Perspectives on Evaluation in Financial Education: Landscape, Issues, and Studies

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Table of Contents

Preface

Financial education plays an important role in guiding individuals to achieve their financial goals and contribute to the economic well-being of society as a whole. While the examination on the effectiveness of financial education has many factors to consider, the National Endowment for Financial Education (NEFE) has taken measures to improve evaluation studies—both for the practitioner and the researcher. These actions include the conception of two documents what will assist in guiding practitioners and researchers in planning high-quality evaluations. The first is the Financial Education Evaluation Manual that is designed to support the evaluation of financial education programs by helping educators to understand the purpose and goals of evaluation, and to provide a basic understanding of the evaluation process. This information is designed for program managers, educators, and decision-makers, in traditional school settings or community-based programs/non-profit organizations, who are implementing financial education programs. The manual is organized around four sections:

- **Part I**. Introduction to Evaluation
- **Part II**. Planning: Preparing for the Evaluation of Financial Education Projects & Programs
- **Part III**. Implementing: Financial Education Evaluation Design & Data Collection
- **Part IV**. Utilizing: Evaluation Data Use & Continuous Quality Improvement

The Evaluation Manual is paired with the NEFE Financial Education Evaluation Toolkit—an online assessment management tool.

The second document is this Evaluation White Paper, written with the premise that future studies and program evaluations need improvement and that studies and evaluations can be improved by drawing on the research that has demonstrated effectiveness. Enhancing educational interventions is imperative; with better measurement, as well as improved interventions, the effect of financial education can be more clearly documented within research literature and within the field of practice. Specifically, the improvement in measurement needs to be embraced by both researchers and practitioners who evaluate their programs; more robust research protocols will provide more accurate assessments of the classes, workshops, and counseling sessions that are providing financial education (Hensley, 2015). As such, with better data, the outcomes and program goals can be more precisely assessed.

Continuously seeking information on the impact of a program or educational session is imperative. Well-designed evaluations tell educators whether and how they are improving behavior, knowledge, and confidence, and where improvements need to be made. Without evaluation, or by using ineffective tools without considering the factors that influence outcomes, instructors rely on anecdotes to inform their work and evaluators miss opportunities to measure multiple facets of a program. A more robust assessment can show where immediate improvements can be made and which areas of success can be capitalized. By clearly presenting several of the key research studies, this white paper seeks to provide a minimum research and evaluation standard. While this paper is not a comprehensive answer to the obstacles faced by financial educators, it is a clear platform from which to begin a deeper and more impactful discussion on the effectiveness of the collective work of the field.

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Introduction

A major challenge for advancing evaluation in financial education is understanding the broad landscape it covers and the many contours within that landscape. That understanding can best be improved by describing some of the key groups served by financial education, specific aspects of evaluations that affect each group, and also some major issues that confront multiple groups. The main rationale for these descriptions is that they segment the broad and complex landscape of financial education that covers all individuals and reduce it to more manageable pieces so that varied constituencies supporting financial education can more easily appreciate the findings from evaluations of financial education programs.

What the group and issue descriptions that follow demonstrate is that there is wide diversity in evaluations of financial education programs. That diversity arises because there is no single standardized approach to financial education in terms of program purpose, groups served, content or issues covered, instructional methods for the delivery of content, program duration, or some other program feature. For example, financial education programs for children and youth delivered through formal education in school will differ significantly in content and purpose from financial education programs for working adults. Planning for retirement will be of more concern for older adults than for younger adults who have just graduated from a college or university and may be more concerned with paying for their student loans.

The factors that shape a particular financial education program in turn affect the methods used to evaluate a program. The scope or depth of an evaluation also will depend both on the program constraints and the available resources for the evaluation. In this regard, each evaluation of a financial education program will be unique and tailored to fit the group to be served and the conditions of the program for improving financial understanding and financial literacy. Despite the uniqueness, each evaluation provides a microcosm of information. When it is combined with the findings from evaluations of similar programs, the collective literature can provide more insights about what works best for financial education.

A key point that should be remembered in reading through the descriptions that follow is how difficult it is to draw a single conclusion about the effectiveness of financial education based on one study or program. How effective financial education is may depend on the characteristics of the group being served or the issues discussed, the conditions for the education, and the quality of the evaluation. What the accumulated evidence from this paper indicates, however, is that there is a growing body of research showing both positive and nuanced effects from financial education across a wide range of groups and issues. That evidence is likely to increase as more studies are conducted.

Groups and Issues

The six groups and four issues discussed in this paper are shown in Table 1. The groups were selected based on age ranges or a characteristic. The issues selected cut across the different groups.

The first group covers the very young: children who are starting their formal education in pre-school through the completion of elementary school (about ages 3 to 10). The second group increases the ages to youth or teens who are of middle or high school age (about ages 11 to 18). The third group expands the age range to the 19- to 29-year-olds, which means that it is a heterogeneous assortment of young adults, some of whom are enrolled in postsecondary education, others who have completed that education and are starting their work careers, and still others who did not receive a postsecondary education but instead entered the workforce fairly soon after attending high school and are early in their work careers. The fourth group includes the wide age spectrum of working adults who range in age from about age 30 to retirement age (about 55 to 70 years old). These working adults may have completed their postsecondary education, are actively involved in their work and careers, and also may be handling the full financial responsibilities of managing a household with other adults and/or children.

Table 1: List of Groups and Issues

A. Groups

1. **Children:** students in pre-school or elementary school (about ages 3 to 10).
2. **Youth:** students in middle school or high school (about ages 11 to 18).
3. **Young adults:** students in postsecondary education and/or young workers with jobs who are deciding on a career or in an early stage of a career (about ages 19-29).
4. **Working adults:** adults with work experience and established careers (about age 30 to retirement).
5. **Military personnel:** adults at all ages until retirement
6. **Low income consumers:** adults at all ages.

B. Issues Affecting Multiple Groups

7. **Student loans**
8. **Homeownership**
9. **Retirement planning**
10. **Financial advising**

Of course, not all young or working adults have the same or similar characteristics, so it is worthwhile to make some further distinctions within the broader groups of adults. Two specific adult groups who have received extensive financial education were selected to give examples of distinctions that could be made within a broader group: adults in the military and adults who are low income consumers. After high school, some young adults enlist in the military and then actively participate in military life, sometimes for the large part of their working careers. Accordingly, adults in the military are likely to be different from other young or working adults when evaluating the effects of financial education programs. Similarly, low income consumers are young or working adults with limited financial resources that can restrict consumer choices and alter their financial decisions in ways that differ from those adults with fewer income constraints.

Another important factor to consider when evaluating financial education programs is that they can be issue-focused or targeted at a specific financial decision that often cuts across age ranges. In addition to the descriptions for the six groups, this paper highlights four major issues in financial education that can be viewed from multiple perspectives depending on the characteristics of the group and the various facets of the issue.

As a first example, consider the issue of how best to pay for a *college education*. It can be a concern of high school students, college students, and their adult parents and can involve learning about saving, financial aid, and loan or debt management. Second, *housing decisions* affect adults at all stages of life, whether they involve renting, buying a house using a mortgage from a financial institution, or some other real estate transaction. Third, *retirement planning* is not a topic solely of interest only to older adults because it typically takes a lifetime of work to accumulate sufficient wealth for retirement security. Fourth, the complexity of financial decisions involving such matters as taxes, banking, investing, credit, debt, or insurance means that adults at all ages may have to seek *financial advice* from different sources to manage their finances. Technological advances will change how financial advice is delivered to different groups as shown by the shift to robo-advising for investment decisions.

Content Outline and Approach

The ten descriptions follow a similar format for ease of presenting complex material and findings. Each one contains an initial overview of the target group or issue and provides a rationale for why it is important to focus on that group or issue. The first section of each description then highlights some of the key programs and resources used to deliver financial education to that group or for that issue. The second section discusses major topics or outcomes in financial education for that group or issue and provides a concise review of the literature on evaluation studies of programs and research about it. The third section offers a brief explanation of the typical evaluation practices for studies of that group or issue and identifies any major concerns with the conduct of studies. The concluding fourth section turns to public communication and suggests how best to connect the evaluation or research findings with a larger audience of the public and convey the essential findings in non-technical language.

Two points should be noted about the approach adopted for the content outline and structure of this paper. The first one is that the basic purpose of the paper to provide a general understanding of financial education programs for different groups or issues and the related evaluations or research studies. The paper is intentionally limited in length so that it could easily be read in a short period of time. It also necessarily omitted technical details so that it could be read by a wide audience. These readers might include financial educators responsible for creating resources or delivering programs, professionals from for-profit, non-profit, or government organizations concerned with improving financial education, and academics who might want to learn more about financial education or are responsible for conducting evaluations.

The second point is that the paper primarily serves as a selective guide to evaluations and research studies in financial education to reduce the complexity of the broad topic by dividing it up into parts that can be more easily comprehended. Persons reading this paper, however, who want more information about a study cited can consult the references listed at the end of the paper, which in most cases contain a link to a publication website. Nevertheless, it also should be understood that the paper is not meant to serve as a framework or manual for conducting evaluation studies (such as NEFE's Evaluation Toolkit Manual) nor was it intended to be an exhaustive review of the literature in financial education. Guides to conducting evaluations or reviews of the research literature related to financial education or financial literacy can be found in other complementary and worthwhile documents, articles, or books (e.g., OECD, 2013; CFPB, 2014; Lusardi & Mitchell, 2014; Xiao, 2016).

Contributors and Timeline

The preparation of this paper was a collaborative project with multiple personnel. In April 2016 the National Endowment for Financial Education (NEFE) convened a full-day meeting of 17 participants in Washington DC to discuss the concept for the paper and to seek consensus on its content and format. William Walstad (University of Nebraska-Lincoln) served as the project leader at the meeting and was designated as the editor for the paper. Eight meeting participants volunteered to serve as the primary writers of paper sections: Carlos Asarta (University of Delaware); Elizabeth Breitbach (Loras College); William Bosshardt (Florida Atlantic University); Julie Heath (University of Cincinnati); Barbara O'Neill (Rutgers University); Carly Urban (Montana State University); Jamie Wagner (University of Nebraska at Omaha) and Jing Jian Xiao (University of Rhode Island). Most section authors also served as reviewers on a section written by another author. Another participant at the meeting, Carlo de Bassa Scheresberg (George Washington University), also served as a reviewer. More details about the authors of this paper are provided in the appendix.

