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TWO CHEERS FOR SCHOOL-BASED FINANCIAL EDUCATION

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ABSTRACT

The near-collapse of the American financial system has led to a search for its causes and ways to prevent it from happening again. Many political leaders blame at least some of the subprime mortgage crisis on mistakes caused by financially “illiterate” consumers and propose to solve that problem with mandatory classes in personal finance.

Currently, about 20 percent of US high school graduates complete a semester-length course in personal finance. Unfortunately, five consecutive surveys by the Jump\$tart Coalition have found no evidence that teaching personal finance in high schools has improved students’ ability to understand and use financial information. Many hypotheses have been advanced to explain the lack of success in teaching personal finance at the high school level. Better-trained teachers and mandatory courses may help, but gains from these solutions have, thus far, been slight. Some feel that constantly-changing financial products and regulations mean that students have little motivation to learn about financial decisions that will no longer be useful when they become adults. Others hypothesize that basic financial habits, such as careful product evaluation and thrift, are formed at a younger age and are difficult to change in late teenage years.

One promising finding is that school-based financial education appears to have a long-term, positive impact on financial *behavior*, manifesting itself when students are adults. Since high school courses do not appear to materially improve scores on financial literacy tests administered to high school seniors, the greatly delayed behavior changes are likely to be *emotional* responses to materials presented in class. These appear to play out years later when former students have the financial ability to engage in a range of financial choices. One cheer for financial education!

Unsatisfactory test results from teaching high school students have led some to suggest that reaching a younger, pre-high school population might prove to be more effective. Younger students might be more susceptible to new ideas and less vulnerable to peer pressure, which can influence spending choices and levels of consumption. However, younger students may lack the background and cognitive development to understand some of the key concepts of personal finance. This suggests that nontraditional types of education, with strong emotional appeal and shared experience, may be more effective in communicating important concepts to younger students and helping them form behaviors that will benefit them throughout their lives.

Two large-scale pilot programs have evaluated the use of a nontraditional (live improvisational play) educational intervention on pre-high school students. While the results are still preliminary and have not yet been replicated on a national sample, it appears that teaching younger students with materials based on personal experience, which appeals to their emotions, may be an effective way to increase knowledge, change attitudes, and alter behavior. These results would also appear to support the institution of child accounts, which use the child’s ownership of assets to personalize age-appropriate financial education from the earliest grades. “Cheer” two for school-based financial education!

INTRODUCTION

A large and growing body of evidence seems to indicate that school-based financial education has had little – if any – measurable impact on the financial literacy of students. This is very disappointing for those who advocate for mandatory courses as a “silver bullet” that will rid society of consumer “mistakes” such as those that have helped cause the current economic crisis. These advocates include the President’s Advisory Council on Financial Literacy (2008) and the National Association of State Boards of Education (2006). As of November 2008, three US states required at least a one-semester high school course devoted to personal finance and seventeen additional states required instruction in personal finance to be incorporated into other subject matters (Jumpstart Coalition, 2008).

The ineffectiveness of school-based financial education has been demonstrated most convincingly at the high school level. For example, five biennial Jump\$start surveys of high school seniors have found consistently that those who have taken a full-semester course in personal finance do no better on the standard 31-question financial literacy “test” than those who have not taken such a course (Mandell 2001, 2002, 2004, 2006a, 2009a). Peng, Bartholomae, Fox and Cravener (2007) found no significant relationship between a personal finance course taken in high school and investment knowledge. The 2008 Jump\$start survey of college students also found that those who had taken a full-semester personal finance course in *either* high school or college did no better on the test than those who had not taken such a course (Mandell 2009a).

From a policy perspective, these findings seriously question the usefulness of mandates to teach financial literacy to all students. In fact, Lauren Willis (2008) cites the Jump\$start findings in her paper, “Against Financial Literacy Education,” to conclude that it would be more

efficient to give up the quest for effective financial literacy education, and search, instead, for policies that could lead more directly to good consumer financial outcomes.

Effective remedies to the problem of financial literacy are in short supply. Logistically, it is difficult to provide effective education to adults who have to make imminent complex financial decisions. A recent study by Mandell (2008a) shows that few employers are motivated to provide effective and disinterested financial education at the workplace.

