Impact Evaluation of a Financial Literacy Program: Evidence for Needed Educational Policy Changes

This study examines the impact of a high school financial planning program on a national subsample of students and finds that students increase in financially responsible behaviors, knowledge, and self-efficacy from the time of starting the program to three months after the completion of the program. The need for graduation standards which mandate financial literacy education in high school is addressed.

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Introduction

As state legislators contend with graduation standards, an ongoing debate across the country addresses who is responsible for the financial literacy of our children—families or schools. Rather than working toward a partnership between families and schools, this debate places families and schools in an oppositional relationship assigning responsibility to one or the other, but not both. Meanwhile, many teens approach financial independence without the knowledge and the skills to effectively manage their money. There is at least some initial evidence that indicates that teaching personal finance in schools does have an impact. Adults who grew up in states where personal finance education was mandated in high school are saving 5% more money than their peers; their net worth was also high by roughly a year's worth of earnings (Bernheim, Garrett, & Maki, 1997). The current investigation assesses the impact of a high school financial planning curriculum on the financial knowledge, behavior, and self-efficacy of teens both after completing the course and three months following course completion.

Conceptual Framework

The conceptual framework guiding the current study is provided by the five-tiered approach to evaluation proposed by Francine Jacobs (1988). This five-tiered approach organizes evaluation activities at five levels: the preimplementation tier, the accountability tier, the program clarification tier, the progress toward objectives tier, and the program impact tier. It is a hierarchical approach because as the levels increase, so do the efforts at data collection and tabulation, the precision in program definition, and the commitment to including the evaluation process in programming. The target of the program evaluation for this study was tier five (program impact).

Operating within the framework of assessing impact, this study utilizes both a post-then-pre design and a longitudinal follow-up. Post-then-pre differs from the traditional pretest/posttest design because it corrects for inaccurate reporting of baseline (pretest) data due to limited knowledge of the question content (Rockwell & Kohn, 1989). For example, teens cannot accurately report their knowledge of credit costs if they do not realize that they have a limited amount of information. Retrospective pretests have been found to have greater internal validity than conventional pretest/posttest evaluations (Howard, Ralph, Gulanick, Maxwell, Nance, & Gerber, 1979).

Literature Review

Teen financial behavior reflects what they have learned or not learned within their family systems (Danes, 1994). Recent studies about the financial knowledge of teens indicate that they are transitioning into the adult financial world ill prepared to function efficiently. The Consumer Federation of America and the American Express Company (1991) tested high school seniors nationally and found that teens answered correctly only 42% of 52 questions about banking, auto insurance, housing, cars, credit, and food. The Jumpstart Coalition for Personal Financial Literacy (1997) conducted a national survey of teens who answered questions correctly 57% of the time; questions covered topics such as taxes, retirement, insurance, credit use, inflation, and budgeting . Danes and Hira's

(1987) teen respondents answered 30% to 90% of questions correctly depending on the content of the question; questions on credit cards, insurance, investments, and personal loans received the lowest correct answers.

Marketers have recently discovered the potential purchasing power of teens. Zollo (1995) estimated that teens spent $100 billion in 1994 which he indicated climbed to $103 billion in 1996 (Teenage Research Unlimited, 1997). Teens have three primary sources of income: (a) allowance, (b) employment, (c) gifts as other funds received from parents and relatives. Much of this money is discretionary income, especially if the teen lives at home with their parents (McNeal, 1990). In this environment, the teen experiences "premature affluence" since there are few expense demands on their disposable income (Koehler, Lawroski, Bischoff, 1995). Motivations for teen employment have been driven not by economic need but by a desire for luxuries (O'Neill, 1992).

Description of the Curriculum Being Evaluated

This project evaluates the High School Financial Planning Program® (HSFPP) Curriculum. HSFPP is a collaborative effort between the National Endowment for Financial Education® (NEFE), the United States Department of Agriculture, and the Cooperative State Research, Education, and Extension Service (CSREES). HSFPP acquaints students with basic financial planning concepts and illustrates how these concepts apply to everyday life. It includes an extensive instructor's manual, student workbook, and student personal financial portfolio which are provided free by NEFE. It has seven units and is designed to be completed within several potential time frames ranging from over a quarter or semester to as few as ten classroom hours.

