

# Moving Into Action: Application of the Transtheoretical Model of Behavior Change to Financial Education

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*The Transtheoretical Model of Behavior Change was used to assess change in financial behavior over a four-week period among participants enrolled in an IDA financial education program. All six money management behavior scores improved on average. The largest change occurred in the behavior represented as “setting aside money for unplanned spending” and the smallest in reducing debt. On average, participants were at the stage of Action in regard to reducing debt prior to beginning the classes, while they were in the stage of Preparation for all other behaviors. Participants who advanced at least one stage are expected to double their chances of taking action on their new behavior.*

Keywords: *Financial education, Behavioral change, Stages of change, Money management*

## Introduction

The purpose of financial education is to inspire change in financial management behavior and provide tools that will enable an individual or family to achieve their goals. Increased knowledge alone does not necessarily translate into changes in behavior. Financial management is a complex set of behaviors and decisions that vary in their importance and ease of implementation according to an individual's or family's needs, priorities, and skills. In addition, individuals and families are ready and able to change different behaviors at different times and for different reasons (Prochaska, Norcross, & DiClemente, 1994).

Assessing change in money management behavior requires specificity for the particular behaviors being measured. If an instructor knows the students' readiness for change in a behavior of interest, materials and methods can be tailored to the current needs and stages of the participants, thus facilitating behavior change. Finding ways to measure changes in behavior has been difficult for many educators. The Transtheoretical Model of Behavior Change of Prochaska, DiClemente and Norcross (1994) is one tool that holds promise for evaluating financial management behavior, since it has been applied successfully to many other behaviors that people have attempted to change (Prochaska, et al., 1994; Kerkmann 1998).

The primary objective of this study was to test the applicability of the Transtheoretical Model of Behavior Change for financial education, using instruments developed by the researchers to measure readiness for

change in six specific financial management behaviors. The six behaviors were hypothesized to enable participants in an Individual Development Account (IDA) program to begin or increase their savings. The Transtheoretical Model formed the basis of the assessment of participants' financial management behavior before and after the classes. Movement from the stages of *precontemplation*, *contemplation*, or *preparation* into *action* as defined below is desired to establish the behavior.

IDA practitioners have suggested that financial literacy classes be taught by topic area and spread out throughout the month rather than be taught in a one- or two-day format, thus matching the participants' budgeting cycle (Corporation for Enterprise Development, 1999). Participants were encouraged to use their own experience and existing money management knowledge to contribute to the class discussion. Even though the classes lasted for only four weeks, IDA participants typically stayed in the program an average of 24.5 months (Schreiner, Clancy, & Sherraden, 2002). Instruction to encourage debt reduction, increase savings, and access the matched savings continued through the program. In their final report on the National Demonstration of Individual Development Accounts, Schreiner, Clancy and Sherraden (2002) reported that a few hours of financial education significantly increased savings by participants, and that the courses need not be long to have a positive impact.

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### Background

Financial management skills often have meant the difference between economic security and insecurity for individuals and families. Putting these skills into effect may be especially important for low-income and low-wealth adults who have interruptions in income or incomes that do not provide any flexibility in spending choices (Hogan, Solheim, Wolfram, Nkosi, & Rodrigues, 2004). The term low-wealth adult reflects an individual's or family's overall asset accumulation (Self Help Policy Initiatives 2001). "One quarter of U.S. households have net assets under \$10,000, and therefore are wealth-poor" (Consumer Federation of America, National Credit Union Foundation, and Credit Union National Association, 2002). In the IDA demonstration project, participants had a median of \$125 in liquid assets, not including their IDA accounts, and when debt was counted against their total assets their median net worth was \$300 (Schreiner, Clancy, & Sherraden, 2002).

Sherraden conceived of the Individual Development Account (IDA) as a tool to enable asset accumulation through a structured savings program involving a match for funds saved by participants. The IDA programs were designed to ensure that participants receive training in financial management skills (Sherraden, et. al., 1995) and not be left with only new knowledge without the skills to be able to put the knowledge into practice. The required financial education linked to IDA programs can vary in number of lessons and class time, averaging five classes of two hours each (Corporation for Enterprise Development, 1999).

The required curriculum includes income needs, money management techniques (i.e. record keeping), savings and investing strategies, credit, and debt management (Sherraden, et. al., 1995). Being able to contribute money to an IDA account is one measure of financial skill development; however, other measures of evaluation are also needed to understand which skills are being used most successfully and which ones might need reinforcement. To assist with standardized IDA data collection nationwide, there is a database available from the Center for Social Development at Washington University Management Information System for Individual Development Accounts (MIS IDA). Beyond this system, some questions to posit are: Do some financial management practices enhance one's ability to save money, while others do not? Is there a chronological order or other structure to the financial management behaviors that would facilitate participant's ability to save money?

