Financial Literacy Center
WORKING PAPER

# Testing Education Tools to Demonstrate Returns to Work for Children Aging Out of the SSI-Disabled Children Program

RICHARD V. BURKHAUSER AND MARY C. DALY

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**Final Report for Year Two Financial Literacy Center**
**Testing Educational Tools to Demonstrate Returns to Work for Children Aging Out of the SSI-Disabled Children Program**

**Principal Investigators**

**Principal Investigator:** Richard V. Burkhauser
Cornell University
Email: rvb1@cornell.edu
Phone: (607) 255-2097

**Co-Principal Investigator:** Mary C. Daly
Federal Reserve Bank of San Francisco
E-mail: mary.daly@sf.frb.org
Phone: (415) 359-8260

**Other key personnel**

Daniel Benjamin, Cornell University, db468@cornell.edu
Assistant Professor of Economics
Assist with the experimental design and oversee the experiment at the Lab for Experimental Economics and Decision Making at Cornell University

Jody Hoff, Federal Reserve Bank of San Francisco, jody.hoff@sf.frb.org
Manager, Economic Education and Public Programs FRBSF
Assist with the experimental design and oversee the development of treatment materials

Phil Armour, Cornell University, poa8@cornell.edu
Research Assistant

Adrian Nan Zhou, Cornell University, nz75@cornell.edu
Research Assistant

Judy Feria, Federal Reserve Bank of San Francisco, judy.feria@sf.frb.org
Web Specialist

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**ABSTRACT**

A substantial fraction of children receiving Supplemental Security Income benefits for disability (SSI-child) transition directly onto the SSI-adult program at age 18 without attempting to enter the labor market. Once this transition is complete, very few attempt to work while receiving SSI-adult benefits. The MDRC SSA Youth Transition Demonstration (YTD) Project report (2008) identified lack of information about financial incentives/disincentives as a potential barrier to work for these youth. In our Year 1 and Year 2 Financial Literacy Research Center projects we focused on this potential impediment. Our Year 1 analysis documented the financial value of working for young adults on SSI. With Year 2 funding we developed a financial calculator based on our analysis and tested whether it could be a tool for determining the value of work for young SSI recipients. Our results point to the potential for such financial education tools to help SSI youth and their families make more informed decisions about their financial future. They also underscore the need for additional development of these and other financial education tools for this vulnerable population.

**Executive Summary**

**Testing Educational Tools to Demonstrate Returns to Work for Children Aging Out of the SSI-Disabled Children Program**

**Richard V. Burkhauser (PI) and Mary C. Daly (Co-PI)**

A substantial fraction of children receiving Supplemental Security Income benefits for disability (SSI-child) transition directly onto the SSI-adult program at age 18 without attempting to enter the labor market. Once this transition is complete, very few attempt to work while receiving SSI-adult benefits. Thus, most SSI-children are aging into what is likely to be a permanent life on the SSI-adult program or in the event of denial of SSI-adult benefits, turning to other forms of social welfare. This is costly to both the beneficiaries who live their lives at or near the poverty threshold and to taxpayers who are funding the benefits. The cost of providing such a low level of economic well-being to a growing number of young adults has raised concerns among policymakers (Social Security Board 2006) and resulted in a large scale attempt by the Social Security Administration to support work among these young adults (SSA Youth Transition Demonstration Project, 2010).

The MDRC SSA Youth Transition Demonstration (YTD) Project report (2008) identified hurdles that youth in transition must overcome in order to transition from the SSI–child program to work as adults.[1] In our Year 1 and Year 2 Financial Literacy Research Center projects we focused on one of the impediments listed in the YTD report—lack of information about the financial benefits of work. Our Year 1 analysis documented the financial value of working for young adults on SSI. With Year 2 funding we developed and tested a financial calculator that could be used to educate young SSI beneficiaries and support teams (families, advocates, counselors) about the economic benefits of working in the labor market.

In Year 2 we devoted a significant portion of our efforts to creating and refining a tool designed to describe the financial consequences of decisions regarding work for young adults on SSI. The starting point for our financial education instrument were the many financial calculators available online for assisting individuals with basic household finance decisions and retirement planning. We also borrowed from the financial education literature regarding assisting young people with these decisions. We presented a prototype of our financial education tool at the New Insights and Advances in Financial Literacy: Translation, Dissemination, Change; The First Financial Literacy Research Consortium Conference, Washington, D.C. in November, 2010. Based on feedback from that meeting, as well as from presentations to several academic audiences, we developed a working online instrument appropriate

[1]These are summarized in Figure I.1, p.3 of the MDRC Report to the Social Security Administration and Mathematica Policy Research (2008).

for pilot study; we began our pilots in Spring, 2011. The pilots were very useful and allowed us to further refine our instrument in preparation for the randomized experimentation at the LEEDR, Cornell University. The randomized experiments were completed in the first half of September 2011.

**Testing Financial Education Tools**

Our hypothesis was that an online tool developed to help young adults on SSI learn about the financial value of working would result in improved comprehension of the payoffs relative to the currently provided SSA materials. A laboratory experiment was designed with three treatment options in which subjects made recommendations about work to a young person on SSI. The three treatments consisted of 1) an electronic copy of the SSA publication *Working While Disabled – How We Can Help*, 2) our graphical version of the online financial education tool, and 3) our visual version of the online financial education tool.

To assess differences across the three treatments, we produced test materials designed to assess each subject's numeracy, comprehension of SSA disability rules, ability to calculate benefit payments and make recommendations regarding the decision to work, and post-experiment evaluation of learning. The numeracy items were obtained from a certification exam for teacher licensing. We included a measure of numeracy as a check on the expected high SAT math scores of Cornell undergraduates given the highly selective admission requirements of the university. The SSI and SSDI test items were obtained from training and testing materials used in the field to certify benefit counselors working in the Oregon Work Incentive Program. In addition, each participant completed a post-experiment survey eliciting attitudes about their experience during the experiment, recommendations for improving their assigned treatment, and demographic information.

In sum, the results suggest that the online financial education tools could be valuable aids for young adults on SSI and their support teams when learning about the financial value of working. Even in the relatively math proficient population of subjects at Cornell University we found that the online tools had a statistically significant impact on the ability to answer questions requiring facility with the rather complicated formulas embedded in the SSI and SSDI rules. Moreover, the Cornell undergraduates in the control group (treatment A) were provided (by us) with additional educational materials not currently available online from SSA. Given the results of the pilot experiment, it is clear that these additional materials were critical to the relatively good control group performance reflected in the results. Taken together, these results point to the potential for our financial education tools to help SSI youth and their families make more informed decisions about their financial future. They also underscore the need for additional development of these and other financial education tools for this vulnerable population.

