EVALUATION OF FINANCIAL FITNESS FOR LIFE PROGRAM AND FUTURE OUTLOOK IN THE MISSISSIPPI DELTA

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ABSTRACT

In Fall 2008 the College Access Challenge Grant, sponsored by the U.S. Department of Education, chose 13 school districts in Mississippi's Delta and Southwest regions to receive the Financial Fitness for Life (FFL) curriculum. The Mississippi Council on Economic Education was asked to implement the training and evaluate the program. Superintendents recruited counselors and teachers to participate in a train-the-trainer program. We used a subset of the FFL theme tests and a survey of questions on student self perception on future perspective, identity development, perception of opportunities, and school performance. We hypothesized that learning the FFL material could positively influence the long term goals of increasing college attendance for disadvantaged youth. We find that the students surveyed did increase their knowledge, especially on Themes 1, 4, and 5. However, their self-perceptions did not improve and we find no correlation between the behavior variables and the improvement in test scores. The experiment was less than ideal in a few areas, so improving the design and carrying out the experiment under more ideal conditions may yield different conclusions.

This project was made possible by the Council on Economic Education.

In 2008-2009, 13 school districts in Mississippi were chosen to participate in a pilot program that is part of the College Access Challenge Grant sponsored by the U.S. Department of Education and administered through the Institutions of Higher Learning in Mississippi. The Mississippi Council on Economic Education was asked to offer financial literacy opportunities for teachers and students as one way of achieving the goal of assisting low-income students and families learn about, prepare for, and finance postsecondary education. Approximately 7,000 middle school students in Mississippi's Delta were chosen to receive the middle school Financial Fitness for Life (FFL) materials as well as teacher training and support. This provided a unique opportunity to assess teacher and student financial literacy, teacher training, and other significant factors that affect the attitudes towards college of disadvantaged youth.

Our original research agenda included studying the change in student behavior as well as the change in knowledge of teachers and students. We are interested in exploring how the FFL

program affects the future perspective, identity development, perception of opportunities, and school performance of youth from low-resource communities. Based on the extant literature on youth development, each of these are plausible mediators that could explain how the FFL program can help achieve the long term goals of increasing college attendance for these youth. However, due to the difficulties of studying students and miscommunication with teachers, this research is unable to study the link between the curriculum and potential behavioral changes. We are able to shed light on students, teachers, and schools in the Mississippi Delta area, the overall effectiveness of FFL curriculum on knowledge for low-resource communities, and the correlation of self-reported attitude measures and performance on FFL theme tests.

REVIEW OF THE LITERATURE

Financial Literacy Education. The effectiveness of the FFL curriculum has been recently studied only by a handful of previous researchers (Lyons et al., 2006; Harter & Harter, 2007; Swinton, et al., 2007). Lyons, Scherpf, and Roberts (2006) find that the FFL parent's curriculum was valued as an effective vehicle to improve communication between parents and children on financial matters.

Swinton, et al (2007) used data collected by the Georgia Department of Education to test whether teacher participation in FFL training workshops by the Georgia Council on Economic Education affected the high-stakes test scores of students in economics classes. They find that having a teacher who participated in a FFL workshop was statistically significant in explaining expected end of course economics test scores. However, the effect was not large, but an increase of 3.4 points or half a percentage point. They point out that even though the measured benefit is low, the relative cost of providing the workshops is likely to be much lower than what the state of Georgia spends on economic education, making the training a viable strategy for increasing economic literacy.

Harter and Harter (2007) study elementary, middle- and high-school students in grades 5, 8, and 11 from an economically disadvantaged area in Kentucky. The students in these grades are tested on the personal finance concepts using standardized tests which provided additional motivation for teachers of these grades to show improvement on test scores. They report that the FFL curriculum does increase student scores. They also report that 93 percent of teachers were satisfied or very satisfied with the curriculum. Additionally, 72 percent of their middle school students liked the curriculum or liked it very much and 69 percent thought the lessons were useful or very useful.

