Measuring the Effects of the *Financial Fitness for Kids* Program for Early Elementary School Students in Chicago

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Abstract: This project researches the effects of a new, sustained, financial literacy curriculum to be taught over multiple years in grades K-5. This program is called "Financial Fitness for Kids" or FFK. The first year of the program was last year, 2005-6. The second year of the program is the just-completed school year, 2006-7. The program pilot continues one more year, school year 2007-8. We are following schools and children over the 3-year period. One school from each of the 17 areas in the Chicago Public Schools (i.e., schools from all over the city of Chicago) was invited by the Chicago Public Schools administration to participate in the first year and additional teachers from each school participated 2006-7 and will participate in 2007-8. The goal of the FFK project is to integrate financial literacy education across the curriculum to reinforce reading and math skills, complement the existing reading and math curriculum, create a sequence for financial literacy that provides progressive and continuing knowledge for students, and to help children become knowledgeable consumer s and savvy savers and investors. Pre- and post-tests were given by teachers in the first year of the 3-year pilot project to (mainly) kindergartners and third-graders.

JEL Codes: A2, A21

Measuring the Effects of the Financial Fitness for Kids Program for Early Elementary School Students in Chicago: Year 2

Introduction

The goal of the *Financial Fitness for Kids Program* (FFK) is to integrate financial literacy education across the curriculum to reinforce reading and math skills, complement the existing reading and math curriculum, create a sequence for financial literacy that provides progressive and continuing knowledge for students, and to help children become knowledgeable consumers and savvy savers and investors. This paper presents some results from the first two years of a 3-year effort to follow students from year-to-year in public elementary schools chosen from 17 districts all over Chicago.

- Elementary school principals and teachers initially, in 2005, made a 3-year commitment to teach the *Financial Fitness for Life* curriculum to all children in the selected grades in their schools (either Kindergarten or 3rd grade in the first year of the program, 2005-2006, and adding either first grade teachers or 4th grade teachers in the second year, 2006-7 with the first-year teachers repeating their financial literacy instruction in 2006-7), and to continue financial literacy instruction in that grade and also add the next higher grade for the next year (K+ 1st the second year or 3rd+4th grades the second year, then K, 1st, 2nd or 3rd , 4th, 5th grades in the third year). This year, 2007-2008, these schools will have a 3-year program in financial literacy starting in either Kindergarten or 3rd grade in place for all students in their schools.
- The total sample size will eventually exceed 2,000 students, including the FFK students plus the control group in this second year of the FFK program.
- Pre- and post-tests were given by teachers each year before and after they teach the financial literacy lessons. Teachers tested their classes over the *Financial Fitness for Life* curriculum, with the option to add the EconomicsAmerica program tests developed by

the Illinois Council on Economic Education for each grade level, recommended if they are incorporating the FFK into social studies classes, and test those social studies economics concepts also.

- Teachers were also encouraged (by a grant of $300 to cover testing costs) if they also recruited a class in the K-5 grades not in the FFK to pre/post test as a control class. A total of 632 students took one or more of the pre-tests in the first year. 289 were Kindergartners, 223 in FFK and 86 in the control group. 205 students tested were third-graders, 185 in FFK and 20 in the control group. The rest of the students were from other grades. A total of 542 students took one or more of the post-tests, of whom 199 were Kindergartners, 239 were third-graders, and the rest were students from other grades. In the second year, over 800 students took one of the pre-tests. About 670 students participated in the post-tests.
- The kindergartners had an average gain of about half a point in the first year. No control kindergarten classes did both pre- and post-testing with the *Financial Fitness for* Kids tests in years 1 or 2. We will be recruiting at least one kindergarten control class in year 3, as well as the other missing groups. Test results are in Tables 2. Differences from pre to post tests that are statistically significant at 90% or have their *p*-values in bold.
- For 3rd graders, the results were not only statistically insignificant but in the wrong direction for the control group, meaning students answered fewer questions correctly on the post-tests than on the pre-tests, but also not statistically significantly different for pre- and post- tests except for the EconomicsAmerica social studies tests.
- In the first year, some Kindergarten teachers and especially 3rd and even 4th grade teachers did not think the tests were appropriate for their students. One principal refused to allow the *Financial Fitness for Life* normed tests to be given to her 3rd graders, so we substituted the K-2 Theme tests. Assessments results support the teachers'

assertion that the tests do not measure what teachers are teaching, as 3rd-grade students' scores did not improve in the post-tests. In the second year, with teachers working on vocabulary lists as spelling and definition curricula along with the financial literacy curriculum, this was not a major issue, and 3rd graders took the *Financial Fitness for Life* normed tests, though their post tests still did not show statistically significant improvement.