## I. Project Summary

A substantial fraction of children receiving Supplemental Security Income benefits for disability (SSI-child) transition directly onto the SSI-adult program at age 18 without attempting to enter the labor market. Once this transition is complete, very few attempt to work while receiving SSI-adult benefits. Thus, most SSI-children are aging into what is likely to be a permanent life on the SSI-adult program or in the event of denial of SSI-adult benefits, turning to other forms of social welfare. This is costly to both the beneficiaries who live their lives at or near the poverty threshold and to taxpayers who are funding the benefits. The cost of providing such a low level of economic well-being to a growing number of young adults has raised concerns among policymakers (Social Security Board 2006) and resulted in a large scale attempt by the Social Security Administration to support work among these young adults (SSA Youth Transition Demonstration Project, 2010).

There are many reasons why a majority of SSI youths and SSI young adults with disabilities are not investing in work. The MDRC SSA Youth Transition Demonstration (YTD) Project report (2008) provides an excellent summary of these barriers, identifying several hurdles that youth in transition must overcome in order to transition from the SSI–child program to work as adults.[1] In our Year 1 and Year 2 Financial Literacy Research Center projects we focused on one of the impediments listed in the YTD report—lack of information about the financial benefits of work. Our Year 1 analysis documented the financial value of working for young adults on SSI. With Year 2 funding we developed and tested a financial calculator that could be used to educate young SSI beneficiaries and support team (families, advocates, counselors) about the economic benefits of working in the labor market.

To facilitate development of our financial education tool we pilot tested it in the Lab for Experimental Economics and Decision Research (LEEDR) at Cornell University. Based on those tests we refined the instrument and our approach, ultimately producing two alternative calculators that were then formally tested, against an augmented SSA Redbook, in a randomized controlled experiment at the LEEDR. The results point to the potential for our financial education tools to help SSI youth and their families make more informed decisions about their financial future.

[1]These are summarized in Figure I.1, p.3 of the MDRC Report to the Social Security Administration and Mathematica Policy Research (2008).

## II. Background and Research Program

Currently more than one million children with disabilities receive SSI-disabled children benefits. Research suggests that at age 18 the majority will apply for and receive SSI-disabled adult benefits and thereafter never attempt to enter the labor market and secure employment. There are many reasons why so many youths and young adults with disabilities may not be investing in work. The MDRC SSA Youth Transition Demonstration Project report (2008) identifies the following potential barriers: [2]

- **Low expectations for working and self sufficiency**
- **Lack of access to employment services and work-based experiences**
- **Uncoordinated handoff to adult services**
- **Inadequate access to social and health services**
- **Financial disincentives to work**
- **Lack of knowledge about how benefits change when a person works**

Among these barriers a critical and under-investigated one is the financial disincentives/incentives to work. In our Year 1 FLRC project we examined the value of work for young SSI recipients and found that the decision to forego employment comes with significant short- and long-run financial consequences for these youth. [3] We showed that young adult SSI recipients can benefit from working in two ways: by increasing their income while on SSI and by potentially qualifying for SSDI. Not attempting to work leaves both of these opportunities untapped.

Our analytic work highlighted a relatively unknown fact, namely that with relatively short periods of work (one and a half years) and small average annual earnings, SSI-disabled children beneficiaries can qualify for Social Security Disability Insurance (SSDI). Moreover, since SSDI is an earnings-based insurance program, young adults on SSI who are able to work more than one and a half years and continue to grow their average earnings will increase their insurance protection against the day they are no longer able to work. Thus, for young adults on SSI working provides both the opportunity to boost their monthly income through wage earnings

[2] These are summarized in Figure I.1, p.3 of the MDRC Report to the Social Security Administration and Mathematica Policy Research (2008).
[3] For a summary of the Year 1 results see "Final Report for Year One Financial Literacy Research Center: The Returns to Work for Children Leaving the SSI-Disabled Children Program." Richard V. Burkhauser and Mary C. Daly (2010).

while on SSI as well as the opportunity to qualify for and ultimately move onto the more generous SSDI program.[4]

Based on our analytic work we developed a computational algorithm that for a broad range of circumstances, calculates the value of SSI adult benefits with and without work at various earnings levels as well as the value of SSDI benefits once coverage is obtained. The algorithm allows for different earnings and employment scenarios and includes information on state supplements to the SSI program. Using this algorithm, we developed a financial literacy tool designed to aid youth with disabilities and their support team in making decisions about seeking employment. We then tested this tool at the Cornell LEEDR and refined it based on feedback from those pilots. The specifics of the Year 2 analysis are listed below.

**Year 2 accomplishments:**

- Expanded the baseline algorithm to include alternative work and earnings scenarios, state specific information on SSI supplements and wage profiles, and basic information about interactions with other benefit programs including Food Stamps and Medicaid.
- Developed a financial education tool intended to assist young adults transitioning off of the SSI children as well as their families and/or advocates in making informed decisions about the economic value of work.
- Piloted the financial education tool at the LEEDR at Cornell University as well as among staff in the Community Development and Education Departments of the Federal Reserve Bank of San Francisco.
- Based on results from these pilots developed an additional calculator geared more towards the SSI youth themselves.
- Conducted a randomized controlled experiment among Cornell University undergraduates at the LEEDR

## III. Policy Relevance

The Social Security Administration, as well as other policymakers, has agreed that the transition to adulthood for youth receiving SSI-child benefits can be difficult. The fact that so many young people end up on the SSI-adult program or unemployed and on other forms of social support underscore the need for study of this issue. Our work adds directly to the evidence needed to devise the tools necessary to assist these young adults in making the transition to

[4] Even when SSDI and SSI benefit payments are identical, the SSDI is more generous in that it allows recipients to work more hours and accumulate savings.

adulthood with greater self-sufficiency, less dependence on social welfare benefits, and potentially higher economic well-being over their lifetimes.

## IV. Year 2: Developing and Testing a Financial Education Tool for Young Adult SSI Recipients

In Year 2 we devoted a significant portion of our efforts to creating and refining a tool designed to describe the financial consequences of decisions regarding work for young adults on SSI. We presented a prototype of our financial education tool at the New Insights and Advances in Financial Literacy: Translation, Dissemination, Change; The First Financial Literacy Research Consortium Conference, Washington, D.C. in November, 2010. Based on feedback from that meeting, as well as from presentations to several academic audiences, we developed a working online instrument appropriate for pilot study; we began our pilots in Spring, 2011. The pilots were very useful and allowed us to further refine our instrument in preparation for the randomized experimentation at the LEEDR, Cornell University. The randomized experiments were completed in the first half of September 2011. The results from these experiments suggest that the financial education tools are helpful in educating young adults about the returns to work while on SSI-adult disability benefits.

In the remainder of this report we summarize the development of our instrument, the pilot process, and the results from the randomized controlled experiment.

