

What Does Financial Literacy Training Teach Us?

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March 14, 2011

Abstract

This paper uses data from a finance-related theme park located at Junior Achievement in Los Angeles to explore how financial education changes investment, financing, and consumer behavior. In the Finance Park, students were assigned fictitious life situations and asked to create household budgets for these roles. Some students received a 19-hour financial literacy curriculum before going to the park, and some did not. After controlling for demographic variables, we show that the treatment effects of the financial literacy program are strong. Students who experienced training were more frugal, delayed gratification, paid off debt faster, and relied less on credit financing. However, these same students purchased less comprehensive health insurance, exposing themselves to greater financial risk and wealth volatility in the future. This implies that training may not be extrapolated to related circumstances, and may lead to unintended consequences. Students who had attended training showed greater up-take of decision support that was offered in the park, which indicates that decision support and financial literacy training are complements, not substitutes.

I. Introduction

Financial literacy is defined as “the ability of people to make financial decisions in their own best short- and long-term interests” (Mandell, 2008). Unfortunately, this skill is in short supply, which may erode both personal and aggregate welfare (e.g., Lusardi and Mitchell, 2007)¹. Indeed, consumer financial literacy has been at the center of current debate concerning the causes and catalysts of the recent financial crisis. Many home owners did not appreciate the variable-rate clauses in their mortgages and their explicit exposure to interest rate risk. Many individuals failed to appreciate the fees and interest rate schedules used commonly in credit cards. Both exacerbated the amount of household debt, personal defaults, and foreclosures during the crisis.²

*Bruce Carlin is from the University of California at Los Angeles; David Robinson is from Duke University. The authors would like to thank Viral Acharya, Doug Bernheim, Annamaria Lusardi, John Lynch, Adair Morse, and seminar participants at Vanderbilt University, Georgetown University, Duke University, and the 2010 Fall NBER Corporate Finance meeting for helpful comments and feedback. The authors would also like to thank and acknowledge colleagues at Junior Achievement of Southern California for helpful discussions and guidance throughout the project. This work was conducted in compliance with IRB human subject guidelines and was approved by the IRBs at Duke and UCLA. Dan Blanchette provided excellent research assistance. Any errors are the authors' responsibility.

¹In a 2003 Survey by NASD, only 35% of market participants could answer better than 7 of 10 basic financial literacy questions—many respondents believed, for example, that stock market losses were insured (Associated Press, 2003). This lack of financial knowledge starts early: in a survey by Jump\$tart.org, around half of all high-school students thought that the sales tax was either set nationally at 6% or that the government deducted it from one's paycheck. Obviously, neither are true.

²See Campbell (2006) for an extended discussion of many of these issues.

Finding the best way to address the scarcity of financial literacy has focused on three distinct channels. The first is directly improving financial literacy through better education and financial literacy training (e.g., Mandell, 2009; Bernheim and Garrett, 2003; Bernheim, Garrett, and Maki, 2001), though the evidence regarding the efficacy of these efforts is mixed.³ The second is improving access to advice and timely decision support. For example, Bertrand and Morse (2009) show that timely, salient information about the true costs of payday loans causes people to frame their decisions more broadly and consequently take-up fewer loans. Lynch (2009) argues that timely decision support—appraising consumers of the consequences of various mortgage options *before* they choose a home—is preferable to increased disclosure in retail mortgage transactions. The third is implementing a policy of libertarian paternalism: nudging consumers in the right direction by judiciously choosing default options, thereby limiting the harm that arises from the failure to make an informed choice (Thaler and Sunstein, 2003; Choi, Madrian, Laibson, and Metrick, 2009).

Several important issues remain unresolved, however. First, it is unclear whether financial literacy training actually affects people’s actions at an individual level, even if it does improve their knowledge about financial decisions. Indeed, many of the cited papers above analyze the uptake of information by subjects, not the effect of training on financial decisions.⁴ Second, it remains unclear how people extrapolate such training to other circumstances that are not specifically included in the training program and whether this leads to unintended consequences. Finally, it remains unknown how financial literacy training interacts with the other channels noted above.

Addressing such questions is usually difficult because the investigator is unable to control for unobserved variables that confound the analysis. For example, consider studying the effect of financial literacy training on a typical 50-year old man. To calibrate the effect of the training, one would have to control for learned biases, previous advice, prior good and bad luck, and previous experiences. This often represents an insurmountable task.

In this paper, we evaluate the efficacy of education in a novel way by studying a population of newcomers to finance: Los Angeles students aged 13-19 years old who participated in a simulated finance experience at the Junior Achievement Finance Park of Southern California. Junior Achievement developed their curriculum and the Finance Park experience to educate young adults about personal finance and improve their ability to make sound financial decisions. Junior Achievement

³Cole and Shastry (2009) show, for example, that financial literacy education does not impact behavior in a very large sample based on Census data.

⁴One exception is Bernheim and Garrett (2003), who show that financial education leads to higher aggregate savings; however, behavior at the individual level is not measured in their study.

of Southern California provided us with data from their program during the 2008-2009 academic year.

What makes this empirical setting interesting is that some of the students received a 19-hour financial literacy training before going to the finance park, and some did not. This allows us to study the effect of education on decisions made inside the park. The training included education in credit management, taxes, budgeting, and simple investments. Students were explicitly encouraged to plan for their future, to maximize the present value of their future wealth, and to minimize reliance on costly credit financing.

In the Finance Park at the Junior Achievement headquarters, both trained and untrained students were randomly assigned a fictitious adult identity, including a monthly income level, a marital status, and a number of dependents (with children's ages, if applicable).⁵ The students role-played making everyday consumer finance-related decisions: what type of insurance to buy, how much to save, whether to buy a cell phone, buying sports equipment, dining at restaurants, and the like. Students made a personal budget based on their character's monthly income, making decisions in each category while still operating within the budget. For example, a 17-year old high school student might be asked to make the financial decisions that a 28-year old, single, mother of two might face as she took a limited budget and allocated it between housing, clothes, utilities, car expenses, education, and recreation. Our data include the budget decisions of approximately 2,350 students, of whom roughly 1,700 turned in completed budgets.

Subjects in the park were not given explicit incentives to take role playing seriously. There is ample evidence, however, that they did. Our statistical analysis of their behavior shows that they played according to the roles they were assigned: wealthier characters spent more on leisure, characters with larger fictitious families secured bigger dwellings, cut back on luxury items, and spent more on clothing and insurance. Interviews with administrators and employees at the Finance Park uniformly indicate that students take the experience seriously. This is also echoed in the student testimonials that we examined, which were contained in the efficacy evaluations of the Finance Park.

Since some students were treated with education and some were not, one possible identification strategy would have been to simply specify a dummy variable for curriculum exposure (Treated vs. Not Treated) and then study the choices that students made in the park, thereby identifying the

⁵To view a video of the finance park, please visit the website <http://www.jasocal.org/s/1019/start.aspx> and click on the "Finance Park" link.

treatment effect from pooled, cross-sectional variation in participant behavior. The problem with this strategy, however, is that assignment to the treatment group is correlated with school characteristics, and most participating schools sent either all of their students with, or all of their students without training. Because differences in school demographics are large, such a specification would likely under-estimate the effect of the financial literacy program. Indeed, because parental wealth and education levels have been shown to predict student financial literacy (Lusardi, Mitchell and Curto, 2010; Lusardi and Mitchell, 2007; Lusardi, 2008), school variation confounds the treatment effect with variation in demographics, family background, grade level, and classroom performance.

Instead, our identification strategy rested on two distinct populations of students. The first came from a set of schools that sent both trained and untrained students to the park. In the analysis, we included school fixed effects and compared the within-school performance differential associated with financial literacy training. While this removes variation in demographics across schools, intra-school demographic variation remains. The second group of students went to the park twice: once before and once again after completing the classroom curriculum. This group, although small, is interesting because essentially all demographics are held constant.