Future Orientation. During adolescence, youth begin to become more oriented to their futures (Erikson, 1968; Nurmi, 1991). Developing a sense of the future involves such tasks as thinking about future possibilities, having positive expectations for the future, developing specific goals and interests for the future, and developing strategies to accomplish those goals (Nurmi). Research has documented significant associations between aspects of adolescents'

future perspective and motivation (Bandura, 1986; Nurmi), reductions in delinquency and substance use (Keough, Zimbardo, & Boyd, 1999; Kogan, Luo, Murry, & Brody, 2005), and positive adaptation in adolescence and early adulthood (Clausen, 1991; Masten et al., 2004; Werner & Smith, 1992; Wyman, Cowen, Work, & Kerley, 1993). Although future oriented thinking plays an important role in preparing youth to transition into adult roles, little is known about what factors influence how adolescents think about, feel about, and prepare for their futures. Although the extant literature suggests that future oriented thinking plays a critical role in adolescent motivation, adaptation, behavior, and preparation for adulthood, we know very little about what individual and contextual factors influence adolescent future perspective. Studies suggest that adolescents will be more likely to exhibit future oriented thinking when they have a developed sense of identity (Dunkel & Anthis, 2001; Kerpelman & Mosher, 2004), a supportive family environment (Pulkkinen, 1984; Trommsdorff, Burger, Fuchsle, & Lamm, 1978), parents who encourage future thinking (McCabe & Barnett, 2000), and access to resources and opportunities (Nurmi et al., 1996; Trommsdorff et al., 1982).

The material in FFL has the potential to give students confidence in their future by providing access to resources and opportunities in the home and community, provides tools to think about future possibilities and form positive expectations for the future, and help develop strategies to accomplish building good habits and practical skills that pay-off in both the short-run and long-run.

METHODOLOGY

Research Design. Trainers were chosen by the superintendents of the chosen schools. Trainers were made up of both counselors who would train classroom teachers and the classroom teachers themselves. The Mississippi Council on Economic Education hired Evelyn Edwards, a Vice President for BancorpSouth to train the trainers. Ms. Edwards specializes in banking for low income clients and has 17 years of experience in financial education and has led thousands of individuals in financial education using the *Financial Fitness for Life* curriculum as well as other curriculum. Ms. Edwards trained 33 trainers in five sessions in seven locations. The trainers were given .5 continuing education units, a nice lunch, and the FFL materials. The 5 hour workshop agenda included the following: Test of Economic Literacy; the middle school Financial Fitness for Life theme tests (used for both pre- and post-tests), and broad introductory lessons to the FFL themes. Each lesson in the theme was briefly explained but none were actually conducted. The Millionaire Game and the other games on the CD were used in the workshop. Teachers were asked to assess the financial literacy of their students using the FFL theme tests for both the pre- and post-test and report their results.

In addition to the workshop, Ms. Edwards followed up with calls and e-mails and she held site visits to classrooms in 21 of the sites. At those visits, which included one class period for a total of 30 hours, she observed the teacher teaching the lessons and the student

involvement. The trainers pre-tested the students then taught lessons from FFL and then post-tested the students. The teachers were under no obligation to teach all the lessons. Ms. Edwards followed up with the teachers through email and phone communication to offer encouragement and answer questions. Teachers were given $100 once they sent the tests to Ms. Edwards who scored the tests. The Mississippi Council on Economic Education provided $50 to the 100 top scoring students on the post tests to students with top scores. Staff of the College Access Challenge Grant visited the schools and presented the checks and certificates of achievement to all students who participated in the program.

Control groups were intended, but we did not understand that all the kids in every chosen school would be receiving the curriculum. Once this became known, we attempted to find control groups, but were unable too. We closely followed Institutional Review Board (IRB) to ensure that all human subject protocols were met.

Data. During Fall 2008 the trainers were pre and post tested using the TEL and the FFL theme tests. The TEL is a standardized test designed specifically for studies involving high school students. Its properties are well known and national norms are available for comparisons with local samples (Walstad & Rebek, 2001). The FFL is the Council on Economic Education's flagship personal finance curriculum for kindergarten through high school students and parents. FFL includes tests for each theme, e.g., income, budgeting, etc. Additionally, trainers completed a survey which included information on courses, training, and demographics.

