

Using A Financial Education Curriculum For Teens

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The “Money Talks: Should I be Listening?” curriculum was created to appeal to teenagers and to help increase their financial literacy. This paper analyzes the effectiveness of this curriculum on financial knowledge and behavior of participants using the series. The findings indicate that using the curriculum improved the financial literacy of high school students. Behavior changed in a positive direction, knowledge improved and students appeared to have responded in ways to make their money go farther.

Keywords: *Children and money, Financial curriculum, Financial literacy, Teen finances*

Many researchers have studied and documented the financial literacy of youth. Even more have developed educational programs or curricula to teach them financial and consumer issues; however, few have actually evaluated the effectiveness of their programs. The *Money Talks: Should I be Listening?* curriculum, developed by a Cooperative Extension team, was created for teenagers to address what they want to learn about using money. It was designed to increase their financial literacy and to be used as part of school curricula or for presentation in other venues. It was also designed to appeal to teenagers. According to Peter Zollo, President of Teen Research Unlimited, young people are demanding that more messages be directed toward them. Materials need to be immediately engaging—as well as lifestyle-relevant—or they will be dismissed (Zollo, 2004).

In order to develop a program that young people would readily use and from which they would learn, teenagers were surveyed prior to program development to determine the topics that were relevant to them, the educational format that appealed to them, and when and where they preferred to receive the information (Varcoe, et al., 2001).

A goal of the team who created *Money Talks* was to evaluate the effectiveness of the curriculum for changing the financial knowledge and behavior of teens. This paper presents research findings from pre- and post-test evaluations to ascertain changes in financial knowledge and/or behavior of participants.

Review of Literature

Teen financial literacy

America’s teenagers are not financially literate—a fact that is causing great concern among educators. The low level of teen financial literacy has been documented by various surveys conducted by Jump\$Start and other organizations (ACEC, 2001; ASEC, 1999; Jump\$Start, 1997, 2000, 2002, 2004). These surveys help highlight the current state of financial illiteracy of our youth and identify problem areas.

For example, the Jump\$Start Coalition for Personal Financial Literacy, a non-profit organization formed to help students become financially competent by the time they graduate from high school, conducted nationwide surveys in 1997, 2000, 2002, and 2004 to measure twelfth-graders’ knowledge of personal finance. Test scores were very low in 1997 and declined even further on the 2000 and 2002 surveys. The average scores from the Jump\$Start surveys in 1997 and 2000 were 57.3% and 51.9%, respectively (Jump\$Start, 1997; Jump\$Start, 2000), failing grades by school grading standards. In 2002, participants answered only 50.2% of the questions correctly. These scores led Jump\$Start to conclude that schools need to do a better job of teaching financial concepts (Jump\$Start, 2002). In 2004, the scores reached 52.3%, reversing the declining trend. Even with this reversal, aptitude levels were not good with 65.5% failing the exam and only 6.1% scoring a C or better (Jump\$Start, 2004).

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In 1999, the American Savings Education Council (ASEC) administered the *Youth & Money Survey* that asked 1000 students aged 16-22 about personal finance which included questions on their views, attitudes, and behavior (ASEC, 1999). The students stated that they felt confident about understanding saving, investing, credit, budgeting, and basic financial knowledge, but their behavior and attitudes did not reflect this. Only 21% of the students had taken a class in personal finance. The students who had taken the class believed they were more knowledgeable about finances, but were no more likely to think that it is important to save on a regular basis than the students who did not take the class. In addition, they were no more likely to budget income or compare prices before purchasing. On the other hand, two-thirds of all the students surveyed admitted that they need more lessons in ways to manage their money. Over 90% of the students reported that they were getting their financial education from family and friends rather than from school (ASEC, 1999). In 2001, ASEC followed up on this survey by looking at whether or not parents are good role models and teachers of money management. Their findings indicate that “parents do not appear to be adequately prepared to be teachers and role models to their children with respect to financial matters. Just 25% of the parents felt they were *very* effective when it comes to providing their children with financial guidance” (ASEC, 2001, p. 13).