The preparation of the paper involved multiple phases of writing, review, and revision. The assigned authors wrote drafts of their section descriptions that in most cases were reviewed by the assigned reviewers. These preliminary drafts then were submitted to the project editor, who offered comments and suggestions for revision and returned them to the authors. The assigned authors then prepared final drafts of each description and submitted them to the editor. The editor wrote an introduction and conclusion for the document and also standardized the style and format for the ten descriptions. References from all descriptions were combined and placed into one section at the end of the document so that they would be easy to access and use. A draft of the entire paper was sent to all contributors for final comments and suggestions. A final version was prepared based on this additional review and then submitted to NEFE.

1. Children

Financial education is benefiting from a time of national attention, particularly since the recent recession. Educators, researchers, and the wider community are rallying around the idea that financial education plays an important role in giving individuals the tools with which to better navigate their financial lives. It is a natural extension, then, to focus on transmitting financial knowledge within the school environment. Doing so provides some measure of confidence that accurate information is being conveyed. It also provides more widespread coverage than solely relying on parents to teach financial literacy to their children.

Within schools, beginning financial education in the elementary grades is important. First, young children have experiences with finances through the receipt of allowances, gifts, and payment for chores. Second, they can be aware of not only their own financial transactions, but also those of their parents. Third, financial education is (or can be) closely tied to numeracy, allowing early math lessons to be contextualized in a way that heightens interest in a core subject, but also imparts financial concepts. Finally, to the extent that financial education is included in a broader umbrella of teaching children the tools with which to evaluate options—good decision-making—beginning this focus in elementary school makes sense for cognitive development. Financial education can be taught in the same way as other academic subjects: establishing foundational knowledge and abilities early and adding incremental skills as children progress. Financial education also should be provided for children to prepare students for high school instruction, as is the case for most academic subjects such as math, science, and history. The instructional model for financial education can and should follow the same cognitive progression from elementary to high school.

1A. Key Programs and Resources

Several resources support the delivery of financial education in the elementary grades. One of the best and most extensive sources of material for this age range comes from the Federal Reserve Bank of St. Louis. This website contains both economic and financial education resources, searchable by grade, concept, resource type, and more. Their education specialists have particular expertise in combining economic and financial education with children's literature, so most of the resources for the elementary classroom center on this integration. Not surprisingly, the role of the Federal Reserve plays a prominent part in these lessons, particularly at the upper elementary level. Most of the lessons are also interactive white board ready. In addition to traditional classroom lessons, this site also has multimedia resources, power point slides, and resources for teachers or parents to teach the concepts. The other Federal Reserve Banks are engaged in economic education as well and have a wealth of resources available.

Another resource is *EconEdLink*, a site maintained by the Council for Economic Education (CEE). The CEE is a national nonprofit organization whose mission is to provide economic and financial education to kindergarten through twelfth grade (K-12) students and educators. The CEE oversees a network of state councils and local centers in each state that provide teacher training, educational resources, and direct-to-student programming. *EconEdLink* is a compilation of resources searchable by type, grade, concept, and other categories. These resources are developed and vetted by classroom teachers and other professionals (such as staff members of the state councils and local centers). Lessons are also reviewed and rated by *EconEdLink* users, so visitors to the site can quickly find popular lessons for every grade and application.

Other websites offer a wealth of financial education resources. Northwestern Mutual Insurance provides content with *The Mint* that should not be confused with Mint.com, a personal finance website for adults. *The Mint* has resources for children of all ages, parents, and teachers. There are online tools and an app to help children budget and plan. Wells Fargo's *Hands on Banking* has content for several constituencies, including an alien named Zing who guides fourth and fifth graders through the intricacies of spending and saving. *Edutopia* is a teacher sharing site with lists of financial education resources from other sources, along with more general classroom management, assessment, and pedagogy content. Similarly, *MoneyTeach* is a teacher resource site focused solely on financial education programs and tools.

Money as You Grow was developed by Beth Kobliner, a member of the President's Advisory Council on Financial Capability. It offers age-segmented activities for teachers as well as "conversation starters" for parents to begin instilling financial education at an early age (beginning at age 3). A companion to this resource is *Math That Makes Cents*. This resource was developed by The Math Forum at Drexel University and the Economics Center at the University of Cincinnati to provide lessons that integrate math and financial literacy concepts for grades 3-8. These are worksheets rather than the longer lessons and activities found on some of the other sites, suitable for math instruction within a financial education context.

The National Education Association has devoted part of its website to financial education resources. Many of the lessons at this site are correlated to the national math standards. *Practical Money Skills for Life* also has lessons plans, activities, and games for students from kindergarten through college. The U.S. Mint offers a range of lessons, not surprisingly, focused on coin recognition, but also includes creative integrations of history, math, and basic decision-making.

Finally, while the above resources are a compendia of individual lessons, activities, or other content, a digital platform called *$martPath* is a comprehensive curriculum program for grades one through six that was developed for the Economics Center at the University of Cincinnati. Each grade level consists of four lessons that correlate to state and national standards in economics, financial literacy, math, and English/language arts. Each grade consists of an overarching story that is told through animated videos and punctuated with in-class activities and interactive games. Although it is a digital platform, it is designed for teachers (or parents) to use as a group experience (as opposed to individual interaction).

1B. Major Topics and Literature Review

Elementary students are certainly participants in the economy, and they are involved with financial decision-making—both their own and, by observation and influence, that of their parents. So the issue of financial education is not one of if it should be included in the elementary classroom. Instead, it is first a question of what are its goals, and second a question of how is it delivered?

Narrowly defining financial literacy to be the ability to perform rudimentary skills, such as balancing a checkbook, for example, or as a vocabulary list significantly restricts the opportunities that exist in the elementary classroom. This treatment does a disservice to the subject and to students. Instead, we could expand our common understanding of what financial education is—critical thinking within a larger ability to develop decision-making skills by understanding cost and benefit analysis and recognizing opportunity costs. Teaching financial literacy can be thought of in the same way as teaching reading literacy: starting with the ABCs, creating age-appropriate, foundational knowledge that is built upon year after year with increasing complexities.

All of this work gets to the crux of the issue—if elementary financial education continues to be defined in a rudimentary way, then its role in providing foundational knowledge for additional complexity in later grades is significantly curtailed. Teaching children to become financially literate involves more than the one-time imparting of a set of skills or knowledge. It requires shaping behavior, molding responsible attitudes toward choices, and developing critical thinking. If financial education is not provided to students in elementary school it makes later instruction in high school more difficult than it needs to be. If, however, financial education for children provides the framework for the development of decision-making skills in a variety of contexts, then specific, real-world applications have a more solid basis, and students will have formed positive attitudes that, hopefully, will lead to increased financial capability in later life.

Which leads to the second question—how should this broader conceptualization of financial literacy be delivered? Although most states have financial education threads woven in (primarily) the social studies curriculum, without a well-defined mechanism for the delivery of financial education in the elementary grades, it is often a rather murky enterprise. Further, the majority of elementary teachers, particularly at the lower elementary level, are generalists. That is, they are responsible for teaching the full complement of academic subjects, as opposed to specializing in one area. As generalists, elementary teachers are less likely to have taken a course in economics or financial education during their own education than middle or high school teachers whose educations include these focused areas. As a result, financial education competes for valuable class time when high-stakes testing results are increasingly becoming the currency used to assign a value to the educational experience.

A cursory look at the resources referenced above suggests a solution. Both as a matter of expediency and appropriate modeling, focusing on integration of financial education into the core curriculum offers a path forward. As generalists, teachers are likely to be more comfortable with delivering financial education if it is embedded in more familiar subjects (Way & Holden, 2009). If the definition of financial education is expanded to include the development of decision-making skills, then modeling those skills in a variety of contexts and academic disciplines provides more opportunities to understand real-world behaviors.

Presenting financial education in the elementary grades in an embedded manner may constitute a compelling narrative. But researchers do not live in a narrative space. Researchers struggle with constructing experimental designs that will have the most validity and specifying models that are the most robust. And the research on elementary financial education is not as clear-cut as the narrative would imply.

While more and more rigorous analyses are being conducted—using an experimental design with control and treatment groups, ensuring that consistent curriculum and delivery are maintained, using reliable and valid assessments—research on the efficacy of elementary financial education is not as plentiful as for other groups.

A particularly useful place to start a research overview is the framework that was developed by Collins and Odders-White (2015). Their three-part conceptualization of financial education research facilitates comparisons and commonality among analyses by articulating the mechanisms, the immediate outcomes, and the impact (intermediate and longer-term) of programs. The authors invite researchers in this area to be explicit in their articulation of intended cognitive acquisition, to clearly identify those immediate changes in knowledge and/or attitudes that could proxy longer-term behavioral changes, and finally, to be mindful of what success means in terms of longer-term behaviors. The authors make the compelling case for greater understanding of the linkages between early financial education and later financial capability.

Using a control and treatment design, Batty, Collins, and Odders-White (2015) examined the efficacy of *Financial Fitness for Life* (FFFL). It consists of lessons clustered within four grade bands: K-2, 3-5, 6-8, and 9-12. This study involved students in grades 4 and 5 in Wisconsin. Students received lessons in five 45-minute sessions (one per week). The lessons focused on savings, money management, and decision-making. The teachers were trained on the curriculum in the same way and they utilized the same materials, including the assessment instrument. Classrooms of students were randomly assigned to control or treatment groups, with control classrooms receiving the financial education instruction after the study was completed. The study was conducted over the course of two academic years. The fifth graders in the second year did not receive the lessons again (they had received them the year before in the fourth grade), but they were assessed to see if knowledge had depreciated. After only five weekly lessons, students in the treatment group had significantly higher scores than those in the control group, a result that persisted with the addition of other variables controlling for student, school, and parent characteristics. The study found no statistically significant change in student attitudes on most of the measures, except when the second year of data was included. In this case, attitudes were positively affected by the intervention, and financial knowledge persisted over time. The intervention was also linked to positive behavior (i.e., savings). This research is important because it utilized "best-in-class" methodologies, as well as a longitudinal component.

The effect of sound curriculum is seen in another study using the FFFL materials with students in elementary school (grades 3-5) middle school (grades 7-8) and high school (grades 9-12). Harter and Harter (2009) found significant improvements in tests of financial knowledge as a result of economically disadvantaged students in eastern Kentucky receiving the FFFL materials at all three education levels. Again, using a control and treatment design and similarly trained teachers, the authors found significant differences between the posttest and pretest scores of the students in the treatment group. They also found significantly greater gains between the post-test scores among those students who had received FFFL and another financial literacy curriculum.