During Spring 2009 the students were pre- and posttested using the FFL middle school theme tests and an additional assessment which measures future perspectives, attitudes, and motivation. Student attitudes about the future were measured by choosing the most relevant questions from the combination of the following: *Future Perspective Questionnaire* (Sharp and Coatsworth, 2008), the *Personally Expressive Activity Questionanaire* (Waterman, 1993), the *Limited Access to Opportunity Scale* (Wall, Covell, and MacIntyre, 1999), *How do I do in School?* (NICHD Study of Early Child Care and Youth Development, 2002), and *What My School is Like* (NICHD Study of Early Child Care and Youth Development, 2002). The questions can be found in Appendix One.

EVALUATION OF TRAINERS

Education. All trainers had bachelor's degrees from regional institutions: Six from Alcorn State University in Lorman, MS; one from Belhaven College in Jackson, MS; six from Delta State University in Cleveland, MS; two from Jackson State University in Jackson, MS; five from Mississippi Valley State in Itta Bena, MS. Ten from comprehensive institutions: two from the University of Mississippi in Oxford, MS; two from Mississippi State University in Starkville, MS; and six from the University of Southern Mississippi in Hattiesburg, MS. Two trainers had gone to schools outside of Mississippi: Cal State and Xavier in Louisiana. Sixteen had master's degrees, one from a comprehensive institution and the rest from regional institutions.

Major. Trainers listed a variety of majors, including biology (2), business, chemistry, communication, computer science (4), criminal justice (2), elementary education (6), English, guidance (3), health (2), history, math, physiology, political science (5), psychology, social science (3), sociology, Spanish, and special education.

Economics Course Background. 20 trainers had taken at least one economics class in college. Seven had taken two classes, four had taken three classes, and one had taken four classes. Four trainers had taken one or two graduate courses in economics.

Experience. On average, the trainers had taught for 10 ½ years, ranging from a minimum of 1 year to a maximum of 32 years. Of the 33 trainers, only four reported that they had taught any economics for more than one year. One trainer had 20 years of teaching economics, one with eight, one with two, and one with one year. None taught economics as a subject. Six of the 33 trainers were teaching economics as part of another course, including U.S. history, world history, geography, and math. Of the six teachers that teach economics as a strand, three evaluated their skill level in teaching economics as "good" and the other three evaluated themselves as "fair."

Workshop Attendance. Nine trainers reported attending one economics education professional development program. One had attended a JumpStart workshop, one reported a workshop at a teacher conference, and seven had been to a workshop sponsored by the Mississippi Council on Economic Education.

Employment. On average, trainers had been employed for 8.7 years in their current school system, with a minimum of 1 year, a maximum of 32 years, and a standard deviation of 8.8. 13 trainers reported teaching as their second career. The variety of first careers included work in retail, post office, paper mill, public library, correction officer, social worker, phone operator, software engineer, and system analyst.

Parents' Educational Attainment. Nine trainers had fathers who did not complete high school, 17 who had completed high school, four had some college, one had an associate's degree, one had a bachelor's degree, and one had a master's degree. Six trainers had mothers who did not complete high school, 14 had mothers who completed high school, 10 had some college, two had associate's degrees, and one had a master's degree.

Income. 15 were single –income households and 18 were dual-income. Three trainers reported household income lower than $30,000; 21 reported household income between $30,000 and $60,000; 7 reported household income between $60,000 and $90,000; and two reported household income over $90,000.

Age and Gender. The average age of the trainers was 41 with a maximum age of 58, a minimum age of 22, and a standard deviation of 11 years. There were 31 African American trainers and two white trainers. 29 of the trainers were female.

TEL. The Test of Economic Literacy 3rd Edition assesses the understanding of basic economic concepts by high school students. The average score of the 33 trainers on the TEL3 Form A was 20.76 with a maximum of 37, a minimum of 3, and a standard deviation of 9.16. The mean score for the nationally normed sample of high school students is 23.85 (Walstad and

Rebek, 2001). If we drop the four trainers who scored below the 25% pure chance score due to possible systematic errors in test marking, scoring, or administration, the mean increases to 22.79, which brings our trainers closer to the national student mean. The nationally normed sample average for low income students with an economics course is 22.75 and 15.58 for students without an economics course.