For decades, financial education programs have been taught in a format that emphasized increasing

knowledge without equal weight being placed on whether learners would be able to implement the new information to change their money management practices. Many such education programs have focused on common mistakes that families with assets make regarding money. It has been a challenge for educators and policy makers to bring financial literacy and consumer education effectively to their varied constituencies (Toussaint-Comeau & Rhine, 2000). Past lessons have focused on limited family involvement and did not include written goals, budgets, money for emergencies, tax planning, utilization of employee benefits, or spreading of risk, diversification (Ross, 1993). Many financial education programs designed for middle- to high-wealth adults focused on preventing costly pitfalls or overcoming them, such as Ohio State University Extension's Mastering Your Money Letter Study (1996). The same approaches could be used with low-wealth adults.

To meet the federal financial education requirements for IDA program participants, faculty members at Purdue University/Indiana Cooperative Extension Service designed the, "Making Your Money Work" curriculum, CFS-679 (Owens, Haynes, & Fucik, 1998). When the curriculum was developed, the financial skills and educational needs of low wealth adults, particularly IDA participants, had not been formally assessed. Likewise, the effectiveness of the proposed IDA financial educational program to promote financial asset building and encourage money-saving behavior was also unknown. To best meet these needs, financial educators should better understand low-wealth adults' characteristics including their financial knowledge and skills (Corporation for Enterprise Development, 1999). Such understanding will help adult educators develop and deliver an effective financial education curriculum for low-wealth individuals who are responsible for their families' finances and management. The behavior change assessment was conceived of as a tool to provide feedback to educators regarding the behavior change readiness of program participants and thus be a guide for instruction to maximize the chance of financial behavior change.

The goal of IDA financial education programs is to enable participants to succeed in accumulating financial assets and, in doing so, have the means to accomplish financial goals such as obtaining additional schooling, establishing a business, or buying a home. Therefore, providing factual information alone is not the objective and is clearly not sufficient to move people from relying on income support to relying on their own ability to accumulate assets (Corporation for Enterprise Development, 1999; Prochaska, et. al., 1994; Bloom, Mesia, & Krathwohl, 1964). The true

outcomes of interest for IDA participants are action, self-efficacy, and behavior that will lead to achieving their savings goal (Corporation for Enterprise Development, 1999).

Studying attempts at smoking cessation led Prochaska, DiClemente, and Norcross to formulate a model of behavior change that has proven to be efficacious for many different behaviors and for many different groups of people. Drawing upon various theories of behavior change from Psychoanalysis, Behaviorism, Humanism, Cognitive Therapy, and Gestalt Psychology, Prochaska and DiClemente (1983) formulated their Transtheoretical Model of Behavior Change. They have applied their Transtheoretical Model of Behavior Change to people trying to stop negative behaviors such as cocaine use, over eating, eating high-fat diets, and teen delinquent behaviors, as well as those trying to start positive behaviors such as exercise, use of sunscreen, use of condoms, and other preventive health behaviors (Prochaska, et. al., 1994).

In their pursuit of finding an underlying structure for intentional change, Prochaska, DiClemente, and Norcross (1992a) found that the stages of change scores were better predictors of behavior change than were the more typical demographic variables such as age and socio-economic status and problem-related variables of severity and duration of the behavior, goals and expectations, feelings of confidence in making the change (self-efficacy), and social support for making the change. Furthermore, they found that self-changers used the same processes as did those who were in therapy. Their initial work focused on changing negative behavior. They found that successfully ending a problem behavior involved working through a series of stages, with many people relapsing before they successfully eliminated their problem (Prochaska, DiClemente, & Norcross 1992b). After studying twelve behaviors, both positive and negative, for which people wanted to make a change, Prochaska, et. al., (1994) found that the intentional change process was fundamentally the same for the diverse behaviors and populations studied.

### Conceptual Framework

The Transtheoretical Model posits five stages of change as persons move toward making the change permanent (Prochaska, Norcross, & DiClemente 1994). The stages begin with what they call *precontemplation*. This first stage is one in which the participants see no need to change. They often feel pushed to change by someone around them. From the precontemplators' perspective, other people or factors around them are responsible for the problems. They are not looking for help to make a change. People in this stage will rarely seek and use information, react emotionally, or re-

evaluate themselves with regard to negative aspects of their problem (Prochaska, Norcross, & DiClemente, 1992).