The data clearly demonstrate a strong treatment effect. This is easiest to see in the small group that went through twice. The post-treatment group had higher completion rates, saved more, spent less on immediate gratification items such as clothing, and relied less on credit financing. These behaviors are consistent with the lessons offered in the curriculum they received.

In the broader sample, students who received classroom financial literacy training made a range of choices that were also consistent with delaying immediate gratification to increase overall wealth. For example, all students were randomly assigned a costly home improvement project, but were given latitude on how fast the loan would be amortized. The annual interest rate for home improvement projects was roughly 21%. Students who received literacy training chose to make larger monthly payments on home-improvement installment plans, thereby avoiding high interest costs and lowering the present-value of the financing costs they incurred.

Nevertheless, in some situations, the students who received training systematically displayed a bias towards choices that were costlier in the long-term but involved less monthly out-of-pocket cost. One important example is in making health care choices. Students in the park were presented with a range of health care options, with increasing degrees of coverage corresponding to higher levels of monthly premia. Plans that offered slightly lower monthly premia were more likely to be chosen by treated students, even though these plans exposed the participants to extensive out-of-pocket

costs in the event that medical care would be needed.

We had no role in designing the curriculum, had no direct contact with participants, and therefore had no means by which to introduce randomized experiments of our own design into the theme park experience. Nevertheless, specific features of the theme park's experiential design allow us to explore the reasons behind the difficulty that students experienced in extrapolating financial-planning heuristics to new decision settings.

In particular, the Finance Park is staffed with volunteers who provide information and answer questions about the budget choices the students face. For home improvement decisions, attendants nudge students toward amortizing their packages more quickly, by encouraging students to pay more today so that they will face lower overall interest payments. The up-take of this advice is higher for students with training than without. In contrast, when health care choices are made, the attendant clarifies relevant concepts such as co-pays and premia, but does not nudge students in any particular direction. Without the nudge, literacy-trained students spend slightly less today on insurance plans, but this exposes them to greater expected costs in the future. Thus, the availability of timely decision support appears to be the key to the seeming inconsistency between prudent financial planning with regard to financing home improvement and imprudent financial planning with regard to health insurance. The financial literacy training tuned the students' ears to actively guided decision support, but does not equip them to conduct a similar analysis by themselves.

There are three central messages that emerge from our analysis. First, financial literacy can indeed be taught, but with important limitations. Trained students in many cases adopted the decision-making that the program stressed, but often had difficulty extrapolating the underlying principles to new settings.⁶ The second lesson is that education may have unintended consequences. The students who received the training even made some choices that were in some sense contrary to the spirit of the instruction they received. Because of this, it is probably optimal to monitor the effect of education on people's behavior over time and adjust the education accordingly. The third lesson, and perhaps the most important one, is that education and timely decision support are not distinct channels for improving consumer financial decision-making. They interact. Decision support was better utilized among the group that received financial literacy training. Timely

⁶Difficulty in extrapolating beyond the scenarios used to illustrate educational principles is discussed in the educational psychology literature. See, for example, Thompson, Gentner and Lowenstein (2000) or Gentner, Lowenstein and Thompson (2003).

decision support and financial literacy training are complements, not substitutes. In this light, it is likely to be optimal in the future to coordinate educational efforts with the advice channels offered in the market to maximize people’s ability to make good decisions.

The remainder of the paper is structured as follows. We begin by describing the details of the Junior Achievement Finance Park, since these details are so critical to our analysis. This is contained in Section II. In Section III, we describe the school demographics underlying the data that we obtained from the Finance Park, and the identification strategies that we use in greater detail. Section IV presents our main findings on the efficacy of the training program. Section V extends these basic results to explore the interaction between exposure to in-class training and exposure to in-park decision support. We conclude in Section VI by discussing how our findings inform ongoing discussions among academics and policy makers about the ways to increase literacy and sophistication in the financial marketplace. Appendix A provides an overview of the 19-hour Finance Park curriculum.

II. The Junior Achievement Finance Park

Junior Achievement (JA) was founded in 1919 with a mission to educate young people about business, economics, and free enterprise through hands-on experiences. It is a global organization, teaching more than 9 million students in 108 countries.

Although Junior Achievement has a number of initiatives that are tailored to different age groups, our sole emphasis in this paper is the Finance Park at Junior Achievement. The JA Finance Park offers students personal financial management and career exploration through classroom instruction and active participation in a simulated finance setting. The curriculum, which is summarized in Appendix A, includes 19 hours of didactic (in-classroom) study of financial institutions, taxes, credit, and personal budgeting. The educational experience culminates in an all-day visit to JA Finance Park, which is a simulated experience where students get a hands-on experience in personal budgeting.⁷

In the curriculum, students receive three primary messages: 1) be wary of the costs of credit; 2) plan for the future; 3) take future costs into account when maximizing wealth today. Students participate in many concrete exercises that solidify these ideas. For example, they are given the costs of consumption goods with and without financing (e.g., Gasoline: \$35 cash, \$42 credit). They

⁷This section is based on material obtained from Junior Achievement. For more information regarding Junior Achievement, please visit the website <http://www.jasocal.org>.

are shown that money grows in a savings account and how this changes with the interest rate and length of time. They are given budget example exercises where the stated goal is to save 20% of their net monthly income (e.g., \$300 savings for an income of \$1,500).⁸

The Finance Park experience appears to improve understanding of financial decisions. A 2008 program study showed that both JA and non-JA students improved their financial literacy as measured by pre- and post-test questionnaires (JA Finance Park Final Report, 2008). A 2006 study of middle-school students arrived at the same conclusion (Finance Park Middle Grades Pilot Program, Final Report 2006). While both of these studies show that students' factual background increased as a result of the training, neither study evaluated the effect of the training on the choices participants made while in the park. As such, it is clear that students do learn, but remains an open question how the education affects their decisions.

During the Finance Park simulation, students are randomly given a fictitious identity, which includes their age, employment, marital status, number of dependents, personal income, and taxes. Students report to their place of employment, which is one of the 17 kiosks at the park where financial decisions are made. Each kiosk is staffed by a volunteer, who assists them. They begin by calculating their Net Monthly Income (NMI) which is their monthly take-home income net of taxes, Medicare, and Social Security contributions. Following this, students are asked to create a personal budget, which includes housing choices, health insurance, credit management, recreation, investment in continuing education, charity, cell phone plan, and home improvement. Then students travel to each kiosk around the park, entering their choices in the computer, with the specific goal of creating a balanced budget that is responsible and represents their preferences.

The data that we use in the present analysis are the completed budget review statements that reflect the choices the students made while engaged in the role play. Table 1 reports the frequency distribution of the roles assigned based on income, marital status, and family size. The age of the profile characters ranged from 25-35 years of age, with a median of 30. The annual gross income ranged from \$20,000 to \$65,000 per annum. To put the income numbers in perspective, data from the U.S. Census indicate that the median household income for metropolitan Los Angeles in 2008 was around \$55,000 per year. In contrast the median household income in zip-code 90222 (a zip code in the Compton area of South Central Los Angeles, from which some of the students were drawn) was only around \$29,500 for 2000.

⁸Examples are taken from the JA Finance Park Student Workbook, which is available upon request.

... Table 1 about here ...

As Table 1 shows, students are about equally split between married and unmarried, and between having children and not having children. Those students whose characters have children are allocated one or two children about equally. These are scattered more or less uniformly across the income distribution, so that there is a fair representation of characters across the income, marital status and family status distribution.