Whether a teacher reported having taken an economics course did not significantly improve the average. This supports the finding that it may take several courses in economics to see an improvement on the TEL (Lynch, 1990).

The Financial Fitness for Life Theme Tests Middle School was used for the pretest and posttest. The average score on the pretest was 30.39 (60.8%) with a maximum of 45, a minimum of 7, and a standard deviation of 9.42. The average posttest score was 40.39 (80.8%) with a maximum of 46, a minimum of 31, and a standard deviation of 4.08. This is a statistically significant improvement using a pair-wise t-test. As expected, most of the gains came from trainers who scored relatively low on the pretest. Comparisons of teacher scores to national averages for the FFL Middle School tests could not be made because of a lack of data.

EVALUATION OF THE STUDENTS

Model and Results. 1,200 pre-tests were given to the trainers. The final sample includes 342 middle-school students from the Mississippi Delta and Mississippi Southwest regions. This sample is 52% female, 82% African American (10% Caucasian, 4% Hispanic, 3% Asian American, and 2% other race/ethnicity). Only 168 students completed the post-test assessment. We did not have complete data on all variables for 8 of these students, so our final sample consists of 160 students.

The variables of interest and their definitions are given in Table 1. Table 2 gives summary statistics.

Participant reported school performance, "Grades," was obtained at pre-test and the results for the 160 students in the final sample were as follows: 21% reported being "very good" students, 55% reported being "good" students, 21% reported being "not too good" and 4% reported being "poor" students.

Student Performance on the Financial Fitness for Life pretest and posttest. In order to allow students enough time to take the financial component and the future orientation component of the survey in one class period, we were only able to use 25 of the questions from the FFL theme tests. The percentage of content coverage over each theme was preserved. However, that is not the case with cognitive level coverage. The instrument we used had 2% fewer knowledge questions, 6% fewer comprehension questions, and 8% more application questions. Our instrument is obviously skewed in the higher order cognitive level, making for a more difficult test.

Table 1. Variable Definitions	
Variable	Definition
Prescore	Score on FFL pretest
Postscore	Score on FFL posttest
Change	Postscore – Prescore
Female	Dummy equal to 1 for female student; 0 otherwise
African-American	Dummy equal to 1 for African-American student; 0 otherwise
Other race	Dummy equal to 1 for race other than African-American or Caucasian
Grades	Self reported; 4 = very good student, 3 = good, 2 = not too good, 1 =
Teacher#	Dummy equal to 1 for teacher# (1-5); 0 otherwise
Ident	Student identity composite (Questions 29-48)
Plifch	Student perceived life chances (Questions 49-51)
Peropp	Student perception of future opportunities (Questions 65-80)
Totalfp	Student future perspective (Questions 52-61)
Note: Theme#Prescore, Theme#Postscore, and Change# are defined the same as prescore, postscore, and	

Table 2. Summary Statistics				
Variable	Mean	Std Dev	Min	Max
Prescore	9.719	3.241	2	17
Postscore	11.094	4.284	2	21
Change	1.375	4.558	-13	13
Female	0.488	0.501	0	1
African-American	0.806	0.396	0	1
Other race	0.063	0.243	0	1
Grades	2.925	0.749	1	4
Teacher1	0.119	0.325	0	1
Teacher2	0.175	0.381	0	1
Teacher3	0.281	0.451	0	1
Teacher4	0.300	0.460	0	1
Teacher5	0.125	0.332	0	1
Ident	3.586	0.720	1	4.875
Plifch	4.573	0.842	1	5
Peropp	3.783	0.585	2.50	5
Totalfp	4.293	0.666	1.70	5
Note: Summary statistics for theme scores are not reported. These data are available on request from authors.				

Out of 25 financial questions, the mean number of items correct on the FFL pretest was 9.20 (37%, SD = 3.40). Comparing these scores with the national normed sample (Walstad & Rebeck 2001) reveals that the 364 students in our research sample scored approximately 5 percent above the national average for the category of greater than 50 percent receiving free lunch.

