjects Committees of both the University of Missouri-St. Louis and Washington University reviewed and approved the research design and instruments.

Researchers administered the nationally-normed test of the *Financial Fitness for Life* curriculum (Upper Elementary version) during the school day with assistance from classroom teachers (Walstad and Rebeck 2005). Students were in their final two months of fourth grade (2005-2008). The 40-minute test consists of four ten-minute sections of 10 questions each. It is scored by number of correct answers (raw score) and by percentile of correct answers. In total, 108 children in fourth grade took the *Financial Fitness for Life* test. This number includes three different groups: (1) ICS students in the treatment group (n=35), (2) students in the comparison group (n=18), and (3) students not in the study (n=55). The children in the study are generally representative of the school’s demographic profile. The majority of children are African American (79%), average parent educational attainment level is 11th grade, and 35 percent of families reported income at or below \$25,000 (see Table 3).

Analysis plan

We use quantitative and qualitative data to assess effectiveness of financial education in improving children's financial knowledge. First, we compare financial fitness scores (FFFL) across all three groups, then compare the treatment group with the comparison group using t-test. It is expected that the treatment group would have the highest FFFL score on average, followed by the comparison group (and non-study group). Second, Pearson Correlation tests on the treatment group assess children's FFFL scores in relation to their ICS Club attendance records, academic test results, and savings. We expect a correlation between FFFL scores and these factors. Finally, we use qualitative data to explore children's perspectives on what they learned.

Results

Between group analysis

The mean of correct answers across all groups is 52.2 percent. Those participating in ICS (60.4%) scored significantly higher than the comparison group (49.9%) ($p < .05$), although the effect size is small (Cohen's $d = .13$). Those not involved in the study had an average score of 47.8%. Taking a closer look at differences between ICS participants and the other two groups, Table 2 shows that the treatment group scored highest on all topics. Further, t-tests with equal variance shows that the treatment group scored significantly higher on income questions than the comparison group ($p < .05$). This is consistent with results from the normed FFFL test, which found that income questions reflected the greatest difference in scores between those with and without FFFL (Walstad and Rebeck 2005, 22).

There is no statistically significant difference between treatment and comparison groups on money management questions ($p = .11$), perhaps due to the small sample. We expected the treatment group would be statistically higher in saving scores given the extra time talking about saving in the ICS Club and ownership of an ICS savings account. However, they were not, a finding that requires further study.

Table 2. Financial Fitness For Life Test Scores

Variable	I Can Save				Test sample (n=815) ^a	
	Total (n=108)	Treatment group (n=35)	Comparison group (n=18)	Non-study group (n=55)	FFFL-normed (n=498)	Without FFFL-normed (n=317)
FFFL total score (raw, percentage)*	20.25 (52.2)	24.14 (60.4)	19.94 (49.9)	19.13 (47.8)	24.43	17.26
Income (raw)*	6.28	7.54	5.72	5.65	6.78	4.62
Money management (raw)†	6.20	7.14	5.89	5.71	5.17	3.98
Spending and credit (raw)	4.47	5.17	4.44	4.04	5.97	3.95
Saving and investing (raw)	3.30	4.29	3.89	3.73	6.50	4.72

a. This sample is reported in Financial fitness for life: Upper elementary test examiner's manual (2005), which is the first to study the Financial Fitness For Life Test. Note that to what extent it is comparable to the I Can Save sample is unknown.

* indicates the difference between the treatment and the comparison group at the 0.05 level.

† indicates the difference between the treatment and the comparison group at the 0.11 level.

Participant characteristics and financial fitness score

Differences between female and male students who took the test are not significant. Although African American children scored 12 percentage points lower than others, this is not a statistically significant difference ($p=.10$). As shown in Table 3, children of married parents performed significantly better than children of parents who were not married (divorced or never married) ($p=.02$). The FFFL scores are not correlated with parents' education ($p=.10$) and income ($p=.15$), which is different from previous research findings.

Table 3. Parent and Child Characteristics in Second Grade (n=53)^a

Characteristic	Parent	Child	FFFIL score (raw, percentage)
Age (mean, SD, years)	37.1 (7.9)	9.75 (0.46)	
Gender (%)			
Male	10.4	43.4	23.7 (59.3)
Female	89.6	56.6	21.9 (54.8)
Race (%) [†]			
African American	75	79.6	21.7 (54.3)
Other	25	20.5	26.5 (66.3)
Marital status (%) [*]			
Married	40		25.6 (64)
Not married	60		20.9 (52.3)
Education (%) [†]			
High school and below	24		19.4 (48.5)
Some college	40		22.6 (56.5)
BA and above	36		25.3 (63.3)
Household income (%) ^{††}			
\$25K and below	34.7		21 (52.5)
Above \$25K	65.3		24.1 (60.3)
Grade at program start (%)			
Kindergarten		26.4	
First grade		73.6	
Group (%)			
Treatment		66	24.1 (60.3)
Comparison		34	19.9 (49.8)

a. This sample only includes children in the treatment and comparison groups who participated in the FFFIL test.