### Development of the Financial Education Tool

The starting point for our financial education instrument were the many financial calculators available online for assisting individuals with basic household finance decisions and retirement planning. We also borrowed from the financial education literature regarding assisting young people with these decisions. Ultimately, based on the skill range of individuals likely to be involved in the decision-making process for a young person on SSI benefits (family members, benefit counselors, advocates) and the feedback we received from our pilot studies we decided to develop and test two versions of our online tool. The versions are identical in content but illustrate concepts differently; one uses graphical displays and the other uses simple visualizations. Exhibit 1 displays screen shots of the pages of both of our online financial tools. As the Figure shows, both alternatives begin with a launch point for young adults on SSI who are considering work. This landing page is meant to start users thinking about questions they could ask and answer with the calculator. From there users go to three additional pages (not shown) which collect basic information needed to individualize the calculations reported. Once these

entry pages are completed, users move through the material first learning about how work increases their income while they are on SSI and eventually learning about how working over a longer period qualifies them for SSDI. The first version (labeled B for the experiment) uses graphs to illustrate the changes in income associated with additional work. The second version (labeled C) replaces the graphs with a simple visualization strategy intended to convey the same information without suggesting or requiring mathematical proficiency. The tools in Exhibit 1 are the same ones we formally tested in September at the LEEDR. They were developed and refined over the course of the year and based on several pilot experiments. Below we discuss what we learned from the pilot and how it affected the final financial education tools fielded.

**Designing the Experiment**

Our hypothesis was that an online tool developed to help young adults on SSI learn about the financial value of working would result in improved comprehension of the payoffs relative to the currently provided SSA materials. A laboratory experiment was designed with three treatment options in which subjects made recommendations about work to a young person on SSI. The three treatments consisted of 1) an electronic copy of the SSA publication *Working While Disabled – How We Can Help*, 2) our graphical version of the online financial education tool, and 3) our visualization version of the online financial education tool.

To assess differences across the three treatments, we produced test materials designed to assess each subject's numeracy, comprehension of SSA disability rules, ability to calculate benefit payments and make recommendations regarding the decision to work, and post-experiment evaluation of learning. The numeracy items were obtained from a certification exam for teacher licensing. We included a measure of numeracy as a check on the expected high SAT math scores of Cornell undergraduates given the highly selective admission requirements of the university. The SSI and SSDI test items were obtained from training and testing materials used in the field to certify benefit counselors working in the Oregon Work Incentive Program. In addition, each participant completed a post-experiment survey eliciting attitudes about their experience during the experiment, recommendations for improving their assigned treatment, and demographic information.

**Piloting the Experiment and Instruments**

Prior to conducting the randomized controlled experiment we ran a series of pilot studies to test our experimental design, test instruments, and treatments (online financial education tools). Pilot subjects were undergraduate students serving as research assistants in the Cornell University

Economics department and staff in the Community Development and Education departments of the Federal Reserve Bank of San Francisco. Results from the first pilot study, using the *Redbook* and a graphical-based calculator, revealed large differences in test scores and attitudes. Subjects in the *Redbook* treatment were unable to obtain correct answers on many of the test questions, could not complete the tasks within the time allotted, and indicated in their survey responses a high degree of frustration about their experiences. These results revealed that even for highly numerate Cornell undergraduates, the *Redbook* was too difficult for individuals inexperienced in calculating disability benefits. Consulting with our experimental design expert, Dan Benjamin, we determined that the *Redbook* was not an acceptable control group treatment since the difference between it and our online instruments was too vast to be a valid comparison. To remedy this issue, we substituted the new *Working While Disabled—How We Can Help* SSA resource for the *Redbook* treatment. In addition, to insure that the treatments were similar in content, we added background information, definitions, formulas, and worked examples of benefit calculations to all three treatments including the SSA materials and our two online tools (see Exhibit 2).[5]

In addition, responding to feedback from the Community Development and education staff at the Federal Reserve Bank of San Francisco, we created a second version of the calculator that incorporated a visual rather than a graphical-based presentation of benefit outcomes. With these changes in place we conducted another pilot with results that were more uniform across treatments groups in terms of scores and time on task. Based on these results, Dan Benjamin determined the three treatments conditions represented a valid experiment.

## V. The LEEDR Randomized Controlled Experiment

Undergraduate and graduate students from Cornell University volunteered to participate in the study. A total of 245 subjects volunteered for the experiment, conducted at the Lab for Experimental Economics & Decision Research, using standard experimental protocols in fourteen sessions. Subjects earned between $10 and $25 in the experiment based on their ability to correctly respond to a series of questions and scenarios about disability benefits and work. Participants were randomly assigned to each treatment, with 83 subjects participating in Treatment A (SSA PDF), 80 subjects in Treatment B (graphical calculator), and 82 subjects participating in Treatment C (visual-based calculator).

The experiment was fielded over the course of two weeks, beginning August 24 and ending on September 13, 2011. Each experiment ran for one hour, following the script in the box below.

[5] Exhibit 2 appeared in the test booklet. The other resources appeared in the treatment resources.

**Experiment Script**

1. Participants will be briefed on the experiment and asked to sign an informed consent form. (5 minutes)
2. Participants will be randomly assigned to one of three decision aides. The decision aides consist of 1) a PDF version of the Social Security Administration materials on disability benefits (attached); 2) an Online Benefit Counselor Chart Version (BC-CV), and 3) an Online Benefit Counselor Visual Version (BC-VV). (5 minutes)
3. Participants will first take a brief, three question test eliciting their numeracy. (5 minutes)
4. Participants will briefly navigate the decision aide loaded on the hard drive of the computer station they have been assigned to use during the experiment. (2-3 minutes)
5. Using their respective online resource, participants will complete a comprehension test consisting of basic knowledge about the Supplemental Security Income and Social Security Disability Income and apply that knowledge in completing two client scenarios. (30 minutes)
6. Participants will complete an exit survey asking about their experience during the comprehension and scenario test and requesting constructive criticism for reforming their respective decision aide. (5 minutes)
7. Participants will complete a demographic questionnaire. (5 minutes)

**Results of the Experiments**

The experiment ran for about two weeks for a total of 14 sessions. We had a total of 245 subjects: 95% were undergraduates and 5% were graduate students. All subjects volunteered to participate in the experiment. The mean age for participants was 20.18; about 63% of the participants were female. The average math SAT score was 714 and the average verbal SAT score was 679.

Table 1 summarizes the sample size for each treatment group and key covariates used in subsequent analysis. Following the experiment, participants completed a survey to elicit demographic and background information. Responding to the post-experiment survey questions was voluntary (i.e., payment did not depend on compliance) and resulted in a loss of some observations.

