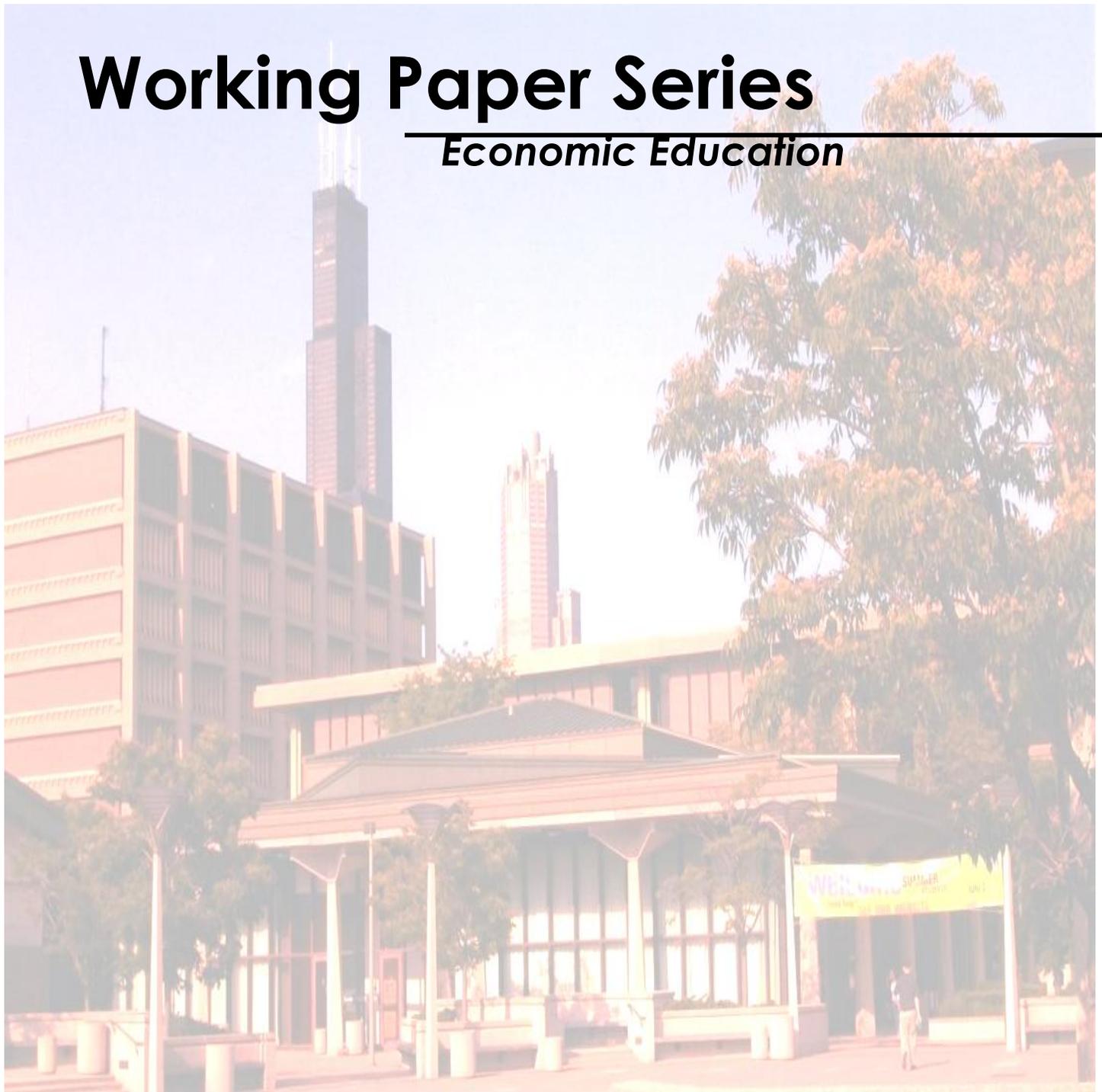


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AFTER SCHOOL MATTERS: ADVANCING THE FINANCIAL LITERACY OF HIGH SCHOOL STUDENTS

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ABSTRACT

Enhancing the economic and financial literacy of urban high school students in predominately under-served schools is critical. To that end, the University of Illinois Chicago Center for Economic Education designed and implemented a financial literacy approach in an after school program. Data and student comments indicate that students' understanding of the Council for Economic Education's "*Financial Fitness for Life*" themes and financial literacy were enhanced. This paper will discuss the results of an economics-based financial literacy program for high school students at 2 locations in Chicago.