* indicates the difference between the treatment and the comparison group at the 0.05 level.

† indicates the difference between the treatment and the comparison group at the 0.10 level.

†† indicates the difference between the treatment and the comparison group at the 0.15 level.

To decompose the effects of parent education and family income on child financial fitness scores, a contingency table compares the treatment and comparison groups. Regarding parent's education, the treatment group scored higher than the comparison group within each level (Table 4). We observe the same pattern with regard to income. In other words, even when taking into

consideration parent’s education and family income, the treatment group still scored higher than the comparison group.

Table 4: Financial Fitness For Life Test Scores by Parent’s Education and Income

	Group	FFFL score (raw, percentage)
<i>Education</i>		
High school and below	Treatment	20.6 (51.6)
	Comparison	17.0 (42.5)
Some college	Treatment	23.5 (58.8)
	Comparison	21.4 (53.5)
BA and above	Treatment	26.6 (66.5)
	Comparison	21.0 (52.5)
<i>Household income</i>		
\$25K and below	Treatment	22.1 (55.3)
	Comparison	19.0 (47.5)
Above \$25K	Treatment	25.8 (64.5)
	Comparison	21.0 (52.5)

In focus groups, teachers underscored the positive difference in the treatment group. They observed that students in the ICS Club overall have a larger economic vocabulary, talk more about spending and saving, and have more confidence in and ability to apply economic concepts, especially in their interaction with the bank. As a third-grade teacher observed:

We did an economics unit and I saw them pulling in concepts we hadn’t talked about in class. . . . there is a big gap between the kids who do the program and those who don’t do the program The kids who are in “I Can Save” seem at ease with the vocabulary a much better understanding of balancing and adding and things like that My “I Can Save” kids are a lot more confident answering questions when we talk about money.

When asked who might have had previous experience with a savings account, the teachers agreed that 95% of the children would probably not have any savings account without this program.

Within group analysis

To further examine factors that might be related to children’s financial test performance, we closely examine the treatment group, with a focus on ICS club participation, academic test results, and savings performance.

ICS participation and financial fitness score. The correlation between ICS Club participation, defined as number of sessions attended across four years and the FFFL test scores, is not significant. Even among children with high participation in ICS Club (approximately three or more per month across four years), there is no significant difference in scores.

Academic test results and financial fitness score. Children with higher academic test results may have better financial fitness scores because they have better reading and math skills. We test the correlations

between financial fitness scores and academic achievement test results on the standardized Stanford Achievement Test Series (Pearson Education, Inc.) reading and math scores.⁶ Results show that financial fitness scores are highly correlated with reading scores ($r=0.73$, $p<.0001$) and math scores ($r=0.74$, $p<.0001$).

Savings and financial fitness score. Children with higher savings accumulation in their ICS accounts also have higher FFFL test scores ($r=0.34$, $p=0.05$). Even excluding all incentives deposited as a result of program participation, there is still a significant positive correlation between test scores and saving deposits. Savings may have helped children improve their financial knowledge and financial test scores, financial knowledge may have improved saving, or some other factors, which should be explored in future studies.

Children’s perceptions about “I Can Save”

In 49 interviews with ICS students in second and fourth grades,⁷ there is some evidence that having a savings account motivated students to learn about a range of financial issues. When researchers asked which ICS activities students liked best, second graders reported that their favorite activities were games (40%), followed by saving (28%), snacks (26%), and going to the bank (11%).⁸ By fourth grade, students said they liked saving the best (48%), followed by games (28%), snacks (24%), and bank visits (14%). A few mentioned other activities, such as learning about future jobs, winning prizes, and seeing friends.

Children described ICS as a program that included a range of personal financial and financial services topics. Fourth grader, Akelia, for example, recounted:⁹

[Our teacher] teaches about saving accounts, deposits, withdraw, money, budget. She teaches us all about what you’re gonna need when you grow up, like when you’re gonna need money, to have responsibility. She teaches us everything like, ATM cards, checks, credit cards, and everything else. I can’t remember them by heart, but I can think of some of them...and income and stuff. And it’s like you’re learning about the things when you’re gonna grow up. So the people who go to ICS – the “I” part – they learn a little bit more.

Children perceived financial education and their savings accounts as learning about money. They reported that financial education lessons, ICS club activities, and bank visits were ways to learn important things about money that would help them in the future. Paul said his favorite part of ICS was “when we went to the bank and we counted the money and did all the activities”. Amy explained that ICS is about saving for college and the teachers “help you and they’ll teach you about

⁶ Stanford 9 academic achievement tests were given in the school two months prior to administration of the financial fitness test.