Details regarding the 17 kiosks are as follows. Bank of America (kiosk #1) is where students pay for the housing choices they make. Students choose between six housing plans that range from cozy apartments to larger houses, although no distinction is made between renting and owning. While students were given discretion over what they must spend on housing, the costs of the six housing options were scaled to the participant's net monthly income.

Kiosks 2, 3, and 5 (Gas, SoCal Edison, and Water/Sewer/Trash, respectively) are choices that are directly impacted by the housing choice they make and their family size. In particular, their expenditures at the Gas Company and SoCal Edison are linked to the size of their dwelling, while their Water/Sewer/Trash expenditure is linked to the number of people in their family. The Phone kiosk (#4) allows students to choose between a variety of phone packages. Some of these packages are based on land-line coverage, while a la carte cell phone plans are also offered.

The Toyota kiosk (#6) is where students make the automobile choice. The choice they make here, along with their housing choice, affects the baseline amounts they will owe at the State Farm kiosk (#10). The choices that they make for groceries (kiosk #7) and clothing (kiosk #8) are not based on household size, but rather on their preferences.

Kiosk #9, the Union Bank kiosk, is the place where students make savings decisions. Understanding their savings behavior in the park experience is complicated by two factors. One, there is no explicit mention of an annual interest rate earned on savings. Therefore, students are not being asked to consider how their money will grow over time when they make savings decisions. Second, as we explain in detail below, because savings decisions are made in conjunction with other decisions, the implicit adding-up constraint means that we cannot really test whether students have a higher propensity to save as a consequence of being exposed to the park. To test whether students had a higher propensity to save, we would need to calibrate their elasticity of savings with respect to income. This would involve perturbing their income and observing how they reallocated spending across categories. We were not given an opportunity to observe this within the park experience, as

we did not design the park experience or influence the students' experience within the park.

Kiosk #11 is where students make health insurance choices. Although there is no difference in the unconditional mean choice, this in part is a function of the fact that price masks important variation in the terms of care provided by the health insurance. We take this issue up in greater detail in Section V.

Kiosk #13 is where students invest in home improvement. Students are randomly assigned an amount that they must spend on home improvement, but are given freedom to choose how to finance it. The annual interest rate is 21% and students choose how fast to pay off the principal balance. As we discuss in detail below, this fact is important for our analysis because it affects the interpretation of the connection between financial literacy exposure and both the savings results and the home improvement results.

The remaining kiosks allow students to take community college classes to further their education (kiosk #12) and to spend money on a variety of leisure items like entertainment, sporting equipment and dining out (kiosks #14-#16, respectively). Students also gave a portion of their income to charity (kiosk #17), which was discretionary within a prescribed range of choices.

... Table 2 about here ...

Before proceeding to discuss our identification strategy in Section III, it is worth pausing to consider whether the students took their role-playing seriously. Table 2 provides an analysis of spending patterns in the park, and shows this to be the case.

The dependent variable in Table 2 is the fraction of income allocated to each category. Broadly speaking, students made choices in keeping with the roles they were assigned. For example, students whose characters were married and had children chose to allocate a significantly larger fraction of their income to housing. They also spent more on utilities and clothing, but less on automobiles. Consequently, they saved less. Students whose characters were wealthier allocated a smaller fraction of their income to housing, and more to leisure items. As discussed in the introduction, we interviewed administrators at the park and reviewed student testimonials, all of which confirm that the data appear to be reliable.

III. School Demographics and Identification Strategies

While the preceding section discussed the data in terms of the fictitious identities used in the park, it was silent on the underlying characteristics of the student populations who attended the

park. In this section we explore actual student demographics. This allows us to lay out our identification strategy in greater detail.

Table 3 provides a snapshot of the schools that participated in the Finance Park in our sample period. The names of the schools have been masked to preserve the anonymity of the participating organizations. The column labelled “Math” is the proportion of students at the school who are at grade-level proficiency for mathematics. As the column indicates, many of these schools score poorly on this dimension. Many schools in our sample have fewer than 1 in 4 students at math grade level. The “Rank” column is a decile ranking of the schools Academic Performance Index (API) score. One is the lowest decile, ten is the highest. Thus, many of the schools have low overall rankings.

The remaining columns indicate that many of these schools also serve economically challenged communities. AVGPE is the average parental education level at the school: numbers here range from 1 (did not finish high school), 2 (high school, no college), 3 (attended college), 4 (completed college), and 5 (attended post-graduate school). The average indicate that with the clear exception of School W, most schools serve areas with very low levels of parental education. Similarly, FRPM is the fraction of students eligible for free and reduced price meals. Since this statistic is tied to the poverty line, it indicates that average household wealth levels in the areas served are low. The columns under the District/School and Black/Hispanic headings indicate the proportion of students of black or hispanic origin, either in the school itself or on average in the district in which the school is located. The figures indicate that for the most part, the schools in our data serve heavily black and hispanic populations, even compared to the districts in which they operate.

The final columns indicate the number of students who successfully completed the park, and the number from each school that attended the financial literacy training course beforehand. The columns indicate that, with the exception of Schools T and U, all other schools sent batches of students who either completely attended or completely did not attend the prior training.

... Table 3 about here...

In terms of establishing an appropriate strategy for identifying a treatment effect associated with exposure to the curriculum, Table 3 demonstrates an important point. There are pronounced differences in school demographics based on whether the school attended the park with or without the training. Thus, simply specifying a dummy for whether a student attended the finance park training and identifying this parameter cross-sectionally is unlikely to provide a good measure of the

effects of the treatment, since it is muddled by the fact that students from better performing schools and less economically disadvantaged backgrounds were likely to have skipped the training. Given the evidence in Lusardi, Mitchell and Curto (2010) on the importance of parental education and financial literacy for predicting childhood financial literacy, this suggests that a cross-sectionally identified dummy variable for finance park training would severely underestimate the true effect of the financial literacy training on their behavior.

This fact can be seen more clearly in Table 4, which provides breakdowns of school characteristics according to whether the school in question participated in the financial literacy training or simply just attended the park. About the only observed similarity between the types of schools is the extent to which they serve hispanic students: otherwise, schools in the treatment group have higher rates of FRPM eligibility, lower parental education levels, are located in districts with larger black and hispanic populations, serve largely black students within those districts, and have lower test scores and graduation rates.

. . . Table 4 about here. . .

Instead, our identification strategy is based on two distinct subsamples of students. One subsample can be seen in Table 3: these are Schools T and U. Since these schools sent students with and without training, one strategy is to estimate the effect of training by including school fixed effects, thereby identifying the treatment effect through the variation in exposure within these schools. Even still, this is a within-school, not a within-class estimate.

The second subsample is a small set of students from a high school in LA who went through the program twice during the 2009-2010 academic year.⁹ These students attended the park, then took the curriculum, and then went through the park a second time. This group includes 81 students who attended in early February and 44 who attended in late April. All students attending in late April had completed the training, and none in February had received any training. Only 20 students attended both sessions. This group is small in size but allows us to best control for variation in demographic variables in assessing the treatment effect associated with the classroom training. However, as we mentioned in the introduction and discuss further in Section IV, this is not a perfect experiment: we do not have a control group at our disposal who went to the park

⁹Confidentiality requirements prevent us from disclosing the name of the school. However, it is in the South LA area, and is approximately 52% black and 47% hispanic in student makeup. It has an API score of 1, placing it in the lowest decile, and has around 2% of students at or above California state-level math proficiency.

twice without receiving training, and are therefore not able to control for the effect that the first park experience had on behavior during the second park experience.

IV. Does financial literacy training affect behavior?

This section explores the basic question of whether the curriculum affected the behavior of the students who were exposed to it. The simple answer is yes, which can be seen in Tables 5-7.

... Table 5 about here ...