- The survey of teachers in June 2006 and 2007: Teachers considered the subject and lessons valuable and the program important and worth expanding. They bemoaned the time commitments for meetings and record-keeping. To enhance communication, and responding to teachers' requests, we added a course-management web site and created external UIC computer accounts so teachers could share materials and communicate with the partners and with each others. In the third year, in response to teacher requests, we also created a course option for participating teachers.
- The first group of teachers was trained November-December 2005 in one of three 6-hour workshops at UIC. The second group of teachers was trained for the Financial Fitness for Kids project during October-November 2006. 17 elementary schools committed to the project in the second year, adding approximately 40 teachers to the original 50 teachers, who combine to teach over 2000 students. The third group of teachers was trained in November-December 2007, bringing the cohort of trained teachers at each school to include all K-2 teachers or all grades 3-5 teachers.

We analyze the effects of this program on student achievement, attitudes and knowledge of economics and financial literacy through Illinois Council on Economic Education-developed tests and through the *Financial Fitness for Life* tests, on teacher attitudes toward teaching economics and financial literacy concepts through surveys, and on parent attitudes toward the program through parent surveys. We surveyed teachers at the end of the school year on their attitudes toward the

program. Results are in the Appendix. Teachers in the first year were enthusiastic about the support and the program, but the assessments were problems for some. Teachers in the second year were still enthusiastic about the worth of the program, but did not like the meetings required. Adaptations for the third year include fewer meetings for teachers, replaced with on-site visits by personnel from the Illinois Council and UIC Center, FFK partners.

Economic Model

The underlying model is a simple production function for elementary school outcomes. Students enter school with a stock of human capital and family resources. Through school programs, friends, family and their own efforts students produce the outcome measures: attitudes on surveys, test scores, grades, and so on.

For an analysis of different estimation strategies for educational production functions and cognitive development, see Todd and Wolpin 2003. We plan to take a value-added approach, using ordinary least squares (OLS) regressions to estimate production functions of the outcome variables, with the inputs financial literacy school programs and demographic and elementary school information as control variables. See the papers by Heckman et al. for analysis of the issues of selection bias and other biases in evaluating educational programs.

The papers by McMillen, Kaestner, and Parkins describe matching models, propensity scores, and ways of handling some of the bias issues. See the other references for reasoning behind production function approaches to measuring learning, and for more ways to deal with measurement and bias issues arising in these sorts of studies.

The preliminary results below are the basic descriptors. We have finished grading the year 2 pre- and post-tests and are constructing the panel and matching pre- and post- tests by student. Year 3

training workshops have taken place and we are meeting with schools to discuss their implementation plans.

II. Methodology and Analysis

The general underlying model is an education production function, with FFK programs as one input. This study estimates the contribution of FFK to students' outcomes, holding constant the other inputs. The danger of bias in this approach is well-known. For example, OLS requires that school inputs and unobserved mental capacity be orthogonal, which is almost certainly violated. And there is a high likelihood of unobserved variables. How we plan to address these issues is summarized below.

The values of the outcome measures might not be due to the effects of being in financial literacy programs. There are several types of potential bias. First is the selection problem, a fundamental issue. Ideally, we would like to have the same individual once in the program and (erasing that experience) once not in the program to truly gauge the effects of the FFK program. We would like this because we cannot be sure we are observing all the relevant characteristics and because the process of selection into the programs can affect the outcomes. This program starts with either Kindergarten or 3rd grade students at each school. Our control group for the kindergartners is kindergarten students at schools where 3rd grade is the participating grade in the first year. Our control group for the 3rd graders is 3rd grade students at schools where kindergarten is the starting year. These students are already assigned to classes, so they will not be selecting in or out of the program.

Principals committed that all teachers for the chosen 3-year band implement the program, so students cannot opt in and out. The schools provide a range similar to the system as a whole of

various characteristics. See Table 1. The control group comes from the same schools as the treatment group, to avoid systematic biases.