The *America's Money Skills Report Card* survey was conducted by the Americans for Consumer Education and Competition (ACEC), a consumer education organization whose mission is to improve the financial literacy of America's youth (ACEC, 2001). Results from their national survey of 800 high school seniors indicated that two-thirds of the students believed that financial issues did not have a strong impact on their lives. Only 32% of the students reported that their parents/guardians regularly talked to them about money matters. The mean score was only 37 percent correct, suggesting that few of the students received a ‘passing grade’ (ACEC, 2001).

These findings indicate that many students do not understand basic consumer financial principles of earning, spending, saving, and investing. Their parents appear to be unprepared to provide the education they need. Teenagers' lack of financial literacy raises concerns about their financial futures and their ability to be effective consumers. Young people often fail at their first consumer purchase, saving, banking, or credit experience, and may continue to make bad financial decisions into adulthood. Habits that begin at a young age may carry on to adulthood and can cause financial problems unless there is some type of effective educational intervention; and this intervention

needs to be in a format to which teens will pay attention and from which they will learn.

Helping Teens Become Financially Literate

According to Jump\$tart (2002), with the exception of interactive games played in classroom settings, existing personal finance classes are not reaching teens. “Personal finance is taught most effectively to high school students if it is both interactive and relevant” (Jump\$tart, 2002, p. 1). Teens are more likely to attend to and learn when information is presented in a way that is interesting to them. More than half of the students (55.9%) in the pilot study for this project stated that they preferred to learn about money at school. According to Lewis Mandell, the most useful thing parents can do to improve financial literacy is to pressure schools to offer courses in personal finance that are interesting and effective (Mandell, 2001). In response, the *Money Talks: Should I be Listening?* (*Money Talks*) curriculum—the subject of this paper—was designed for use in schools, youth groups, and other venues identified by the teens (e.g., a website and/or newsletters received at home).

Evaluations of financial curricula

Financial literacy surveys have concluded that teenagers lack knowledge about personal finance. Survey results are convincing; however, it is equally important to know what financial programs are being implemented and if they are making a difference. While financial literature and educational programs for teens are readily available, many do not conduct surveys that try to match knowledge with behaviors (Hogarth, 2002). An article by Hilgert, Hogarth, and Beverly (2003) explored the connection between knowledge and behavior focusing on four financial management activities: cash-flow management, credit management, saving, and investment. Using data from the University of Michigan's monthly *Survey of Consumers*, they found that financial knowledge can be statistically linked to financial practices. Additionally, they noted that “there is a difference between providing information and providing education” (p. 321). Materials and techniques developed to teach financial management may need to be used with “audience-targeted motivational and educational strategies to elicit the desired behavioral changes in financial management practices” (p. 321).

Vitt, et al. (2000) identified 91 programs offered by schools, Cooperative Extension, colleges, the military, faith-based organizations, community groups, employers, and others. The National Endowment for Financial Education (NEFE) lists multiple educational resources on its Economic Independence Clearinghouse database. Many of these specifically target the teenage audience and are available in

multiple languages (NEFE, 2004). Yet, few of the available financial literacy programs offer an evaluation component to determine whether financial knowledge and behavior have been successfully changed. However, several banks, including Citibank, Bank of America, and Wells Fargo Bank among others, develop and support financial education programs. Fifty-six percent (56%) of these banks evaluate the programs they administer in some fashion (CBA, 2002).

Other programs who evaluate effectiveness do so by administering a pre-test and post-test to determine how much students have improved in their understanding of personal finance concepts. For example, the NEFE *High School Financial Planning Program* (HSFPP) was evaluated in 1998 and again in 2004 to assess its impact on financial knowledge, behavior, and self-efficacy of teens. Students were asked about their financial management behaviors, financial knowledge, and financial self-efficacy before and after studying the financial planning curriculum (Danes, et al., 1998; Danes, 2004). In the 1998 study, the post-test found a significant change in the number of high school students who had begun to keep track of their expenses. Participants also increasingly indicated self-confidence in making decisions about money, reported setting aside money for future purchases, demonstrated improved knowledge of investments, and understood the cost of buying on credit. At a three-month follow-up, 58% of the students said that they had improved their spending habits and 56% said that their savings habits had improved (Danes, et al., 1998). The findings of the 2004 study were similar. The students who studied the program reported significant improvement in their financial knowledge, behavior, and confidence immediately after studying the HSFPP. Students surveyed three months later showed that the positive impact of the HSFPP continued and even increased over time (Danes & Haberman, 2004).