Table 5 examines completion rates by training status across the entire sample. This table illustrates that holding constant average differences attributable to school effects, students with literacy training were significantly more likely to complete the budget reviews. This means that they were able to turn in a completed, balanced budget within the time frame allotted to them more often than the untreated group. The point estimate suggests that this effect is economically large, around 35%.

Table 6 shows how the financial literacy training affected the students' choices. The dependent variable in each column is the percentage of total income allocated to each category. The broad takeaway from this table is that the students who received the financial literacy training were more attune to making choices that can be described as investments in the future and delaying gratification. For example, students in the treatment group spent more to pay off their debt obligations on their home improvement, and thus incurred lower interest charges on their loans. The students also spent less on clothing and chose to dine out less.

... Table 6 about here ...

Nevertheless, students in the treatment group saved a smaller fraction of their overall income. While this clearly cuts against the stated intent of the training they received, there is an important shortcoming in the park's design (from a research perspective) that prevents us from drawing sharp conclusions from this fact. Namely, there was no rate of interest associated with the savings account. Students were simply asked to allocate a fraction of their income to savings and were not given any information about the rate of interest their savings would earn. In view of the fact that other choices had explicit interest rates tied to them, this complicates the interpretation of the savings estimates, especially in light of the mechanical adding-up constraint imposed by the structure of

the exercise. For example, some students may have felt that they were saving by choosing to avoid higher interest expenses on home improvement packages, which faced a 21% interest rate. Indeed, because students in the treatment group amortized their home improvement packages more quickly, they faced larger monthly home improvement expenditures (this can be seen from the loading on the finance park dummy in Column (13) of Table 6), and consequently had less to save. Therefore, it is important to bear in mind the limitations of the park’s design when considering the difference in savings rates across the treated and untreated groups.

... Table 7 about here ...

Table 7 reports differences in behavior before and after the curriculum exposure for the small group. The most striking sign of the efficacy of the training program is the completion rate. Before the training, only one student was able to complete the park (i.e., able to go through and produce a balanced budget). After the training, over half the students did. This difference is highly statistically significant.

There are also pronounced differences in the allocation decisions that students made in the park. Panel A of Table 7 reports percentages allocated to each kiosk. Since the pre-treatment completion rate was virtually zero, it is misleading to scale the allocations at each kiosk by the total net monthly income in the pre-treatment group. This would lead us to conclude that the post-treatment sample spent larger amounts on everything. Instead, whenever a student did not complete the park, we scale the amount spent at a kiosk by the total amount spent across all kiosks, rather than by net monthly income.

After receiving the classroom training, the fraction that students saved was nearly four times larger than their pre-treatment amount. Post-treatment students paid off their home improvement faster and spent significantly less on clothing. Taking these decisions together, Table 7 indicates that the post-treatment students favored delayed over immediate gratification in their decision-making.

One simple explanation for these last results, especially the higher completion rates, is that the students were visiting the park a second time, and were therefore already familiar with the protocol. Although we cannot rule out this possibility, the structure of the exercise makes it highly unlikely that this explanation is responsible for the results. Namely, each student’s park experience is influenced by the random identity they were assigned. Students report to the kiosk that represents their “place of employment” to plan their budgets. No students reported to the

same employer on subsequent visits. Moreover, no students had the same family structure on both visits, nor did they have the same income or home repair budget. This variation in identity, combined with the time between the park experiences, works against this effect being attributable purely to repetition.

Another possible problem arises from the way the fractions are calculated in the pre-treatment group. Scaling by the amount allocated in an incomplete exercise could introduce an important bias if students simply completed the exercise in a particular order and stopped when time ran out. Suppose, for example, the allocations were ordered so that the savings decision were last: then incomplete records would mechanically have lower savings rates. To make sure that this possibility does not introduce spurious differences between the before and after treatment groups, Panel B compares the pre-treatment sample to only those in the post-treatment sample who did not complete their exercises. Although the reduction in sample size limits the power of the tests in many instances, we still find a statistically distinguishable difference in the savings rates in the pre- and post-treatment samples. Even students who did not complete the exercise in the post-treatment sample saved more, made larger monthly payments on randomly assigned home improvement packages, and spent less on clothing.

In summary, this section illustrates that the financial literacy training had an effect on the students who were exposed to it. Students who were exposed to training completed the program faster, and they made many choices that are consistent with delaying immediate gratification in favor of investing in longer-term outcomes. This is especially significant when one considers that the students in the study were not from advantaged backgrounds.

V. Training, Decision Support, and Unintended Consequences

While the previous section focused primarily on the effectiveness of the training in terms of the choices made by treated students, this section focuses on two different questions. First, does training induce unintended consequences? Second, are education and decision support complements or substitutes? This latter question is important because implicit in most policy analyses of consumer literacy is the assumption that education replaces decision support, or vice versa. Indeed, in this section we present evidence suggesting that one of the primary benefits of education may be to increase the up-take of timely decision support.

We exploit some specific features of the park experience that students face. In particular, we compare the students' decisions regarding home improvement and health care. Each student is

required to purchase a home improvement package on credit. While the size of the purchase is randomly assigned to the student, they have discretion over how fast they amortize their loan. The annual interest rate for these loans is approximately 21%. The students can choose to make lower monthly payments, but by doing so they face higher interest costs over the life of the credit plan. Or they can choose to make larger payments, leaving them less money each month, but saving money over the life cycle of the credit plan.

When students make their health insurance choice, they can choose among six plans: three with slightly lower premia and three with higher premia. The low premia plans all require the policy holder to pay a percentage of the total bill as a co-pay if health care is needed (e.g., a 15% copay). The higher premia plans offer fixed-rate copays (e.g., a \$15 co-pay). In some sense, the choice faced here mirrors the choice faced at the home improvement kiosk, because in both settings, students must choose between paying more today for lower payouts in the future, or paying less today but more in the long-run. To be sure, there are important differences in the types of decisions students are being asked to make. The choices vary in terms of where they sit in a student's locus of control (ample research in psychology indicates that people underestimate the probabilities of bad outcomes when they think they can exert influence over those outcomes). They also have important risk differences: in the case of home improvement, there is no uncertainty surrounding future payments. In the case of health insurance, students are exposing themselves to potential income volatility by adopting percentage co-payment plans.

Importantly, the two kiosks also differ in terms of the structure of decision support that is offered. At the home improvement kiosk, attendants actively prescribe one type of choice over another. Specifically, they remind students that credit financing is expensive and nudge them toward paying more today to avoid higher costs in the future. In contrast, attendants at the health insurance kiosk do not advocate for one package or another, but instead simply explain concepts such as co-pays and premia. Drawing on this difference allows us to consider the interaction between decision support and financial literacy exposure.

... Table 8 about here ...

Panel A of Table 8 presents the results regarding home improvement in two ways. In the first two columns, the dependent variable is the log of the ratio of interest cost to total credit package size. The second two columns report regressions of log ratio of monthly payment to total credit plan size. All columns include school fixed effects, while columns (2) and (4) replace log income

with fixed effects for the ten income categories to allow for income to enter non-parametrically in the estimation. Income is included as a control variable in these regressions because the random home improvement package was scaled to the income level of the student (so that no participant had to manage an unmanageable home improvement amount). In general, the loadings on the family profile characteristics indicate that larger fictitious family sizes tended to be associated with higher interest costs and slower amortization, presumably as a consequence of the higher expenses faced in the family budget elsewhere.

The effect of financial literacy training on the amortization of the home improvement plan is pronounced. Focusing on the first two columns, we see that the financial literacy exposure reduces the interest payments by about 11% of the total credit plan size. Columns (3) and (4) express the same finding in a complementary manner by showing that the finance training raises the monthly payout on the credit plan by about 8%.