The second stage of the change process is *contemplation*. Contemplation, as its name implies, is the point at which participants are beginning to acknowledge having a problem and beginning to think about ways to solve it. At this point they are struggling to find causes and think about solutions. They are seeking information and sources of help, fearing that they might not be able to change on their own (Prochaska, Norcross, & DiClemente, 1994). People in this stage become open to educational processes, and they begin to re-evaluate themselves with respect to the cognitive and affective aspects of the problem and what change would do for and to them (Prochaska, DiClemente, and Norcross, 1992b).

*Preparation* is the stage at which the participant is serious about taking action. They are planning to start the changes within a month. They are beginning to make the final preparations before starting the action and may be trying different strategies. They will be seeking information and support for this change, with some concern that it will be difficult and that they may not succeed (Prochaska, Norcross, & DiClemente 1994).

*Action* is the fourth stage, and the one in which the actual cessation of bad behavior or initiation of good behavior begins. At this time, the changes begin to be felt in various ways for the self and for those around the person making the changes. Friction may occur and the initial excitement gives way to the hard work that making serious change inevitably involves. Much energy and effort is required during this stage. People in this stage need to believe that they can implement the changes, be able to control the stimuli that would cause them to relapse into the old behaviors, and garner support to get them through the challenging times when the change process is particularly difficult (Prochaska, Norcross, & DiClemente, 1994).

The final stage of the change process (before the change is accomplished and considered terminated) is *maintenance*. This stage begins about six months after the *action* stage was begun (provided the *action* stage was fully accomplished). The struggle continues for those attempting to make the change permanent. Lapses and relapses are frequent, and vigilance is a necessity. The commitment to change must be great. Maintenance often lasts for years until the temptation to go back to the old behavior is no longer there. This stage requires the participants to be able to assess what conditions will make relapse possible or especially likely and establish successful coping strategies. Particularly important is the need for valuing the self

that is changed and for having at least one significant other who also values the changed self (Prochaska, DiClemente, & Norcross, 1992b).

Successful programs that will inspire and support change should be designed to meet the needs of people in the stage in which they fall (Prochaska, Norcross, & DiClemente, 1994). The strategies used and the information provided must be relevant for their stage of readiness. Because financial education is a very complex set of specific behaviors, the assessment of behavior change stage must be done on specific behaviors. Readiness for change is not based solely, or even primarily, upon the amount of information that one has about a problem or circumstance. There is a baseline level of information and self-awareness that one must have to be able to see that a problem exists and that a solution is possible; however, information alone will not bring a person to behavior change (Baranowski, 1992-93; Prochaska, Norcross, & DiClemente, 1994). Therefore, while providing financial information is important in effecting change in financial behavior, helping participants understand what changes they can make, observing that they are ready to make the needed changes, and providing a structure that they can use to make the changes are all helpful aspects of the process of inspiring change (Sherraden, Page-Adams, & Johnson, 1999; Zimmerman, Olsen & Bosworth, 2000).

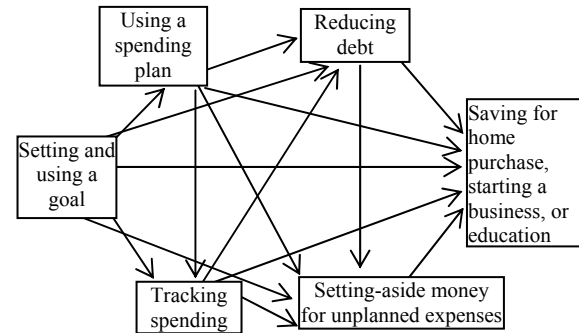
#### *Application of the Model to Financial Behavior*

Using the Transtheoretical Model of Behavior Change, researchers selected six targeted money management behaviors that facilitate saving money to assess change—Setting financial goals, Using a spending plan, Tracking spending, Reducing debt, Setting aside money, and Saving money. Participants were assessed on their readiness for change for those six behaviors prior to the start of the financial education classes.

The conceptual framework of the change process guided this study and the structure of the IDA financial education classes that were designed to help individuals become self-sufficient by learning and practicing to save money. The intent of the IDA program was twofold: (a) help low-wealth adults save money and motivate them to accumulate personal financial assets to use in buying a home, furthering their education, or starting a business (primary goal) and (b) introduce low-wealth adults to financial education skills that will promote behavioral change (secondary goals and financial tools). To achieve the primary goal of accumulating savings in the IDA account (long-term savings) and the secondary goals of reducing their debt and setting aside money for unplanned expenses (short-term and non-earmarked savings), the tools of setting financial goals, using a

spending plan, and tracking spending are introduced and reinforced during the educational process. Change in these three financial goals and the use of the three tools for achieving them is measured.