Many other programs, however, are less clearly evaluated. The success of the program is often determined by feedback such as the number of people using the materials (CBA, 2002). While bank-sponsored programs that develop and support financial education programs are readily available, information about program effectiveness often is not available. For other programs, efficacy is solely determined by the number of participants or by the positive comments of school administrators.

Method

Curriculum development

The *Money Talks* curriculum was developed as the result of a survey of 323 teens conducted by a Cooperative Extension team in the fall of 1998 (Varcoe, et al., 2001). Data were collected from a convenience sample of five groups of teenagers from (1) juvenile halls/probation, (2) migrant education programs, (3) pregnancy and parenting programs, (4) public high schools, and (5) youth groups. The survey contained 21 multiple-choice questions about teen sources of income, how they used their money, and most importantly what types of financial information they would like to learn and how they would like to learn it (Varcoe, et al., 2002).

Based on the results of this study, a Cooperative Extension workgroup developed a series of four newsletters named *Money Talks*. Each newsletter, geared towards high school students aged 13-18 years, covers a different topic including saving habits, shopping tips, car costs, and money values. The newsletters contain hands-on activities such as interactive quizzes and games related to the specific topic. Accompanying the newsletters are teachers' guides that contain background information, key points, learning objectives, group activities, pre- and post-tests, and websites of interest.

Participants

To evaluate the effectiveness of the curriculum, it was implemented with 114 high school students ages 13-20 with data being collected over a six-month period during spring, 2002. Data were collected in four California counties: Kern, San Bernardino, Santa Barbara, and Solano. IRB approvals were obtained before selecting the sample. Additionally, the teens had signed permission slips from their parents allowing them to participate in the study. Each teacher developed their own schedule for delivery of the programs. In some classrooms, the lessons were presented all in one week while in other they were presented once a week.

Demographic information is summarized in Table 1. Just less than half of the sample was male (44.7%), 51.8% were female, and four participants (3.5%) did not specify gender. Most participants were 17 (28.1%) or 18 (44.7%) years old. The sample was ethnically diverse. The respondents were primarily Hispanic (41.2%) or non-Hispanic white (27.2%) with the balance being African American (4.4%), Asian (0.9%), Native American (2.6%), multi-racial (5.3%), and other or unspecified (18.4%).

Table 1
Participant Characteristics (N = 114)

Characteristic	N	%
Gender		
Male	51	44.7
Female	59	51.8
Unspecified	4	3.5
Age		
13-14	3	2.7
15	4	3.5
16	10	8.8
17	32	28.1
18	51	44.7
19	11	9.6
20	2	1.8
Unspecified	1	0.9
Ethnicity		
African American	5	4.4
Asian	1	0.9
Non Hispanic white	31	27.2
Hispanic	47	41.2
Native American	3	2.6
Multi racial	6	5.3
Other	7	6.1
Unspecified	14	12.3

Procedure

At the onset of the study, the teenagers were given a pre-test on their financial knowledge, habits, and attitudes. The teachers or youth leaders then presented the program. This consisted of distributing the newsletters and engaging students in the activities presented in the newsletters, using the teachers' guide for reference. The educational materials were presented over a one to two month period depending on the amount of time the teacher could devote to the topic. Approximately two months following the delivery of the four-part (four newsletter) curriculum, the participants took a post-test that was identical to the pre-test. In some instances the post-test data were collected in less than two months if the semester was about to end and the students would be gone for the summer. Data from the pre- and post-tests are reported here.

Data were analyzed using the SPSS statistical package. Scales were created and tested for reliability using Cronbach α . Four scales were created; see Tables 3 and 4 for a listing of the items in the scales. Significant

correlations were found between all scales. Difference of means tests were performed to determine if financial knowledge had significantly changed from pre- to post-test. Chi-square analyses were used to compare use of savings accounts by gender and ethnicity. Responses for behavior and attitude questions were based on a 4-point Likert scale with 1 = a lot, 2 = sometimes, 3 = occasionally, 4 = never.