Methods

Sample and Sampling Procedures

The sampling procedures of the evaluation were executed in three phases. **Phase One:** All teachers in the U.S. (1,213) requesting the HSFPP from NEFE at the beginning of the 1997-98 school year were sent a one-page questionnaire asking if they planned to use the curriculum between September 1997 and January 1998 and if they would participate in a national evaluation of the curriculum. University of Wisconsin Research Laboratory collected the data. One follow-up mailing was sent to teachers who did not respond to earlier mailings.

Seven hundred and thirty-eight surveys were returned; 194 (26%) were not using the curriculum and an additional 110 schools indicated that they would be completing the program outside the time window of the evaluation study. Teacher and student evaluations were sent out to the remaining 434 schools (classrooms).

Phase Two: The teacher and student surveys were to be completed at the end of the curriculum use within the classroom setting. Surveys contained knowledge, behavior, and self-efficacy questions designed to mirror the objectives of the curriculum. In total, 434 teachers and 13,119 students were sent questionnaires in this phase of the study. In the end, 188 (43%) of the schools returned the evaluation questionnaires and 4,107 students answered the questions. Responding schools were from all areas of the United States.

Phase Three: For the three-month follow-up, questionnaires and parental consent forms were sent to all students providing addresses on the in-school evaluation forms at Phase 2. Two follow-up mailings were sent to students to obtain as many returns as possible. Four hundred and eighty questionnaires (26%) were returned, although only 418 were usable due to the fact that 62 returned surveys did not contain parental consent forms.

An attrition analysis was conducted to discern whether there were any significant differences between the 418 students providing usable follow-up data and the 3,689 students who did not. Students were compared on all major variables in the in-school survey, and no significant differences were found except that non-respondents save about $4.47 per week more than the 418 students providing follow-up data. The present study is an assessment of the longitudinal impact of the curriculum on those 418 students providing follow-up information.

Sample Description

Almost all students were in high school (99%); 56% were high school seniors. Males comprised 44% of the sample and females the remainder (56%). About 13% of the students originated from urban areas (population over 100,000), while 25% were from communities with populations between 25,000 and 100,000. Approximately 37% were from towns less than 25,000 population. Twenty-one percent lived in the rural area or on farms.

Financial Description

Fifty-six percent of the students had a part-time job. About 6% worked less than 10 hours a week, 25% worked 10 to 15 hours, 29% worked 16 to 20 hours, 26% worked 21 to 30 hours, 11% worked 31 to 40 hours, and 3% worked more than 40 hours a week. The average weekly take-home pay after deductions was $110.00.

Students were asked about financial products and specific high cost items they had in their own name at Phase 2. Sixty-six percent of the students had savings accounts, 41% had a car or truck, 27% had a checking account, 10% had a credit card, 9% had an investment account, 9% had a loan, and 5% owned a motorcycle.

When the students were asked how much was given to them by parents/guardians on an "as needed" basis, 23% received no money "as needed." Those who did receive money received $14.00, on average, each week. Twenty-eight percent received an allowance averaging $26 per week.

When asked how much money personally saved each week, 24% of the students said they saved nothing. Those who saved place about $23 in savings per week. About 41% of the students indicated that they had debts or bills to pay; they were asked to include money they owed friends and family as well as creditors outside their immediate family and friends. On average, those students had $670 in debts and bills. When those students indicated they owned a car or truck, the average debt amount was $1,065 compared to an average of $203 for those students without a car or truck. Students spent an average of $36 each week.

Conceptual and Operational Definitions

Students were asked about eight financial management behaviors, three questions about their financial knowledge, and two about their financial self-efficacy both before and after studying the financial planning curriculum. Self-efficacy refers to a feeling of being able to deal effectively with a situation (Bandura, 1977). Self-efficacy issues are critical factors in determining whether people believe they are capable of making changes measured in the evaluation process (Danes, 1991).