**Figure 1**  
*Model for Financial Education for Savings*



Assessment of personal transformation through behavior change is the purpose of the Financial Education for Savings (FES) Model, which works through financial goal setting, planning and tracking spending and savings, reducing debt, and measuring the success of their financial management strategies. The model as presented in Figure 1 posits that transformation of participants' financial management must occur in order for them to achieve their primary goal of saving money for buying a home, starting a business, or advancing their education.

Family resource management has been viewed as a linear process in which the family sets goals, assesses resources, implements plans, and evaluates outcomes (Winter & Morris, 2002). The FES Model suggests that the six objectives of the IDA financial management curriculum (Goal setting, Using a spending plan, Tracking spending, Reducing debt, Setting aside money for unplanned expenses, and Saving money) are all engaged during the management process. The six objectives were developed in response to the IDA program design guidelines (Corporation for Enterprise Development, 1999; Owen, Haynes, & Fucik 1998). However, teaching financial management does not have an exclusively linear approach, because tracking one's spending may result in a change in his/her spending plan in addition to the spending plan having influence over the tracking of spending, for example.

The first element of the FES Model, Setting and using a financial goal, is fundamental to successful money management, because it establishes the unifying aim for all of the organization, strategies, and sacrifice that will be necessary to complete the IDA program (O'Neill, et. al., 2000). The next two elements, Using a

spending plan and Tracking spending, are actually tools to be used by the participants in their financial management process to achieve success. Reducing debt, Setting aside money for unplanned expenses, and Saving money are all money management goals to be realized, with Saving money as the ultimate goal for the IDA program. Reducing debt and Setting aside money for unplanned expenses will help prevent derailment of the process of contributing to the IDA savings account, remaining in good standing in the program, and being successful at saving money (O'Neill, et. al., 2000; Shelton & Hill, 1995). Using the FES Model in Figure 1, researchers assessed participants' readiness for change in the six behaviors listed above.

### Methodology

Money Management Behavior Scales were developed to collect the IDA participants' money management behavior data. In order to assess the instruments' reliability and validity for this program, a convenient sample of 25 low-wealth adult participants was tested. Besides the participants, an expert panel was surveyed to provide input on content validity.

#### *Money Management Behavior Scales*

The change evaluation instruments were created from the Prochaska, Norcross and DiClemente Trans-theoretical Model of Behavior Change (1994) and utilized to determine money management behavior change in study participants. The study assessed behavior change for the first five levels:

- |                 |                    |
|-----------------|--------------------|
| (a) Level one   | Pre-contemplation, |
| (b) Level two   | Contemplation,     |
| (c) Level three | Preparation,       |
| (d) Level four  | Action,            |
| (e) Level five  | Maintenance        |

The instruments sorted participants into one of five levels of readiness for change using the following basic questions:

- (a) How often do you do the activity (e.g. save money)?
- (b) For how long have you been doing it?
- (c) During the next six months will you do it?
- (d) In the past six months have you tried doing it?
- (e) How successful were you in doing it?

Responses to the questions were on a five-point scale, e.g. for question (e):

- Not at all successful,
- Not very successful,
- Somewhat successful,
- Successful,
- Extremely successful

Scores were assigned as:

- 1 –not currently engaging in the specified money management activity and not planning to do it in the near future, representing *precontemplation*;
- 2 –have tried it in the last six months and have not been successful, but are considering beginning in the next 6 months representing *contemplation*;
- 3 –plan to implement the behavior within a month representing *preparation*,
- 4 –have been doing it for one to six months and who have been somewhat successful, successful, or extremely successful representing *action*
- 5 –have been doing it for more than six months and who have been successful or extremely successful representing *maintenance*.

To test the revised instrument's reliability, convenient samples of 25 low-wealth adult participants were tested. Because the site coordinators were scoring the change forms for their own participants to enable the educators to better target teaching materials and activities, inter-rater reliability was important. The inter-rater reliability coefficients for this sample were 1.00 for five of the six money management behaviors (Goal setting, Tracking spending, Using a spending plan, Reducing debt, and Saving money) and a .98 on Setting aside money for unplanned expenses. An expert panel of Extension family resource management specialists determined that the scales had content validity.