There are potentially a large number of characteristics that may be important for the outcomes but are not available to the researcher. These include motivation, effects on an individual of others' involvement (or lack thereof) in the program, or other unmeasured differences between those enrolled in the program and those outside that may affect outcomes.

Consider motivation bias. This is part of the potentially large group of unobservable characteristics that might affect the outcomes. Maybe the success of the program occurs because the people in the program are ready and motivated to succeed, and not because the program is actually causing the improvement. Comparing the outcomes of those who wanted to be in the program (but randomly couldn't get in) with those who were actually in the program gives a measure of the effects of the program that would not have this motivation bias above, but might have other sorts of bias. We are avoiding this through the principal's choice of the 3-grade band. Therefore, students are not choosing to be in the program.

Another issue is what exactly is the alternative to the treatment? For example, compare a person who applied but doesn't get the randomly-assigned pass to enter the program and then alters nothing from the original path of someone with no program available with a person who doesn't get the randomly-assigned pass to enter the program but the rejection alters the coursework and effort. Some teachers have reported that other classes in their schools are also covering financial literacy topics, since students like these real-world and personal applications of math, reading, and social studies. There is a danger that our control groups are also becoming treatment groups. We do not have a way to control for this, but will watch the means over time of the control group students to see if they are rising.

One solution to the selection bias problem has been to use results from programs where not all applicants can be admitted and where those who are admitted are randomly chosen. Since this program requires all students in a given grade at a participating school be included, that avenue is not available.

If enrollment in the study provides sufficient numbers so we have enough matches, we will estimate matching models of FFK program students individually paired with students in the same grade but not in the FFK program and compare the gains in the outcome variables. Such matches as are available are in Table 2.

III. The Data

During the school year of 2005-2006, teachers from 20 elementary schools, mainly teachers of Kindergarten and 3rd grades, in Chicago were trained in the *Financial Fitness for Life* curriculum and directed to pre-test their students, to teach at least 5 lessons (lessons 1-5) from that curriculum, and to post-test their students. All of the teachers were the regular classroom teachers for their grade and class. The school principal signed a commitment letter to encourage all teachers from the chosen grades to participate and to allow the teachers to attend 6 planning and implementation meetings at UIC during the school year. The schools participating in this program represent the variety of schools in the CPS school system. The average attendance, percent of low income families, percent of limited English proficiency, racial/ethnic background, size, and test scores of the schools in the *Financial Fitness for Kids* program are close to the averages for all CPS elementary schools.

The program trained 50 teachers as planned in 3 6-hour workshops. Implementation of lessons (student work submitted brought the additional financial reward of $30 per lesson per teacher up to 5

lessons) and pre/post testing (all schools which tested in the first year received $300 for testing costs) meant that some schools tested, others implemented, and some did both. Lesson implementation incentives were dropped in the third year because of low submissions.

The teachers were given their choice of 2 potential tests to administer, and required to administer at least one of them, though they were encouraged to administer both. Most gave the *Financial Fitness for Life* tests, either the Grades 3-5 normed tests or the Theme Tests at the end of each theme for grades K-2. Alternatively, they could use *EconomicsAmerica* tests developed several years ago by the Illinois Council on Economic Education for Chicago Public Schools, and available for each grade K through 5th. These check general economics understanding and economic literacy, suitable for teachers teaching financial literacy along with economics in the social studies. The Kindergarten and 3rd grade test questions are in the appendix.

Several teachers and principals rejected the *Financial Fitness for Life* grade 3 tests as too difficult for Chicago 3rd graders, but wanted to test financial literacy concepts. These classes took the Theme Tests from the K-2 books of used the *EconomicsAmerica* tests.

In the first year, 750 tests were given and returned to us, 296 kindergarten and 454 3rd grade. 681 students tested were in the FFK program and 69 in the control group. Teachers from 6 of the 20 schools submitted either kindergarten or 3rd grade test results, 557 pre-tests and 428 post-tests. We also received some tests for other grades, which will be used to compare with future years. Because of teacher confusion and busy schedules, 209 students took a pre-test and the same test as a post-test.

In the first year,

- Students who did not receive the *Financial Fitness for Kids* program did not improve on the post-test.