Table 2 provides results of the random assignment of participants across treatment groups. Independent sample *t-tests* were conducted to compare the control treatment means (Group A) and the two experimental treatments means (Group B and Group C) on key covariates. The means

for each treatment group are reported in the first row, with standard errors in the second row. The results indicate no significant difference between groups on most variables. Notable exceptions to this were in Treatment B where Father's Education ($M$ = 3.37, $SE$ = 0.09), Math Courses Completed ($M$ = 1.90, $SE$ = 0.22), and Numeracy Binary ($M$ = 4.53, $SE$ = 0.07) were significantly different than Group A at the 5% level.

Table 3 summarizes the outcomes on various performance measures. The mean for each group is reported in the first row, followed by standard errors in the second row. The Scenario section is divided into three sub-groups measuring comprehension of SSI and SSDI disability information, facility in calculating SSI monthly benefits, and facility in calculating SSDI monthly benefits. Independent sample *t-tests* were conducted comparing the means of the experimental treatment groups (Group B and Group C) with the means of the control treatment (Group A). The results indicate no statistically significant differences between the control and experimental groups in the Overall Score and the Post experiment comprehension scores. A small but significant difference was found between Group C ($M$ = 2.17, $SE$ = 0.10) and Group A ($M$= 2.42, $SE$ = 0.10), $t = 1.98$, $p<0.10$ on the Familiarizing questions; between Group B ($M$ = 2.75, $SE$ = 0.06) and Group A ($M$ = 2.58, $SE$ = 0.06), $t = -2.17$, $p < 0.05$ on the SSI Calculation questions; and between Group C and Group A ($M$ = .78, $SE$ = 0.05) $t$ = -1.69, $p < 0.10$ on the SSDI calculation question.

Multiple regression analyses were conducted to examine the relationship between specific performance measures and various potential predictors. Three specifications were conducted on four sets of performance measures. The first specification included Treatment B, Treatment C, and a measure of numeracy (Numeracy Binary) as the predictor variables. The second specification added SAT scores in mathematics and verbal comprehension (Math SAT, Verbal SAT) to the model. The third specification added background variables including being an English language speaker (Native English), gender (Female), mother and father's educational attainment (Mother's Education, Father's Education), and the number of undergraduate mathematics courses completed (# Math Courses).

Table 4 summarizes the results of three specifications estimating the unweighted number of correct responses on all performance measures, with possible scores ranging from 0 – 12 (Numeracy Score excluded). The results of the full model indicate that the predictor variables explain 17% of the variance, $R^2$ = 0.17, F(10, 173) = 3.55. $p < .001$. Both Treatment B and Treatment C had a small negative effect on the overall score with a marginally significant effect for Treatment C across all three specifications (B = -0.622, $p < 0.10$). Several of the other covariates also had marginally significant effects and included Verbal SAT scores (B = 0.006, $p <$

.001), Mother's Educational Attainment (B = 0.39, $p < 0.10$, and the # of Math Courses Taken (B = 1.05, $p < 0.10$).

Table 5 summarizes the results of three specifications estimating the number of correct responses on the comprehension portion of the Scenario section (scores range from 0-2). Comprehension questions do not require calculating benefit outcomes. The results of the full model indicate that the predictor variables explain 10% of the variance, $R^2 = 0.10$, F(10, 173) = 1.87. $p < 0.053$. Treatment C had a negative and significant effect on the comprehension score across all three specifications (B = -0.242, $p < 0.05$). Additional covariates with significant effects included Math SAT score (B = -0.001, $p < 0.10$) and Verbal SAT score (B = 0.002, $p < 0.05$).

Table 6 summarizes the results of three specifications estimating the number of correct responses on the SSI calculation portion of the Scenario section (scores range from 0 – 3). The results of the full model indicate that the predictor variables explain 8% of the variance, $R^2 = 0.08$, F(10, 173) = 1.55, $p < 0.131$. Treatment B (B = 0.152, $p < 0.10$) had a positive, marginally significant effect in the first specification but, that effect was lost with the addition of covariates. Father's Education (B = 0.063, $p < 0.10$) and Mother's Education (B = 0.154, $p < 0.05$) were covariates with significant effects at the 10% and 5% levels, respectively.

Table 7 summarizes the results of three specifications estimating the number of correct responses to the SSDI calculation question in the Scenario section (scores range from 0 – 1). The results of the full model indicate that the predictor variables explain 9% of the variation, $R^2 = 0.086$, F(10, 173) = 1.63, $p < 0.102$. Treatment B had a positive and marginally significant effect in the second specification (B = 0.074, $p < 0.10$). Treatment C achieved a positive and significant effect over all three specifications (B = 0.078, $p < 0.05$). Math SAT (B = 0.001, $p < 0.05$) was statistically significant in the third specification at the 5% level.

In sum, the results suggest that the online financial education tools could be valuable aids for young adults on SSI and their support teams when learning about the financial value of working. Even in the relatively math proficient population of subjects at Cornell University we found that the online tools had a statistically significant impact on the ability to answer questions requiring facility with the rather complicated formulas embedded in the SSI and SSDI rules. Moreover, the Cornell undergraduates in the control group (treatment A) were provided (by us) with additional educational materials not currently available online from SSA. Given the results of the pilot experiment, it is clear that these additional materials were critical to the relatively good control group performance reflected in the results. Taken together, these results point to the need for additional development of these and other financial education tools for this vulnerable population.