#### *Financial Literacy Program: Four Lessons*

The financial education classes were based upon the "Making Your Money Work" curriculum (Owen, Haynes, & Fucik 1998). The authors wrote this financial education curriculum specifically for IDA participants, and they received input from IDA program personnel during development. The curriculum, one of three approved as of 1999 for use in IDA financial education program by the Corporation for Enterprise Development covered topics that were important to their success in the IDA program and were presented in a manner that was appropriate for low-wealth adults (Owen, 1999). The instructional approach involved a variety of teaching methods, including problem solving through case studies and simulation of real life scenarios, in addition to lecture and discussion. Although the "Making Your Money Work" curriculum was originally designed in a six-lesson format, four sessions were deemed by experienced instructors to be more appropriate for the participants. Therefore, the curriculum was reconfigured into four sessions, using terminology appropriate to the audience as recommended by the expert panel. Throughout the four sessions, three general teaching principles were observed: informing the participant of the money management objectives;

**Table 1**  
Financial Literacy Class Learning Objectives that Encourage Behavior Change by Type of Behavior

Setting and using financial goals	Using a spending plan	Tracking spending	Reducing debt	Setting aside money for unplanned expenses	Saving money
Session 1					
Become aware of the impact of values and goals on spending patterns	Become aware of the impact of values and goals on spending patterns Complete spending records report	Understand there are different types of expenses Know at least 2 ways to track expenses	Identify financial liabilities/debts	Understand there are different types of expenses	Become aware of the impact of values and goals on spending patterns
Session 2					
Identify at least one financial goal in writing	Know the benefits of a spending plan Develop a spending plan Describe a system for paying bills on time	Report progress in tracking expenses	Review my credit report Complete debts owed chart	Learn to save dollars when you don't have a dime to spare	Become aware of decision to build wealth and assets Learn to save dollars when you don't have a dime to spare
Session 3					
	Integrate debt repayment into spending plans Identify influences that affect my buying Evaluate my spending plan	Describe a system for paying bills on time -	Describe a system for paying bills on time Realize that credit is using tomorrow's resources today Develop skill in negotiating repayment terms when all bills cannot be repaid Integrate debt repayment into spending plans Know how to build a positive credit record	Realize that unplanned expenses such as emergencies can increase debt	Identify wise use of credit management to save money
Session 4					
	Evaluate spending plan to save money	Identify which records to keep and which to toss Identify the best place to keep records	Identify which records to keep and which to toss Identify the best place to keep records	Identify appropriate financial self-defense strategies including emergency savings and insurance	Identify savings plans that move toward asset development

encouraging them to generalize to their own circumstances; and guiding them to apply what they learned.

The curriculum was designed to facilitate change in the six identified financial management behaviors. As identified in Table 1, Sessions One and Two addressed learning objectives for all six behaviors, while Sessions Three and Four developed specific money management behaviors

Table 2 lists the learning activities for each of the six financial management areas:

- Setting and using a financial goal
- Tracking spending
- Using a spending plan

- Reducing debt
- Setting aside money for unplanned expenses
- Saving money, i.e. contributing to their IDA.

Participants began by identifying and prioritizing goals for their financial future. This exercise applied decision-making steps to their own circumstances. They then tracked their spending and reviewed it in light of their goals. Participants developed a spending plan that was appropriate for their income and needs with guidance from the instructor. The spending plan exercise addressed the three desired financial management outcomes of Reducing debt, Setting aside money for emergencies or other unplanned expenses, and Saving money for an IDA goal.

**Table 2**  
Financial Literacy Class Learning Activities that Encourage Behavior Change by Type of Behavior

Setting financial goals	Using a spending plan	Tracking spending	Reducing debt	Setting aside money for expenses	Saving money
Identify goals and resources needed to accomplish them Set goals for the use of money Commit to financial behavior change	Develop and refine a spending plan Plan occasional expenses Commit to financial behavior change	Record everyday spending Practice using a tracking system for income and spending Commit to financial behavior change	Review own credit report Develop and refine a spending plan to reduce use of credit Develop a repayment plan Commit to financial behavior change	Develop and refine a spending plan to include emergency funds Planning for occasional expenses Commit to financial behavior change	Develop and refine a spending plan to include saving money Commit to financial behavior change

At each of the four two-hour classes, pre- and post-tests were given. The four sessions were held over a four-week period, with study participants required to take part in all of the classes. Session One, "Financial Goals and Tracking Spending," was designed to help participants understand money management basics. During Session One, participants identified their financial values and goals. Session Two, "Develop a Spending and Savings Plan," guided participants in understanding the responsibility of being in charge of their money and ways they could resolve their financial problems by choice of money management strategies. The interrelationship of successful saving with spending was introduced in the second session.

Session Three, "Credit and Unplanned Expenses Management Plan," presented the importance of debt management and ways to plan for unplanned expenses, sometimes referred to as emergencies (Ohio State University Extension, 1996). They identified financial strategies, including emergency savings and insurance plans. The fourth session, "Developing a Comprehensive Saving Plan," informed the participants of the importance of various documents and records. During this session participants also learned about a variety of banking services and basic investments.