- Kindergartners who participated in the *Financial Fitness for Kids* program improved their average scores nearly half a point, reducing their wrong answers by 25%. Their excellent performance on the pre-test made it particularly difficult for their scores to improve.
- Third-graders who participated in the *Financial Fitness for Kids* program improved their average scores by over 2 points, a 10% increase.

In other words, there is some evidence of learning in the treatment group. Kindergarten students showed stronger results on the tests. There was no change in the mean score of the control groups, but in general, results are not statistically significant.

In the second year:

- Over 800 students took one of the pre-tests. About 670 students participated in the post-tests.
- In the second year, the average score for Kindergartners and First-Graders on the financial literacy pre-test was 61% on Income and 69% on Saving. The average score for the post-test was 71% on Income and 82% on Saving.
- Average score of Third- and Fourth-Graders on the financial literacy pre-test was 37%, including all topics (some of which they are not studying yet). The average score on the post-test was 50%, a gain of 13 percentage points.
- The average pre-test scores on the EconomicsAmerica test, which was designed for social studies classes, was 38%. Only a small number of students took the EconomicsAmerica test after the *Financial Fitness for Kids* program, but their average score was 79% .
- As in Year 1, students who did not receive the *Financial Fitness for Kids* program did not improve on the post-test.

IV. Data and Results

Table 1 compares the schools in the FFK program with the full set of Chicago Public Elementary Schools. The average characteristics for FFK schools are within a standard deviation of the averages for the system as a whole. In the first year, only 7 of the 20 schools submitted tests (fourth graders and sixth-graders were tested at one school), but the characteristics also are not far from the FFK group or CPS averages.

Tables 2 presents average scores for the different tests and the results of t-tests to see of the pre/post test scores differ statistically. Kindergartners scored unexpectedly well in the first year on all tests. This may be due to conscious or unconscious teacher prompting, since kindergartners, who cannot read, will have teacher assistance for each test. Additional teacher assistance is also given when tests are given in English but translated verbally into Spanish. We have added questions on the test submission forms for the second and third years asking whether the tests were given in English or Spanish and whether or not the teacher read the test questions to the students. Post-tests in Table 2 do not necessarily reflect the performance of the same students. In the first year, some teachers submitted pre-tests only. Some submitted post-tests only. Some submitted both. Understanding of the procedures was much improved in the second year.

Tables 3 and 4 look at students' performance on individual questions and concepts. Students did relatively worse on the producer/production questions in the pre-tests. Economics jargon and concepts unfamiliar to the teachers were reflected in poorer performances by the students, such as human capital or opportunity cost. Students did quite well with scarcity, money, and taxes, however. The questions students scored best on in the pre-tests showed the least average improvement, and sometimes outright declines between pre and post tests. It is not surprising that the questions students scored worst on in the pre-tests showed the greatest improvement in the post-tests (coming off a small base). The test concepts were somewhat surprising to teachers, who told us in the training

workshops that they have been used to looking at financial literacy knowledge from the consumer viewpoint but not the producer viewpoint.

V. Conclusions and Future Hopes

Chicago Public School elementary students given the economics and financial literacy tests in previous years have posted very low scores on these tests. The vocabulary and skills of economic decision making are not part of their human capital. This program provides connections of life skills in economic decision making and financial literacy to the state standards and learning goals. Teachers meet school, district, and state goals and follow their guidelines while also providing real-world lessons that help students see the usefulness of academic subjects like reading, mathematics, and social studies.

We expected teacher attitudes, measured by responses to surveys, to grow more positive about economics, business, and their students' life skills.

We measure student learning through pre- and post-test financial literacy results. The tests are required by the FFK program—principals and teachers committed to administering them. In practice, less than half the schools submitted the tests. We plan to use the lesson plans submitted to identify teachers who implemented the lessons without submitting the tests so that we can follow their students from year to year.

We expected students' financial literacy test scores to rise significantly—large increases and statistically significant increases—in the post-tests relative to the pre-tests, especially as their years with the curriculum accumulate. We expect higher improvements in the students experiencing *Financial Literacy for* Life lessons than in the control group of same-grade students not receiving those lessons—e.g., teachers are pre- and post-testing the control group also. We also expect attitudes

toward economics, financial literacy topics, and business to become more positive on the part of teachers and students after the FFK lessons.