Again, using the FFFL curriculum, Chen and Heath (2012) found that elementary students (grades 3-5) and middle school students (grades 6-8) made significant gains in financial knowledge from instruction in financial education using 16 lessons. In this study, teachers were trained during the same timeframe by the same instructor using the same materials. This study was not an explicit treatment/control design. The advantage of having a control group is that a "trend" (difference between control group's pre- and post-test scores) can be identified and subtracted from the "gross" effect of the program for the treatment group. The remaining effect represents the net contribution of the program, absent any common, external influence on levels of financial knowledge. But since both elementary and middle school students were included in the analysis, a proxy for that trend exists—the difference between middle pre-score and elementary pre-score. This difference indicates the change in financial knowledge absent any financial literacy instruction over what is, on average, a three-year time period (age difference of middle and elementary student). The assessments given to elementary and middle school students varied only in the level of the language—the same concepts were covered in each. Since the difference in pre-scores for the two groups was statistically the same, the authors assumed that a trend was nonexistent, and that the results were attributable to the program. As with the other cited studies, all students experienced significant gains from financial instruction, with the most significant among disadvantaged students. Teacher attitude (belief that teaching financial literacy is important) was also found to be a significant determinant of student gains in knowledge.

Given the increasing recognition that experiential learning is an important component of all student learning, but particularly as it relates to financial education, examining the efficacy of school-based programs can add an important facet to discussions of elementary financial education. Sherraden et al. (2010) used a quasi-experimental design to assess the effectiveness of a school-based financial education and savings program (*I Can Save*). This program exposed elementary students to financial literacy lessons from either FFFL or *Wise Pockets World*. Children also were provided incentives for opening and contributing to savings accounts in the form of seed money and dollar-for-dollar matches for deposits. This comprehensive program also included after-school clubs and parental engagement. The results indicated that students who received the treatment scored significantly higher on tests of financial knowledge and showed significant differences in financial capability via savings behavior.

1C. Evaluation Practices, Strengths and Limitations

As with all other types of program evaluation research, many analyses that focus on the efficacy of financial education in the elementary grades suffer from inconsistent methodologies: lack of a control and treatment design, short length of treatment and lack of standardization of treatment, lack of explicit standards, small sample sizes, and a struggle with what financial literacy means when applied to elementary-aged children. From the studies cited above, however, it is clear that when empirical structures are carefully created and applied, financial education in the elementary grades is successful in increasing student knowledge and—at least—short-term behavior. These results certainly indicate that much more can and should be done to better understand financial education in these early years.

Paradoxically, the characteristic of elementary financial education that makes it so amenable to adoption—its ability to be integrated into other core academic subjects—also makes it difficult to evaluate and measure all outcomes. For example, financial education may affect math scores in addition to the anticipated effect on the increase in financial knowledge. Also, if we more broadly define financial education, particularly at the lower grades, as good decisionmaking, how do we measure its acquisition with the same sort of rigor and attention to empirical modeling that we afford a more narrow definition?

1D. Public Communication

There are opportunities and challenges for financial education for children and in elementary schools. This financial education makes sense because it serves as the foundation for later education in middle school or high school, just as early instruction provides the foundation for later instruction in major academic subjects in the school curriculum. Financial education can be embedded within and effectively taught in these other subjects. It can be delivered in a cross-curricular way by teachers who are generalists and thus in the best position to model good decision-making in a variety of contexts and with different content.

This infusion or seamless integration, however, makes it challenging to isolate the effects of financial education. Although the most rigorous experimental designs and most robust empirical approaches can be applied in a study, it is still possible to miss the important effects that financial education can have—effects and behaviors not easily measured by tests or other measures.

2. Youth

Youth covers a wide age range that includes the typical ages (about 11 to 18 years old) for students attending middle school or high school. One reason for financial education at these schooling levels is to provide a foundation for developing the understanding of basic financial concepts and their application to financial issues that these students will experience later in life. This section focuses on high school because it is the last formative period in the transition from youth to adulthood. Adult consumers today face a complex financial world and financial mistakes can be costly for these consumers. Accordingly, financial education for high school students is one common policy intervention targeting individuals before they begin making major financial decisions as adults.

This financial education can be particularly important for high school students who are not bound to attend a college or university, as it may be their only chance in life to receive formal instruction about financial concepts and their application to financial decisions and issues they may encounter later in life. This financial education that gets added to students' class schedules comes at a cost. By adding a personal finance course requirement, students could forfeit other courses in arts, science, math, physical education, or college-level courses. Thus, it is important to determine the effect of personal finance education on knowledge and financial behaviors to properly assess the costs and benefits of mandating the education.

2A. Key Programs and Resources

A variety of non-profit organizations offer financial education curricula. First, the National Endowment for Financial Education (NEFE) offers the *High School Financial Planning Program* (*HSFPP*). Second, the Council for Economic Education (CEE) provides a flagship personal finance high school curriculum entitled *Financial Fitness for Life* (FFFL). The curriculum also includes a nationally normed test instrument that can be used to assess student knowledge. Third, the Jump$tart Coalition for Personal Financial Literacy

(Jump$tart) offers a variety of high school financial education resources via its online clearinghouse. Fourth, Next Generation Personal Finance (NGPF) is a relatively new online site that supplies a curriculum and extensive lesson materials for teachers on major topics in personal finance.

Both Jump$tart and the CEE have outlined personal finance competencies for K-12 students. Jump$tart publishes the *National Standards in K-12 Personal Finance Education* (Jump$tart, 2015). It defines six personal finance categories within which students should be knowledgeable: spending and saving, credit and debt, employment and income, investing, risk management and insurance, and financial decision making. Second, the CEE provides a similar set of categories in it's *National Standards for Financial Literacy* (CEE, 2013): earning income, buying goods and services, saving, using credit, investing, and using insurance for protection against several financial risks. These categories are generally consistent with topics taught in states with personal finance course requirements.

The Federal Reserve System offers a variety of personal finance education programs through some of its Reserve Banks. One example is *Keys to Financial Success (Keys)*, a one-semester personal finance program for high school students offered by the Federal Reserve Bank of Philadelphia and the University of Delaware Center for Economic Education and Entrepreneurship.

The 2016 *Survey of the States* gives an overview of the state of U.S. personal finance education in K-12 (CEE, 2016). In 2016, 17 states require a high school personal finance course, and only 5 states require a semester course solely focused on personal finance. The CFPB has put together a guide for policymakers on advancing K-12 financial education across states. This toolkit provides policymakers with tips and information for state officials looking to incorporate personal finance into public education in their states.

Many states requiring a course in personal finance prior to high school graduation provide content guidelines and sample curricula when adding the requirement. A well-specified curriculum, however, is only part of the problem with personal finance instruction in the schools. A common issue across states that offer a course in personal finance is that teachers do not think they are well-prepared in course content and pedagogy for teaching it (Way & Holden, 2009). One reason for this situation is that personal finance is a minor subject in the school curriculum. Most high school teachers received their undergraduate education for teaching in such major areas as math, science, English, social studies, and business. They rarely specialize in teaching personal finance or learn how to teach it as part of the undergraduate education. To combat this issue, state councils in the CEE network, state Jump$tart coalitions, and other organizations provide teacher training programs to improve the financial knowledge and pedagogical skills of teachers.

2B. Major Topics and Literature Review

Outcomes in evaluations of youth financial education come in two forms: financial knowledge and financial behaviors. While most youth studies focus on financial knowledge in the short run, those focusing on financial behaviors often study long-run outcomes as well. Testing knowledge gains from financial education is an important first step to understanding how and when the curriculum and instruction for youth can be effective. Beyond knowledge, financial education must lead to an eventual reduction in financial mistakes in order to be beneficial. For example, do students exposed to financial education in high school benefit from improved credit scores and fewer missed payments? Or do they have a misperception of finances and acquire more debt?

Several research studies have examined the effect that various curricula have on the personal finance knowledge of high school students. The studies often vary in pedagogical content, assessment instruments, levels of teacher training, and amount of instructional time. These variations lead research findings to differ in the sign, magnitude, and overall interpretation of their results. To provide a concise review, the following reviews discuss the results of three programs with valid assessment instruments, appropriate content, and a minimum time allotted to the curriculum. It also omits reference to middle school studies, some of which were cited in conjunction with the elementary school studies in the previous section.

Four papers in particular look at three rigorous curricula and test high school students before and after the education to see if their knowledge improved. First, Harter and Harter (2009) examined the effectiveness of the FFFL curriculum in an underprivileged area of eastern Kentucky. Prior to instruction, participating teachers received FFFL training. The FFFL instruction improved financial knowledge for the 433 high school students who received it. Second, Danes, Rodriguez, and Brewton (2013) found that NEFE's *HSFPP* improved personal finance knowledge and behaviors in a sample of 4,794 students enrolled in 130 U.S. high schools. Third, Asarta, Hill, and Meszaros (2014) used a sample of 967 students enrolled in a one-semester *Keys to Financial Success* course offered to high school students in Delaware, Pennsylvania, and New Jersey and showed that students participating in the course increased their personal finance knowledge by over 60 percent on average, with improvements taking place in each of the standards and concept areas of the FFFL test. Fourth, Walstad, Rebeck, and MacDonald (2010) showed that the *Financing Your Future* (*FYF*) curriculum improved the financial knowledge of high school students. The authors tested 673 senior high school students who received the six hours of instruction, as well as 127 who did not, from New York, Minnesota, Texas, and Maryland both before and after the instruction. Notably, teachers were trained prior to the instruction period. The instruction increased student's personal finance knowledge by 19.7 percentage points.

Several early studies explored the effects that state-mandated financial education have on financial knowledge and behaviors, as well as on other financial outcomes. Bernheim, Garrett, and Maki (2001) used household survey data to examine the long-term effects associated with personal finance mandates in high school. Comparing individuals living in states with personal finance mandates after they were implemented to individuals within the same states before the policies were implemented, as well as to individuals living in states without mandates at the same time, the authors found that those who took a personal finance high school course saved and accumulated wealth at greater rates during adulthood than those who did not. Tennyson and Nguyen (2001) used the same empirical strategy with testing data and found that personal finance mandates requiring students to take a personal finance course that included a testing component improved knowledge. The authors found, however, that broadly defined mandates did not change the financial knowledge of students.

More recently, Cole et al. (2015) found that financial education mandates in high school did not affect credit behaviors later in life or asset accumulation. This study used data from the Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP) and survey data from the U.S. Census Bureau. Brown et al. (2016) use a similar empirical approach and the CCP data, but investigated the effects for only young adults (under age 29). They found that financial education in high school decreases delinquency, decreases collections, and decreases non-student debt.