If personal financial education is not being delivered effectively in high school or college or to adults in the workforce, attention must turn, by default, to younger children of pre-high school age. It is notable that the President’s Council on Financial Fitness recommends education at all grades, K to 12, as does the National Association of State Boards of Education. The Jump\$start Coalition’s National Standards (Jumpstart Coalition for Personal Financial Literacy 2007) do include standards for children in grades one to eight, but measuring the financial literacy of pre-high school children against these standards has not yet been done on a national level.

THE KEY CONCEPTS OF BEHAVIOR AND EMOTION

A FOCUS ON BEHAVIOR

It is important to ask what we want personal financial education to accomplish. Although much evaluative work has focused on knowledge, many of those who study the issue feel that the most important outcome is self-beneficial financial behavior (Lyons, Rachlis, Staten and Xiao 2006), which involves, in part, not making “mistakes.”

Financial literacy does appear to be positively related to self-beneficial financial behavior. For example, Hilgert, Hogarth and Beverly (2003) formed a “Financial Practices

Index” based upon self-benefiting behavior in cash-flow management, credit management, saving, and investment practices. When they compared the results of this index with scores on a financial literacy quiz, they found a positive relation between financial literacy scores and Financial Practices Index scores. Their results suggest that financial knowledge is related to self-beneficial financial practices.

Van Rooij, Lusardi and Alessie (2007) found in a study of Dutch adults that those with low financial literacy are more likely than others to rely on friends and family for financial advice and are less likely to invest in stocks. Using the 2006 Jump\$tart survey, Mandell (2006) found that high school seniors who never bounced a check or who balanced their checkbook had substantially higher financial literacy scores than others with checking accounts.

Studies of adult behavior modification education also produce results with mixed outcomes. The efficacy of retirement education through retirement seminars has been studied by a number of scholars. Bayer, Bernheim and Scholz (2006) found that employer retirement seminars increased both participation in and contributions to voluntary savings plans. Lusardi and Mitchell (2006) found that retirement seminars have a positive wealth effect, but mainly for those with less wealth or education. Duflo and Saez (2003) found retirement seminars to have a positive effect on participation in retirement plans, but also found the increase in contributions to be negligible. Choi, Laibson, Madrian and Metrick (2006) and Madrian and Shea (2001) found participants in retirement seminars to have much better intentions than follow-through. Outside of retirement planning, Elliehausen, Lundquist and Staten (2003) found that credit counseling tended to improve borrowing behavior and improve creditworthiness. Hirad and Zorn (2001) found that pre-purchase counseling programs for those about to buy a

home decrease delinquency rates.

Although financial literacy and self-beneficial financial behavior appear to be positively correlated, we have not yet found effective ways to improve financial literacy through high school classes, which limits our ability to change financial behavior through this route. Mandell and Klein (2007) used a small but rigidly-controlled sample of students, who took a highly-regarded money management class in a mid-western school system for up to four years after graduation, and found that their financial literacy and financial behavior did not differ significantly from other students from that school system who did not take the course.

This is not merely a problem of financial education. It is important to note that high school programs designed to change or modify behavior in other important areas have been no more successful than those related to financial literacy. For example, a meta analysis by DiCenso, Guyatt and Griffith (2002) found that educational interventions designed to reduce unwanted pregnancies among adolescents did not delay initiation of sexual intercourse among young women or young men or reduce pregnancy rates among young women.

IMPORTANCE OF EMOTIONAL IMPACT

There is some promising evidence that school-based personal finance education may positively influence long-term behavior even without affecting financial literacy. Two studies document a delayed but positive impact of financial education on the financial behavior of students, years later, even when this education may have had little or no impact on financial literacy. Bernheim, Garrett and Maki (2001) showed that students who took a high school course in personal finance tended to save more of their income in middle age than those who did not take such a course, in spite of the fact that many respondents couldn't remember that they had ever had such a course. Mandell

(2009b) used a recent national sample of college students to find that while those who had taken a high school course in personal finance were no more financially *literate* than others in college, they *did* exhibit significantly better financial *behavior*. It appears that such education may have its greatest effect on financial behavior by reaching young people emotionally, which results in changing attitudes rather than knowledge. The paper concludes that there is little evidence showing that full-time high school (or college) courses in personal finance increase financial *literacy*. However, there is compelling evidence that such courses improve future financial *behavior*.

A similar phenomenon was found in non-financial areas in studies of Head Start. These enrichment programs, which were given to children prior to first grade, showed little impact on school performance. However, studies of Head Start participants who had reached adulthood found that they are doing better in *life* than their counterparts who did not participate in Head Start (Currie and Thomas 1995).