## References

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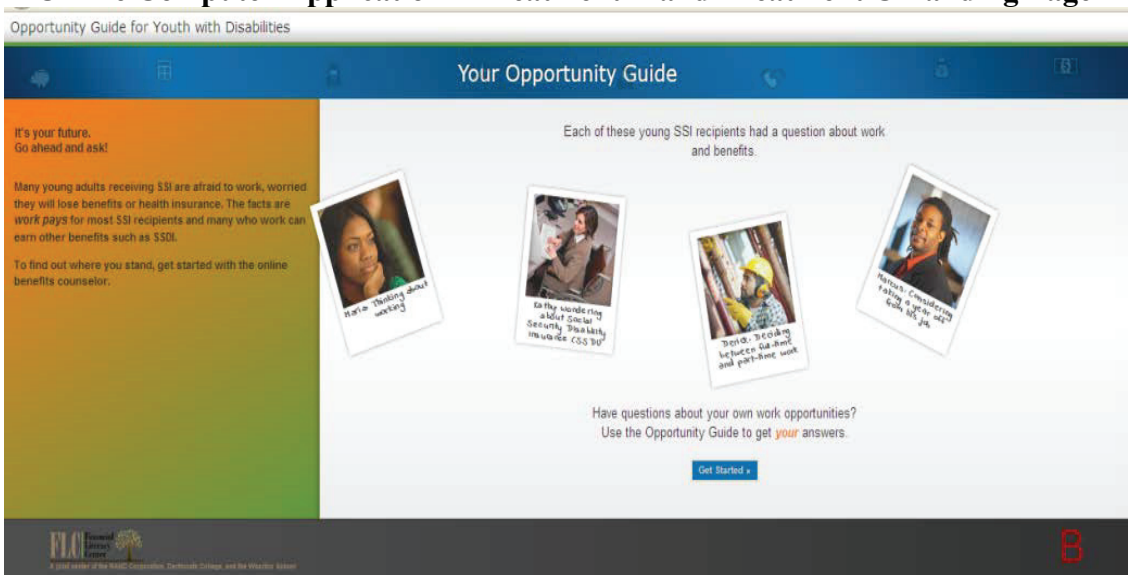
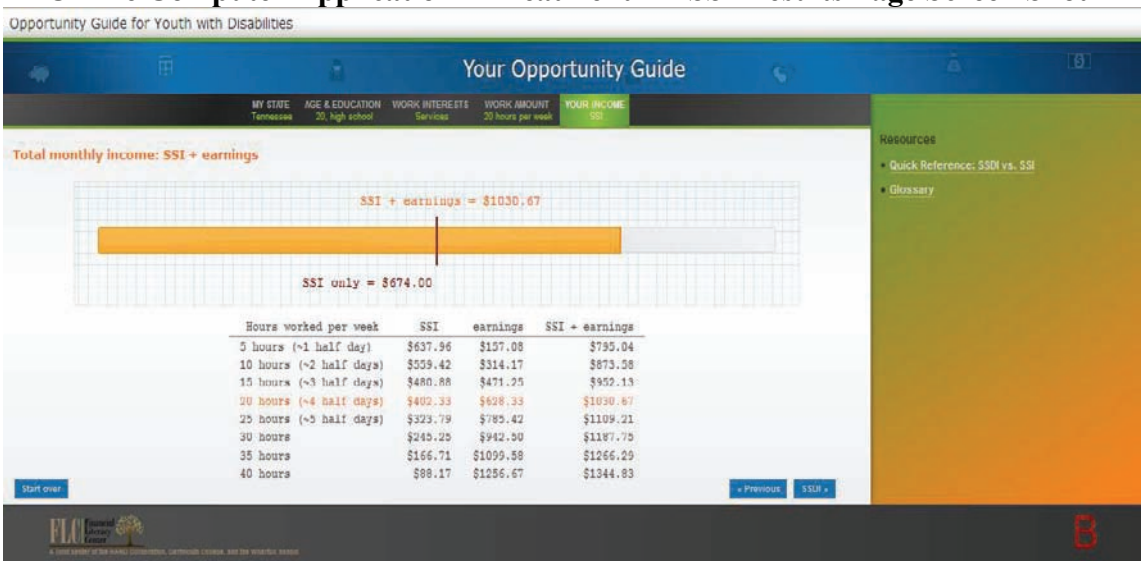
## Exhibit 1. Financial Education Tools for Young Adults on SSI

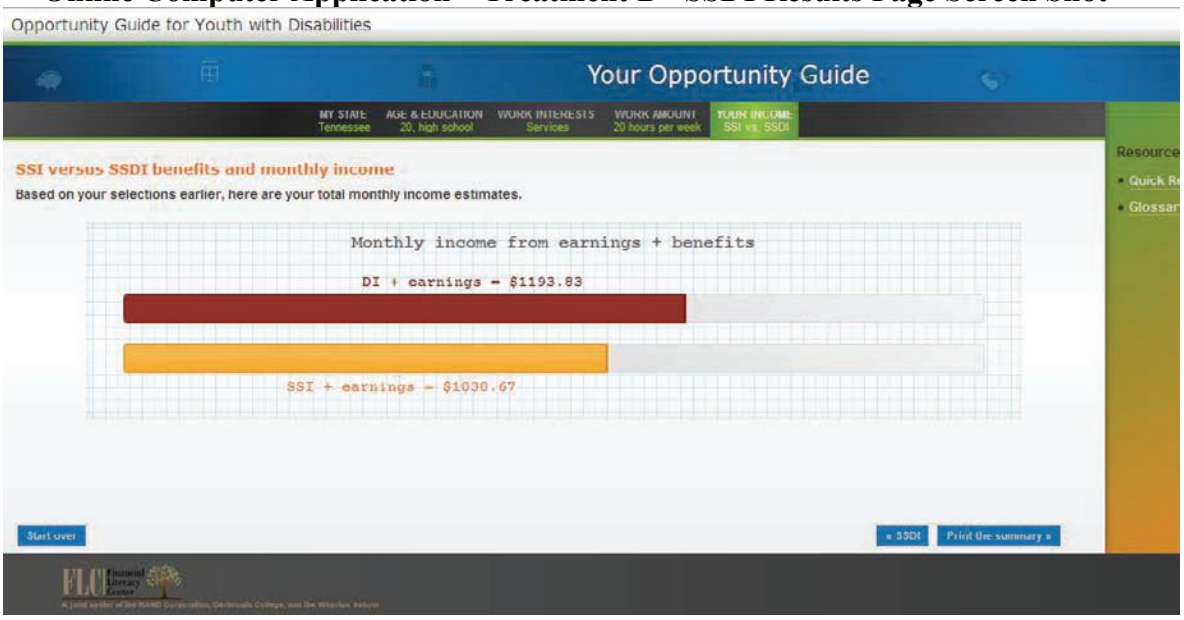
### Online Computer Application – Treatment B and Treatment C Landing Page



