

The Effects of Financial Education on Financial Literacy and Financial Attitudes

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Interest in Financial Education in U.S. Schools (since late 1990s)

- Increase in number of states with content standards and requirements
- More organizations and programs (Jump\$tart Coalition, National Endowment for Financial Education, Junior Achievement, Council for Economic Education)
- Greater testing of financial literacy
- More focus on personal finance issues because of the economic conditions

Past Research

- Focused on financial education for adults (e.g., Hilgert, Hogart, Beverly, 2003)
- But some research on youth education
- Research more “macro-oriented” with aggregation across states or nation
 - Effects of state mandates (Bernheim, et al. 2001)
 - Effects of personal finance course work on financial literacy (Mandell 2009)

Current Research

- More micro-oriented to focus on the instructional effects
- Investigates multiple outcomes—both financial literacy and financial attitude
- Imposes control for multiple factors that cannot be captured in macro studies

Research Issues Addressed

- Clear definition of personal finance content
- Well-prepared teachers for instruction
- Reliable and valid measurement instruments
- Analysis of change using pretest and posttest data
- Investigation of simultaneity effects from multiple outcomes



FINANCING YOUR FUTURE

A Complete Personal Finance Program On DVD For High School Teachers And Their Students

Get a Financial Life **Get Smart: Decisions Have Consequences** Get Banked: The Banking Advantage **Get the Credit You Deserve** Get a Financial Plan

Financing Your Future

- DVD with 5 content videos
 - introduction to personal finance
 - financial decision-making
 - banking and checking
 - credit and debt management
 - financial planning (budgeting, saving, investing, and risk)
- Printed lessons for teachers that outline the major content in the videos
- Instructional activities to prepare students or reinforce their learning

Study Design

- Treatment Group
 - high school students taught with FYF video and lessons for ~6 hours over 2–4 weeks
 - taught by teachers with 3–4 hours of training in the use of FYF materials
- Control Group
 - Similar group of high school students in the same school and course who did not receive FYF instruction
- Data (pretest and posttest)

Sample

- 800 students with pre-and posttest data
 - 673 FYF students taught in 40 classes by 15 teachers in four states (NY, MN, TX, MD)
 - 127 control students taught in six classes either by the same teacher or their equivalent in the same school
- Sample characteristics (Table 1)

Outcome Measures

- **Financial literacy test score**
 - 30 multiple choice-items (score: 0 to 30)
 - content & construct validity (Table 2 and Appendix 1)
 - reliability: alpha (0.85)
- **Financial attitude index score**
 - 10 statements for index score (score: 1 to 5)
 - content & construct validity (Appendix 2)
 - reliability: alpha (0.54)

Mean Scores

- **Financial literacy test results**

	<i>Pretest</i>	<i>Posttest</i>
FYF (n=673)	14.76 (4.52)	20.67 (5.44)
Con. (n=127)	14.85 (4.95)	15.16 (5.27)

- **Financial attitude scores (x 10)**

	<i>Pretest</i>	<i>Posttest</i>
FYF (n=673)	34.0 (4.6)	36.0 (5.0)
Con. (n=127)	34.7 (3.9)	35.0 (3.9)

Mean Scores

- **Expected differences in pre- to posttest mean scores for the FYF group on all variables (Table 3)**
 - Course type
 - Gender
 - Class level
 - Plans after high school
 - Employment history
 - Credit card use
 - State

Conceptual Model

- **Posttest financial literacy** is a function of posttest *financial attitude*, pretest financial literacy, set of other relevant variables, and error term
- **Posttest financial attitude** is a function of posttest *financial literacy*, pretest financial attitude, set of other relevant variables, and error term

Estimation

- Two-equation model estimated with two-stage least squares to correct for a simultaneous equations bias from including an endogenous posttest variable in each equation as a regressor
- TSLS model is just identified. The pretest variable is included in its respective posttest equation but not the other posttest equation
- Reduced-form estimation uses ordinary least squares estimation and shows the effects of all exogenous variables on outcome variables

Other Control Variables (dummy variables)