A NEW APPROACH: STARTING YOUNGER

If the ultimate purpose of personal financial education is to positively influence financial behavior, there is reason to believe that such education may be delivered more effectively to younger children than to their older counterparts. Many positive habits are instilled in young children well before they are capable of understanding the reasons. These habits include hygiene such as toilet training, teeth brushing and the washing of hands as well as safety such as looking for traffic before crossing a street, not biting other children, and not talking to strangers.

As children grow older they are conditioned emotionally to conform to family values. These values might include going to church, caring for relatives, giving to charity, and saving money. Newly-developed behaviors are supported by attitudes toward things such as religion, concern for

others, and thrift. While these attitudes may change over time as children are increasingly exposed to and influenced by people and ideas from outside the core family, attitudes and habits formed in childhood are often hard to break.

A survey of the literature by developmental psychologists (Holden, Kalish, Scheinholtz, Dietrich and Novak 2009) supports the benefits of providing financial education to young children, although there is, as yet, limited empirical evidence that it works. Work by Piaget and others who have studied cognitive development in children shows that most children can understand complex relationships only at a certain age. For example, younger children feel that a penny and a nickel are worth more than a dime since they are physically bigger. This implies that certain financial concepts should only be taught at an age-appropriate time.

Jahoda (1981) suggests that a reasonable understanding of banking doesn't occur until a child is ten or eleven years old, which implies third or fourth grade. Ng (1983) demonstrated that a child's understanding of banking is enhanced by having experience with it, supporting the advantages of associating a child with an asset account to help enhance financial literacy. This finding helps justify, on an *a priori* basis, child endowment programs, such as the British Child Trust Fund, which link a child's personal assets to age-appropriate financial education at an early age.

School-based bank accounts have existed in the United States for more than half a century (Comptroller of the Currency 2009). Although they still exist and are making somewhat of a comeback, they used to be far more prevalent before the increased cost of bank personnel, explicit recognition of the marginal costs of running small accounts, privacy rules, and increasing paranoia of tiny embezzlements made many banks reluctant to offer them. Mitigating against gaining "experience" through the use of such an account at a young age are rules in most states

which insist that ownership and control of the assets of minors be in the hands of an adult parent or guardian. Access to these funds by someone other than the child runs the risk that balances can be diverted by the custodial adult for other purposes. One could hypothesize that this risk would be greatest in the accounts of those from less-affluent families who lack other types of emergency balances. Research shows that children of such families have the greatest need for financial education (Mandell 2008c).

THE CHILD TRUST FUND PROGRAM IN THE UNITED KINGDOM

Much of the current interest in child trust funds and investment accounts stems from a belief that an early start in asset accumulation and personal finance education is likely to shape future saving behavior in a positive manner (Bennett, Chavez Quezada, Lawton, and Perun 2008, Initiative on Financial Security 2007, Mensah, Perun and Chavez-Quezada 2007). As a result, the Child Trust Fund program, which is in its sixth year in the United Kingdom, plans to integrate personal finance education when the children reach first grade in the fall of 2009. This program began with a government grant of £250 (doubled for poor children) to each child born in Great Britain and was topped off with an additional grant (again doubled for poor children) in the same amount at age seven. Accounts are owned by the child, and most are invested first in equity accounts with high growth potential and finally in more secure assets beginning at age 13. At age 18, accounts convert into adult savings accounts and withdrawals can be taken for any purpose.

The aims of the program are to:

- Help insure that each child, regardless of family circumstance, would have at age 18 sufficient funds for basic higher education or training or the capital to start a business or get to work

- Guarantee that every child is “banked” with a relationship to a financial institution
- Provide each child with assets of his or her own so the notion of saving, investing and earning returns is no longer theoretical for many
- Use the accounts as the basis for personal finance education

As of March of 2009, over 4.5 million children in the U.K. have received certificates for CTFs (HM Revenue and Customs, 2009). There are currently over 40 approved private sector providers and over 70 distributors of CTFs. About 75% of all CTFs are opened by families directly, a favorable take-up rate when compared to similar products. In addition, some 30% of family-opened accounts are receiving additional contributions, and private savings already equal 55% of what the government has contributed.