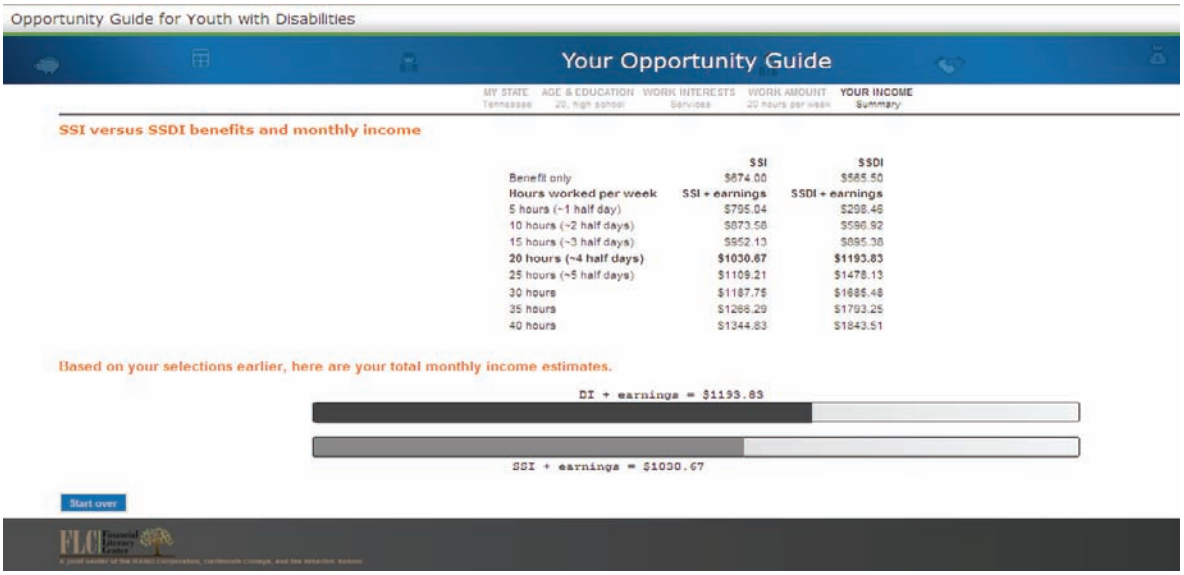

### Online Computer Application – Treatment B - SSI Results Page Screen Shot



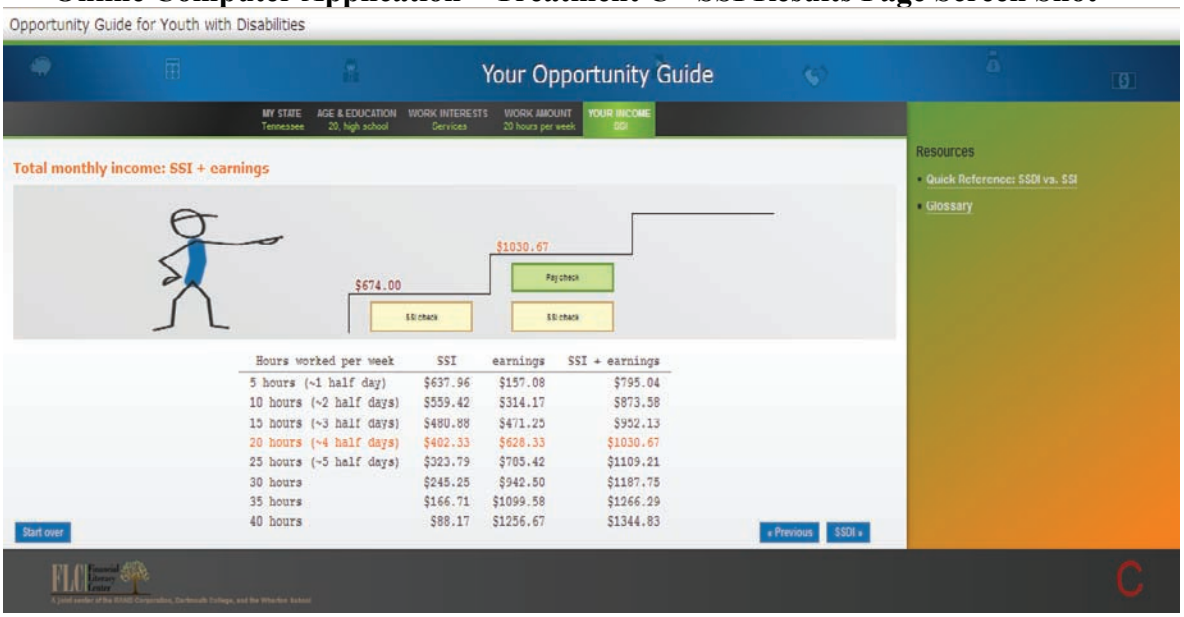
## Online Computer Application – Treatment B - SSDI Results Page Screen Shot