For the sample of students in our research project, the scores improved only slightly on the posttest (M = 10.96, 43.84%, SD = 4.37). The average change in score from pretest to posttest was 2.52 points (SD = 3.08). The national normed mean posttest score for students who attend schools with more than 50 percent free lunches is 51.6%. So, while we find that our students did approximately 5% relatively better than the nationally normed students without FFL

lessons on the pretest, we find that our students did approximately 8% relatively worse on the posttest than the nationally normed students with FFL lessons. While it is surprising to find that our students would test above the national average on the pre-test, it is not surprising to find that they would lose ground on the posttest given that the teachers' economic literacy was well below national averages.

Table 3 below, provides the mean score pretest and posttest, the correlation between pretest and posttest score, average change in score from pretest to posttest, and t-statistic for difference in means from pretest to posttest. For the five themes, all variables are defined in terms of percentages rather than number correct. Theme 1 is "The Economic Way of Thinking," Theme 2 is "Earning Income," Theme 3 is "Saving," Theme 4 is "Spending and Using Credit," and Theme 5 is "Money Management."

Table 3. Pre- vs. Post Test Score Comparisons

Variable	Mean Pre	Mean Post	Correlation	Mean Change	T-Statistic
Overall	9.719	11.094	0.2909***	1.375	3.82***
			(.0002)		(.0002)
Theme1	49.0%	56.1%	0.2336***	7.1%	2.94***
			(.0029)		(.0037)
Theme2	39.7%	40.3%	0.1334*	0.6%	0.23
			(.0927)		(.8164)
Theme 3	26.3%	27.6%	-0.1121	1.4%	0.61
			(.1583)		(.5409)
Theme 4	30.3%	41.1%	0.2108***	10.9%	4.27***
			(.0075)		(<.0001)
Theme 5	47.7%	54.2%	.3000***	6.5%	2.78***
			(.0001)		(.0062)

Note: P-values in parentheses. *** indicates change is significance at 1% level,
** indicates significance at 5% level, and * indicates significance at 10% level.

The results indicate a significant correlation between pretest and posttest score with the exception of Theme 3. In addition, there is a positive and significant difference between pretest and posttest score for the overall score, and for Themes 1, 4 and 5. Thus, student financial knowledge improved significantly with the exception of Themes 2 and 3.

We next conduct regression analysis to examine which factors affect the student pretest, posttest and change in scores. In the regression models, we include three broad types of variables. First, we have student characteristics which include race, gender, and grades (self-reported student quality). Second, since the teacher is likely to have an important impact on student learning, we include dummy variables for the teachers in our sample. Finally, we include student developmental characteristics, which include the identity, life chances, optimism and preparation for the future composites. We run the following three regressions:

$$\text{Prescore} = \alpha + \beta \cdot student + \delta \cdot teacher + \gamma \cdot development + e$$
$$\text{Postscore} = \alpha + \beta \cdot student + \delta \cdot teacher + \gamma \cdot development + e$$
$$\text{Change} = \alpha + \theta \cdot prescore + \beta \cdot student + \delta \cdot teacher + \gamma \cdot development + e$$

where *student* is the vector of student characteristics, *teacher* is the vector of teacher dummies, and *developmental* is the vector of developmental characteristics. We include *prescore* in the *change* equation to examine the impact of initial score on improvement. The OLS regression results are given in Tables 4-6. In each table, model 1 includes just student characteristics, model 2 include student and teacher characteristics and model 3 include student, teacher, and developmental characteristics.

Table 4. Regression Results: Dependent Variable = Prescore

Variable	Model 1	Model 2	Model 3
Intercept	5.849***	4.838***	0.414
	(1.243)	(1.322)	(2.072)
Female	0.258	0.243	0.005
	(.479)	(.471)	(0.460)
Afr-Amer	-0.602	-0.782	-1.020
	(.711)	(.718)	(.697)
Other Race	-2.582**	-2.570**	-2.214*
	(1.174)	(1.157)	(1.127)
Grades	1.501***	1.368***	0.842**
	(.325)	(.325)	(.338)
Teacher 2		2.178**	2.083**
		(.876)	(.846)
Teacher 3		1.086	1.041
		(.822)	(.811)
Teacher 4		1.938**	1.868**
		(.809)	(.780)
Teacher 5		2.283**	1.850*
		(.977)	(.955)
Ident			-0.447
			(.360)
Plifch			-0.256
			(.332)
Peropp			1.891***
			(.480)
Totalfp			0.460
			(.448)
Observations	160	160	160
F-value	8.14	5.41	5.70
R-squared	0.174	0.223	0.317
Adjusted R-squared	0.152	0.182	0.262