AFLATOUN

Aflatoun is a Dutch-based NGO whose purpose is to empower young children in developing countries through a combination of child-controlled bank accounts and school-based financial education in the primary grades. With the cooperation of participating banks which offer no-fee accounts with no minimum balances, children can gain experience in managing their own deposit account, and this experience is then built upon in a set of cartoon-based “textbooks” for each grade, translated into four languages. Early results on the effectiveness of the Aflatoun program were reported by GreenEarth (2007), which measured the impact on savings, some four to six years after students had been exposed to the program. The results were encouraging; with 78 percent having reported that they still saved on a regular basis. The study concluded that the Aflatoun “Bank” (generally the school safe) succeeded in inculcating savings habits that endured.

EXPERIMENTS WITH MIDDLE SCHOOL PROGRAMS IN THE UNITED STATES

A savings education program evaluated by Mandell (2008b) involved an intervention in ten public middle schools in the Chicago area during the 2005-06 school year in which students saw a live play performed by professional improvisational actors from the National Theatre for Children, which showed the advantages of saving to younger people. The play reflected both the cognitive and emotional benefits of saving – showing in one skit the disappointment of a student who spent his entire allowance on a CD and fast food when he learned that his favorite performer was coming to town to give a concert, which he could not attend because he no longer had the money for a ticket.

Using anonymous questionnaires, both before and after the performance, students answered factual, attitudinal, and behavioral questions related to saving. Those who had seen the performance showed a small but significant improvement in knowledge. Most importantly, the greatest improvement occurred among the youngest students – sixth graders. Findings of some positive attitudinal change also occurred, although it was not possible to measure behavioral differences.

In September, 2008, students in grades five through nine in 10 schools in North Dakota were given a similar educational intervention relating to the management of money. Part of this educational intervention involved attendance at a live production of a play entitled “Mad About Money,” put on by the National Theatre for Children, which focused on the usefulness of savings.

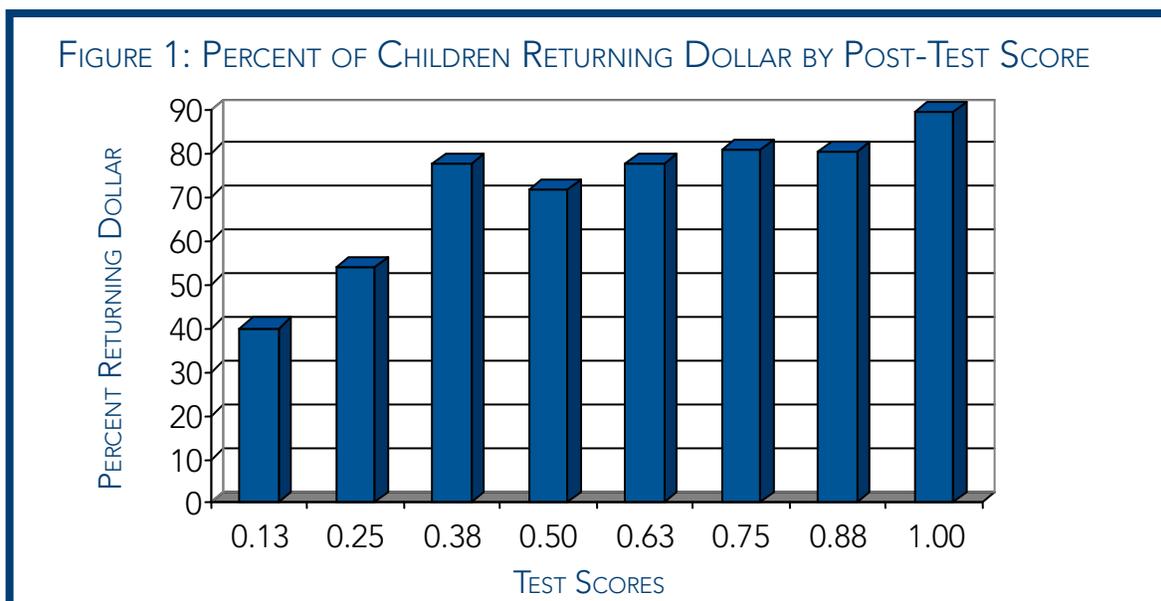
This study was similar to the Chicago study in that both used interventions involving an improvisational play put on by the National Theatre for Children. They both also involved identical pre-tests and post-tests, which measured the students’ knowledge of and attitudes toward savings

and also attempted to measure actual saving behavior. However, in contrast to the Chicago study, the North Dakota study extended to more grades (five through nine, rather than six through eight), used a much larger group of students who took both the pre- and post-tests, and included an “experiment” to test actual saving behavior.