Table 1. ***Financial Fitness for Kids Schools, First and Second Years, 2005-2006 and 2006-2007***

Attendance Rate	% Low Income	% Limited English Proficiency	% Mobility	Racial/Ethnic Background			Membership	ITBS Read	ITBS Math
				% White	% Black	% Hispanic			
Individual FFK Schools									
96.4	80.6	0	4.7	0.5	99	0.5	408	49.3	58.3
93.4	86.7	19	20.8	5.2	3.6	90.7	884	45.3	45.6
95.9	96.3	43.5	10.9	2.6	0.2	97.2	949	48.6	44.1
92.5	97.8	0	49.2	0	99.7	0	365	44	48
94.6	75.3	0	18.5	0	100	0	738	53.4	38.5
94.5	89	60.9	37	0.7	5.3	94.1	437	29	38.3
95.2	93.6	42.3	23.9	6.3	4.5	84.9	872	43	55.5
94	99.8	0.1	24.2	0.1	99	0.9	870	34.6	31.3
94.6	92.1	0	36.8	0	99.7	0	730	44.2	48.8
97	22.1	0.4	0.9	35.9	46.8	16	231	99.4	98.2
94	93.4	37.6	25.9	5.1	27.9	61.2	1036	52	63.6
90.3	99.4	6.9	21.5	0.8	79.8	19.3	362	30.3	36.2
96.3	97.4	43.2	11.4	0.1	0.4	99.5	804	41.1	45.6
93.7	91.6	20.1	26.4	21.8	11.4	60.7	298	57.4	59
91.4	93.5	0	26.6	0	100	0	310	39.3	32.4
93.3	95.3	26.3	43.5	1.7	57.8	14	358	32.3	33.3
95.5	21.8	8.1	8.6	71.2	2.4	22.8	496	81.7	83.9
95.8	47.2	1.6	3.4	1.2	92.5	5.6	252	58.3	46
92.7	92.2	12.5	47.6	0.2	76.9	22.9	536	29.2	23.9
96.6	93.2	39.5	8.4	0.5	0.1	99.4	1121	38.5	45.2
95.9	96.9	30.5	24.2	8.9	4.2	83.6	327	49.3	537
Average for FFK Schools (First year submissions in parentheses)									
94.5	83.5	18.7	22.7	7.9	46.6	43.1	590	47.2	49.2
Standard Deviations for FFK Schools									
1.7	22.9	19.0	13.9	16.6	43.2	40.5	287	16.7	17.0
Range for FFK Schools									
90.3	21.8	0.0	0.9	0.0	0.1	0.0	231	29.0	23.9
97.0	99.8	60.9	49.2	71.2	100.0	99.5	1121	99.4	98.2
All CPS Elementary Schools: Averages									
94.0	85.6	13.7	24.8	35.7	43.9	17.4	642	44.2	47.0
All CPS Elementary Schools: Standard Deviations									
2.2	19.7	16.5	16.2	N/A	N/A	N/A	323	18.2	20.3
All CPS Elementary Schools: Range									
82.1	6.9	0	0.8	N/A	N/A	N/A	89	12.5	10
98.5	100	67.6	204	N/A	N/A	N/A	1906	100	100

Table 2a: ***Test Results, Grades K-2***

Grade (Year)	Test	Pre-Test Mean (Percent Correct)	Post-Test Mean (Percent Correct)	t-statistic: H0 no pre/post difference	Significance
K (2005-6)*	FFL Themes 1-2 Test 1	83.3	86.2	1.37	**0.087**
K (2006-7)	FFL Themes 1-2 Test 1	65.2	92.9	8.55	**0.000**
K(2005-6)*	EconomicsAmerica	33.7	30.6	-1.48	0.071
1 (2006-7)	FFL Themes 1-2 Test 1	75.3	81.0	0.93	0.179
2 (2006-7)	FFL Theme 2 Test 1	N/A	91.8	N/A	N/A

*Results for Pre/Post Tests on same students only

Table 2b: ***Test Results, Grades 3-5***

Grade (Year)	Test	Pre-Test Mean (Percent Correct)	Post-Test Mean (Percent Correct)	t-statistic: H0 no pre/post difference	Significance
3 2005-6*	EconomicsAmerica	70.4	78.4	2.41	**0.01**
3 (2005-6)*	FFL K-2 Test 1	91.4	91.2	0.12	0.45
3 (2006-7)	FFL 3-5 Q1-24				
3 (2006-7)	FFL 3-5 Q1-40	30.8	33.1	1.14	0.13
3 (2006-7)	EconomicsAmerica	24.3	N/A	N/A	N/A
4 (2006-7)	FFL 3-5 Q1-40	33.5	43.6	6.97	**0.00**
4 (2006-7)*	EconomicsAmerica	51.2	79.0	4.40	**0.00**
5 (2006-7)	FFL 3-5 Q1-40	44.7	54.8	2.58	**0.01**