Using the "post-then-pre" test method (Rockwell & Kohn, 1989), students were first asked about their financial knowledge, behavior and self-efficacy "at the end of studying financial planning" and then "prior to studying financial planning." A 1-5 Likert scale ranging from almost never (1) to almost always (5) was used to measure abilities both "before" and "after" studying the material. The specific items are listed in Tables 1 and 2. The same financial knowledge, behavior, and self-efficacy questions were asked in the 3-month follow-up.

In the 3-month follow-up, students were asked if and how they changed their spending and saving habits, how they used the money they receive or earn, how they determined how much to save, what large ticket items they purchased since completion of the curriculum, and if and from whom they borrowed money for these purchases. Whether the students made changes in spending and savings habits was first asked through a "yes," "no" question; if changes were reported, they were asked to explain how those habits changed. Finally, they were asked to report the most important thing they had done with their money as a result of studying financial planning.

Analytical Procedures

To assess short-term impact, t-tests were conducted comparing the behavior, knowledge, and self-efficacy items before studying financial planning with these same item reports after studying financial planning. Longer-term impact was examined by conducting t-tests that compared the behavior, knowledge, and self-efficacy scores reported for after program completion with those scores reported in the 3-month follow-up survey.

Findings

Behaviors, Knowledge, and Self-Efficacy Changes

Two behaviors students did the least before participating in HSFPP were writing goals (M = 2.14) and using a spending plan (M = 2.17). Two behaviors performed the most were repaying debts and comparing prices; the mean for these behaviors is representative of the category of "About Half the Time." Within the response of "Almost Always," 40.2% of the students indicated that they "almost always repay the money they owe on time."

Before participating in the HSFPP, the knowledge level was comparatively low on the cost of buying on credit, shopping for auto insurance and investments. About a third of the students indicated that they "almost always" believed the way they managed their money would affect their future and about a fifth "almost always" felt confident about making decisions that dealt with money.

Students were asked the same questions after participating in the HSFPP. There was a statistically significant increase on all behavior, knowledge and self-efficacy questions at the .001 level (Table 1). The

knowledge and self-efficacy questions increased dramatically. The pattern in means among the behaviors was similar, although higher in every case.

Table 1
Frequencies of Financial Behaviors, Knowledge, and Self-Efficacy After Participating in HSFPP

Financial Questions	Percentage					Mean	
	Almost Never	Seldom	About Half the Time	Often	Almost Always	After	Before
Behaviors							
I track some or all of my expenses	12.3	21.7	28.0	25.1	13.0	3.05*	2.63
I compare prices when I shop	7.0	10.3	28.1	29.0	25.7	3.56*	3.29
I set aside money for future needs/wants	7.2	14.2	26.0	29.1	23.6	3.48*	3.09
I use a spending plan/budget	28.5	27.6	24.2	13.9	5.8	2.41*	2.17
I repay the money I owe on time	3.6	3.4	13.1	30.4	49.4	4.18*	3.77
I write goals for managing my money	28.2	21.8	25.2	16.5	8.3	2.55*	2.14
I generally achieve my money management goals	11.5	15.6	29.8	26.4	16.6	3.21*	2.85
I discuss money management with my family	23.4	18.8	22.9	24.3	10.6	2.80*	2.46
Knowledge							
I know the cost of buying on credit	19.2	12.3	17.2	25.1	26.3	3.27*	2.42
I know key questions to ask when shopping for auto insurance	20.4	19.7	21.6	24.8	13.6	2.92*	2.27
I know about investments (stocks, mutual funds, bonds, etc.)	15.9	17.8	26.4	25.7	14.2	3.05*	2.29
Self-Efficacy							
I believe the way I manage my money will affect my future	3.9	3.6	12.0	24.8	55.7	4.25*	3.70
I feel confident about making decisions that deal with money	3.8	5.0	24.5	34.6	32.0	3.86*	3.23

*Indicates that the difference in mean score after participating in HSFPP was higher and that the t-score for the difference was statistically significant at the .001 level.

Three-month Follow-up

Three months after participating in HSFPP, the mean scores for all of the financial questions increased significantly compared to immediately having completed the course (Table 2). Greater percentages of students reported that they "almost always": compare prices when shopping (44.5%), set money aside for future needs or wants (40.5%), and repay the money they owe on time (60%). In the follow-up, 44% of students reported "almost always" knowing the cost of buying on credit. Finally, about 77 percent of the students reported that they "almost always" felt as though the way they managed their money would affect their future.