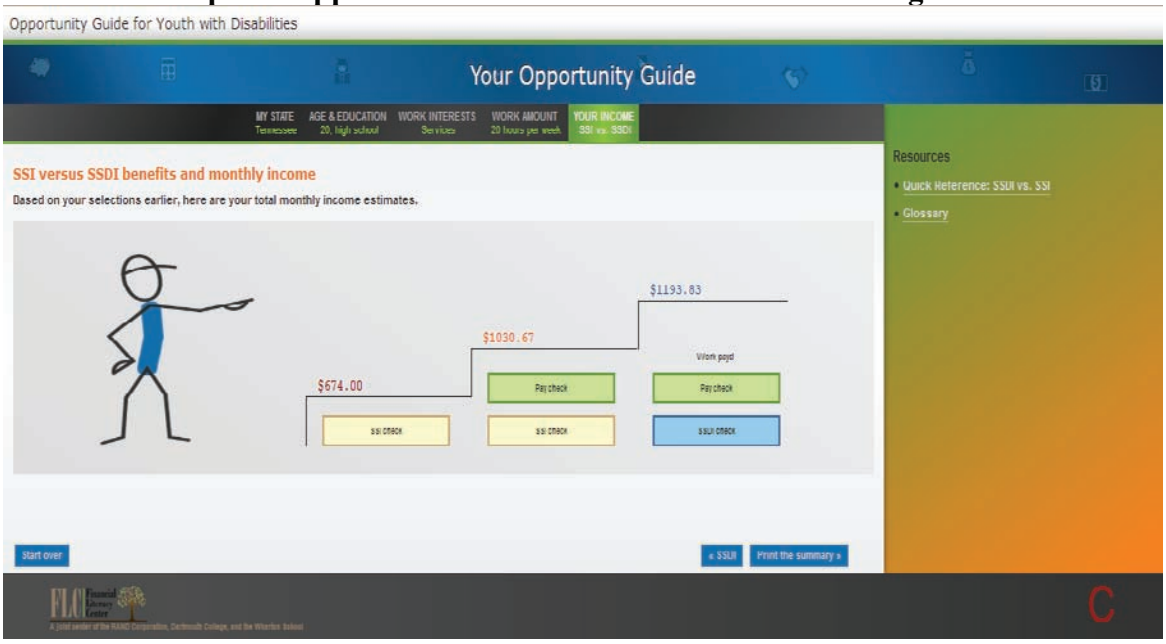

## Online Computer Application – Treatment B – SSI-SSDI Summary Page Screen Shot



## Online Computer Application – Treatment C - SSI Results Page Screen Shot




## Online Computer Application – Treatment C - SSDI Results Page Screen Shot



## Online Computer Application – Treatment C – SSI-SSDI Summary Page Screen Shot

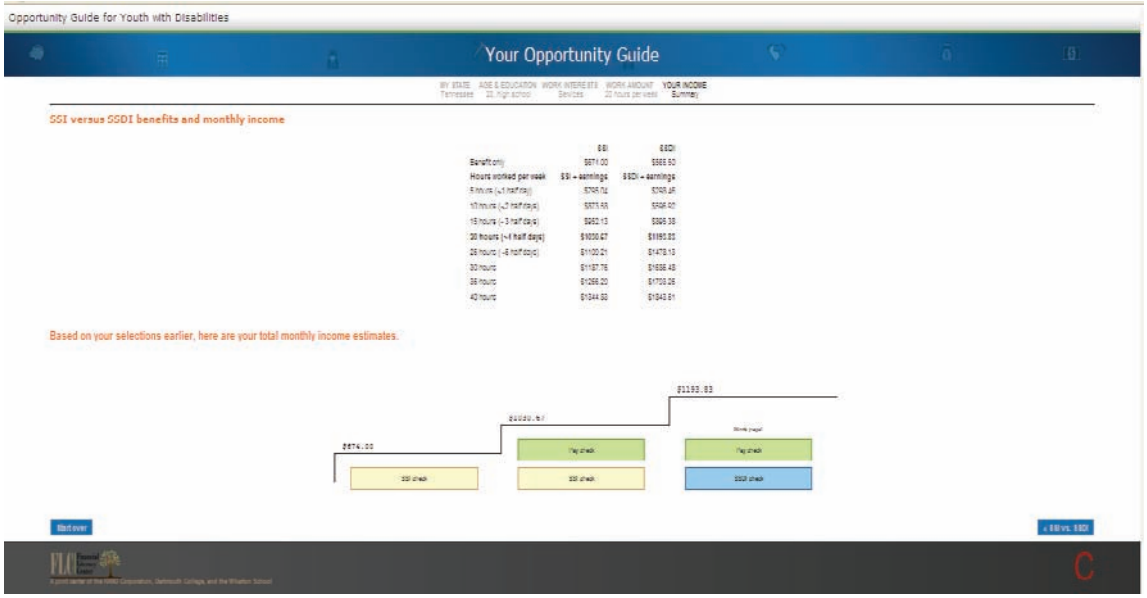


**Exhibit 2. Augmentation Sheet for SSA Materials**

**Counseling young adults with disabilities**

**Background Information**
Young people with disabilities face many challenges as they transition to adulthood.
For young recipients of a disability benefit known as Supplemental Security Income (SSI), one challenge is deciding whether or not they can enter the labor market without jeopardizing the disability benefits they receive. To assist them in making a good decision, states have set up counseling centers that provide advice about the financial rewards to working. The centers are staffed by undergraduate volunteers—like yourself.

As a volunteer your task is to assist young adults visiting the center in making the right financial decision, meaning one that maximizes their monthly income.
Please refer to the information resources on the screen to find answers to your client's questions and help them make a work decision that is right for them.

**SSI Benefit Calculation**

Total Monthly Income = Monthly Earnings From Wages + SSI Benefit Payment

- Monthly Earnings = Hourly Rate x # of Hours Worked x 4.3 (weeks per month)
- SSI Monthly Benefit Payment = $674 (2011Federal SSI Benefit Amount) - .5 x Countable Income
- Countable Income = Monthly Earnings - $85 (Income Exclusions)

**Example**
Hourly Rate = $10; Hours per Week = 10; Weeks per Month = 4.3
Monthly Earnings = 10 x 10 x 4.3 = $430
SSI Monthly Benefit Payment = 674 - .5(430-85) = $501.50
Total Income = $430 + $501.50 = $931.50

**SSDI Benefit Calculation**
Total Monthly Income = Monthly Earnings From Wages + SSDI Payment

- Monthly Earnings = Hourly Rate x # of Hours Worked x 4.3 (weeks per month)
- SSDI Monthly Benefit Payment = SSDI Monthly Benefit Amount (varies based on FICA contributions)

**Example**
Hourly Rate = $10; Hours per Week = 10; Weeks per Month = 4.3
Monthly Earnings = 10 x 10 x 4.3 = $430
SSDI Monthly Benefit Payment = $424.13
Total Income = $430 + $424.13 = $854.13

**Table 1: Participants, by Treatment Group**

| | Group | | | |
|---|---|---|---|---|
| | **A** | **B** | **C** | **Total** |
| **Total** | 83 | 80 | 82 | 245 |
| **No Missing SAT Scores** | 61 | 65 | 66 | 192 |
| **No Missing Covariates** | 57 | 63 | 64 | 184 |

Note: SAT scores consist of Math and Verbal scores. Covariates consist of SAT scores, gender, parents' education, number of math courses taken, and native English speaker.

**Table 2: Randomization Check**

| | A | B | C |
|---|---|---|---|
| ***Demographics*** | | | |
| **Female** | 0.68 | 0.64 | 0.56 |
| | 0.05 | 0.05 | 0.06 |
| **Age** | 21.14 | 20.47 | 21.31 |
| | 0.47 | 0.36 | 0.49 |
| **Hispanic** | 0.10 | 0.09 | 0.12 |
| | 0.03 | 0.03 | 0.04 |
| ***Educational Level*** | | | |
| **Freshman** | 0.05 | 0.04 | 0.04 |
| | 0.02 | 0.02 | 0.02 |
| **Sophomore** | 0.27 | 0.23 | 0.21 |
| | 0.05 | 0.05 | 0.05 |
| **Junior** | 0.27 | 0.31 | 0.33 |
| | 0.05 | 0.05 | 0.05 |
| **Senior** | 0.34 | 0.36 | 0.34 |
| | 0.05 | 0.05 | 0.05 |
| **Graduate** | 0.08 | 0.04 | 0.04 |
| | 0.03 | 0.02 | 0.02 |
| ***Background*** | | | |
| **Native English** | 0.69 | 0.69 | 0.76 |
| | 0.05 | 0.05 | 0.05 |
| **Mother's Ed** | 2.99 | 3.04 | 2.84 |
| | 0.10 | 0.10 | 0.10 |
| **Father's Ed** | 3.01 | 3.37 | 3.18 |
| | 0.10 | 0.09* | 0.10 |
| ***Skill Controls*** | | | |
| **Verbal SAT** | 678.69 | 682.46 | 676.67 |
| | 14.54 | 11.57 | 14.22 |
| **Math SAT** | 717.70 | 720.15 | 704.03 |
| | 15.14 | 10.15 | 14.79 |
| **Math Courses** | 2.60 | 1.90 | 2.28 |
| | 0.28 | 0.22* | 0.28 |
| **Numeracy Score** | 4.28 | 4.53 | 4.43 |
| | 0.10 | 0.07* | 0.09 |

Note: Means for each treatment group in first row, with standard errors under means. Starred values denote significant difference from Group A mean at 5% level.