Thus, the results of Panel A of Table 8 indicate that there was a significant interaction between prior exposure to financial literacy training and the presentation of timely advice about financial management. Attendants in the park frequently reminded students to consider paying off their debt earlier. However, even though the students who did not receive financial literacy training prior to the park experience heard the same advice, many did not take it. One interpretation is that the prior literacy training primes people to act on advice, or that the advice itself recalls past training that people have received.

The results regarding health insurance choice are presented in Panel B of Table 8. The first two columns examine whether someone is “under-insured”. In our setting, this simply means that the respondent’s character had a family (i.e., was married and/or had children) but only had individual insurance. Given the complexity of the overall budgeting problem that the students faced at the park, this variable measures task comprehension and effective budget preparation more than it measures attitudes toward risk. We determine this by comparing the character’s family size to the reported cost of the plan they choose to see if they chose a policy that only covered a single person when their profile character was married or had children. From the profile characteristics, it is clear that this occurred most often among people who were married without children. The presence of children made this much less likely. One reasonable explanation here is that the respondent assumed that their profile character’s fictitious spouse had their own insurance somewhere else.

In the first two columns, we see that students who received financial literacy training were significantly less likely to inappropriately choose a lower cost plan that did not provide adequate

coverage for their family. Therefore, they behaved as if they possessed a better understanding of the overall planning task faced at the health insurance kiosk.

The second two columns examine a dependent variable that is a dummy for whether the respondent chose a more expensive plan that offered flat-fee co-payments. The results are striking. Students with financial literacy exposure were much less likely to choose these plans. In doing so, they economized on monthly premia, but faced potentially higher out-of-pocket costs, and indeed, potentially more volatile income.

Comparing the results in Panels A and B allows us to explore the interaction between decision support and financial literacy. In Panel A, when students receive decision support in the form of a nudge, trained students act on the information while untrained do not. In Panel B, when students receive decision support that merely clarifies terminology without offering prescriptive advice, trained students fall back on heuristics (economize on costs, etc.) that are ill-suited to the task at hand.

This finding complements concurrent work by Bertrand and Morse (2010). They conduct a randomized trial among consumers who use payday lenders, providing timely decision support to would-be borrowers about the true costs of accessing payday lenders. They find that apprising would-be borrowers of the total cost causes them to think about their decision in a broader decision frame, and consequently makes it less likely that they borrow from the payday lender. While ours is not a randomized clinical trial, the random variation present in our data suggest in turn that the ability to make use of the information being provided by the Bertrand/Morse intervention would be increased by augmenting the general financial education made available to such borrowers. In other words, financial education policies should not be abandoned in favor of decision support mechanisms, they should be pursued alongside the implementation of decision support mechanisms. Financial literacy and decision support are complements, not substitutes.

VI. Discussion and Conclusion

This paper analyzes field data to determine how educating young adults affects the financial choices they make in a controlled setting. At the Junior Achievement Finance Park, subjects were randomly assigned fictitious adult identities, and then were asked to role-play in an environment where they had to make the types of financial decisions that are faced by, say, a single mother with two children making around \$30,000 per year, or someone with median income family in LA, but with no children.

Although the assignment of adult roles was random in our data, the subjects' access to literacy training was not. We did not control the assignment of students to treatment and control groups. Instead, we had to rely on the fact that some schools engaged in financial literacy training to varying degrees. We identified the main effect of financial literacy training by looking at two types of variation. The first was within-class variation among a group of students who attended the park both before and after receiving financial literacy training. The second was within-school variation in exposure to training in statistical models that include both school fixed effects as well as standard error corrections that account for dependence across individuals participating in the role-playing exercise at the same time.

In our setting, financial literacy training affected behavior. One measure of this was simply differential rates of task completion: students in the treatment group were about 35% more likely to complete the budget balancing exercise that they were given than those in the non-treatment group. Moreover, there were pronounced differences between the treatment and control groups when we looked across the various kiosks at which fictitious financial decisions were made.

Our results suggest that financial literacy training teaches us two primary things. First, financial literacy can indeed be taught, but may lead to unintended consequences. Trained students in many cases adopted the decision-making that the program stressed, but sometimes had difficulty extrapolating the underlying principles to new settings and even made some choices that were in some sense contrary to the spirit of the instruction they received. This finding implies that financial literacy training needs to be monitored carefully and adjusted over time.

The second thing that financial literacy training teaches us is to make better use of the information around us. In our study, exposure to financial literacy training increased the up-take of timely advice. All students in our study were exposed to decision support surrounding the benefits of paying off their credit installment plans early; however, students who were exposed to literacy training were significantly more likely to act on this advice. In a contrasting setting, in which students faced a similar decision with respect to health insurance in the absence clear-cut advice, the students with exposure to financial literacy training avoided high monthly premium insurance plans, even though these plans might have offered lower out of pocket costs down the road.

Interpreting the behavior coming out of these contrasting settings requires caution. First, the advice being offered was of a particular form: in both settings, the choice that conserved cash-flow had a long-term cost, and the advice apprised the students of the cost. In the setting with decision support, students moved away from the default towards plans with lower present value costs but

higher out-of-pocket costs. Generalizing to different information/default structures with different sets of behavioral biases embedded in them requires care. Second, not all advice is good advice. Would the treated group have seen through bogus advice? Perhaps not. Evidence from a NASD investor fraud survey (NASD, 2006) showed that senior citizens with more financial literacy were more likely, not less likely, to be victims of fraud. Ours is the first evidence that directly speaks to the interaction of financial education and timely decision support as alternatives for improving consumer financial decision-making. Hopefully it is not the last.

References

- [1] Associated Press (2003). “Survey Reveals Misinformed Investors”. Associated Press, December 2, 2003.
- [2] Bernheim, B. Douglas and Daniel M. Garrett (2003), “The effects of financial education in the workplace: evidence from a survey of households,” Journal of Public Economics 87, 1487-1519.
- [3] Bernheim, B. Douglas and Daniel M. Garrett and Dean Maki (2001), “Education and saving: The long-term effects of high school financial curriculum mandates,” Journal of Public Economics 80, 435-465.
- [4] Bertrand, Marianne, and Adair Morse (2009), Information Disclosure, Cognitive Biases and Payday Borrowing, working paper, University of Chicago.
- [5] Campbell, John Y. (2006), “Household Finance,” Journal of Finance, 61(4), 1553-1604.
- [6] Choi, James, David Laibson, Brigitte Madrian and Andrew Metrick (2009). “Optimal Defaults and Active Decisions,” Quarterly Journal of Economics, 124, 1639-1674.
- [7] Cole, Shawn and Gauri Kartini Shastry (2008), “If you are so smart, why aren’t you rich? The effects of education, financial literacy, and cognitive ability on financial market participation,” working paper, Harvard Business School and University of Virginia.
- [8] Evaluation and Training Institute (2006), “Middle Grades Pilot Program: JA Finance Park Final Report”
- [9] Evaluation and Training Institute (2008), “JA Finance Park Final Report”
- [10] Gentner, Dedre, Jeffrey Lowenstein and Leigh Thompson (2003), “Learning and Transfer: A General Role for Analogical Encoding,” Journal of Educational Psychology 95(2) 393-408.
- [11] Lusardi, Annamaria, and Olivia S. Mitchell (2007). “Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education.” Business Economics, vol 42, 35-44.
- [12] Lusardi, Annamaria, Olivia S. Mitchell and Vilsa Curto (2010). “Financial Literacy Among the Young: Evidence and Implications for Consumer Policy.” Working Paper, Harvard, Wharton, and Dartmouth.