IMPORTANCE OF ECONOMIC THINKING FOR HIGH SCHOOL STUDENTS

The centrality of economics in effective decision making has never been more critical. The global economic meltdown of 2008 was a clarion call for a literate citizenry. Even the well-

educated misread the economic signals and for those without extensive resources, economic literacy assumed an even greater importance.

The Council for Economic Education states, “In the coming years, young people – our students, our children, our future workers, our fellow citizens, will face unprecedented economic challenges and opportunities.” (Education, 2009). High school students, particularly those in impoverished inner school communities, face an overwhelming set of economic challenges. Because of this, the “*Financial Fitness for Life*” (National Council for Economic Education, 2001) themes are important to enhancing their economic literacy.

Theme 1: The Economic Way of Thinking. Choice is, in many ways, the essence of economics. High school students are beginning to experience the impact of making their own choices. Also, students also are starting to notice that there is an unequal distribution of resources and benefits across society. Working with students on their future options will help them make good decisions.

Policies and decisions change the cost or benefits that people face and can alter their subsequent behavior. In learning about incentives, students begin to understand markets, how a market economy allocates scarce resources, how prices are incentives for buyers to consume more or less, and for sellers to produce more or less of a good or service. Helping high school students understand the impulse to buy and the need to save is critical at this developmental stage.

The principle that people create economic systems is challenging, but empowering for high school students. It involves understanding the market economy, in which our students live, and allocates resources through the decentralized decisions of many firms and households. This decentralization has resulted in both a vibrant and possibly a stalled economy. Helping high schools grapple with the appropriate role of government provides first-hand experiences with economic variables. Additionally, the importance of a strong skill set of economic literacy to manage the ebb and flow of current economic events better prepares these students for future economic changes.

Theme 2: Earning Income. A second key economic concept is opportunity cost—the next-best alternative. It is central to making a decision, especially a decision about future plans after high school. Assisting students in recognizing the true costs of their decisions, whether for work, higher education or family, is key to their making a good decision. The earnings given up to attend school are the “largest single cost of education,” may result in student choices away from pursuing a higher education. The challenge is how to move the discussion forward, so that students correctly assess the true short and long term costs and benefits.

Marsh and Kleitman found that “the spending characteristic that had the most systematic effects on Grade 12 and postsecondary outcomes was saving money to pay for future education.” (Marsh, 2005) Castellano noted that earning at least a high school diploma, as opposed to decades ago when an 8th grade education might have been sufficient, creates increasingly high hurdles for young people seeking economic sufficiency in adulthood. (Castellano, 2003) Students in economic environments that are very demanding and complex face additional costs, in terms of actual outlays and delayed earnings that add significant additional dimensions to these decisions. This effect is well-noted by Fischer and Kmec in their work on the neighborhood effect on high school completion. (Fischer, 2004)

Theme 3: Saving. The benefits to saving lie in the future, while the costs in foregone spending are immediate and painful. Many high school students face daily challenges of living in an urban atmosphere, filled with the inequalities of resources and the opportunities for advancement and contributions to improve the community. Shifting students from a view of being a victim of society toward one who can impact and change society ensures that their futures are enhanced. Understanding how short-sighted decisions made in the high school years have long-term consequences in adulthood is critical to financial literacy.

Theme 4: Spending and Credit. Students buy products from around the world. Today’s high school students live in a global economy and a multicultural diverse community, that is both integrated and segregated in terms of resources and services. The goal is one of helping students understand that they are competing in a global marketplace, the benefits of trading via

specialization enhances their understanding of our relations with other nations, and their “fit” with other high students who will graduate and enter the international community.