*Results for Pre/Post Tests on same students

Table 2c: ***Test Results, Control Classes***

Grade	Test	Pre-Test Mean (Percent Correct)	Post-Test Mean (Percent Correct)	t-statistic: H0 no pre/post difference	Significance
1	FFL	72.0	N/A	N/A	N/A
2	FFL	70.4	N/A	N/A	N/A
3 (2005-6)*	FFL K-2	92.4	85.6	-2.24	**0.015**
3 (2005-6)*	FFL 3-5 Q1-24 (Themes 1-2.5)	57.0	57.0	0.00	0.500
3 (2006-7)*	FFL 3-5 Q1-10 (Theme 1)	27.9	27.0	-0.25	0.403
3 (2006-7)	FFL 3-5 All Themes	29.5	N/A	N/A	N/A
5 (2006-7)	FFL 3-5 All Themes	31.2	N/A	N/A	N/A

*Results for Pre/Post Tests on same students

Table 3: Question Analysis, *EconomicsAmerica* FFK Year 1 Tests.

Average Percent Correct	Max Possible	Pre-Test Score	Pre-Test %	Post Test Score	Post-Test %	Improvement (Percentage Points)	
All	N/A	N/A	73.78	N/A	79.15	5.37	
(Std. Dev.)			25.6		19.91		
EA-K	17	11.545	67.91176	10.545			
(Std. Dev.)		3.37		3.22			
Quest. 1	9	5.59	62.11111	5.48			
Quest. 2	3	2.36	78.66667	1.89			**>**
Quest. 3	1	0.773	77.3	0.727			
Quest. 4	2	1.659	82.95	1.2727			**>**
Quest. 5	2	1.159	57.95	1.1818			**<**
EA-3rd	29	17.5	60.34483	22.43	77.34483	17	
(Std. Dev.)		6.88		5.22			
Quest. 1	2	1.67	83.5	1.34	67	-16.5	**>**
Quest. 2	4	2.43	60.75	2.88	72	11.25	
Quest. 3	5	4.5	90	4.58	91.6	1.6	**>**
Quest. 4	4	0.956	23.9	1.95	48.75	24.85	**<**
Quest. 5	6	2.4099	40.165	4.34	72.33333	32.16833	**<**
Quest. 6	8	5.53	69.125	7.18	89.75	20.625	

Table 3 cont'd: Question Analysis, *Financial Fitness for Life K-2* FFK Year 1 Tests.

Average Percent Correct	Max Possible	Pre-Test Score	Pre-Test %	Post Test Score	Post-Test %	Improvement (Percentage Points)	
All Tests	N/A	N/A	73.8	N/A	79.15	5.37	
(Std. Dev.)			25.60		19.91		
FFK-2	10	8.5	85	8.54	85.4	0.4	
(Std. Dev.)		1.64		1.89			
Quest. 1	1	0.759	75.9	0.791	79.1	3.2	
Quest. 2	1	0.932	93.2	0.934	93.4	0.2	
Quest. 3	1	0.874	87.4	0.836	83.6	-3.8	
Quest. 4	1	0.986	98.6	0.961	96.1	-2.5	>
Quest. 5	1	0.918	91.8	0.869	86.9	-4.9	
Quest. 6	1	0.912	91.2	0.904	90.4	-0.8	
Quest. 7	1	0.694	69.4	0.779	77.9	8.5	<
Quest. 8	1	0.745	74.5	0.77	77	2.5	<
Quest. 9	1	0.816	81.6	0.83	83	1.4	
Quest. 10	1	0.864	86.4	0.866	86.6	0.2	
FFK-2 by 3rd Graders	13	7.153	55.0				
(Std. Dev.)		3.76					
Quest. 1	1	0.379	37.9				<
Quest. 2	1	0.586	58.6				
Quest. 3	1	0.793	79.3				>
Quest. 4	1	0.552	55.2				
Quest. 5	1	0.552	55.2				
Quest. 6	1	0.81	81				>
Quest. 7	1	0.81	81				>
Quest. 8	1	0.5	50				
Quest. 9	1	0.534	53.4				
Quest. 10	1	0.517	51.7				
Quest. 11	1	0.534	53.4				
Quest. 12	1	0.586	58.6				

Table 3 cont'd: Question Analysis, *Financial Fitness for Life 3-5* FFK Year 1 Tests.