Results

Financial Knowledge

Perceived financial knowledge. As a summary measure of their perception of their financial knowledge, participants were asked, "When it comes to handling my money, I know [everything, most of, some of, or a little about] what I need to know." As shown in Table 2, self-reported general financial knowledge increased significantly from a pre-test mean score of 2.75 to post-test mean score of 3.03.

Knowledge score. Table 3 lists the nineteen true/false questions that assessed knowledge on topics ranging from shopping and credit to automobile purchase and automobile insurance. A total knowledge score was calculated with correct responses receiving one point, incorrect, missing or 'don't know' responses scoring zero points. A 2 X 2 repeated measures ANOVA with between-subjects factors was used to examine pre/post test responses (within subjects) and gender (between subjects).

Prior to participation in the program, participants answered an average of 56 percent of the knowledge questions correctly, increasing to approximately 72 percent on the post-test, a significant increase. There was no main effect of gender; males and females scored similarly across the pre- and post-tests. There was, however, an interaction of knowledge change and gender. Table 2 shows that males evidenced a significantly greater increase in average score, gaining 3.58 from pre- to post-test; females gained only 2.50.

Financial Behavior

The items on the financial behavior scales are found in Table 4; results of analyses are reported in Table 5.

Talking to family about money. Using a 4-point Likert scale of 1 = a lot to 4 = never, four questions examined the degree to which teenagers reported talking to their families about money. These four items formed a 'Talk to Family' scale with adequate reliability. A 2 X 2 repeated measures ANOVA with between-subjects factors was also used for this analysis to examine pre/post test responses (within subjects) and gender (between subjects) for this scale. Females reported talking to their families about money matters more often than males; however, the extent of talking to their families about money did not change significantly from pre- to post-test.

Table 2
Analyses of Perceived Financial Knowledge and of Scored Financial Knowledge with Gender
(N = 114)

	Mean	sd	Mean	sd	t-test	F-test.
Perceived (pre and post)	2.75	0.79	3.03	0.73	3.48***	
Scored (pre and post)	10.66	3.26	13.67	2.82		140.58***
Gender (males and females)	12.15	2.77	12.18	2.77		.003
Gender * Scored (pre and post)						4.31*
Males	10.36	3.47	13.94	2.68		
Females	10.93	3.07	13.43	2.95		

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3
Pre-test and Post-test Responses to Knowledge Items (N = 114)

	Percent answered correctly	
	Pre test	Post test
1. Most everyone can find at least one easy way to save.	89	88
2. You always have a choice on how to use money.	83	84
3. All advertisements are true; no one would purposely try to trick me out of my money.	77	82
4. You can get lower car insurance rates if you have good grades.	58	82
5. Car insurance costs more for females because they have more car accidents than males.	70	80
6. Your values will change over time.	61	77
7. A planned purchase is an impulse buy.	61	76
8. If I buy something then decide that I don't want it, the store has to give me a refund.	61	76
9. Liability insurance pays for injury or damage you cause to other people and their property.	52	72
10. Paying the minimum on a credit card bill is a good money management practice.	50	71
11. You will buy less food if you shop when you're not hungry.	56	68
12. Your beliefs and values have little influence on how you spend money.	39	66
13. If you damage your car, your insurance company will pay for all of the costs to have it repaired.	56	66
14. If you put 15 gallons of gasoline in your car, and gasoline costs \$1.75/gallon, you will pay more than \$25 to fill up your tank.	59	61
15. If your car gets 20 miles to the gallon, and your car holds 15 gallons, you will be able to drive about 300 miles on a tank of gas.	56	61
16. In the grocery store, the food displays at the end of aisles have the best buys.	36	58
17. Most people find it hard to start a savings plan.	62	55
18. The biggest expense for a new car is depreciation.	20	34
19. New car warranties are always free.	11	22
All items	56	72

Table 4
Internal Reliability of Financial Behavior Scales (N = 114)