State mandates vary in content, duration, and enforcement. To control for these differences, Urban et al. (2015) choose three states (Georgia, Idaho, and Texas) that had rigorously implemented mandates post 2000, where no other education requirements changed at the same time, all students were required to complete a course on personal finance prior to high school graduation, and sample curricula were provided to instructors. They designated a border state without any personal finance education (or other education changes) as a control group, along with students within both states before the education was required. The authors found that exposure to mandated personal finance education in high school increased credit scores and lowered delinquency rates in 18-22 year olds.

For an international perspective consider the study by Bruhn et al. (2016). It showed that randomly assigning an intensive financial education curriculum and involving parents improved financial knowledge and financial behaviors of students in Brazil. This work complements Urban et al. (2015) in showing that rigorous financial education improves financial behaviors.

2C: Evaluation Practices, Strengths and Limitations

There are three main caveats to studying the effect of personal finance curricula on financial knowledge. First, each study tests the effects of curricula for only a small population. It could be that the results are not externally valid, meaning that the education would not work similarly for other groups of students in other schools. This factor makes it difficult to make comparisons across curricula. For example, it is difficult to determine if one curriculum is more successful, or if there is a different effect for different populations. Second, testing students before and after education is completed does not take into account what the students *would have* learned anyway during that period. Instead, a control group with similar students who were not exposed to the education should ideally be used as a baseline for the change in financial knowledge during those months. Third, even if knowledge gains are present in the short run, it is important to understand if those knowledge gains persist and how actual financial behaviors change in the long run.

In measuring the effects of financial education in high school on financial behaviors, measurement challenges also arise. First, personal finance mandates are heterogeneous. While some of the mandates require content to be taught through the years in any class, others simply recommend a class be offered, and others still require a full year course with standardized testing covering the topics. Classifying each of these as a *personal finance mandate* results in a large standard error, or an imprecise measure of zero. It is thus important to look at specific content and requirements and ask what works not does financial education in high school work. Second, the year the mandate is passed is often not the year the first graduating class is required to take the course. Instead, these implementations often happen at a lag of nearly three years. In some circumstances states often reverse the mandate before it is implemented in schools. Third, administrative and survey data often do not report where individuals lived at age 18. This requires assumptions about whether or not an individual lives in the same state in which she attended high school. Again, this results in imprecise measurement of high school education.

2D. Public Communication

Adding any courses to a high school requirement can be costly. High-achieving students may forgo advanced placement courses or early college credits to complete the requirement, and these students may learn more about finances from their parents anyway. At the same time, lower-ability students may already struggle with the course requirements currently in place. This makes it important to empirically document the effect of personal finance education in high school on both knowledge and outcomes.

While studies covered by the media often assert that financial education in high school may be ineffective, research suggests that properly measured intensive curricula can improve knowledge, reduce delinquencies, and increase credit scores. The results should encourage policymakers that the benefits of financial literacy education potentially outweigh the costs in states that rigorously implemented their mandates.

3. Young Adults: College Students and Young Workers

The target group for this section is young adults ages 19-29 years old. It is a mixed one of young adults at various stages of education and a formative period for work and career decisions. Some of these young adults are attending a postsecondary institution or they completed their postsecondary education and have started their careers. Other young adults may not have pursued a postsecondary education, or did so only temporarily, but they have worked at different jobs since they graduated from high school.

Young adults, both those who work and those enrolled in postsecondary education, need financial literacy, as many are becoming financially independent and having to make major financial decisions. These young adults are receiving credit card applications to consider or may have to take out a student loan to finance their education. One problem is that these young adults in this transition stage often lack financial knowledge, are inexperienced in financial markets, and are at risk of making poor financial decisions that can have costly and lasting effects. Research studies have found that financial literacy is often low among this mixed group of young adults (e.g., Lusardi, Mitchell, & Curto, 2010; Shim et al., 2010).

3A. Key Programs and Resources

There are several ways for young adults to receive financial education. Young adults may have been exposed to financial lessons through their parents, their employers, or through a workshop or consultation at their bank or credit union. This education can be general in coverage, or specific to a household experience, the retirement plan of an employer, or the products offered at a bank or financial institution. There are few financial education programs especially designed for young adults before they begin working a job or commit to postsecondary education.

For those who continue their education beyond high school, college is another way for young adults to receive financial education. This education can come through a campus financial aid office or from enrollment in a specific course. As student loan debt and defaults become a growing policy concern (and factor into college ratings), schools are beginning to implement interventions that provide counseling for student loans. These sessions include creating a budget, selecting a major, calculating expected future salaries, and determining future loan amounts. These sessions can also advise students on potential avenues to increase scholarships and non-loan aid. (Note: Further discussion of financial education and student loans will be the focus of the seventh section of this document).

There are various financial institutions that offer programs or products related to financial education that can be used by college students or by instructors in college classrooms. For example, Wells Fargo offers its *Hands on Banking* program to a variety of audiences, including young adults as well as children, teens, military personnel, and seniors. Another program that college campuses can take advantage of is *Financial Avenue* provided by Inceptia. The program uses various modules to teach financial topics. The modules include: College and Money; Credit and Protecting your Money; Debt and Repayment; FAFSA; Foundations of Money; Future of your Money; Loan Guidance; Psychology of Money; and Spending and Borrowing.

Another high-quality college-based program, which has been adopted by over 1,000 colleges and universities, is CashCourse. It is a no-cost online financial education resource designed specifically for college and university students. It equips students with information that helps them make informed financial decisions, from orientation to graduation and beyond. The program, managed by the National Endowment for Financial Education, utilizes a whole-life approach to personal finance, including resources focused on budgeting, credit, debt, banking, savings, insurance, student loans, transportation, financial crises, and several other relatable topics. In addition, the program provides resources for college administrators and faculty who assist them in implementing campus-wide financial literacy programming.

3B. Major Topics and Literature Review

One topic of particular interest for young adults is using credit and managing debt. For the first time in their lives young adults may take out different types of loans for purchases involving such items as automobiles, appliances, and education. Young adults also assume responsibility for proper use of credit cards and for managing credit card debt. They frequently receive solicitations for credit card applications and therefore need to be educated about proper use of a credit card. Not understanding the degree to which high interest rates can increase debt burdens can be costly. For example, missed credit card payments can lower one's credit scores, resulting in higher interest rates in the future.

Young adults are moving out of their parents' houses and may be considering renting or purchasing a house in the near future. They need to be educated when choosing the right time to transition from renting to owning. A home may be one of the largest purchases an individual makes and not understanding the complex contract can be problematic.

Young adults face financial decisions that affect their future income. They apply for and work at jobs and start to make work decisions that shape their careers. Choices about marriage and family made at this stage of life change the compositions of households and household budgets and expenses. They also can be concerned with investing in further education and financial assets, and saving for retirement.

Given the heterogeneity across the young adult population and the different financial issues of concern, it's difficult to design one-size-fits-all policies or programs for financial education for all young adults that unambiguously improve their welfare. Many of the financial issues that affect young adults also affect older adults. Accordingly, further discussion on decisions regarding homeownership, retirement, student loans, and financial investing can be found in other sections of this paper.

Most of the evaluation and research of financial education for young adults is concentrated at the college or university level probably because that segment of the young adult population is easy to access for such studies and relatively well-defined compared with a broader population of young adults. Lyons (2008) examined how a college financial education course at 10 midwest universities affected four risky credit card behaviors. Students who took a course were less likely than those who did not take a course to have credit card debt greater than $1,000, to be delinquent on payments, reach their credit card limit, and not paying their balance in full each month. Although many research studies of college students focus only on one university, this study included multiple universities and had a large sample (n=26,759).

Other studies estimated the effect of financial education on financial behaviors of college students. Using a national online survey of currently enrolled college students ages 18 and over, Gutter and Copur (2011) found that college students who took a personal finance course in high school were more likely to save and pay off their credit cards and less likely to max out credit cards, than those who took a financial education course in the community, but outside of school. Another study of financial education in high school, college, or both found that those who took a college personal finance course increased investment knowledge and therefore are more likely to increase savings (Peng et al. 2007). One benefit of this study is that investment knowledge and saving rates were measured years after the financial education was delivered rather than immediately after the intervention as many studies tend to do. Implications from this research suggest that investment topics may be more appropriate for an older college-age audience rather than high school students and therefore they were more likely to take the education seriously, which improves retention of knowledge and implementation of what they learned even years later.

Research on financial education in high school, college, or through an employer found that college financial education had mixed or no effects on short-term behaviors such as paying their bills, having a checking account, paying credit card in full, and not paying mortgage late (Wagner & Walstad, 2016). College financial education had stronger and positive effects on long-term behaviors, including having an emergency fund, having a savings account, having investments, figuring out how much to save for retirement, having non-employer retirement accounts, and obtaining a credit report. Financial education may be effective for behaviors that do not lend themselves to being learned through experience.

3C. Evaluation Practices, Strengths and Limitations

There are many limitations to evaluating the effects of financial education for young adults. First, many college financial education interventions typically focus on one institution because of convenience—researchers only have resources to evaluate financial education in small-scale settings—but this limits the generalizability of the study. Larger, more purposely selected samples with a specific research question in mind would improve the quality of research (Cude, Danes, & Kabaci, 2016). Financial education is unique with a lack of standard curriculum and instruction among courses and programs, and also among institutions. In practice it is good to customize financial education to the audience but it can make comparisons for research purposes difficult (Lyons et al., 2006).

Second, the decision to obtain financial education and the propensity to make financial mistakes are endogenously determined. Individuals who seek financial education may be the most motivated young adults who would have been less susceptible to financial mistakes anyway. Or, young adults already in financial distress may be more likely to seek financial education. The direction of the bias is not clear, making it difficult to determine the causal effects of financial education on financial behaviors.

Third, linking financial education to increased financial knowledge is merely a first step. It is equally important to determine if the education changes behavior. Many studies therefore lack a long-term connection between financial education and financial behaviors. Does financial education in college improve investment decisions twenty years later?

Fourth, evaluation can be an afterthought. Those in charge of planning financial education need to keep the evaluation component in the planning process rather than leaving it for after the education is completed and trying to make the data fit the evaluation method (Lyons et al., 2006). This suggests that researchers estimating the effectiveness of financial education need to plan their study to include the best way to collect the data and appropriate questions or measures of financial literacy or financial outcomes before the intervention to improve reliability and potential bias later.

3D. Public Communication

Young adults face major financial decisions about their postsecondary education, jobs, and careers. They also are starting to live independently and form their own households. These changes require careful management of income and expenses and financial planning. If young adults take on large amounts of debt, either through credit cards, student loans, or other avenues and cannot manage the payments, this debt can be problematic years into the future.