Average Percent Correct	Max Possible	Pre-Test Score	Pre-Test %	Post Test Score	Post-Test %	Improvement (Percentage Points)	
All	N/A	N/A	73.8	N/A	79.15	5.37	
(Std. Dev.)			25.60		19.91		
FF3-5	12	6.55	54.6	6.8584	57.15333	4.708397	
(Std. Dev.)		3.76					
Quest. 1	1	0.638	63.8	0.529	52.9	-17.0846	>
Quest. 2	1	0.224	22.4	0.431	43.1	92.41071	<
Quest. 3	1	0.328	32.8	0.6078	60.78	85.30488	
Quest. 4	1	0.603	60.3	0.431	43.1	-28.524	
Quest. 5	1	0.448	44.8	0.725	72.5	61.83036	<
Quest. 6	1	0.586	58.6	0.586	58.6	0	
Quest. 7	1	0.431	43.1	0.5098	50.98	18.28306	<
Quest. 8	1	0.621	62.1	0.5294	52.94	-14.7504	
Quest. 9	1	0.552	55.2	0.5882	58.82	6.557971	
Quest. 10	1	0.776	77.6	0.5882	58.82	-24.201	>
Quest. 11	1	0.5	50.0	0.784	78.4	56.8	
Quest. 12	1	0.448	44.8	0.549	54.9	22.54464	

Table 4: ***EconomicsAmerica*** **and** ***Financial Fitness for Life*** **Test Question Concepts and Points**

Test	EA K	Concepts	EA 3	Concepts	FFK K-2 (Test 1)	Concepts	FFK 3-5	Concepts
Q1	9	Goods, Services	2	Productive Resources, Alternatives	1	Earning Income	1	Productive Resources
Q2	3	Scarcity	4	Producer, Goods Services	1	Human Capital	1	Wages
Q3	1	Opportunity Cost	5	Earning Income	1	Entrepreneur	1	Earning Income
Q4	2	Alternatives	4	Scarcity, Opportunity Cost	1	Money	1	Education, Income
Q5	2	Production	6	Producers	1	Service	1	Human Capital
Q6	4	Producer, Goods, Services	8	Productive Resources	1	Choice	1	Goods, Services
Q7	6	Productive Resources	1	Scarcity	1	Opportunity Cost	1	Entrepreneur
Q8	2	Barter			1	Alternative	1	Profit
Q9	3	Money Trade			1	Spending	1	Taxes
Q10	3	Consumer			1	Saving	1	Taxes, Government
Q11							1	Savings, Interest, Bank
Q12							1	Opportunity Cost
TOTAL Points	35		30		10		12	

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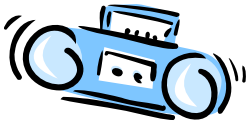
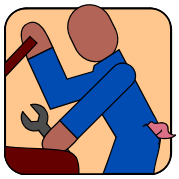
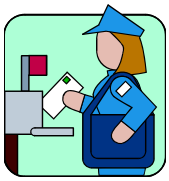
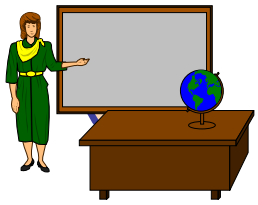
Appendix:

EconomicsAmerica Pre-/Post-test – Grades K-1

1. From these pictures showing goods and services, put a red circle ( ) around those that show goods and put a green square ( ) around those that show services.






(Pictures of radio, muffin, person holding wrench, fireman putting out fire, pediatrician with child, baseball, doll, mail carrier putting letter in box, teacher pointing to board)

2. Pretend you have a quarter; you can use it to buy one large gumball or one small candy bar (each costs one quarter). How much money do you have? Which item would you buy? Why can you buy only one of the items?
3. Tell what you gave up when you made the choice (in # 2).
4. Suggest two ways we could decide who gets to use a jump rope if we have only one rope but three children want to use it.
5. Tell what jobs you do at home.
6. Make a list of workers you see in school or in your neighborhood; mark those that produce services with an S; those that produce goods with a G.
7. List at least three resources that are needed to make a cake; tell what kind of resource each is (human, natural, capital).
8. Tell about exchanges (trades) you have made without using money.
9. Tell about exchanges (trades) you have made using money.