Being a responsible consumer arises from incorporating the economic way of thinking into everyday decisions. Additionally, this responsibility counters the ubiquitous marketing targeting their potential spending decisions. Developing consumers’ critical thinking skills for spending and borrowing decisions is a primary emphasis in consumer education.

Theme 5: Money Management: Students repeatedly assess risks and benefits of their world and its changes. This theme emphasizes understanding the risks, credit scores and reports, insurance, responses to consumer scams, and how citizens can protect themselves or recover from identity theft and other illegal practices.

THE AFTER SCHOOL MATTERS PROGRAM IN CHICAGO

The Chicago Public School System has made a commitment to enhance the development of high school students in underserved settings across a number of dimensions; increased academic performance, improved social behaviors, heightened retention, improved attendance, and developed career–building skills and dispositions. The goal here is to reduce the “vast gulfs that separate and continue to widen between children and youth who flourish in school and those who do not, between the privileged and the disenfranchised.” (Hull, 2001)

Chicago’s After School Matters Program (ASM) was created in 2000 as a non-profit organization. It coordinates a vast array of after-school programs, many of which provide stipends for students participating in sports, arts, technology, and communication programs. The City of Chicago, Chicago Public Schools, and the Chicago Park District work together under the direction of Chicago’s First Lady, Maggie Daley. The Chicago schools which participate have high dropout rates, and poor school attendance. Concerns arise that these students are not prepared for the world of work, with appropriate skills and dispositions. By 2006, the program housed 725 programs in 35 schools and provided over 22,000 apprenticeships for teens. (George, 2007) In 2007-2008 there were 600 programs in 59 high schools in partnership with 110

community-based organizations, including the University of Illinois Chicago – Center for Economic Education. (UIC-CEE) (After School Matters, 2009)

The ASM includes an array of programs from arts, sciences, sports, etc. Programs provide a stipend for students who meet ASM attendance and participation standards. That was the case for this financial literacy program. Students met three days per week for three hours each after school. The goal was to occupy students with relevant education experiences, during the prime time when boredom and lack of supervision often results in teen misbehavior. To encourage attendance, the \$900 stipend (paid over two semesters) required 85% or better attendance (3 absences or less in a 5-week period). That attendance could only be accrued if students were in school on those days.

Working an outside job has a largely negative effects on many high school and postsecondary academic outcomes (Marsh, 2005). So, this stipend-approach to encourage attendance and connection with the high schools was considered to be an appropriate incentive. It was anticipated that participation in the program would improve attendance, learning, grades, and graduation rates. Neumark and Joyce reported that “low-intensity school-to-work programs encourage education, while high-intensity programs discourage education and encourage work over education.” (Neumark, 2001)

Various studies pointed out the effectiveness of ASM. In Spring 2002, before ASM enrolment , students failed 15.0% of their courses taken. In Fall 2003, those same students failed 13.7% of their courses. Failure rates fell as participation in ASM rose, with students who had high attendance (present for 23-27 of 30 days) or very high participation (more than 27 days) in ASM failed 13.2% or 9.6% of their courses, respectively. Therefore, the lowest failure rates were by students with the highest program participation rates. Unfortunately, this seemed to be a short-term effect, as improved academic performance earned while participating in ASM disappeared 2 semesters after students stopped attending the program. (George, 2007)

Eckstein and Wolpin noted that “youths who drop out of high school have different traits than those who graduate. They are: lower school ability and/or motivation, lower expectations about the rewards from graduation, a comparative advantage at jobs that are done by non-graduates,

place a higher value on leisure, and have a lower consumption value of school attendance.” (Eckstein, 1999) A final measure of school attachment is remaining in school and graduating. ASM students had higher graduation rates and lower dropout rates. As participation increased, graduation rates increased and dropout rates decreased. In other words the higher the level of participation, the “odds of graduating were 2.7 times greater.” (George, 2007)

Jenkins (Jenkins, 1995) described factors which may predict delinquent behavior and influences on students’ academic performance. These include higher levels of delinquency among boys, lower family involvement in schools, family size (children in large families being expected to be less committed), family structures in terms of single parent families or children living with stepfathers, disproportionate suspension of African-American male students, and stratification of students by ability. In principle, the ASM programs attempt to overcome factors that hinder academic success and promote positive attitudes toward education and schools. Since there are “few widespread American policies for improving educational equality and productivity with long-lasting benefits to students and society,” the ASM Program may fill that gap. (Borman, 2002)