Financial mistakes can be mitigated through financial education. That financial education might begin during high school, but some continuation during postsecondary education or through employment can reinforce and extend what was previously learned. It also is the case that each financial decision related to such matters as accessing credit, managing debt, obtaining insurance, paying bills and taxes, or something else will require either formal or informal financial education to avoid costly financial mistakes.

4. Working Adults

In the last 20 years there has been an increase in workers' responsibility over their financial security and financial well-being. With the shift from the defined benefit (DB) to the defined contribution (DC) pension system, workers have to decide when and how much to save and invest for retirement. The financial system also has become increasingly complex and important decisions, such as whether or not to purchase a home, when and how much to borrow, and how to finance children's life pursuits, can be difficult to make and have a long-lasting impact on workers' financial situation. Further, changes in the labor markets have brought more flexibility, meaning that many individuals are faced with careers that provide less security and more uncertainty. In today's rapidly changing economic and financial markets, financial decisions are increasingly complex and an understanding of basic financial concepts is becoming an increasing priority, and workers (and other working age adults) are prime candidates for financial education programs.

4A. Key Programs and Resources

One key venue for financial education for adults is the workplace. This setting is a natural fit, as it allows educators to reach a large audience and at the same time benefit from economies of scale. Workplace financial education can take many forms and cover a variety of topics including retirement planning, budgeting, saving, investing, credit and debt management, health insurance, and personal wellness.

Employers often choose to provide such information through three main formats. The first are *short, one-time seminars* aimed at providing information about employer-specific policies relating to retirement savings or health insurance provisions. These seminars are often provided at the time the employee is hired, when there is a company-wide policy change, or at a significant life moment for the employee (e.g., promotion, salary increase, etc.). A second format of education is *extended financial education programs*. These programs may last up to a week and could be paid for by the employer by sacrificing time from the employee's normal duties. A third format is *online financial education*. In this case, employers often choose an online platform where workers can access a variety of resources and learn as much in depth as they like. This allows individuals to customize the education to areas that important to them.

Avoiding a one-size-fits-all strategy for financial education is especially important. While a standard course in understanding interest rates and risk diversification is a first step, in order to succeed, individuals must be offered a diverse set of financial education tools that apply to their diverse needs. For example, policies that work for high income or more educated working populations may not be equally effective for low income and less educated populations. Also, programs can have heterogeneous impacts by gender (Lusardi & Mitchell, 2008). The financial education contents and instructional methods must be carefully tailored to the audience of working adults for it to be effective in increasing financial understanding or attitudes.

Government agencies such as the Social Security Administration, nongovernmental organizations such as the National Endowment for Financial Education (NEFE) and the Financial Industry Regulatory Authority (FINRA), and private businesses such as Bankrate and Fidelity have all developed planning, budgeting, saving, and investing calculators and tools that can all be helpful instruments and resources for working age individuals looking to increase their financial knowledge or help manage their finances, and tools for financial educators. The Consumer Financial Protection Bureau has published a report (*Financial Wellness at Work*) that describes several promising case studies of workplace financial education programs (CFPB, 2014). One example of an innovative program is the initiative launched by the Doorway2Dreams (D2D) Foundation, which developed an online game to teach employees basic financial concepts. This foundation also developed other online financial education games that are free to the public on a website they developed, and can be a great resource for working age individuals who are looking to learn on their own. Finally, a key resource for employers looking to evaluate their own programs is the Woodstock Institute, which has developed a guide and survey example of how to evaluate the effectiveness of a financial education program (Jacob, 2002).

4B. Major Topics and Literature Review

Most discussions of workplace financial education target retirement savings. While one-size-fits-all policies such as auto-enrollment in employer-sponsored 401(k) programs has been highlighted as one potential mechanism to increase retirement savings, employees' specific financial needs cannot be universally translated into policy prescriptions. Instead, financial education should allow individuals to make more informed decisions based on their current financial condition and plans.

A number of research and evaluation studies over the years have found generally positive effects for financial education on retirement participation and saving. Bernheim and Garrett (2003) found that individuals working at firms that *offer* financial education are more likely to participate in retirement plans, accumulate more retirement savings, and, on average, increase savings rates. There was no relationship, however, between the offer of financial education and wealth. Bayer, Bernheim, and Scholz (2008) showed that when firms offer more workplace seminars, retirement plan participation and retirement savings increased in the firm. These seminars ranged from financial education seminars for all employees to those directed at employees over 50, and again for those near retirement age.

Lusardi, Keller, and Keller (2008) studied the effect of additional employer-provided information programs on employee pension enrollment. To do so, the authors tested the effectiveness of an employer provided financial planning aid at a distinguished university. The authors tested the effect among employees who received the planning aid compared to a control group of new employees who attended employee orientation and received just the standard information packet. Using surveys, focus groups, and in-depth interviews, the authors evaluated the program and found that additional financial information provided by employers can greatly enhance employees' enrollment in supplementary pensions.

Clark, Morrill, and Maki (2011) examined the impact of employer-provided financial education for newly hired workers on contributions to voluntary retirement savings plans. To evaluate the effectiveness of the program the authors randomly split workers into three groups, including a control group, and two other groups who each received different versions of the flyer, and then assessed the 401(k) enrollment rates for each group. They found that younger workers receiving the program information were significantly more likely to enroll in the 401(k) plan, while older workers actually had lower initiation rates relative to their control group, demonstrating that programs can have heterogeneous impacts on different groups and evaluations must take this into account.

More recently, Collins and Urban (2016) used a field study approach to determine the effect of online financial education on retirement savings. The online education was given to credit union employees in Wisconsin during work hours and consisted of ten units, taking employees an average of nine hours to complete. Employees offered the online education improved their financial knowledge compared to the control group. The employees receiving the online education also increased their retirement plan participation and the monthly amount of their retirement savings.

4C. Evaluation Practices, Strengths and Limitations

Evaluations aimed at understanding the effects of workplace financial education on financial knowledge and financial decision-making comes in three types. The first type is field studies. These studies randomize financial education in the workplace, allowing some groups to obtain the education first and the others at a later date. Randomizing financial education allows evaluators to compare a treatment group to a control group after the education is complete to see how treated adults' knowledge, savings, and retirement plan participation changed as a result of the intervention. While we learn that the intervention changed behavior in a systematic way in one particular setting, it is not certain that a similar intervention would affect behavior in the same way for a different population, as studies have shown that one program can have heterogeneous impacts for different demographics.

A second strand of literature uses cross-sectional data to compare individuals who work in companies that offer financial education to similar individuals who are not offered financial education in their workplace. The samples are larger and more nationally representative than in field studies. Employees, however, may select into firms that offer better financial education, which makes it difficult to determine if individuals save more *because* of the education, or if they were more likely to save to begin with.

A third literature strand compares firms to *themselves* in times that they offered less or more workplace seminars. This allows evaluators to remove some of the selection of financially literate employees to firms that offer financial education. However, it could be that individuals choose to enter a firm at a time they are most focused on financial literacy training. These studies tend to be nationally representative in general.

4D. Public Communication

With greater talk about opt-out policies focused on increasing retirement savings, it is important to recognize the variety of employees' financial decisions. These policies can change behavior for all individuals, while financial education can allow employees to better target their own financial goals and needs. Moreover, independent retirement planning can be costly. Workplace financial education can reduce these costs for employees, allowing them to be more productive in other areas. As such, financial education programs for the workers benefit all parties involved.

Beyond retirement, workplace financial education can focus more closely on the employee's health insurance decisions, which correlate with both worker productivity and worker finances. Further, for low income individuals, providing employees with emergency savings options in the event of a financial shock will continue to be an important area in the future.

5. Military Personnel

Members of the U.S. military have unique financial circumstances. They can be deployed for years while accumulating a monthly paycheck, often spending little of that income during deployment. Upon returning to the United States they get a lump sum payment that may encourage overconsumption and accumulation of unsustainable debt, which can lead to financial hardship (Elbogen, 2015). Military families at home also must deal with an active duty member being removed from day-to-day financial decisions for an extended period of time, which can create financial problems during their absence and upon their return.

In addition, the transition to civilian life can be financially challenging for members of the U.S. military. One major decision for many service members is whether to attend additional years of schooling. Although the U.S. government provides assistance to military members through the GI Bill, there are requirements that must be met for members to receive the benefits (VA, 2016a). Ensuring that service members are fully aware of all requirements allows them to take full advantage of these benefits. The support also extends to mortgages as the Department of Veterans Affairs guarantees home loans to military members. Many members, past and present, are not fully aware of these benefits and how to use them to their fullest potential (Elbogen, 2015). Providing financial education to this group on topics that are specific to their special circumstance can help reduce the financial burden placed on these households.

Service members are often found to have low levels of financial literacy (FINRA, 2013a), which can have consequences for financial decision-making. Military members are more likely than adult civilians to engage in higher cost alternative financial services, including non-bank check cashing and payday loans (Carrell & Zinman, 2014) and are more likely to report their home is "underwater" (FINRA, 2013b). Due to the unique situation members of the military experience, the National Defense Authorization Act for Fiscal Year 2016 included a financial literacy mandate issued to the U.S. Department of Defense. The mandate requires that financial literacy training be provided to members of the uniformed services. The training is to focus on various career and life milestones that may require financial education. The provision also requires the Department of Defense to include a "financial literacy and preparedness survey in the status of the forces survey" (National Defense Authorization Act for 2016, 2015).

5A. Key Programs and Resources

The two main sources for financial education programs for active duty and retired military members are from the U.S. government and non-profit organizations. The Department of Defense, along with all branches of the military, provided financial education programs or financial assistance prior to the National Defense Authorization Act of 2016. The Department of Defense provides financial education and assistance through Military OneSource (Military OneSource, 2016). Military OneSource is a web-based resource for military members covering everyday issues, military benefits, relocation information, and personal finances. The program is open to all members of the military, including spouses and children, immediately after joining. Financial topics include: budgeting basics, home and family finances, savings tools, financial planning for deployment, general financial planning, financing college, protecting financial health, financial fraud and identity theft, taxes, and compensation and survivor benefits. Not only can members receive education directly from the website, they can also obtain additional information upon request or can speak with someone to receive immediate assistance (Military OneSource, 2016).

Individual branches of the military also provide personal financial assistance through their educational resource programs. Some education is offered in person during training sessions or based on the specific needs of the member. Education is also provided online in order for service members to access the material any time (Vitt et al., 2005). The Army provides financial education and assistance through an online service, Army OneSource. This service includes information on a wide variety of basic financial tools and every day decision-making assistance. The website also provides service members with a financial literacy game "Army Gold: Financial Game." The game includes a virtual world where participants make financial decisions, including those specific to military members (Army OneSource, 2016).