⁷ In second grade, 13 children had moved, five were unavailable, and three refused to participate in the research. By fourth grade, 32 had moved.

⁸ Adds up to more than 100 percent because some students mentioned more than one "favorite activity."

⁹ All names are pseudonyms.

different jobs and how to save in different ways, ‘cause saving, it really helped me, ‘cause before ICS, I didn’t really save at all. And so, that’s why I’m glad, because now I’m full of money.”

Students’ comments about ICS suggest enthusiasm for learning financial concepts. In second grade, for example, Amy discussed program incentives to save and attend ICS Club: “Well, in ‘I Can Save’, we get money each day we come and that helps us. And each day we get a snack. And sometimes we go on field trips to the bank, ‘cause to see how much that we just deposited into the bank.” Jamal, another second grade student, explained, “We learn how to save, and not get tempted – like if you have some place that you know where your money is – not to take it out. So you can do other stuff not to take your money out of the bank.”

Interviews also suggest that by fourth grade, students in ICS were making increasingly sophisticated connections between program activities and financial concepts. Although we cannot determine if the ICS program is responsible for students’ learning, their remarks suggest it had an effect. For example, Shantelle, a fourth grade student, described the “three things about ICS” she liked best: “The first one is that they taught me how to save money. It taught me what a budget is. And I learned more things about money that I didn’t know before.” Other students’ descriptions of ICS also suggest students’ experiences in ICS were contributing to their learning financial concepts.

We would go to the bank once a month and then there’s – We played a game where [our teacher] taught us about income and bounced checks She teaches us how to save and not spend our money that much when we have it. And she teaches us about income and interest, depositing in the bank. – Chandra (4th grade)

Interviews also suggest that between second and fourth grades students improved their understanding of financial services. In second grade, for example, Carlos explained how his money was deposited in the bank, “They pass out the money...we put in our little piggy banks. And there’s some kind of tube that goes from that library to the bank. So you put it in...it sucks it up...it goes right down to the bank.” Others had similarly naïve observation about their accounts. Shantelle referred to her piggy bank as her bank account. Another second grader said that ICS is “all about opening money inside your account.”

With several years of experience, students demonstrated a more sophisticated understanding of making savings deposits. Kim explained how they made bank deposits after walking a few blocks to the bank: “We just line up and when they say we can go, we go to the counter, and we put our money in the bank.” She continued, “[ICS] teaches you different things about saving and spending and it also gives you a chance to save money for college...like doubling this certain amount of money you get from the bank.” She likes “learning about different things about saving, so I can be a successful person when I grow up.” “Filling out the checks [deposit slips]” was the most fun, according to Mark. Cody said, “I give my deposit to the worker and they type something in the computer and it kind of takes a long time. Then they give me my receipt back.” The interviewer asked “when you get the receipt back, what’s on there?” and he replied, “Well, I think it’s my balance.”

Discussion and Conclusion

Children who participated in “I Can Save” scored significantly higher on the financial fitness test than comparison group and transfer students in the same school. A closer look at children’s financial fitness scores reveals that the treatment group had higher scores regardless of parent education and income. Children’s academic performance did not appear to be a confounding factor of program effects because the two groups were not significantly different from each other on Stanford reading and math scores in the fourth grade. All of this might suggest that the “I Can Save” program was successful in improving children’s financial capability. However, there may be bias in sample selection and group assignment. As noted earlier, while the two groups are similar in some characteristics, the baseline information reveals some group differences. It is not clear to what extent these differences affected study results.

Further analyses are not clear about which components of the ICS program explain higher scores, although within group analyses show that academic test results and higher savings are associated with higher test scores. This is in line with other research that suggests SES and socialization factors are key influences on financial knowledge and skills (Beutler and Dickson 2008; Lunt and Furnham 1996). Yet, we still know relatively little about which aspects of financial education and participation in financial services may help to explain children’s motivation to learn, and their knowledge, skills, and financial behavior.

This study has several limitations. The study sample is small and the design is quasi experimental, therefore we cannot generalize results. In addition, the FFFL is a measure of financial knowledge, and as a result, does not assess financial behavior. Although there are qualitative indications that children’s outlook and behavior have changed, future studies should measure behavioral change. Furthermore, the study follows children only from kindergarten through fourth grade. Future studies with large randomized samples that follow children for longer periods can sort out questions about causality, assess whether cognitive gains in elementary school translate into more optimal financial behavior in high school and beyond, and permit generalization.

Turning to test results, there are at least three possible explanations for higher scores among ICS students. First, ICS children who participated in the ICS Club received more financial education than the other two groups. This may explain higher scores. Moreover, according to students, the lessons in ICS Club were more “fun” (experiential) than classroom lessons. Children expressed a clear preference for experiential learning. This may have increased learning and retention among ICS children. The findings suggest that even very young children enjoy and can learn economic and financial concepts if they are conveyed in an engaging manner.