- [13] Lusardi, Annamaria (2008). Household Saving Behavior: The Role of Literacy, Information and Financial Education Programs, NBER Working Paper n. 13824.
- [14] Lynch, Jr., John G., (2009) “Information Remedies, Choice Architecture, and Plain Vanilla Financial Products,” working paper, Russell Sage Foundation.
- [15] Mandell, Lewis (2008), “Teaching Young Dogs Old Tricks: The Effectiveness of Financial Literacy Intervention in Pre-High School Grades, chapter in Thomas A. Lucey and Kathleen S. Cooter (eds), Financial Literacy for Children and Youth Digitaltextbooks.biz.
- [16] Mandell, Lewis (2009), “Results of the 2008 National Jump\$tart Coalition Survey of High School Seniors and College Students,” working paper, University of Washington.
- [17] NASD Investor Education Foundation (2006), “Investor Fraud Study: Final Report”.
- [18] Thaler, Richard H. and Cass R. Sunstein (2003), “Libertarian Paternalism.” American Economic Review (Papers and Proceedings) 93(2) Fall: 175-179.
- [19] Thompson, Leigh, Dedre Gentner and Jeffrey Lowenstein (2000), “Avoiding Missed Opportunities in Managerial Life: Analogical Training More Powerful than Individual Case Training,” Organizational Behavior and Human Decision Processes 82(1), 60-75.

Table 1: Profile Characteristics

This table presents the frequency distribution of income and family structure for all participants in our sample.

Net Monthly Income	<u>Unmarried</u>				<u>Married</u>			
	# of Children:				# of Children:			
	Zero	One	Two	Total	Zero	One	Two	Total
1,580	53	44	21	118	14	28	.	42
1,911	71	29	.	100	22	22	15	59
2,337	63	21	.	84	37	2	34	73
2,764	25	17	15	57	60	23	9	92
3,189	52	.	.	52	70	34	13	117
3,635	84	24	.	108	.	26	40	66
3,829	13	39	53	105	.	13	39	52
4,031	60	.	4	64	48	41	22	111
4,432	29	.	16	45	24	58	20	102
4,873	12	36	3	51	36	20	57	113
Total	462	210	112	784	311	267	249	827

Table 2: Where the Money Went: School Characteristics

This table reports Tobit estimations in which each dependent variable is the percentage of income allocated to a spending category. School fixed effects are included, but suppressed. Standard errors are clustered at the school level. Bank of America is the kiosk associated with housing decisions. The size of the home chosen has a direct impact on items 2, 3, and 5, which are gas, electricity, and municipal services, respectively. Item 4 is the choice of telephone package; this includes cell phones and different varieties of land-line packages. Toyota is the kiosk where they make a car purchase decision. Union Bank (kiosk #9) is a savings account. State Farm is auto and property insurance, and the choice here is largely dictated by the choice in (1) and (6). Providence St. Joseph (kiosk #11) is health insurance; participants can choose between six plans that vary in terms of the monthly premium and coverage levels (see Table 8). L.A. Valley College (kiosk #12) is a community college where they can pay for courses that equip them with more marketable skills. Home improvement is mandatory, and is the monthly payment level associated with a home improvement plan they choose. Entertainment, Sport, and Dining out each represent opportunities to enjoy movies, sporting equipment purchases, or dining out. “Charity” reflects an amount they choose to donate to a local charity.

	B of A (1)	Gas Co. (2)	SoCal Ed (3)	Phone (4)	Util. (5)	Toyota (6)	Groc. (7)	Clothing (8)	Union Bank (9)
log(NMI)	-1.511*** (0.095)	-1.784*** (0.044)	-0.321*** (0.056)	-0.058 (0.068)	-2.371*** (0.047)	0.573*** (0.091)	0.913*** (0.086)	0.638*** (0.124)	1.868*** (0.311)
Kids==1	0.425*** (0.061)	0.134*** (0.025)	-0.009 (0.031)	-0.139** (0.056)	0.542*** (0.021)	-0.255*** (0.060)	-0.044 (0.064)	0.231*** (0.060)	-0.621*** (0.145)
Kids==2	1.033*** (0.116)	0.266*** (0.024)	0.113** (0.044)	-0.248*** (0.070)	0.734*** (0.030)	-0.400*** (0.068)	0.152 (0.099)	0.042 (0.066)	-0.676*** (0.170)
Age	0.005 (0.008)	-0.003 (0.003)	0.013*** (0.004)	0.007 (0.007)	-0.000 (0.004)	-0.000 (0.011)	-0.011 (0.009)	-0.001 (0.007)	-0.012 (0.017)
Married	0.210*** (0.061)	0.032* (0.018)	0.118*** (0.025)	0.035 (0.065)	0.405*** (0.014)	-0.091** (0.045)	-0.002 (0.064)	-0.064 (0.060)	-0.341** (0.165)
	State Farm (10)	Prov. St. Joe (11)	LA Coll. (12)	Home Imp. (13)	Entert. (14)	Sport (15)	Dine Out (16)	Charity (17)	
log(NMI)	-2.104*** (0.041)	-0.469*** (0.048)	-0.473*** (0.027)	0.769*** (0.109)	0.339*** (0.060)	0.089 (0.060)	-0.275*** (0.033)	0.269*** (0.060)	
Kids==1	0.142*** (0.025)	0.489*** (0.039)	-0.017 (0.033)	-0.208*** (0.078)	-0.263*** (0.040)	-0.066* (0.035)	-0.004 (0.028)	-0.060 (0.058)	
Kids==2	0.175*** (0.027)	0.374*** (0.048)	-0.012 (0.024)	-0.167* (0.096)	-0.272*** (0.046)	-0.066* (0.036)	0.099*** (0.038)	0.041 (0.091)	
Age	-0.001 (0.005)	0.007 (0.007)	0.007 (0.004)	-0.006 (0.010)	-0.001 (0.005)	0.004 (0.004)	0.003 (0.004)	0.008 (0.011)	
Married	-0.092*** (0.014)	0.158*** (0.038)	0.045* (0.025)	-0.101 (0.064)	0.048 (0.048)	0.006 (0.030)	0.104*** (0.023)	-0.093 (0.112)	

Table 3: Participation and School Demographics

School names are masked to preserve the anonymity of the participating organizations. Math is the fraction of students who are at grade-level proficiency for math in that school. Rank is a decile ranking (1=low, 10=high) of the school's Academic Performance Index (API) scores. AVGPE is the average parental education at the school. Size is the number of students who attend the school. FRPM is the fraction of students who are eligible for free and reduced-price meals. "Black" and "Hisp." indicate the fraction of Black and Hispanic students in the district and school level. Attendance is the number of participants who completed the experience at the JA Finance Park, with the final column indicating the number of students from the school who attended the 19-hour training course beforehand. Data were obtained from <http://www.cde.ca.gov/ds/sh/cw/filesafdc.asp>.

Also www.city-data.com.

Name	School Demographics								JA Participation:	
	Math	Rank	AVGPE	Size	District		School		Attendance	Finance Educated
					Black	Hisp.	Black	Hisp.		
School A									79	None
School B	35	1	1.91	396	94	10	73	2	90	32
School C	20			1,139	75	10	73	2	82	31
School D	48	3	2.11	3,339	66	10	73	9	71	All
School E	70	7	3.26	2,666	31	2	25	2	35	60
School F	67	8	3.04	2,750	25	3	35	2	42	None
School G	58	7	2.97	2,239	60	10	73	14	39	All
School H	24	1	2.1	2,530	79	23	74	25	74	All
School I	17	1	2.4	2,023	78	10	73	65	33	All
School J	.	2	2.26	333	41	1	22	2	47	All
School K	59	4	2.44	2,691	67	10	73	16	54	All
School L	31	4	2.21	1,949	68	10	73	13	67	All
School M	59	3	1.96	578	84	23	75	5	94	All
School N	59	7	2.92	4,683	58	17	52	28	27	All
School O	67	9	3.03	591	15	4	31	3	26	All
School P	13	1	1.95	1,287	81	10	73	50	48	All
School Q	47	3	2.45	4,374	72	10	73	1	68	29
School R	36	1	3.75	1,306	62	21	56	32	61	None
School S	22	1	2.21	2,420	74	10	73	27	64	All
School T	34	1	1.73	4,648	81	10	73	0	99	358
School U	32	1	1.67	3,302	45	10	73	1	97	300
School W	75	10	4.19	930	2	1	4	1	3	116
School X	18	1	1.47	671	95	10	73	30	69	All
School Y	69	8	3.33	3,533	21	10	73	7	25	All

Table 4: Comparing Trained and Untrained Students: Characteristics

This table presents differences in school and district-level characteristics for schools that participated in the Finance Park, with and without finance literacy training.