The Navy delivers similar services through their Fleet and Family Support Programs (FFSP) which is provided both online and in person with a Command Financial Specialist (CFS). These specialists provide financial training, counseling and information based on the sailors' needs. Financial topics include identity theft, predatory lending, creating a spending plan, saving and investing, consumer awareness, and financial resources (U. S. Navy Fleet and Family Support Programs, 2016).

The level of financial education offered by other branches of the military is less clear. The Marine Corps provides information on similar topics to both the Army and Navy, however, information is distributed through in-person workshops and seminars (U. S. Marine Corps, 2016). The Air Force also provides financial information to their members, though it appears they encourage their members to seek out education from non-profits (Air Force Personnel Center, 2016).

In addition to the financial literacy offered through the Department of Defense and branches of the military, the Consumer Financial Protection Bureau (CFPB) provides financial education and support along with advocating for stronger laws concerning the financial treatment of service members and veterans. The information provided through the CFPB website is specific to the financial situation of military members: education and student loan options, mortgages, debt collection and military benefits, and fraud protection. Support is also offered through financial coaching and a complaint system where service members can submit a complaint against a financial company and the CFPB will investigate the issue (CFPB, 2016).

Various non-profits are also providing financial education specific to the needs of military members. The Financial Industry Regulatory Authority (FINRA) provides resources for financial educators, specifically those targeting military members. The materials provided include general and specific financial education. Some specific financial education training includes transitioning to civilian life and GI Bill benefits related to paying for college. Another non-profit organization, InCharge Debt Solutions, provides service members with financial education programs, specifically assistance with their debt management (InCharge, 2016). There are many other non-profit organizations that provide financial education and support specifically to military members. These include, but are not limited to, National Financial Educators Council (NFEC, 2016), American Institute for CPAs (CPA, 2016), and the Better Business Bureau (BBB 2016). The Military Families Learning Network (MFLN) provides professional development training via webinars, blogs, and social media for professionals who serve military families. The MFLN has archived over sixty 90-minute personal finance webinars that are available for both professionals and military families. For more information, see http://articles.extension.org/militaryfamilies.

5B. Major Topics and Literature Review

Military members face the same financial issues any household experiences, however there are additional challenges. During deployment one member of the household may be responsible for all financial decisions. For single individuals, those financial decisions may be put on hold until returning from deployment or someone may be given power of attorney and required to make any financial decisions for the deployed member. The financial decisions made at this time may place strains on the relationship should any mismanagement of funds or disagreements occur. Many organizations providing financial education focus their programs on basic financial skills such as budgeting and debt management.

Military members also face financial challenges that are specific to their situation. The GI Bill, in reference to education and student loans, is an area often covered when providing financial education to service members. The details and requirements of the program can be difficult to understand, making it challenging for members to receive full benefits. In addition to support for educational advancement, service members and veterans are eligible for assistance with home loans. The Department for Veteran Affairs (VA) guarantees a portion of the home loan in order for the lender, private banks and mortgage companies, to provide more favorable terms to the service member (VA, 2016b). These loans also have specific requirements that the borrower and lender must be made aware of in order to secure the benefit.

The final area of education typically provided to military members is assistance with alternative financial services. Many service members utilize the services of nontraditional loans such as payday loans (Carrell & Zinman, 2014). These services are typically more costly than the loans provided by traditional banking institutions. The CFPB works to ensure military members limit the high APR often associated with these loans and any illegal debt collecting methods. The CFPB, along with other organizations, also provides education to members to ensure they fully understand the cost of these services and the longevity of the loans (CFPB, 2016).

Limited research has been done on the effectiveness of any financial education opportunities listed above or other programs specific to the military. Plantier and Durband (2007) investigated the use of financial resources provided to military members and their families. They found it difficult to recruit participants, and were only able to acquire data for 201 service members from over one million active duty personnel. One significant finding is that many spouses were not fully aware of the financial support and services offered by the military and often looked to non-military resources as an alternative.

Brand et al., (2011) examined the effectiveness of a two-day personal finance course completed by new enrollees into the Army. The authors found that the course did increase the number of service members signing up for retirement savings plans, but did not have a significant impact on establishing emergency funds. Bell et al., (2009) surveyed soldiers to determine their subjective well-being. The measure included indicators for how often they worry about their financial situation, along with their level of anxiety, difficulty sleeping, and ability to concentrate. On average, soldiers reported a relatively high level of subjective well-being, 16 points out of 20. While the authors did not have access to the service members' actual level of financial knowledge, they did conclude a higher level of perceived financial knowledge increased the soldiers' subjective well-being. Previous literature has found that perceived financial knowledge can be just as valuable as actual financial knowledge when examining financial behaviors and practices (Allgood & Walstad, 2016).

Skimmyhorn (2016) examined the effects of an eight-hour personal financial management course on a variety of financial behaviors. The course was a mandatory portion of the Advanced Individual Training (AIT) program for new enlistees to the U.S. Army. The course included "education, assistance in signing up for savings plans, and advice provided by the instructors during breaks or in response to specific questions." After the first year, those participating in the course reduced their credit account balances, delinquencies, and saw a reduced number of adverse legal actions. These positive financial results, however, were not evident in the second year. What was consistent both years was an increase in savings rates.

5C. Evaluation Practices, Strengths and Limitations

Due to the limited research on the usage and effectiveness of the financial education programs provided by the military, there is little to report in terms of evaluation practices. Formal financial education evaluation that has been completed has focused on relatively short programs, spanning two days of basic training and totaling eight hours (Brand et al., 2011; Skimmyhorn, 2016). More research examining the effectiveness of Military OneSource and other branch-specific programs would provide further insight into the effectiveness of the military's financial education programs.

The measures of success are also somewhat limited within existing literature. Evaluation of the financial education programs has been measured in terms of the number of soldiers signing up for retirement savings plans and reporting emergency funds (Brand et al., 2011; Skimmyhorn, 2016). Missing from the existing literature is evidence these programs improve financial literacy and have any effect on recurring financial behaviors. More research is specifically needed in investigating the effect of financial education programs on practices service members commonly engage in such as payday loans and maintaining credit card balances.

5D. Public Communication

After returning from deployment, many service members struggle to adapt to civilian life, not only with regard to making financial decisions but in other aspects of daily living. This results in high rates of homelessness and suicide among military members and veterans. Providing financial education and support may help alleviate some of the stresses that are put on members as they return to society. The government and non-profit organizations provide financial education and support to military members and veterans. Little is known, however, about whether the members are aware of the services, how frequently they are utilized, and their effectiveness. More research is needed to determine whether these resources are effective and what can be done to improve the financial literacy and well-being of current and past military members.

6. Low-Income Consumers

Low income consumers are those whose family incomes are below 80 percent of area median income levels (HUD, n.d.), and many of those with incomes below the federal poverty level are served by government assistance programs. These consumers are economically vulnerable and need help to increase their economic security and quality of life. Nielson et al. (2016) described some of the unique challenges they face compared to other consumers. Low income consumers have fewer employment options and unstable labor market opportunities. They are more likely to have a disability or responsibility to care for people with disabilities. They are more likely to lack access to health care and health insurance. As a consequence of these factors and others, their finances are often characterized by highly volatile income and expenses (Hannagan & Morduch, 2015). This group is therefore especially vulnerable to economic shocks and resulting material hardships.

In addition, low income consumers often have lower levels of education and financial literacy (Lusardi & Mitchell, 2011). As a result, they may lack familiarity with or exposure to certain financial products, services, tools and techniques, and advice for financial planning and management. They also are more likely to be underserved by financial products and services that are safe, useful, affordable, and convenient. For example, their higher likelihood of having no or a short credit history or low or no credit score results in limited access to affordable credit. Navigating public services also makes life more complicated and expensive in terms of time, energy, and mental effort. The above challenges can be compounded for some low income consumers, such as new immigrants from non-English speaking countries, by language barriers and limited understanding of the U.S. financial system.

6A: Key Programs and Resources

Financial education programs targeting low income consumers take various forms, but three types are noteworthy:

Products. Financial education programs paired with financial products targeting low income consumers. One example would be individual development accounts (IDA) that are matched savings accounts helping people with modest means to save towards the purchase of a lifelong asset, such as a home (Grinstein‐Weiss et al., 2015). Financial education also can be included with other products such as home loans, bank accounts, and debt management plans (Roll & Moulton, 2016; Sherraden et al., 2016).

Services. Financial education is integrated into social/human services such as workforce/employment support programs, child protection, child support, pre-school, food, health, legal aid, domestic violence disability and housing programs (LISC, 2016). For example, for economically vulnerable youth and young adults, financial education is integrated into programs such as summer youth employment programs, programs serving youth aging out of foster care, and higher education access and retention programs, including community colleges (Loke et al., 2015).

Instruction (counseling and coaching). Financial education can also be provided in topical counseling such as credit counseling and homeownership (Delgadillo, 2016). It also can be provided through financial coaching, a form of financial education that generally involves one-on-one sessions between a coach and client to increase awareness of financial decisions and to provide support reaching financial goals, which is growing in popularity as a strategy to support the financial behavior and financial well-being of low and moderate income consumers (Collins, 2016; Lienhardt, 2015).

6B. Major Topics and Literature Review

Frequently considered outcome measures for improving the economic well-being of low income consumers focus on money management behaviors (Xiao, 2015). Included in the list of such behaviors would be financial goal setting and planning, paying bills on time, bringing past due debts current, or increasing the frequency of savings deposits, as well as financial outcomes such as sustainable employment, reduced debts, improved credit profile and increased savings, which are indicators of economic well-being (Xiao, 2015). Financial education programs for low income consumers are broadly defined in terms of instructional format and training so there is not one standard type. Each program often differs in terms of the financial information given, the financial knowledge and skills taught, and desirable financial behaviors that are encouraged (Xiao & O'Neill, 2016). The following are evaluation studies on the effect of financial education on the economic well-being of low income consumers related to financial education programs that focus on products, services, and instruction for low income consumers.

Several studies evaluate the effectiveness of financial education programs on low income consumers' economic well-being. Researchers from the Center for Social Development at Washington University examined the impact of financial education on savings outcomes of participants in individual development account (IDA) programs. Data from a sample of approximately 2,000 participants in the American Dream Policy Demonstration showed that relative to counterparts who have not completed educational requirements, IDA participants who completed program requirements for financial education had higher average monthly savings, saved a higher portion of their income, and deposited savings more frequently (Grinstein-Weiss et al., 2015). A different study randomly assigned very low income families in a subsidized housing program to a mandatory financial education program and tracked them for 12 months (Collins, 2012b). The results showed that the financial education leads to improvements in self-reported behaviors and expanded use of credit, but no other measurable effects on savings or credit.