Note: Std errors in parentheses. *** indicates change is significance at 1% level,
** indicates significance at 5% level, and * indicates significance at 10% level.

Table 5. Regression Results: Dependent Variable = Postscore			
Variable	Model 1	Model 2	Model 3
Intercept	6.028***	6.496***	6.787***
	(1.716)	(1.480)	(1.520)
Female	0.645	0.574	0.603
	(.661)	(.528)	(.533)
Afr-Amer	0.194	-0.954	-1.143
	(.982)	(.803)	(.839)
Other Race	-1.275	-1.389	-1.622
	(1.621)	(1.295)	(1.328)
Grades	1.598*** 8*	1.107***	1.065***
	(.449)	(.364)	(.368)
Teacher 2		0.724	0.629
		(.980)	(.996)
Teacher 3		0.332	0.312
		(.920)	(.944)
Teacher 4		2.246**	2.202**
		(.906)	(.919)
Teacher 5		8.340***	8.269***
		(1.094)	(1.109)
Ident_p			0.020
			(.028)
Peropp_p			0.024
			(.033)
Totalfp_p			-0.022
			(.041)
Observations	160	160	160
F-value	4.24	14.99	10.90
R-squared	0.099	0.443	0.447
Adjusted R-squared	0.075	0.413	0.406

Note: Std errors in parentheses. *** indicates change is significance at 1% level,
** indicates significance at 5% level, and * indicates significance at 10% level.

Model 1 in the prescore regression, indicates that races other than African-American or Caucasian perform significantly worse on the FFL. As expected, Grades is positive and significant. Thus, students who perceive themselves as being good students perform better, on average, than do students who perceive themselves as being poorer students.

These results are not affected by the addition of teacher dummies in model 2. However, the results seem to support the view that teachers do influence student learning. Students with Teachers 2, 4, and 5 perform better than Teacher 1's class (the control group).

Finally, we add the developmental variables. With regard to the pretest results, the students' perception of future opportunities has a positive and significant impact. This could be

due to more optimistic students being more interested in learning or it could be that students who do well tend to have a more optimistic outlook.

Table 6. Regression Results: Dependent Variable = Change (Postscore – Prescore)			
Variable	Model 1	Model 2	Model 3
Intercept	4.487**	5.732***	5.556**
	(1.807)	(1.533)	(2.432)
Female	0.578	0.535	0.560
	(.652)	(.525)	(0.540)
Afr-Amer	0.353	-0.830	-0.760
	(.970)	(.801)	(.824)
Other Race	-0.595	-0.983	-0.951
	(1.621)	(1.308)	(1.340)
Grades	1.203**	0.891**	0.806**
	(.471)	(.382)	(0.405)
Teacher 2		0.379	0.219
		(.994)	(1.013)
Teacher 3		0.161	0.075
		(.919)	(.957)
Teacher 4		1.939**	1.912**
		(.917)	(.933)
Teacher 5		7.979***	7.816***
		(1.106)	(1.134)
Ident			-0.117
			(.425)
Plifch			-0.508
			(.390)
Peropp			0.883
			(.593)
Totalfp			0.058
			(.527)
Prescore	-0.737***	-0.842***	-0.884
	(.109)	(.090)	(.097)
Observations	160	160	
F-value	9.35	17.88	
R-squared	0.233	0.518	
Adjusted R-squared	0.208	0.489	

Note: Std errors in parentheses. *** indicates change is significance at 1% level,
** indicates significance at 5% level, and * indicates significance at 10% level.