**Table 3: Mean Number Correct, by Treatment Group**

| | A | B | C |
|---|---|---|---|
| **Overall Score** | 8.99 | 9.11 | 8.57 |
| | 0.22 | 0.17 | 0.25 |
| **Familiarizing** | 2.42 | 2.31 | 2.17 |
| | 0.07 | 0.08 | 0.10* |
| **Scenario** | | | |
| *Comprehension* | 1.29 | 1.24 | 1.11 |
| | 0.07 | 0.07 | 0.08 |
| *SSI Calculation* | 2.58 | 2.75 | 2.62 |
| | 0.05 | 0.06* | 0.07 |
| *SSDI Calculation* | 0.66 | 0.78 | 0.78 |
| | 0.05 | 0.05 | 0.05+ |
| **Post** | 2.04 | 2.04 | 1.89 |
| | 0.08 | 0.09 | 0.10 |

Note: Means and standard errors shown. Starred values denote 5% significant difference against Group A mean, + denoting 10% difference. Overall score calculated from the 12 post-numeracy questions. "Familiarizing" and "Post" scores are calculated from the respective 3-question sections. The "Comprehension" subsection is a two-point category calculated from the third question in Matt's Scenario and the first question in Maria's Scenario, neither requiring calculation. The "SSI Calculation" section is based on the 3 questions requiring subjects to calculate changes in SSI benefits given earnings. The "SSDI Calculation" section refers to the one question requiring subjects to calculate SSDI benefits, Maria's 3rd question.

**Table 4: Overall Performance Regression**

| | (1) | (2) | (3) |
|---|---|---|---|
| Treatment B | -0.012 | -0.265 | -0.127 |
| | [0.301] | [0.324] | [0.336] |
| Treatment C | -0.501 | -0.764 | -0.622 |
| | [0.298]+ | [0.323]* | [0.335]+ |
| Numeracy Binary | 1.455 | 0.475 | 0.59 |
| | [0.380]** | [0.551] | [0.576] |
| Math SAT | | -0.001 | -0.002 |
| | | [0.002] | [0.002] |
| Verbal SAT | | 0.006 | 0.006 |
| | | [0.002]** | [0.002]** |
| Native English | | | -0.244 |
| | | | [0.328] |
| Female | | | -0.113 |
| | | | [0.279] |
| Father's Education | | | -0.135 |
| | | | [0.204] |
| Mother's Education | | | 0.39 |
| | | | [0.200]+ |
| # Math Courses Taken | | | 0.105 |
| | | | [0.057]+ |
| Constant | 7.778 | 5.629 | 4.913 |
| | [0.379]** | [0.946]** | [1.080]** |
| Observations | 245 | 192 | 184 |
| R-squared | 0.07 | 0.13 | 0.17 |

Standard errors in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Note: OLS regression, estimating unweighted overall number correct on all post-numeracy questions. The dependent variable ranges from 1 to 12. Numeracy binary variable is zero if numeracy score is less than 4; 1 otherwise.

**Table 5: Performance on Comprehension Scenario Questions**

| | (1) | (2) | (3) |
|---|---|---|---|
| Treatment B | -0.094 | -0.2 | -0.145 |
| | [0.101] | [0.110]+ | [0.116] |
| Treatment C | -0.206 | -0.28 | -0.242 |
| | [0.100]* | [0.110]* | [0.116]* |
| Numeracy Binary | 0.455 | 0.3 | 0.311 |
| | [0.127]** | [0.188] | [0.199] |
| Math SAT | | -0.001 | -0.001 |
| | | [0.001] | [0.001]+ |
| Verbal SAT | | 0.001 | 0.002 |
| | | [0.001]* | [0.001]* |
| Native English | | | -0.018 |
| | | | [0.113] |
| Female | | | -0.035 |
| | | | [0.096] |
| Father's Education | | | -0.021 |
| | | | [0.071] |
| Mother's Education | | | 0.098 |
| | | | [0.069] |
| # Math Courses Taken | | | 0.024 |
| | | | [0.020] |
| Constant | 0.911 | 0.9 | 0.686 |
| | [0.127]** | [0.323]** | [0.373]+ |
| Observations | 245 | 192 | 184 |
| R-squared | 0.06 | 0.08 | 0.1 |

Standard errors in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Note: OLS regression, estimating number correct on the two non-calculation scenario questions. The dependent variable ranges from 0 to 2. Numeracy binary variable is zero if numeracy score is less than 4; 1 otherwise.

**Table 6: Performance on SSI Scenario Questions**

| | (1) | (2) | (3) |
|---|---|---|---|
| Treatment B | 0.152 | 0.114 | 0.148 |
| | [0.089]+ | [0.100] | [0.104] |
| Treatment C | 0.031 | 0.043 | 0.083 |
| | [0.089] | [0.100] | [0.104] |
| Numeracy Binary | 0.206 | 0.063 | 0.09 |
| | [0.113]+ | [0.170] | [0.178] |
| Math SAT | | 0.001 | 0.001 |
| | | [0.001] | [0.001] |
| Verbal SAT | | 0 | 0 |
| | | [0.001] | [0.001] |
| Native English | | | -0.097 |
| | | | [0.101] |
| Female | | | -0.006 |
| | | | [0.086] |
| Father's Education | | | -0.117 |
| | | | [0.063]+ |
| Mother's Education | | | 0.154 |
| | | | [0.062]* |
| # Math Courses Taken | | | 0.017 |
| | | | [0.018] |
| Constant | 2.407 | 2.041 | 1.889 |
| | [0.113]** | [0.292]** | [0.334]** |
| Observations | 245 | 192 | 184 |
| R-squared | 0.03 | 0.03 | 0.08 |

Standard errors in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Note: OLS regression, estimating number correct on the three questions requiring SSI benefit calculation. The dependent variable ranges from 0 to 3. Numeracy binary variable is zero if numeracy score is less than 4; 1 otherwise.

**Table 7: Performance on SSDI Scenario Question**

| | (1) | (2) | (3) |
|---|---|---|---|
| Treatment B | 0.113 | 0.127 | 0.126 |
| | [0.069] | [0.074]+ | [0.078] |
| Treatment C | 0.118 | 0.161 | 0.156 |
| | [0.069]+ | [0.074]* | [0.078]* |
| Numeracy Binary | -0.002 | -0.084 | -0.052 |
| | [0.088] | [0.125] | [0.133] |
| Math SAT | | 0.001 | 0.001 |
| | | [0.000]** | [0.000]* |
| Verbal SAT | | 0 | 0 |
| | | [0.000] | [0.000] |
| Native English | | | -0.049 |
| | | | [0.076] |
| Female | | | -0.032 |
| | | | [0.065] |
| Father's Education | | | 0.016 |
| | | | [0.047] |
| Mother's Education | | | 0.004 |
| | | | [0.046] |
| # Math Courses Taken | | | 0.01 |
| | | | [0.013] |
| Constant | 0.664 | 0.11 | 0.128 |
| | [0.087]** | [0.215] | [0.250] |
| Observations | 245 | 192 | 184 |
| R-squared | 0.02 | 0.08 | 0.09 |

Standard errors in brackets

+ significant at 10%; * significant at 5%; ** significant at 1%

Note: Linear probability model, estimating success on Maria's 3rd question, the only question asking subjects to estimate total income given SSDI receipt. Numeracy binary variable is zero if numeracy score is less than 4; 1 otherwise.