One recent study evaluated effects of financial education programs on low income youth. Loke et al. (2015) examined the impact of the *MyPath Savings* pilot on 275 economically disadvantaged youth participating in a youth development and employment program. *MyPath Savings* targets youth earning their first paycheck—a critical teachable moment to promote savings and connect youth with mainstream financial products, and peer developed and led financial education sessions. The results indicated that *MyPath Savings* contributes to significant increases in financial knowledge, financial self-efficacy, and the frequency of positive financial behaviors among the youth. Participants also saved an average of $507 through *MyPath Savings.*

Research shows that financial counseling encourages counseling clients to reduce undesirable debt behaviors and increase desirable behaviors (Agarwal et al., 2010; Elliehausen et al., 2007; Moulton et al., 2015; Roll & Moulton, 2016). Several organizations used financial counseling as a major education approach to help low income consumers. To improve the financial well-being of low income families, LISC (2016) adopted a bundled services approach. Through its network of 80 Financial Opportunity Centers (FOCs) in more than 30 cities across the country, they have offered three main services bundled together: one-on-one financial counseling, employment assistance, and help accessing public benefits that supplement income from work. The evaluation study shows that FOC participants receiving these bundled services have greater success in meeting their financial goals than do people in programs offering employment assistance alone. For example, their clients are more likely to be employed year-round, to reduce non-asset related debt, and to build positive credit histories than comparison group participants.

Karlan et al. (2012) partnered with a New York City-based credit union to examine potential effects of a commitment savings product and financial counseling among a low income population. The product, marketed as a *Super Saver Certificate of Deposit* (SSCD), allows gradual deposits toward a client's savings goal but imposes penalties for missed goals or early withdrawals. They had randomly assigned credit union members to a SSCD product offer, an offer of free financial counseling, or a survey-only control group. They found strong demand for both the SSCD and counseling that is positively correlated with proxies for behavioral biases. 65.7 percent of SSCD holders avoided substantial penalties by holding to maturity, and the average closing balance was $910. However, only 32.3 percent of SSCD clients met their chosen goal amount, and they did not find significant evidence that either the SSCD product offer or the financial counseling treatment increases savings balances or net assets, or affects borrowing behavior, relative to the control group.

Researchers at the Corporation for Enterprise Development explored effects of financial counseling on financial capability and checking account use. This program integrated access to financial counseling into a workforce program for individuals transitioning off of TANF. The results showed that counseling clients were more likely to stay current on debt payments. Access to financial counseling is associated with a lower percentage of debt that is past due 12 months after starting the program. However, the study did not find significant improvements in banking access or use, although the overall rate of all POP participants being banked increased dramatically from about a third to over half (Wiedrich et al., 2014).

Researchers at the Urban Institute studied the effects of access to financial coaching at two different programs on low and moderate income consumers' financial behaviors and outcomes using an experimental research design (Theodos et al., 2015). Consistent with the financial coaching theory of change, the authors found that consumers randomly assigned access to financial coaching achieved improvements in their day-to-day financial management behaviors, as well as in both objective and subjective financial outcomes such as stress, confidence, and satisfaction. However, the findings varied by the different program sites. At one site, participants increased their savings amounts and credit scores, while at the other they achieved significant debt reduction. One conclusion from this study is that, because financial coaching is a strategy focused on supporting clients in achieving their personal financial goals–whatever they may be, outcome evaluations of financial coaching programs cannot focus on just one or two confirmatory outcomes.

6C. Evaluation Practices, Strengths and Limitations

There are at least five issues related to collecting data for evaluations of financial education programs serving low income consumers that can affect the outcomes. First, exit from a human service program or the transient nature of population can make it difficult for long-term tracking and data collection. This is one reason why getting upfront permission to access credit files or other administrative data for follow-up outcome data can be useful. Second, family and household units are more dynamic, making follow-up contacts more complicated, and these contacts also are highly correlated with financial outcomes (e.g., if someone moves into a household, it increases income). Third, interviewer-assisted surveys may be necessary due to cognitive issues, disabilities and reading levels. Fourth, study participants may have more administrative data associated with them via other human service programs or benefits that they receive (Medicaid, SNAP, CPS, UI, etc.), which could be a source of evaluation data. Fifth, highly heterogeneous financial goals and outcomes make any one dependent variable inappropriate for some families (e.g., some need to borrow, some need to pay off debt). A final consideration related to evaluation design for low-income consumers is that, for clients in crisis, standard individual-level randomization or denial of service may not be possible or appropriate with a randomized control trial (RCT). In some circumstances, randomizing multiple treatment arms may make more sense than a treatment and control group design.

Information alone provided by traditional financial education is likely insufficient to improve the economic well-being of low income consumers in the absence of financial inclusion. Low income consumers are more likely to need additional support for action such as financial products that support a given behavior, counseling, coaching or peer support, access to language services, child care, transportation, etc. Basically, low income households need supports that address or acknowledge significant barriers this population may be facing in terms of financial health or forward-looking financial behaviors. Public systems, legal processes and polices may create further barriers to certain financial behaviors.

People need some level of stability to be able to focus on improving finances. If people are dealing with significant crises and lack of financial resources (e.g., those unemployed, or are dealing with loss of home, health crisis or other major disruption), financial education and other financial decision-making supports are not what is most needed. If consumers are in the mindset of financial crisis, financial counseling may be the right approach (e.g., credit counseling, foreclosure counseling). When these consumers have a stable situation, they may be more motivated to improve their finances and then financial coaching or an IDA program can help individuals refine and advance their personal financial goals.

6D. Public Communication

Providing effective, actionable financial education for low income consumers is important for them to better utilize social services available for them and enhance their financial capability to achieve greater financial well-being. Because of unique situations and characteristics of this special population, education approaches must be flexible with various forms such as teaching, informing, counseling, and coaching, and will typically need to be paired with additional supports such as appropriate financial products or various types of human services. Educational program content should focus on action that effectively uses available social resources and goal setting and planning to achieve life goals. Evaluating effectiveness of financial education for low income consumers should not only emphasize knowledge acquisition but also financial confidence and improvements in financial behaviors and outcomes.

7. Student Loans

Student loans are a large investment often made by 18- or 19-year-olds beginning their postsecondary education pursuits. These young adults often have little experience with credit, lending, and financial markets in general. They are not informed about how to make initial decisions on how much debt to assume for financing a postsecondary education. One option is for students to take out the maximum allowable loan amount offered. This option, however, may not be optimal for students, given different background characteristics such as the choice of a major, the expected time until graduation, and the number of hours students decide to work while attending an educational institution.

Another group obtaining student loans at an increasing rate are adults who have spent years working and for various reasons (e.g., career change, better income) return to complete a postsecondary education started when they were younger or are seeking further education. While "older" adults have more experience with financial markets, they face different decisions surrounding student loans. They may even have more options for financing their higher education including obtaining home equity loans, dipping into retirement savings, selling assets, or using precautionary savings. These decisions are not obvious and can be a teachable moment. It appears that only limited study has been conducted on this smaller group of adults returning to complete a postsecondary education or expand it. Accordingly, the remainder of this section will focus on the large group of adults (18- or 19-year-olds) who are just starting their postsecondary education.

Student loan debts have reached $1.39 trillion according to FinAid's student loan debt clock. In addition, debt per borrower for four-year graduates has risen to nearly $35,000 (Ziv, 2016). Even more shocking than the sheer amount of student loans is the increasing rate of delinquency: 11.5 percent of student loans were 90 or more days behind on payments in the fourth quarter of 2015 (FRBNY, 2016).

7A. Key Programs and Resources

Some states require that high school students complete a course on financial education prior to graduation (CEE, 2016). In a few states, these courses contain information on debt, including borrowing, repayment, and the costs of default directly in their curricula.

Prior to entering college, students determine their initial student loan amounts by completing the Free Application for Federal Student Aid (FAFSA) to determine their federal aid eligibility. If submitted, students can qualify for federal grants and low interest federal student loans. There are some groups that provide assistance in completing the FAFSA, such as high school counselors and high school events that involve parents, and college access programs. Tax agencies have in some circumstances added FAFSA guidance in their tax preparations. The U.S. Department of Education has an office of Federal Student Aid that provides information about financial aid options.

There are financial aid calculators that are provide by non-profit organizations such as FinAid. Online financial counseling is required by law for all students receiving federal financial aid. Another possible resource is financial counseling for students making student loan decisions or having student loan debt problems through such organizations as National Foundation for Credit Counseling.

Colleges are beginning to implement interventions that provide counseling for student loans, where sessions include creating a budget, deciding on a major, determining expected future salaries, and deciding on future loan amounts. These sessions also can advise students on ways to apply for more scholarships and increase their non-loan aid. Other resources available are post-college fact sheets or college exit seminars that explain different repayment plans.

7B. Major Topics and Literature Review

Heterogeneity across students makes it difficult to define one-size-fits-all policies that unambiguously improve well-being for all students. There are three particular outcomes that generate the most attention. A first outcome is that financial interventions may affect retention. Students with more financial education may understand that investing in their education is worth the benefit of the future earnings. This suggests that financial literacy improves retention in college. However, other students may quickly realize that college education is costly and the probability of completing and finding a job that requires a college degree is low. They may leave school earlier, decreasing retention. While the effect of financial education on student retention is ambiguous and potentially different for different types of students, college administrators and policymakers are increasingly fixated on graduation rates.

A second outcome financial education could change is the rate at which students complete financial aid applications. For most students, filling out the FAFSA can improve the probability that they obtain federal aid in the form of grants and low interest student loans. Some of these grants, such as Pell grants, have no obligation of repayment and can unambiguously help students finance their education. Any outcome that captures the likelihood that students apply for scholarships can be thought of as an improvement in student outcomes. Given that only a few states require a personal finance courses that directly discusses student loans in high school curricula, preparation for FAFSA completion could be low.

A third outcome is the probability that one defaults on his student loans. If students optimally choose their loan amounts and graduate from postsecondary education institutions, they should not default on their student loans. Missing student loan payments can cause individuals to lose their tax refunds and future Social Security payments and damage their credit scores. While online counseling is required to precisely combat default, students often click through the screens rapidly, retaining little information (Fernandez et al., 2015).

Research suggests that filling out the FAFSA is sufficiently complex to prevent students who need aid from completing the application (Dynarski & Scott-Clayton, 2006). Bettinger et al. (2012) confirmed this with a randomized experiment, where some individuals were assigned assistance with completing the FAFSA at tax time and some were not. The group that received the assistance were more likely to complete the FAFSA, received more federal aid, and were even more likely to enroll in college.