#### Population and Sample

The target population for this study was low-wealth adults who were enrolled in IDA Financial Literacy programs. Researchers chose a purposive sample of IDA participants who were beginning the financial education classes in four states (Hawaii, Indiana, Missouri, Ohio) between November 1999 and May 2001. The accessible population included 302 individuals. Program participants whose responses could not be included were primarily individuals who had a language barrier or who started the IDA classes but did not complete all of the classes so their questionnaires were missing or incomplete.

Ten community-based agencies comprised the sites chosen for data collection. The sites were all non-profit agencies whose purpose was to serve the community and its low-wealth residents. The agencies participated in the IDA program, providing matching funds for IDA savings accounts and financial education to prepare participants to save money and achieve their financial goals. These agencies offered the matching-funds accounts and other assistance for qualifying individuals to accumulate savings and increase their financial skills. The funds were deposited with a financial institution within the community, and the accounts were administered by community development corporations (CDCs). The agencies worked with varied populations and provided a range of social and educational services. All of these non-profit programs included collaborative programming and operations that involved program evaluation and data collection.

Class size varied from program site to program site, and ranged from four to 35. A sample of 200 participants in IDA program financial education classes was the goal. To ensure the minimum number of participants needed for statistical analysis, researchers used an accessible population of 302 IDA participants, and the useable sample, after removing those who did not complete the program, was 253.

#### Data Collection

Data were collected over 18 months from the IDA Financial Literacy courses conducted from November 1999 through May 2001. Financial Literacy educators participating in this study received guidelines instructing site coordinators on the administration of instruments to collect data. Data collected provided information on the participants for the instructors and the sponsoring organizations. The participants also gained information about their level of financial knowledge and behaviors.

The data for this study were collected as a planned part of the IDA financial education classes. Participants who were enrolled in the program completed pre-test

and post-test Money Management Behavior Scales for each of the six behaviors:

- Setting and using a financial goal
- Tracking spending
- Using a spending plan,
- Reducing debt
- Setting aside money for unplanned expenses
- Saving money, i.e. contributing to their IDA.

The money management behavior scales were administered at the first of the four classes and again during the final class.

*Participants demographic characteristics*

Three-fourths of the IDA participants' sampled were female, and their mean age was 34. Almost half of the participants were single (47%), followed by married (26%), divorced or separated (20%), and cohabiting and widowed (5% each). The number of dependents ranged from 0 –11, with a mean of two. About half of the sample was African American (58%), about one-third was Caucasian (32%), and the remainder was of other racial/ethnic origin. Participants had, on average, a higher education level than their parents did; about one-fourth of the participants' parents had not completed high school, compared to only 14% of the participants. Participants were not asked the amount of their income, but rather how sufficient they perceived it to be. Half of the respondents reported that they were able to pay all of their bills without much to spare, but a quarter of them reported not being able to meet their necessities.

*Money management experience, education and perceived knowledge*

Prior to beginning the financial education classes, participants were asked a series of questions about their current circumstances with regard to money management and use of financial tools. A majority (75%) of participants reported that they believed that they knew as much or more than most people about managing money. They had experience with a number of financial services and tools: 83% already had an IDA account, 75% had checking accounts, and 58% had saving accounts. However, less than 20% had other types of accounts such as 401K, CD, or IRA. About 16% of the participants were listed on ChexSystems which denied them checking or saving accounts.

Most participants kept a record of their spending, most often on a weekly basis (26%). Respondents reported that when they recorded personal spending they learned or identified how their money was spent, how little expenses added up, some of their bad spending habits, current account balances, a system for paying fixed expenses, and how money left over from one month could go into next month's budget.

This experience of recording their expenditures led to greater knowledge in financial management. Respondents shared their discoveries about their money management habits in class when they reported on the experience of recording their spending. Over half of participants (60%) reported that their own personal experiences had been the best way for them to learn about money management. Fewer than 20% identified other sources of information such as the media, friends, and formal classes.

Participants identified a number of problems they encountered when they tried to save money. The top three were: unexpected expenditures, 44%; not having the money to save, 39%; and sticking to a budget, 36%. They found it hard to save due to: lack of money (51%); unexpected expenditures (44%); costs of raising a family (38%); difficult choices between wants and needs (37%); and irregular expenses, (25%). Only 5% reported that they did *not* have a hard time saving money.

*Money management behavior change*

To test whether change had occurred during the financial education process, the six specific money management behavior pre-test scores were compared to the post-test scores. Results are presented in Table 3. All six post-test scores for the money management behaviors were significantly greater than the pre-test scores.