Characteristic:	Trained	Untrained	t(diff)
% Eligible for FRPM (2007)	51.36	65.61	-10.39
Parent Education Level	2.49	2.25	5.21
% Black (district)	6.48	10.22	-10.73
% Hispanic (district)	1.18	14.00	-10.56
% Black (school)	52.55	66.33	-9.93
% Hispanic (school)	66.04	64.95	0.52
% White (school)	25.56	8.13	14.11
Graduation Rates (2005-2006)	83.27	73.44	12.78
Math score	51.71	39.84	8.85
Rank score	4.22	3.06	5.39

Table 5: Task completion and financial literacy training

This table reports probit regressions in which the dependent variable is a dummy for whether the respondent completed the park experience. Because there is scope for substantial heterogeneity in completion rates based on day-to-day circumstances, the regressions include school fixed effects, and the standard errors are clustered at the school level. Trained is a dummy for whether the students received the financial literacy training course prior to the park experience. All coefficients are reported as marginal changes in probability.

	(1)	(2)	(3)
Trained	0.366*	0.369**	0.368**
<u>Profile Characteristics:</u>			
Kids=1	-0.020 (0.02)	-0.020 (0.02)	
Kids=2	-0.060*** (0.02)	-0.060*** (0.02)	
Married	-0.023* (0.01)	-0.028* (0.01)	
log(NMI)		0.021 (0.02)	
Income fixed effects	No	Yes	No
School fixed effects	Yes	Yes	Yes
Observations	2357	2357	2357

Table 6: Within-school estimates of the effects of financial literacy training

This table reports Tobit estimations in which each dependent variable is the percentage of income allocated to a spending category. School fixed effects are included, but suppressed. Standard errors are clustered at the school level. Please see Table 7 for descriptions of the spending categories. A total of 1672 observations are included in the regressions.

	B of A (1)	Gas Co. (2)	SoCal Ed (3)	Phone (4)	Util. (5)	Toyota (6)	Groc. (7)	Clothing (8)	Union Bank (9)
Trained	0.455*** (0.005)	-0.012*** (0.002)	0.160*** (0.002)	-0.057*** (0.003)	0.078*** (0.002)	0.134*** (0.004)	-0.196*** (0.003)	-0.292*** (0.003)	-0.566*** (0.011)

Profile Characteristics

Kids=1	0.442*** (0.064)	0.131*** (0.027)	-0.007 (0.033)	-0.135** (0.060)	0.543*** (0.022)	-0.238*** (0.061)	-0.017 (0.066)	0.221*** (0.063)	-0.616*** (0.154)
Kids=2	1.045*** (0.124)	0.266*** (0.026)	0.105** (0.046)	-0.240*** (0.073)	0.740*** (0.031)	-0.406*** (0.071)	0.181* (0.101)	0.024 (0.067)	-0.650*** (0.177)
Age	0.000 (0.008)	-0.003 (0.003)	0.011*** (0.004)	0.006 (0.008)	-0.000 (0.004)	-0.002 (0.011)	-0.010 (0.010)	-0.002 (0.007)	-0.009 (0.018)
Married	0.228*** (0.062)	0.035** (0.018)	0.127*** (0.024)	0.039 (0.068)	0.402*** (0.014)	-0.106** (0.044)	0.021 (0.062)	-0.071 (0.063)	-0.321* (0.171)
log(NMI)	-1.509*** (0.100)	-1.783*** (0.046)	-0.329*** (0.058)	-0.068 (0.070)	-2.381*** (0.049)	0.574*** (0.096)	0.917*** (0.091)	0.625*** (0.129)	1.830*** (0.321)

	State Farm (10)	Prov. St. Joe (11)	LA Coll. (12)	Home Imp. (13)	Entert. (14)	Sport (15)	Dine Out (16)	Charity (17)
Trained	0.108*** (0.001)	0.032*** (0.001)	0.127*** (0.002)	0.371*** (0.004)	-0.004 (0.003)	0.009*** (0.002)	-0.025*** (0.002)	0.582*** (0.006)

Profile Characteristics

Kids=1	0.135*** (0.024)	0.491*** (0.041)	-0.006 (0.033)	-0.208** (0.083)	-0.270*** (0.042)	-0.077** (0.037)	-0.017 (0.026)	-0.065 (0.056)
Kids=2	0.178*** (0.029)	0.385*** (0.051)	-0.017 (0.025)	-0.170* (0.100)	-0.286*** (0.046)	-0.076** (0.036)	0.093** (0.040)	0.021 (0.094)
Age	-0.000 (0.005)	0.006 (0.007)	0.007* (0.004)	-0.008 (0.010)	-0.001 (0.005)	0.006 (0.004)	0.003 (0.004)	0.010 (0.011)
Married	-0.087*** (0.013)	0.147*** (0.038)	0.045* (0.026)	-0.098 (0.067)	0.035 (0.048)	0.019 (0.028)	0.099*** (0.024)	-0.089 (0.117)
log(NMI)	-2.085*** (0.038)	-0.472*** (0.051)	-0.474*** (0.029)	0.756*** (0.113)	0.341*** (0.063)	0.085 (0.063)	-0.270*** (0.035)	0.288*** (0.053)

Table 7: Comparing Students Before and After Training: Choices

This table presents the mean fractions of total net monthly income spent on the 18 different consumer spending categories. The data are based on the within-sample comparison of students who went through before and after receiving finance park training; in the pre-treatment column the percentages are based on the amount allocated, rather than net monthly income. 81 students went through the park prior to receiving the curriculum. This occurred in early February. From the same class, 44 students attended in late April after taking the classroom training. Bank of America is the kiosk associated with home purchase or rental decisions. The size of the home chosen has a direct impact on items 2, 3, and 5, which are gas, electricity, and municipal services, respectively. Item 4 is the choice of telephone package; this includes cell phones and different varieties of land-line packages. Toyota is the kiosk where they make a car purchase decision. Union Bank is a savings account. State Farm is auto and property insurance, and the choice here is largely dictated by the choice in (1) and (6). Providence St. Joseph is health insurance; participants can choose between six plans that vary in terms of the monthly premium and coverage levels (see Table ??). L.A. Valley College is a community college where they can pay for courses that equip them with more marketable skills. Home improvement is mandatory, and is the monthly payment level associated with a home improvement plan they choose. Entertainment, Sport Chalet, and Restaurant each represent opportunities to enjoy movies, sporting equipment purchases, or dining out. Non-profit giving reflects an amount they choose to donate to a local charity.