Changes in Spending and Savings Habits

Three months after participating in the HSFPP, over half of the students reported a change in both spending (58%) and savings (56%) habits. Of the students reporting changes in spending, 26% now think more carefully about their spending. Another 23% now save money for purchases. The remaining half of students reported changes such as only buying needed items, using a budget, comparing prices, and spending less. Of the students reporting changes in savings, 39% reported that they had started saving money 3 months after completing HSFPP. Twenty-seven percent now save more than before. The remaining students reported changes in savings behavior such as saving for future needs, spending less money, and shopping more carefully.

Table 2
Frequencies of Financial Behaviors, Knowledge, and Self-Efficacy Three Months After Participating in HSFPP

Financial Questions	Percentage					Mean
	Almost Never	Seldom	About Half the Time	Often	Almost Always	
Behaviors						
I track some or all of my expenses	4.6	9.9	22.5	34.4	28.6	3.73*
I compare prices when I shop	1.2	6.9	16.5	30.9	44.5	4.12*
I set aside money for future needs/wants	2.6	9.4	17.8	29.7	40.5	3.96*
I use a spending plan/budget	14.0	20.7	27.2	23.4	14.7	3.04*
I repay the money I owe on time	0.7	1.7	11.1	26.5	60.0	4.43*
I write goals for managing my money	14.2	24.1	26.8	18.8	16.1	2.99*
I generally achieve my money management goals	4.3	12.5	25.1	36.5	21.6	3.59*
I discuss my money management with my family	15.1	13.0	20.4	28.4	23.1	3.31*
Knowledge						
I know the cost of buying on credit	7.2	7.5	16.1	25.7	43.5	3.91*
I know key questions to ask when shopping for auto insurance	12.5	15.1	23.0	28.8	20.6	3.30*
I know about investments (stocks, mutual funds, bonds, etc.)	9.1	13.7	20.3	33.6	23.3	3.48*
Self-Efficacy						
I believe the way I manage my money will affect my future	1.4	2.2	4.0	15.6	76.8	4.64*
I feel confident about making decisions that deal with money	0.7	2.2	13.4	36.0	47.7	4.28*

*Indicates that the difference in mean score three months after participating in HSFPP was higher than at the completion of the class and the t-score was statistically significant at the .001 level.

Asset Changes

Students were asked about purchases made since participating in HSFPP. Three months later 25% had purchased a stereo/cd player. Sixteen percent had purchased a beeper and 7% had purchased a cellular phone. Eleven percent had purchased a car or truck and 1% had bought a motorcycle. Six percent bought a computer.

Most Important Thing Done Resulting From Studying HSFPP

Nearly one third of students (31%) reported that the most important financial planning activity they had taken on since participating in the HSFPP was establishing a savings account. Saving for major expenses and purchases was reported by 14% as the most important thing they had done, while another 14% reported saving for a future want or need. Others identified activities were paying for one's own expenses, comparing prices and spending less when shopping, budgeting and planning, learning how to save, investing, and helping family.

Discussion

The results of this study indicate that teaching personal finance in high schools can positively impact the financial knowledge, behavior, and self-efficacy levels of teens. These findings support research suggesting that teaching personal finance in schools has an impact on financial management practices as adults (Bernheim et al., 1997). As students enter financial independence, they encounter an increasingly complex marketplace, earnings do not meet spending goals, and easy access to credit places young adults at risk for future financial instability.

Education within the high school setting can better prepare youth to successfully meet these challenges while bringing financial education concepts home to be discussed with family.

Teen financial literacy needs to be made a priority on the education policy agenda. Currently only 26 states mandate consumer education and only 14 require a personal finance component (Bernheim et.al., 1997). As many states are currently developing graduation standards, these are ideal times to make a difference in the lives of future youth as they launch into adulthood. One of the goals of education is to prepare youth to be employable citizens, preparing them to use the income they earn from that employment should be an equally high priority.

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Endnotes

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