**Table 3**  
Results of t-tests of pre- and post-test scores

Money management behaviors	Mean scores	SD	Difference in mean scores	% with increase in score
Setting and using a financial goal				38
Pre-test	3.72	1.19		
Post-test	4.15	.95	.43***	
Tracking spending				36
Pre-test	3.68	1.22		
Post-test	4.05	.98	.37***	
Using a spending plan				36
Pre-test	3.76	1.22		
Post-test	4.19	.91	.43***	
Reducing debt				19
Pre-test	4.28	.97		
Post-test	4.42	.78	.14**	
Setting aside money				49
Pre-test	3.26	1.24		
Post-test	3.78	.96	.52***	
Saving money				45
Pre-test	3.54	1.19		
Post-test	3.97	.95	.43***	

\*\*  $p < .01$ , \*\*\*  $p < .001$ , from paired sample, two-tailed t-test



The IDA participants' post-test mean scores for money management behavior change were all higher than the mean pre-test scores after participating in the four-week financial education classes. Participants' mean scores moved from the *Preparation Stage* (Level 3) to *Action Stage* (Level 4) for three behaviors – setting financial goals, tracking spending and using a spending plan. According to the FES Model, setting goals and the financial tools of using a spending plan and tracking spending are precursors of the secondary goals of reducing debt and setting aside money for unplanned expenses and the primary goal of saving money.

Because of the movement into *Action* by the participants for these behaviors, one might expect the next phase for participants would be to move into *action* in the primary and secondary goal behaviors. The largest increase in means score, .52, occurred in setting aside money for unplanned expenses, even though this increase did not result in movement from *Preparation* to *Action* as defined by the stage scores 1 through 5. According to the FES Model, this secondary goal is expected to move into *action* following the movement by the preceding behaviors. When participants identified reasons for having difficulty saving money, unexpected expenditures ranked high. According to the model, elimination of the inability to cover unexpected expenditures, that is, setting aside money to cover them, would pave the way for saving money for the IDA savings account or other long-term savings.

Mean participant scores for reducing debt were already in the *Action Stage* (Level 4) at the pre-test, so it was not surprising that there was less movement of the mean from the initial stage. Over 80% were in *Action* or *Maintenance* for the pre-test. There was little room to move up for this behavior, however, 19% of participants' scores did move in a positive direction for reducing debt.

Almost half of participants increased their scores for the other money management behavior goals of setting-aside money (49%), and saving money (45%). Overall mean scores moved in a positive direction (toward a higher level of change), as well, but stayed at the *Preparation Stage* (Level 3). Again, the FES Model would predict that as participants mastered the preceding behaviors, the later behaviors would then move into *Action* and *Maintenance* also.

Relationships among the money management behaviors were tested using stepwise regression; results are in Table 4. The dependent variables were the primary and secondary goals of Reducing debt, Setting aside money for unplanned expenses, and Saving money. Independent variables entered into the models for the secondary goals were the first three behaviors

suggested as the first steps to achieving the goals-- Setting and using a financial goal, Tracking spending, and Using a spending plan. For the primary goal, the secondary goals of Reducing debt and Setting aside money for unplanned expenses were added to the stepwise regression.

These variables were moderately correlated with each other: Setting and using financial goals and Using a spending plan (.63), Setting and using financial goals and Tracking spending (.63), and Using a spending plan and Tracking spending (.60). Multicollinearity can be a problem when independent variables are strongly correlated with each other (Goldberger, 1964). Because multicollinearity can produce large errors in the coefficients, the coefficients may be insignificant and have erroneous signs (Jensen, 2003). The moderate correlation of .60 provides the researcher with the opportunity to assess whether there is concern. As shown in Table 4, these variables were entered separately into the stepwise regression procedure, were each highly significant, and were positively related to the dependent variables as expected; therefore, . multicollinearity does not appear to compromise the results.

Three significant variables were found in each model. Readiness to change one's financial management behavior was assessed by participants' readiness to change other related behaviors. Prochaska, Norcross and DiClemente (1992a, 1992b) found that stages of change scores were more significant predictors of real behavior change than were demographic variables or variables directly related to severity and duration of the problem behavior, the participant's goal and expectations, their confidence in their ability to change or their social support. Readiness to change in one money management behavior as scored in the pre-test was found to be related to readiness to change others, as scored in the post-test. As seen from the standardized coefficients, Setting and using a financial goal (.204), Using a spending plan (.196), and Setting aside money for unplanned expenses (.211) were all significant factors in participants' readiness to act on reducing their debt. Keeping track of spending was not a determinant of Reducing debt, even though it was significantly related to Setting aside money for unplanned expenses (.163) and Saving money (.175).