	Cronbach alpha
Talk to Family Scale	.70
I talk to my family about:	
My own use of money.	
The importance of savings.	
Our family finances.	
How our family's money should be spent.	
Saving Scale	.81
I'm likely to save money by packing my lunch instead of buying it out.	
I'm likely to save money by going to matinee movies instead of prime-time shows.	
I'm likely to save money by buying clothes off-season or on sale for lower prices.	
I'm likely to save money by sharing a magazine subscription with a friend.	
I'm likely to save money by shopping for the best long-distance phone rates.	
I'm likely to save money by depositing gifts of money into a savings account.	
Saving money for the future is something I think about.	
When I get money, I save some of it no matter what.	
I do a good job of budgeting my money.	
Car Insurance Scale	.71
I'm likely to save money on my car insurance because:	
I've taken Driver's Education classes.	
I use my good grades.	
I don't have traffic tickets.	
I'm added to my parents' policy rather than having my own policy.	

Table 5
Changes in Financial Behavior from Pre- to Post-Test (N = 114)

	Mean	sd	Mean	sd	t-test	F-test
Talk to family about money (pre and post)	10.43	2.76	10.09	2.83		1.36
Gender (males and females)	9.51	2.28	10.94	2.34		8.94**
Gender * Talk to family (pre and post)						.04
Males	9.71	2.83	9.31	2.79		
Females	11.08	2.54	10.79	2.71		
Saving scale (pre and post)	24.28	5.67	26.78	5.13		26.26***
Gender (males and females)	24.21	5.76	26.71	5.03		5.59*
Gender * Saving (pre and post)						2.90
Males	23.39	6.12	25.03	5.39		
Females	25.07	5.19	28.34	4.38		
Auto Insurance (pre and post)	11.59	3.43	12.83	2.93	4.90***	
Shopping (pre and post)						
Compare prices	1.68	0.74	1.83	0.83	2.14*	
Impulse buy	2.63	0.81	2.55	0.82	-.99	
Buy on sale	2.10	0.78	2.35	0.87	3.09**	

* $p < .05$, ** $p < .01$, *** $p < .001$

Saving scale. Nine items such as "I'm likely to save money by packing my lunch instead of buying it out" and "Saving money for the future is something I think about" were combined to construct a "saving scale" assessing savings attitudes and behaviors with good reliability. Responses were based on a 4-point Likert scale.

The amount participants reported saving increased significantly from pre-test. Males had significantly lower scores on the scale than females; a mean of 24.2 compared to 26.7.

Auto insurance. Four items assessed participants' understanding of how to save money on car insurance using a four-point Likert-scale. These items combined to form a scale with adequate reliability. Teens demonstrated significantly more knowledge about how to save money on car insurance after participating in *Money Talks*; a pre-test mean of 11.6 compared to post-test mean of 12.8.

Shopping. Three items elicited shopping behaviors using a four-point Likert-scale. They were: "When I go shopping, I (1) compare prices (2) I impulse buy, and (3) I wait to buy items on sale". Paired-samples *t*-tests were used to compare pre/post-test behavior on each of these items. Taking part in *Money Talks* improved some shopping behavior: after the program, teenagers reported comparing prices more (mean 1.68, compared to 1.83) and more often waiting to buy items on sale (mean 2.10 compared to 2.35). There was no change in the amount teens reported impulse shopping.

Savings accounts. Approximately half of the participants reported having a savings account. Those who claimed to have a savings account on the post-test were further examined using chi-square analyses for differences in gender and/or ethnicity (see Table 6). Males and females were equally represented in this group; however, 70.5% of the males had a savings account compared to 52.6% of the females. The analysis of ethnicity was restricted to non-Hispanic white and Hispanic participants due to a relatively small representation of other ethnicities in the sample. No significant difference in ownership of savings accounts was found between non-Hispanic white (59%) and Hispanic participants (41%).

Table 6
Savings Accounts by Gender and Ethnicity
(N = 114)

	Percent	Chi-Square
Have savings account – by gender		
Males	50.8	n.s.
Females	49.2	
Have savings account – by ethnicity [†]		
Hispanic	41.0	n.s.
Non-Hispanic white	59.0	

[†]There were not enough participants in the African American, Asian, Native American, or Multi-racial categories to include them in this analysis

Conclusions

The results indicate that teaching a financial curriculum such as *Money Talks* does seem to improve the financial literacy level of high school students. Self-reported data indicate that both financial knowledge and appropriate behavior increased after participation in *Money Talks*. The students also learned valuable information about car insurance, a consumer purchase decision that they will likely have to make at this stage of their lives.