In the experiment, students were given a dollar bill whose serial number had been recorded. They were told that if they brought that identical dollar bill back in two weeks, they would receive a second dollar bill. In order to see whether the educational intervention had an effect on the willingness of the students to forego current consumption to earn interest with an annual rate of several thousand percent (100 percent in two weeks), they were randomly divided into a test group, which received the intervention before receiving the dollar, and a control group which received the dollar several weeks before the intervention. The hypothesis was that students in the test group should be more likely to save the dollar than those in the control group.

The results from this study showed that the educational intervention significantly increased student knowledge in the area of savings. Of the eight knowledge questions, five showed significant improvement between the pre- and post-tests. Overall, students answered 72 percent of the questions correctly on the pre-test and 81.7 percent correctly on the post-test, a difference of 9.2 percentage points, which is equal to an improvement of 13.5 percent from the base score of the pre-test. Looking at percent change in score from the pre-test to the post-test, those in lower grades had much larger increases in score than those in higher grades. The percent change in score was significantly related to grade which implies that the lower the grade, the more they learned.

Student attitudes toward savings were measured by their answer to the following question: *If you had a friend who*



saved most of his/her money and spent almost none, would you think he/she is ...? Although there were many different types of responses, the first response, “smart,” was chosen by 75.8 percent of the students on the pre-test and 81 percent on the post-test, indicating that attitudes had shifted positively toward savers as a result of the intervention. This difference was highly significant. Other positive responses to that question included “careful,” “cool,” and “fun,” all of which increased positively and significantly. Negative attributes attributed to saving fell between the pre- and post-tests but not significantly.

An attempt was made to measure actual saving behavior as reported by the respondents. The question was: “*When some kids get money, they spend it right away. Other kids like to save their money to spend in the future. What about you?*” Answers on this Likert-type scale ranged from “I usually save all my money right away” to “I usually spend all my money right away.”

While reported saving behavior appeared to improve, the improvement was very slight. This is not surprising, since ingrained behaviors are unlikely to change dramatically in response to an intervention that lasted for little more than a week. For students in the test group who received the intervention prior to receiving their dollar, 83.2 percent

returned the dollar bill to get another. For those in the control group, who received the intervention only after the dollar was given to them and expected back, 81.8 percent returned the dollar. This difference was positive but not significant. However, if we look at the proportion of students who returned their dollar by their score on the post-test (an indicator of knowledge), we see in Figure 1 that those who had higher test scores (the horizontal axis) tended to have been more likely to have returned the dollar.

Return of the dollar by the student was regressed on gender, grade, post-test knowledge score, and whether they were in the test group that had the educational intervention prior to the experiment with the dollar. The results show clearly that return of the dollar varied inversely with the student’s grade, with younger students significantly more likely to return the dollar than older students. Also, return of the dollar is directly and significantly related to financial knowledge or literacy as measured by scores on the post test.

The return of the dollar was not significantly related to whether the student was assigned to the test group which received the educational intervention before the experiment with the dollar, or to the control group which

received the education after the experiment. This may be the result of the very short savings time required to double one's money or the relatively immaterial size of the sum involved. It would be worthwhile to replicate this test using a larger sum of money (perhaps five dollars) with a mail-in feature that would increase the amount of "interest" for every week that the students forego consumption. For example, if received after two weeks, six dollars would be returned, after three weeks, seven dollars, etc.

SUMMARY AND CONCLUSIONS

Although tests of financial literacy administered to high school seniors do not support the usefulness of high school classes in personal finance, it is not yet time to pull the plug on school-based financial education. Two positive results of such education have recently begun to emerge. The first has found that such courses appear to have a long-lasting emotional impact on students, which manifests itself in self-beneficial financial behavior only years or decades later when the former student has the financial resources to demonstrate such behavior. This provides some justification for school-based education, even though the improvement of knowledge may not be apparent in the short-run. It also implies, however, that the most valuable part of such education is not the conveyance of information about current financial products (which may become obsolete before the student becomes an adult), but rather an appeal to the student's emotions regarding the need for savings, the consequences of excessive debt, etc.

A second finding indicates that financial education may be more useful when introduced to children of pre-high school age. Again, the emotional impact of such education may be most useful in improving knowledge, changing attitudes, and possibly in changing behavior. The integration of child accounts to this early education, whether or not the accounts are begun with some type of endowment, would appear to strengthen and personalize the importance of such education to the student, making it more likely to result in favorable changes in financial behavior.

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