The postscore regression results are similar to the prescore results. Again, we see that Grades is positive and significant. However, the teacher results are somewhat different. In the prescore model, students of Teachers 2-5 all averaged about 1.5 to 2 points more than students of Teacher 1. In the postscore model, we see that students of Teacher 4 are expected to score 2.2

points higher, but students of Teacher 5 are expected to score more than 8 points higher. It may be that Teacher 5 spent an extraordinary amount of time teaching this material; it is not possible to say from the data we have exactly what might have caused this large increase in scores. Teacher 5 scored just above the mean on the TEL and scored a 37 on the FFL pretest (compared to the teacher mean of 30) and scored a 39 on the FFL posttest (compared to the teacher mean of 40). Finally, the developmental factors in the posttest model are not significantly different from zero.

The "change in score" regression results are somewhat similar to the previous model results. We again observe that Grades is positive and significant, and we again see the extremely high change in scores associated with Teacher 5. In this model, none of the developmental effects are significantly different from zero.

We included *prescore* in this model to control for the starting point. A student who scores high initially has less room for improvement given the finite number of questions on the test. Thus, we expect a negative coefficient for *prescore*. The regression results indicate a 1 point increase in *prescore* leads to roughly a 0.8 point decrease in the change in score.

Lastly, Table 7 shows the correlations between the change in students' behavioral indices and the change in pretest and posttest scores. The only change that is significant is between a [hmmmm….this is first time using prep]

Table 7.
Correlations Between Change in Behavior Variables and Change in Test Score

Variable	Correlation
indentΔ	0.15875
	(.0758)
preoppΔ	0.12659
	(.1578)
totalfpΔ	-0.11185
	(.2124)

Note: P-values in parentheses. *** indicates change is significance at 1% level, ** indicates significance at 5% level, and * indicates significance at 10% level.

CONCLUSIONS

While we do find that our students demonstrated a significant improvement in knowledge, we find that the students in our research study scored approximately 5% higher on the pretests than the nationally normed sample without the FFL lessons and scored approximately 8% lower on the posttests than the nationally normed sample. While it is surprising to find that our students would test above the national average on the pre-test, it is not surprising to find that they would lose ground on the posttest given that the teachers' economic

literacy was well below national averages. We find that most of the gains in knowledge are in Themes 1, 4 and 5.

We also find that Hispanic and Asian students had the lowest performance on the FFL. Given that, the curriculum and assessment measures might need to be revised to address potentially meaningful cultural differences of students participating in the program (e.g., consider issues of language, cultural values, etc.).

We consistently find that teachers make a difference in student scores. Exploring the reasons for this finding is an obvious extension of the work. For example, studying the change on the pretest and posttests, analyzing specific questions teachers improved on the pretest and posttests, and knowing which lessons were taught and in what ways would shed light on the findings of teacher impacts.

We consistently find that students who perceive themselves as being good students perform better, on average, than do students who perceive themselves as being poorer students. Developmental variables were found to be explanatory in only one case: With regard to the pretest results, the students' perception of future opportunities has a positive and significant impact. The developmental variables have no explanatory power in other regressions.

We find no correlation between the change in behavior variables and the change in knowledge. This is primarily due to the fact that the behavior variables do not change much from pre- to post-test. In one case, student future perspective even diminishes at the posttest compared to the pretest. It is possible that if the research design and implementation were improved, the relationship between knowledge and future outlook could be captured and examined. If we find that the middle school FFL is an effective way to give low-income students confidence toward their future, we should find more students staying in school longer, even through college. Finding middle school FFL as an effective tool for low-resource students would provide a relatively inexpensive, practical solution to combat, in part, Mississippi's low graduation rate.

FUTURE RESEARCH

An obvious first step to future research would be to redo the survey using a control group, assisting the teachers in giving the pretests and posttests, use the full FFL test (or keep the percentage of knowledge, comprehension, and application questions similar in order to make meaningful comparisons), use an exit survey for students and teachers, have the teachers teach specific lessons, and have the student's performance on the test figure into their grade so that students had a greater incentive to study the material seriously.

EDITORS' NOTE

Do to space limitations the editors have omitted the original questionnaire used in this research. Interested readers should contact the authors for a copy of the questionnaire.

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