If you have $.30 and buy something for $.25, how much will you have left?

10. List at least three items you use but do not make yourself.

EconomicsAmerica Pre-/Post-test – Grade 3

1. Give 2 alternative uses for a resource, such as a piece of construction paper.
2. Identify 4 producers of goods and services in the community.
3. Identify 5 jobs for which people are paid.
4. Make a choice from among three or more items and identify the opportunity cost of your choice.
5. Give 3 examples of producers in the economy and identify what they produce.
6. From this list of productive resources, tell which are human resources, which are natural resources, and which are capital resources: Oil, Mother,Hammer,Factory,Water,Tree,Friend,Truck
7. Explain why choices must be made about the use of productive resources.

EconomicsAmerica Pre-/Post-test – Grade 4

1. At lunch, you have to choose between a hamburger and a slice of pizza. Which would you choose?
2. What is your opportunity cost?
3. LaToya is saving to buy a new CD. Instead of spending $1.00 on snacks at the store, she saves the money. In order to save for the CD, LaToya is willing to give up after school snacks. Circle the correct answer. The snacks are LaToya's
   a. opportunity cost.
   b. choice.
   c. favorites.
   d. resources.
4. The elevated train in Chicago is one type of transportation. In order to have the train; some of the resources we must use are train cars, engineers, land, tracks, maintenance workers, signs, train stations, guards, ticket machines, people to sell tickets, and cash registers. List the resources in the correct columns below.

Natural Resources	Capital Resources	Human Resources

5. Give three examples of natural resources found in Illinois.
6. Give three examples of human resources working in the school.
7. Give three examples of capital resources found at a hamburger restaurant.
8. List three types of production that occur in Illinois.
9. When people in your household buy food, clothing, and other goods and services, are you consumers or producers?
10. When your grandmother works at a restaurant, your mother teaches fourth grade, and your brother works at McDonalds, are they consumers or producers?
11. Where can people put their money so that it is safe and so they can write checks or use a debit card?
12. Circle the correct answer. The skills, education, and training that a person has is called
    a. natural resource
    b. capital resource
    c. human capital
    d. human resource
13. Here is a list of different investments in human capital that people can make. In the table below, list those that apply to someone who wants to be a doctor and those that apply to someone who wants to be a carpenter. Some apply to both.

finish high school
attend a four year university
go to medical school for four years
attend a trade school
work as an apprentice
spend seven years as an intern and a resident,

Doctor	**Carpenter**

14. In general, the more education and training a person has the _____the income they will earn. (higher or lower?)
15. Write about a spending choice that you had to make. Explain why you had to make a choice. (Why couldn't you have everything you wanted?) Explain what the opportunity cost of your decision was. Explain how the prices of the items you wanted affected your choice.
16. Use the words in the word bank below to complete the sentences about banks.

Word Bank

loans safe interest checking account

deposit debit card

a. People _____ their money in banks.
b. One reason to keep your money in the bank is because the money will be _____ .
c. If you have a _____ you can write checks to pay bills.
d. If you have a checking account or savings account at a bank, you can also use a _____ .
e. Another reason to keep your money in the bank is that banks pay _____.
f. When people want to borrow cars or houses, they ask the bank for a _____.

17. Read the paragraph below and answer the questions that follow.

Mary, Nick, and Sam are baking cookies for a bake sale at the community center. At first, each of them mixes a batch of cookie dough, puts the cookies on the cookie sheets, bakes the cookies, and decorates them. They have to take turns with the mixer, cookie sheets, bowls, and mixer. It takes a really long time. Mary thinks of another way to make the cookies. She explains that if one of them mixes the cookie dough, another one puts the cookies on the baking sheet, and the third decorates the cookies, things will go more quickly.

What are the benefits of producing cookies the first way?
What are the costs of producing cookies the first way?
What do we call the method of production that Mary wants to use?
What are the benefits of this method of production?
What are the costs of this method of production?