- FYF instruction (1=no instruction)
- Gender (1=female)
- Class level (1=senior)
- Plans after high school (1=four year college)
- Work history (1=never worked)
- Credit card use (1=no)

Instruction Effects

	Structural Equations (TSLS)	
Variable	Fin. Literacy Posttest	Fin. Attitude Posttest
Financial education (1=no FYF)	-4.581** (0.479)	0.085 (0.605)
Course type (1=economics or personal finance)	2.637** (0.404)	-0.043 (0.522)

Instruction Effects

- Financial education via FYF instruction has a significant effect on student learning
- A gain of 4.58 points for the FYF group represents a 31% increase from the pretest for relatively short period of instruction
- No significant effect of financial education instruction on financial attitudes
- Bonus for FYF instruction in an economics or personal finance course

	Structural Equations (TSLS)		Reduced Form (OLS)	
Variable	Fin. Literacy Posttest	Fin. Attitude Posttest	Fin. Literacy Posttest	Fin. Attitude Posttest
Financial Literacy Posttest	---	0.037** (0.008)	---	---
Financial Attitude Posttest	3.999 (2.201)	---	---	---
Financial Literacy Pretest	0.427** (0.065)	---	0.502** (0.039)	0.019** (0.004)
Financial Attitude Pretest	---	0.147** (0.042)	0.691 (0.375)	0.173** (0.040)

Multiple Outcomes

- Prior results indicate that financial education influences financial literacy
- Financial literacy in turn influences financial attitudes
- Financial attitudes, however, do not influence financial literacy
- The TSLS and reduced-form findings are consistent in showing financial literacy influences on financial attitudes, but not vice versa

Probit Analysis (Attitude Items)

- Each of the 10 attitude statements were converted to dummy variables (0,1) where 1=agreement with opinion of experts
- Conducted probit analysis for each of the 10 attitude statements
- Controlled for pretest attitude, posttest financial literacy, and other control variables

Variables	Saving (1)	Retirement (2)	Financial Decision (3)	Borrowing (4)	Interest (5)
Financial attitude (item pretest)	0.54** (4.89) ^a	0.56** (4.95)	0.59** (6.15)	0.73** (7.23)	0.76** (8.02)
Financial literacy (posttest score)	0.07** (5.45)	0.05** (4.41)	0.02* (2.18)	0.04** (4.17)	0.02* (2.18)
Financial education (1=no FYF)	0.35* (2.29)	0.18 (1.19)	0.14 (0.99)	0.43** (3.12)	-0.06 (0.41)
Course type (1=economics or p.finance)	-0.14 (1.07)	0.21 (1.65)	0.25* (2.22)	0.06 (0.54)	0.07 (0.59)

Variables	Banking (6)	Credit Score (7)	Credit Card (8)	Wealth Accum. (9)	Investing (10)
Financial attitude (item pretest)	0.63** (5.94)	0.43** (4.14)	0.62** (6.59)	0.46** (4.85)	0.70** (7.07)
Financial literacy (posttest score)	0.01 (1.49)	0.04** (4.01)	0.02 (1.61)	0.05** (5.49)	0.03** (3.37)
Financial education (1=no FYF)	0.05 (0.32)	0.06 (0.39)	-0.02 (0.18)	-0.35** (2.57)	-0.14 (0.98)
Course type (1=economics or p. finance)	-0.13 (1.10)	0.12 (0.97)	0.14 (1.24)	-0.16 (1.36)	-0.25* (2.19)

Probit Analysis (Attitude Items)

- Results show mostly consistent effect of financial literacy on each attitude statement (8 of 10 are significant and in expected direction)
- Financial education has a minor and mixed effect on financial attitude (significant in 3 cases, but two positive and one negative)
- Course type and other variables also show minimal or no effect

Conclusions

- Personal finance instruction is valuable in improving the financial literacy of youth
- Financial literacy in turn is likely to improve financial attitudes of youth
- The converse is not likely the case: financial attitudes have little or no effect on improving financial literacy
- If you want to improve financial attitude, concentrate on financial education to increase financial literacy