Castellano et al. discussed the relationship between education and income. (Castellano, 2003) Their research concurred with Murane and Levy (Murane, 1996) who pointed out this disparity was due to the lack of an appropriate skill set in high school students. Additionally, these students were not being taught the “new basics”, which are: reliability, positive attitude, willingness to work hard, ninth-grade-or-higher mathematics/reading abilities, ability to solve semi-structured problems at much higher levels, ability to work in groups, ability to make effective oral and written presentations, and the ability to use personal computers.” Similarly, Namenwirth noted that “misadaptation or nonadaptation to middle-class values causes school failure.” (Namenwirth, 1969)

RESEARCH DESIGN

The Center for Economic Education in the UIC Department of Economics designed a new financial literacy ASM program (180 contact hours) taught 2008-2009 at 2 high schools located on the south side of Chicago. The goal of After School Matters Financial Literacy (ASMFL)

was to increase the financial literacy of Chicago teens. There were other financial literacy programs among the 2008-2009 ASMFL programs, unrelated to the UIC-CEE's financial literacy program.

The UIC-CEE curriculum was based on the National Council for Economic Education (NCEE) *Financial Fitness for Life* (National Council for Economic Education, 2001) curriculum (ASMFL). Students completed the pre and post tests from that curriculum. This allowed comparisons of Chicago students with other students across the country based on the five "*Financial Fitness for Life*" themes.

The two ASMFL programs were taught by graduate students in the UIC Department of Economics. They were trained and mentored by UIC's Center for Economic Education. The UIC financial literacy curricula promoted knowledge on consumption, decision-making/economic way of thinking, earning income, and saving/investing, borrowing, and budgeting. High school students learned consumption decision-making by making an informed decision on the purchase of a high-priced item, such as a computer or TV. Students learned about the importance of earning income by comparing income levels of individuals with different schooling and the financial benefits of pursuing college education. They received hands-on practice with job applications, writing cover letters, creating resumes, and role-playing examples of good and inadequate job interviews. Students learned about saving by studying savings accounts, certificates of deposit, money market deposit accounts, savings bonds etc. They used a spreadsheet to calculate retirement savings with different levels of income. Finally, students learned about budgeting by creating a budget for their prom.

To demonstrate their learning and dispositional outcomes students presented three elements in a Campus Showcase. First, in a job game, students provided clues about jobs and the audience tried to identify the occupation. Second, students role-played examples of good and inadequate job interviews. Finally, the prom budget was demonstrated by playing a game with the audience pricing the most important elements (clothes, shoes, tickets, transportation etc.) and possible saving strategies. Additionally, they displayed completed protocols from the course activities and sample resumes. These components reflect the Deweyan principle that "education through

occupations” enables students to learn school subjects with work as the context for their learning.” (Benson, 1997)

CHARACTERISTICS OF PARTICIPATING HIGH SCHOOLS

Two high schools participated in the 90-hours-per-semester program, and completed the entire research project. Table 1 provides school and district characteristics.

HYPOTHESIS

This study measured student learning through pre- and post-test financial literacy results. The test questions were developed by the National Council on Economic Education and normed on a national sample of high school students. For our purposes, questions were analyzed by theme. We expected improvements in the themes presented in the intensive semester long lessons in the *Financial Literacy for Life* curriculum.

RESULTS

There were 3 pre-post administrations at High School A and only one at High School B. The themes and the average percent correctly answered on the pre- and post-tests are included below:

Theme 1: The Economic Way of Thinking

- Sample Question: Why is there “no free lunch”?
- Average Percent Correct Answers in Pre-Test: 40/36/45% in High School A, 49% in High School B
- National Average for Pre-Tests: 53%
- Average Percent Correct Answers in Post-Test: 25/36/51% in High School A, 48% in High School B
- National Average for Post-Tests after Consumer Course: 64%

Theme 2: Earning Income

- Sample Question: Which questions are employers allowed to ask job applicants during a job interview?
- Average Percent Correct Answers in Pre-Test: 34/28/45% in High School A, 39% in High School B
- National Average for Pre-Tests: 52%
- Average Percent Correct Answers in Post-Test: 34/21/38% in High School A and 44% in High School B
- National Average for Post-Tests after Consumer Course: 64%

Theme 3: Saving

- Sample Question: Why do financial experts recommend that you begin to save while you are young?