	Panel A:			Panel B:		
	Pre	Post	t-diff	Pre	Post	t-diff
Student has made all payments	0.01	0.52	-8.74	0.00	0.00	.
Bank Of America amount	8.04	17.46	-2.9	7.80	15.18	-1.54
The Gas Co amount	4.85	4.41	0.17	4.93	7.06	-0.56
So Cal Edison amount	10.26	3.44	2.82	10.43	3.90	1.82
Phone amount	5.78	2.64	1.25	5.89	2.95	0.79
Water/sewer/trash amount	4.03	2.38	1.55	4.10	2.57	0.96
Toyota amount	5.92	13.87	-3.68	5.62	10.93	-1.7
Groceries amount	16.45	17.21	-0.17	16.46	17.25	-0.12
Clothing amount	11.82	4.28	3.01	11.97	3.81	2.19
Chase or Wamu amount	2.00	7.90	-2.38	1.96	11.39	-2.62
State Farm amount	2.29	3.92	-2.26	2.26	3.85	-1.5
Providence St. Joseph amount	5.21	2.72	1.18	5.24	2.01	1.03
La Valley College amount	5.66	2.11	1.44	5.74	2.16	0.98
Home Improvement amount	2.60	4.94	-2.48	2.50	5.80	-2.4
Entertainment amount	2.21	3.58	-1.58	2.20	4.58	-1.88
Sport Chalet amount	4.52	2.25	1.43	4.60	2.65	0.82
Restaurant amount	2.62	1.55	0.94	2.65	1.70	0.56
Nonprofit Giving amount	3.45	1.63	0.76	3.51	1.95	0.44
Sample Size	42	43	-	41	20	-

Table 8: Prudent and imprudent financial choices

When students in the park were randomly assigned an amount to spend on home improvement, they chose a monthly payment plan. Panel A explores how exposure to classroom training impacts the decision to amortize the loan more quickly. The first two columns report the log of the total interest payments to the total package size. When this variable is smaller, it indicates that the student has chosen to amortize the package more quickly by making larger payments that result in lower overall interest charges. The second two columns report OLS regressions of the log of the ratio of the size of the monthly payment to the total package size. Panel B explores health insurance choices. In columns (1) and (2) the dependent variable is a dummy variable that accounts for whether the respondent has a family but does not have insurance that covers the family (i.e., they appear to have chosen individual instead of family insurance). In Columns (3) and (4), the dependent variable is a dummy for whether the person chose a plan with high premiums that has fixed-payment copays (\$15 per visit) versus slightly lower premiums with percentage copay (15% of cost). Columns (2) and (4) replace log(NMI) with income fixed effects in each Panel. School fixed effects are included in all estimations. 1,672 observations are included.

Panel A: Home Improvement Loan Decisions

	(1)	(2)	(3)	(4)
	Interest Payments:		Amortization:	
log(NMI)	0.787*** (0.034)		-0.588*** (0.025)	
Kids = 1	0.074** (0.033)	0.052* (0.026)	-0.056** (0.025)	-0.049** (0.020)
Kids = 2	0.024 (0.034)	0.046 (0.028)	-0.015 (0.025)	-0.044** (0.021)
Age	-0.012** (0.005)	0.002 (0.004)	0.008** (0.003)	-0.002 (0.003)
Married	0.075*** (0.020)	0.019 (0.019)	-0.069*** (0.016)	-0.020 (0.015)
Trained	-0.110*** (0.001)	-0.114*** (0.004)	0.080*** (0.001)	0.085*** (0.003)
R-squared	0.268	0.594	0.274	0.566

Panel B: Health Insurance Decisions

	(1)	(2)	(3)	(4)
	Prob(Underinsured)	Prob(Flat-fee Co-pay)		
log(NMI)	-0.003 (0.011)		0.883*** (0.043)	
Kids=1	0.006 (0.009)	-0.006 (0.006)	-0.198*** (0.034)	-0.256*** (0.037)
Kids=2	-0.012 (0.009)	-0.022*** (0.005)	-0.134*** (0.027)	-0.196*** (0.028)
Age	0.001 (0.001)	0.001 (0.001)	0.001 (0.004)	-0.005 (0.005)
Married	0.019** (0.008)	0.028*** (0.007)	-0.255*** (0.021)	-0.223*** (0.026)
Trained	-0.033*** (0.003)	-0.029*** (0.002)	-0.161*** (0.005)	-0.187*** (0.007)

A. Junior Achievement Finance Park Program Summary

JA Finance Park offers students personal financial management and career exploration through classroom instruction and active participation in a simulated community. The curriculum is designed as an integrated unit, preparing students for an all-day visit to JA Finance Park.

The learning objectives listed beside each activity state the skills and knowledge the students will gain.

A. Activity One - Financial Institutions:

Students recognize the role of financial institutions and the various services they provide. Through case study, graphing and other activities, students understand the advantages and disadvantages of saving, investing and using credit. Key Learning Objectives Students will be able to:

- identify services provided by financial institutions and understand how/when the services are used
- explain debit cards and their uses define interest and credit
- understand the cost of credit
- explain the advantages and disadvantages of using credit
- list the risks and benefits involved in saving and investing
- identify the impact interest rates have on investment value
- read stock quotes and determine stock value

B. Activity Two - Taxes and My Salary:

Students discuss the similarities and differences among sales, income, and property taxes. Students study the benefits and limitations of Social Security. Using various scenarios, students determine net monthly income (NMI).

Key Learning Objectives Students will be able to:

- define the differences among sales, income, and property taxes and the purpose of each

- identify the basic principles of Social Security
- define NMI and demonstrate how it is calculated

C. Activity Three - Budgeting:

Students learn the importance of creating and maintaining a personal budget. Students create their own personal budgets and evaluate other budgets through case study analysis.

Key Learning Objectives Students will be able to:

- understand who uses a budget and why
- identify the components of a successful budget
- evaluate the effectiveness of sample budgets
- develop spending plans and practice making budget decisions

D. Activity Four - Preparing for the Visit:

Students prepare for their visit to JA Finance Park by defining their schedule, conducting pricing research, and assessing investment. They also gain knowledge about budgeting by evaluating hypothetical life situations and prioritizing budget items.

Key Learning Objectives Students will be able to:

- create a personal budget
- calculate net monthly income
- conduct pricing research and assess investments

E. Activity Five - The Visit:

Students spend one day at JA Finance Park where they apply classroom learning by making important spending decisions and maintaining a balanced budget.

Key Learning Objectives Students will be able to:

- create a typical family budget using hypothetical life situations
- use percentages to calculate minimum and maximum spending allowances
- evaluate stock holdings

F. Activity Six - After the Visit:

Students participate in a reflective assessment of their accomplishments during their visit to JA Finance Park that includes feedback from parents.

Key Learning Objectives Students will be able to:

- demonstrate integration of classroom instruction to the simulation experience
- perform a credit card and investment assessment
- conduct self-reflection regarding their visit

G. Activity Seven - Career Goals (optional activity):

Students identify their abilities, interests, work preferences, and values. Based on their newly acquired financial knowledge, students consider the type of lifestyle they would like and what goals they must set to achieve this lifestyle. Students determine the training they will need to achieve these goals.

Key Learning Objectives Students will be able to:

- differentiate between abilities, interests, work preferences, and values
- identify their personal characteristics
- rate their abilities, interests and work preferences
- identify their career interests
- perform career choice research
- write a letter of application to a prospective employer

JA Finance Park enhances the students learning of the following concepts and skills:

Concepts Banking Budgets Buying Careers Choices Consumers Credit Debt Exchange Expenses Income Interest rates Investments Money Opportunity costs Saving Scarcity Spending Social security Standards of living Taxes

Skills Analysis Applying information Budgeting Cause and effect Critical thinking Computation Data collection Decision making Filling out forms Following directions Graphing Interpersonal communication Interpreting data Listening Negotiation Observation Planning Problem solving Reading Research Role playing Taking responsibility Teamwork

All JA programs have technology enhancements and are designed to support the skills and competencies outlined in the SCANS (Secretarys Commission on Achieving Necessary Skills) report. These programs also augment the school-based, work-based, and connecting activities for communities with school-to-work initiatives.