The other significant variables in the regression equation for Setting aside money for unplanned expenses were the other goal behaviors of Reducing debt (.156) and Saving money (.425), with the strongest relationship being that with Saving money. The three significant factors affecting the Saving money score were two money management tools of Using a spending plan (.150) and Keeping track of

spending (.175) and the goal of Setting aside money for unplanned expenses (.424).

It is clear that there is not a uni-directional relationship between Saving money and Setting aside money for unplanned expenses, as indicated in the Financial Education for Savings (FES) Model. Saving money and Setting aside money for unplanned expenses are similar behaviors in that they both require putting money aside for the future, although they are not the same in that one has a long-term horizon and the other is focused on short-term spending issues.

**Table 4**  
Standardized coefficients from regression model for readiness to change

Independent variables	Dependent variables		
	Reduce debt	Set aside money	Save money
Uses financial goals to guide decisions	.204**		
Uses spending plan	.196***		.150*
Keeps track of spending		.163**	.175**
Sets aside money for unplanned expenses	.211***		.424***
Reduces debt		.156***	
Saves money		.425***	
F ratio	25.42**	45.41**	48.21*

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

### Conclusion

Results from this study demonstrate that behavior change can be measured for a number of distinct but related behaviors in such a manner that readiness to change can be determined for a set of specific money management behaviors. This approach to evaluation of financial management practices can readily be done with diverse audiences, including persons without college education, high income, and/or large portfolios of assets to manage. It appears that the Transtheoretical Model of Behavior Change has application for evaluation of financial education.

Enrolling in an IDA program is indicative of an intention to change money management behavior. Many of the study participants were using recommended financial management techniques, such as tracking their spending, on their own when they entered the class. They were, therefore, better prepared than most people to make changes in their money management practices to facilitate saving money. Participants' behavior change scores were, therefore, probably higher than would be the scores of a more random selection of people. Providing such participants with the tools to facilitate their self-change is the task, even the expectation of financial educators

(Corporation for Enterprise Development, 1999). The ability to measure the change and to provide feedback to participants is a benefit of the method and model addressed in this study.

Even though the mean score for Reducing debt did not move from *Action* in the four weeks of the financial education classes, it did increase, and it was significantly affected by pre-test scores of Using financial goals and Using a spending plan. A high debt load and/or the inability to obtain more credit because of a bad credit rating is often the trigger that brings people to the awareness of needing to change their financial management practices (O'Neill, et. al, 2000). Therefore, many of the study participants may be farther along the path of change in reducing their debt because of the inability to overcome credit barriers. The FES Model places debt reduction in the position of a secondary goal, after setting goals and using financial tools; however, the chronological order for many people may place that behavior at the front of the sequence as the imperative that brought them to financial education.

Enhancing participants' ability to make changes is possible through education that combines learning strategies and tools focused on changing behavior with the more standard learning approaches of increasing knowledge. This study provides evidence that low-wealth adults enrolled in IDA financial education classes were able to gain knowledge and skills to change their money management behavior in a positive way. Noticeable growth occurred, documented by the participants' increased scores in money management behavior change assessments for the six desired areas of setting and using a financial goal, using a spending plan, tracking spending, reducing debt, setting aside money for unplanned expenses, and saving money.

These increases in scores indicated that the IDA financial education program could make a positive difference. The percentage of participants that increased their scores ranged from 19% for Reducing debt to 49% for Setting aside money for unplanned emergencies. Even though the pre-test/post-test period was only four weeks in length, the chance of success in participants' changing their money management behavior has increased. In previous work, Prochaska, DiClemente and Norcross (1992a), found that progressing forward one stage within the first month of treatment doubled the chances of participants' taking action on their new behavior. IDA participants are likely to continue their progress similarly to the high school students who took part in the High School Financial Planning Program (HSFPP). An evaluation of the national program by Danes, Huddleston-Casas, and Boyce (1999) found that there was positive change

in all eight behaviors tested at the end of the course and again three months. Indeed, there was a greater change for some of the behaviors at the post-test three months later than at the end-of-class post-test. Participants' continued enrollment in the IDA program for an average of two years (Schreiner, Clancy, & Sherraden 2002) provided continued reinforcement of the new behaviors and a financial incentive to achieve the primary goal of increased savings.

The participants had, on average, moved into the *Action* stage for the three preliminary behaviors and were already in *Action* for Reducing debt. On average, the other two goal behaviors were moving toward *Action* by the post-test, with scores of 3.78 and 3.97 for Setting aside money for unplanned expenses and Saving money, respectively. Even though a longer-term follow-up assessment was not possible for this study, the evidence of change in one month portends successful behavior change for many of the participants in the IDA financial education classes.

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