- Average Percent Correct Pre-Test Answers: 22/27/34% in High School A, 32% in High School B
- National Average on This Section: 35%
- Average Percent Correct Answers in Post-Test: 30/27/26% in High School A and 34% in High School B
- National Average for Post-Tests after Consumer Course: 44%

Theme 4: Spending and Credit

- Sample Question: What is the best indicator of the cost of a loan?
- Average Percent Correct Pre-Test Answers: 29/24/30% in High School A and 31% in High School B
- National Average on This Section: 38%
- Average Percent Correct Answers in Post-Test: --/24/36% in High School A and 43% in High School B
- National Average for Post-Tests after Consumer Course: 53%

Theme 5: Money Management

- Sample Question: What does “Pay Yourself First” mean?
- Average Percent Correct Pre-Test Answers: 28/28/26% in High School A and 38% in High School B
- National Average on This Section: 45%
- Average Percent Correct Answers in Post-Test: --/29/29% in High School A and 39% in High School B
- National Average for Post-Tests after Consumer Course: 53%

Paired analysis for the programs was also done. Results differed predictably with the conditions of the interventions. For example, when the program included the full 90 instructional hours, the learning gains were stronger. Additionally, themes actually taught in a given program showed stronger gains.

Another level of analysis is to compare gains on concepts actually taught within a theme. School A students had the lower improvement outcomes, so that school was chosen. In this case (using saving questions) there is clear improvement in scores after instruction.

DISCUSSION OF FINDINGS

This nationally-normed FFFL test gives us a profile for U.S. students’ financial literacy. Students are most proficient in Theme 1: The Economic Way of Thinking and Theme 2: Earning Income, followed by Theme 5: Money Management. Students are less financially literate when it comes to Theme 4: Spending and Credit. Their lowest scores are in Theme 3: Saving.

The Chicago students showed a similar profile. They improved in Theme 3: Saving, across the administrations and Theme 5: Money Management. They lost ground in Theme 1: the Economic Way of Thinking in some cases and gained in others. Students at both schools scored below the national pre-test averages in all themes. As with the students nationally, Chicago students scored the highest in the pre-tests on the Theme 1: The Economic Way of Thinking. The average percent correct went both up and, surprisingly, down in this category in the post-tests.

Reasoning via a new framework is more complex than simple rules and content. The Economic Way of Thinking, by its very nature, requires high levels of critical thinking. High school students as a group are dualists, and are being asked to parse shades of gray. This result suggests an approach for future research. The Economic Way of Thinking is the primary theme in gaining financial literacy. The finding that this is their strongest area means that these financial literacy gains are promising. Additionally, they may reflect students' real-world experiences with economic issues.

High School B scored higher in the pre and post-tests, except for a slight dip in Theme 1: The Economic Way of Thinking. This might be explained by the school profile in Table 1. School B has a higher graduation rate, higher ACT scores, and a higher percentage of students meeting/exceeding state standards. High School B is above the district average.

On the other hand, High School A is well below the school district average. Its programs had administrative challenges including fewer instructional hours. However, High School A students made significant progress in Theme 4 Spending and Credit and Theme 5 Money Management. So, even in a low-performing school, progress can be made and at-risk students can achieve financial literacy. Both schools performed below the national averages across all themes. Lower scores may arise from the lack of economic experiences with credit bearing tools and the marginal financial existence of our urban youth. Therefore, it is critical that interventions for financial literacy attainment continue. Students did improve when one analyzes responses to questions directly related to actual instruction.

LIMITATIONS OF THE RESEARCH DESIGN

First, the outcome measures might not have been due to the effects of being in the financial literacy program. A number of school characteristics which may have impacted the outcome, were unavailable to the researchers. 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 not enrolled. Successes of the program may have occurred because students were motivated to succeed, not because the program was actually causing the improvement.