A number of financial behaviors changed after participation in the program. Increased scores on the saving scale indicate that saving attitudes and behaviors improved after the teens took part in this program. The participants also demonstrated better choices when shopping—they were more likely to compare prices and wait until items were on sale after using *Money Talks*. The subjects were also more knowledgeable about ways to decrease the costs of auto insurance—a major expense for young people.

The data in this study highlight issues of importance for financial educators. About half of the teens studied reported not having a savings account. Although not statistically significant, only 41% of Hispanic students had savings accounts compared to 59% of the non-Hispanic white teens. It is important that teachers and educators who work closely with teens and adolescents emphasize the value of savings accounts with all students, especially as it concerns Hispanics.

Not surprisingly, the females in this study reported talking to their families about money more than the males. The males, however, had a greater increase in knowledge after completing the materials. This may indicate that females talk to their families more about money, obtaining financial knowledge at home, while the males tend to learn more from educational programs.

It should be noted that the mean score for talking to family was lower on the post-test than the pre-test. Even though this difference is not significant, it may indicate that while the teens are learning about money in a classroom setting, they may talk less with their families because they are getting their questions answered in the classroom rather than at home. As educators, it will be important to encourage the teens to continue talking with their families about what they are learning about money. This should help the teens as well as the parents. This suggestion is supported by a nationwide survey conducted by the Northwestern Mutual Financial Network that looked at how parents are teaching their children about money (NMFN, 2004). Another possibility is that this type of program does not impact this aspect of parent/child interaction. Other means may be necessary to increase communication.

One of the limitations of the study was the selection of the sample. Teachers self-selected to participate and only those students who took the permission slip home for parental signature were included in the study. As a result, the sample is not truly unbiased. To overcome this, the curriculum needs to be tested with teens where self-selection is not an issue. This will be difficult to accomplish as Human Subjects Review requires a signed participation approval statement from parents. Another limitation of the study was that the amount of time the teachers spent teaching the materials varied based on how much class time the teacher could devote to the topic. Additionally, the delivery period varied with some presenting all the material in one week while others presented the material once a week. These limitations are difficult to overcome when different groups of students are selected for sampling.

This study illustrates that it is possible to improve the financial literacy of teens in order to prepare them for the financial demands of the future. To accomplish this, financial management needs to be integrated into high school curriculum as an important step to ensure future financial success of today's teens. "Just as our schools do not teach children to read without first teaching them the letters of the alphabet or to do long division without first teaching them to count, the same should hold true for financial education" (U.S. Department of the Treasury OFE, 2002).

Historically, a higher priority has been given to teaching financial education by incorporating these concepts into math and English curriculum. However, within the last twenty years, the standards-based reform movement in the U.S. has resulted in the emphasis being placed on teaching students basic math, English, and science skills. Subsequently, less emphasis has been placed on financial education. Fortunately, the standards-based reform movement is continuously evolving and expanding in order to allow for financial education, which is incorporated into other subjects. One example is the "*No Child Left Behind Act of 2001*" that emphasizes higher standards along with the importance of financial education (U.S. Department of the Treasury OFE, 2002). Since financial education is not a requirement in most schools at this point in time, it is important to provide students with other sources of financial information such as financial web sites, audio-visual mediums, and games, which might stimulate the teen's interest. Additionally, financial education should be included in the curriculum used by 4-H Youth Development and other after-school programs.

Overall, the results of this study are consistent with the findings of others. Research based curricula in personal finance yields positive results. Because teens in general require a different teaching approach, it is important to develop the appropriate pedagogy and settings to ensure learning. To address this issue, a web-site has been added to the *Money Talks* program. Included on the web site are interactive games and a video, which address the importance of saving and money management. Additionally, teachers and educators should take into consideration that teens are naturally more interested in learning about the consumer and financial issues they perceive as salient in their lives at that particular time. Educators must assess the developmental stage of the teens in order to provide age-appropriate materials of interest to the teens and develop, or use existing, interactive methodology to present the information.

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