Second, some parents of ICS students received financial education, and they may have encouraged and augmented their children’s learning. Although the number of parents who received financial education and total number of hours in workshops was low, the sample is small enough that this could have made a difference. Most parents, including those who did not attend financial education workshops, were enthusiastic about ICS. As one mother observed: “[ICS] didn’t just bring [my daughter] in, it brought us as a family. It brought us as a team and taught us all things that we can use.”

Third, qualitative evidence suggests that the children may have been especially motivated to learn because of the savings account and visits to the bank. Unlike most school-based experiential financial education which uses games and simulations, children in ICS had access to real financial services. They opened a savings account, visited the bank regularly, made savings deposits, and monitored their savings. The children talked about their interaction with the bank and the deposit process. They reminded their parents when it was “bank deposit day” so they would have something to deposit. Making their own deposits (instead of accompanying their parents on family business) may have increased children’s locus of control, thus increasing motivation and learning. Although we cannot determine the relative importance of various experiential activities, the savings accounts and visits to the bank may have made financial lessons especially relevant and memorable, and enhanced effectiveness of financial education. This is the idea behind financial capability, but future research should explore the possible link, and the mechanisms for how and why access to a savings account may enhance financial education (Johnson and Sherraden 2006).

This study suggests the potential importance of helping children gain a toe-hold in the economy through increased knowledge and direct participation in financial services. This may be especially important among children in marginalized families who may be less prepared to offer such exposure to their children. As noted by several experts in this field, active participation promotes greater understanding (Brazeau 1998; Furnham and Argyle 1998; Webley et al. 2001; As noted by Webley and colleagues (2001), “...experience obtained through economic participation, as opposed to experience derived from passive observation or information that is merely inferred, can enhance the child’s economic understanding” (p. 42).

This raises important policy questions about how to reach children and their parents, especially those with lower incomes. Partnerships among schools, non profits, and banks can operate small innovative programs like ICS, but these programs are labor intensive and expensive. Moreover, as we observe in ICS, children transfer in and out of the school, making continuity impossible. In addition, most community-based programs cannot afford to provide a matched savings incentive, a major attraction for both children and parents in ICS. To reach all children will require at least two policy innovations.

The first is formal financial education for all children. Schools are an ideal platform because most children attend school (at least until at least age 16). Moreover, schools have an education mission, they are accessible to children of all ages and income levels, and they employ teachers who are likely to be effective financial educators (Beverly and Burkhalter 2005). In fact, states have already begun to require financial education at the high school level; and there is increasing interest in expanding formal financial education in elementary school (NCEE 2007). The experience of ICS, however, suggests that teachers may not feel prepared to teach or have time to teach financial education. ICS teachers were enthusiastic about the program generally, but they expressed qualms about teaching financial concepts. In the ICS demonstration, staff at a local community-based organization took over financial education, but this would be too expensive to implement in all schools. It may be more effective to train teachers to incorporate financial concepts into existing lessons (e.g., math, reading) (Grody et al. 2008; Morgan 1991; Suiter and Meszaros 2005).

The second policy component is access to financial services through a savings account for all children. Proposals for Children’s Savings Accounts, Children’s Development Accounts, and progressive college savings programs could potentially provide every child with a savings account

(Butrica, Carasso, Steuerle, and Toohey 2008; Clancy, Cramer, and Parrish 2005; Goldberg 2005; Lindsey 1993; Sherraden 1991). There are several demonstrations of child savings in the United States (CFED 2006; Sherraden and Clancy 2008), however, the preeminent example worldwide is the Child Trust Fund (CTF) in the United Kingdom which provides a savings account and financial incentive for every child (Kempson, Atkinson, and Collard 2006).

Together school-based financial education and children's savings accounts could provide all children with access to a program similar to ICS (Sherraden et al. 2008). Individual school districts, schools, teachers, staff from nonprofits, and local financial institutions could build on these policy instruments to make their programs meet the needs of the student body.

Although these policies will confront significant political and funding challenges, it is important to recall the importance of children growing up understanding their personal finances, and having access to the financial tools for building a solid financial future. Scholars point out understanding financial concepts is a cumulative process; and it is important to begin early (Jacob, Hudson, and Bush 2000; Webley et al. 2001). This is something that ICS fourth grader, Olivia, understood. She pointed out it is a good idea to learn early: "What I like best about [ICS] is you get to learn about money when you're young, so you don't have to do it like, in high school. You already know it." Elementary school is not too early for children to learn about and start practicing money management rather than falling into debt as young adults (Russell et al. 2006). Through policy and program innovations, there is reason to believe that young children can grow up to be financial capable teens and adults.

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