Second, was the problem of self-selection. In this study, students applied to desired programs offered in their schools. Therefore, self-selection could have biased our sample. This lack of random student assignments was seen as a major weakness in research studies by Castellano, et al. (Castellano, 2003). 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. That avenue was not available to the researchers.

George, et al. (George, 2007) looked at selection bias issues for their research into academic outcomes and finds some selection bias, but not large effects on their outcome variables. In many school sites, administrative assistants, counselors, and teachers recommended students into the program on the basis of its focus and their views of its appropriateness for students. So some students self-selected into the program, while others were assigned. Students who were assigned were not able to be identified.

A final limitation was inconsistency in teaching all the themes which had a negative impact on the assessment measures.

CONCLUSIONS

Quality economic education, which is the base of financial literacy, is critical for all high school student literacy. However, high school students living in challenging economic circumstances still deserve the best instruction possible, from knowledgeable instructors.

This requires heightened levels of economic literacy of classroom teachers. Unfortunately, this is a problem given teachers' lack of preparation in economics, made more urgent by the state

mandate for economic understanding and financial literacy gains. To fill this gap, school districts are turning to centers for economic education. Centers, affiliated with the Council for Economic Education are positioned to provide quality courses in high schools, as well as professional development opportunities in economics and financial literacy for educators.

Into this void, steps the After School Matters Program, which states that “Chicago teens need to believe they have a future and adults need to help them get there.” (Vision Statement for After School Matters, <http://www.afterschoolmatters.org/about>) Their future is dependent on their economic and financial literacy to function successfully in a complex economic and financial environment. The UIC Center for Economic Education is working to make that happen, despite the limitations in school-based research studies. Its investment in the human capital of high school students is providing evidence that whether a school is above or below state or national averages, improvement is necessary and possible.

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Table 1 School Characteristics

2007 Data	High School A	High School B	District	State
Number of students	1,245	1570	390,243	2,077,856
Percent White	5.7	0.0	8.3	54.9
Percent Black	64.4	99.6	46.9	19.6
Percent Hispanic	25.9	0.4	38.9	19.3
Percent Low Income	98.6	94.7	84.9	40.9
Percent Limited English	7.1	0.1	14.4	7.2
Graduation Rates	44.4	71.5	66.0	85.9
Senior Yr Dropout Rates	11.5	7.0	8.3	3.5
Composite ACT Scores	14.0	17.0	17.6	20.3
% met IL standards	10.0	19.0	59.6	73.8

Table 2 Content Scores: Percent correct for pre and post tests, same-program comparisons.

Question, % Correct	Pre-Test:ASM N=260	Pre-Test: HS A N=15	Post-Test: HS A N=15
11. What is the opportunity cost of letting your interest compound?	16.9	6.7	46.7
12. Charlie deposits \$500 at 5%. How much does he have after 3 years?	36.1	20.0	53.3
13. Beginning to save while young is recommended because...?	25.4	6.7	26.7
14. If the interest rate is 7.2%, how many years to double?	38.1	26.7	26.7

TABLE 3 PRE/POST TEST ANALYSES/PERCENTAGES CORRECT

Significance Levels: *.001, **.05, *.1, based on standard deviations from national norming data¹**

High School A: fall 08

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
pre	40.00%	34.71%	22.35%	29.41%	28.24%
post	24.71%	33.53%	30.59%		
	***		**		

High School A: spring 09

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
pre	35.77%	27.69%	26.92%	23.85%	27.69%
post	35.71%	21.43%	27.14%	21.43%	28.57%
		**			

High School A: fall 09

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
pre	44.38%	45.00%	33.75%	30.63%	26.25%
post	51.25%	37.50%	26.25%	36.25%	28.75%
	**	***		**	

High School B: fall 09

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
pre	48.89%	38.89%	32.22%	31.11%	37.78%
post	47.50%	43.57%	33.93%	42.86%	38.57%
		**		*	

¹National norming standard deviations highlight statistically significant results in the perverse direction. School A Fall 2008 Themes 4 and 5 questions were not included in the post-test given.