A growing body of literature studied a variety of interventions targeted at college students that provide financial counseling to those with loans. Schmeiser, Stoddard, and Urban (2016) studied the effect of a warning letter targeted at students with high debt levels for their standing in college that also provided academic information and an incentivized offer for financial counseling. While the letter did not change future loan amounts, it improved retention for these high-debt students.

A separate debt letter intervention at the University of Missouri sent information to a random sample of undergraduates on their loan amounts, future payments, and the average loan amount for undergraduate students (Darolia, 2016). While the letter did not change loan amounts, it did encourage students to seek out more financial information by visiting the financial aid office.

Brown et al. (2016) studied the effect of state-level personal finance mandates on student loan amounts. The authors found that states that pass personal finance mandates have higher student loan debt. However, personal finance mandates do not necessarily require that high school students must complete a course prior to graduation. It is also hard to determine if an increase in student debt is a greater investment of students in their education or a result of students just taking out the maximum allowable student loan amount.

7C. Evaluation Practices, Strengths and Limitations

Evaluation in the student loan space is plagued by a lack of data. While a large set of literature determined the effect of nudges (e.g., reminders) and defaults (e.g., changing the offered initial loan amounts), few studies have been able to tie together financial education and student loans. No research has studied the effect of financial education on student loan default rates. This is because student loan default data is often only available at the aggregate level, meaning it is reported for colleges as a whole, instead of individually for each student. Federally required education products, such as online education prior to obtaining federal student loans, are difficult to evaluate since they are required for everyone. This precludes researchers from determining what would have happened in the absence of the policy. Finally, the education interventions for students making decisions about financing college are often expensive. However, the assignment into the group receiving the education is random, or quasi-random, allowing evaluators to causally identify the effect of the program on the desired outcome.

7D. Public Communication

While there is little research that is able to determine the effects of financial education on young adults' decisions around student loans, 18 year olds entering college have little experience with credit and borrowing. Thus, this financial situation should provide a teachable moment for individuals to improve their financial decision-making for the rest of their lives.

States such as New Jersey are attempting to pass legislation that will include student loan decisions in high school personal finance courses (Flammia, 2016). These types of policies could help to increase the rate of FAFSA completion, grants received, and college attendance. However, more evaluation is needed to fully understand the effect of high school financial education on student loan decisions.

8. Homeownership

Within the category of homeownership, there are four distinct groups that could benefit from financial education. First, *first time homebuyers* who are obtaining a mortgage and potentially checking their credit scores for the first time could benefit from timely education surrounding this decision point. While purchasing a home for the first time can seem like sound investment, fully understanding the costs and benefits of purchasing when compared to renting is an important comparison for all potential homeowners to perform. With nontraditional mortgages prevalent leading up to the Great Recession, understanding a variety of complex mortgage terms was imperative knowledge for all potential homebuyers.

A second group of potential homeowners are *low and moderate income (LMI) homebuyers*. Historically, this group has held most of its wealth in housing. While LMI homeowners can have an important asset in their housing wealth, this group frequently has less savings in other types of assets in the event of an unforeseen shock. Since housing wealth is less liquid, this could pose future threats to financial stability. Further, LMI homeowners have shown to be the least numerate, with the lowest levels of financial literacy. As they showcase the highest probabilities of making mistakes, financial education is imperative for this group prior to and after purchasing a home.

A third group that would benefit from financial education are those who are in some stage of foreclosure or are at risk of beginning that process (i.e., those who are past due on a mortgage payment). As large drops in house prices pushed borrowers underwater on their mortgages and the unemployment rate doubled, borrowers had difficulty making mortgage payments. By early 2011, the Mortgage Bankers Association reported that roughly 2 million borrowers were in some stage of the foreclosure process, with another 3.6 million borrowers past due. Thus, these *borrowers at risk of losing their homes* became a target group for financial education, counseling, and coaching to improve their probabilities of obtaining new mortgage terms.

The fourth group are older homeowners. They may need to live on their home equity using reverse mortgages, sale leaseback or some other financial strategy. The complicity of such financial transactions and their immediate or longer-term consequences for these homeowners suggest that the homeowners themselves could benefit from financial education related to the financing change.

8A. Key Programs and Resources

There are several key programs for homeowners and potential homeowners to obtain financial information and education. First, the federal government, through various departments and agencies, offers some resources either for new homeowners before making their first purchase or to current homeowners struggling to pay their mortgage. For example, the U.S. Department of Housing and Urban Development (HUD) has a web portal containing links to resources to assist existing or potential homeowners. Both HUD and the U.S. Department of the Treasury are responsible for a mortgage adjustment program called the Home Affordable Modification Program (HAMP). Additional government resources for homeowners also can be found at state and local governments such as the Minnesota Housing Finance Agency and the Neighborhood Housing Services of Chicago.

Non-profit organizations, private businesses, and banks also provide financial information and education for home buyers or homeowners who need assistance. MGIC has an online program for home buyers. Freddie Mac has online homeowner resources. U.S. Bank is an example of a bank that includes mortgage and home buying education on its banking website. In addition, home buying courses are supplied through extension programs at universities such as the one offered by Utah State.

8B. Major Topics and Literature Review

For all four groups, an outcome of interest will be mortgage default and eventual foreclosure. Homeowners taking on too much debt or not understanding the loan conditions associated with different types of credit are at risk of losing their homes and tarnishing their future credit reputation. For new homeowners, and even older homeowners entering the home equity market for the first time, knowledge-based outcomes are important to study to make sure they understand what they are doing and make proper initial decisions that will mitigate future default or mistakes. Obtaining and understanding credit and calculating net worth is important when deciding what to purchase, how much to invest in a down payment, the length of the mortgage, and what type of mortgage to obtain (fixed or adjustable rate).

The above concerns are often compounded for LMI borrowers because they are likely to have the lowest level of financial literacy of all new homeowners. If this is the case, they may obtain a mortgage that is difficult to finance with their future income due to a lack of financial knowledge about a housing purchase.

Financial coaching may be particularly important for this group, as they may benefit the most from continued, not just one time, financial advice in the event that the household experiences a financial shock.

The number of borrowers under financial distress and at risk of losing their homes reached its highest levels from 2008-2012. Subsequently, federal, state, and local governments, non-profit organizations, and private institutions all began providing forms of financial counseling, education, coaching, and a variety of policies and programs to reduce the bleeding. These range from the federally sponsored Homeownership Affordable Modification Program (HAMP), which aimed to provide relief through mortgage modifications, to informal housing counselors at churches and local nonprofits.

The prime outcomes studied to evaluate the range of financial education programs are default, foreclosure filings, and modifications. As formal changes in the terms of the modification were the primary method through which to improve the borrower's probability of future repayment, this outcome is most likely to benefit the borrower. Policies that increased modification rates were thought to be "successful." However, many times borrowers could only receive modifications if they were already in default, meaning borrowers had an incentive to be strategic in their missed payments.

Several evaluations have studied the effects of financial education, coaching, and counseling as they relate to home buying. Moulton et al. (2013) examined the ability of LMI first time homebuyers to estimate their borrowing capacities. They used this self-estimate, compared to their actual borrowing capacity, to determine if the borrowers were over-confident in their ability to pay. They then document that this over-confidence measure is negatively associated with the acceptance of free financial coaching. Their results suggest that over-confident LMI borrowers do not self-select into counseling and must be more directly targeted. In a subsequent study, Moulton et al. (2015) employed a randomized field experiment to show that first time homebuyers required to complete a financial planning education module and subsequently received contact from a financial coach were less likely to miss payments or become behind on their mortgages than borrowers who did not.

Agarwal et al. (2010) studied a voluntary counseling program sponsored by the Indianapolis Neighborhood Housing Partnership, Inc. (INHP) that aims to build credit for and educate LMI households. INHP provides financial education that focuses on budgeting and credit management for LMI borrowers at the time of application. After the initial home purchase, INHP continued counseling these homeowners. Those that completed the program had lower default rates than observationally similar borrowers who did not complete the program, even after controlling for selection into the voluntary counseling program.

Collins and Schmeiser (2013) evaluated the effects of National Foreclosure Mitigation Counseling (NFMC) on missed payments and foreclosure filings for at-risk borrowers. Congress provided $508 million for foreclosure counseling from 2008-2011 through the NFMC, which funded nonprofits to counsel nearly 1.2 million borrowers nationwide. They found that after counseling, borrowers were more likely to miss payments when they compared borrowers who received the counseling due to access to events in their local areas to borrowers who were observationally similar in their demographic and mortgage debt characteristics, but did not live in proximity to national events at the time they were in default. Counseling, however, was found to reduce the likelihood that borrowers experience eventual foreclosure, suggesting that financial advice can be beneficial in times of crisis.

Agarwal et al. (2016) provided a sophisticated analysis of the 2009 HAMP program, which provides servicers with financial incentives to modify mortgages. They used a clever counterfactual technique to determine what would have happened in the absence of the policy. They compared borrowers of owner-occupied properties who were eligible for HAMP to borrowers of investor-owned properties who were ineligible. To develop a further counterfactual, they also compared those with remaining housing debt who were eligible for HAMP to those with remaining housing debt who were ineligible for HAMP. They found that the program increased the rate of permanent modification, and subsequently this decreased the foreclosure rate by a modest 0.48 percent, reducing annual aggregate foreclosures.

8C. Evaluation Practices, Strengths and Limitations

Evaluation of financial education for homeowners is challenging, as borrowers self-select into education. Those borrowers who attend a counseling session or obtain financial education are either (1) the most motivated individuals, who are the least likely to miss payments or (2) those who are already behind on their mortgage, who are most likely to miss payments. Thus, evaluation must overcome the selection into the education. Evaluation in this field comes in three forms.

First, studies used randomized control trials that allow some individuals access to financial education, where others do not. While there can be equity-based concerns when all individuals are not given access to a counseling or education that could benefit their situation, there are often not sufficient resources to allow all access to the education. Thus, a lottery is the most equitable way to allocate the education.

Second, analysis used natural experiments to determine what *would have* happened to borrowers in the absence of a program. This includes comparing borrowers just above and below program cutoffs, or borrowers with access to a local event at their time of default and borrowers without access to local counseling even at their time of default. These methods allow researchers to create a treatment and control group without having to randomly assign treatment in an experimental setting.

Third, researchers used large administrative datasets to match borrowers with similar observable characteristics based on income at origination, race, geographic area, gender, debt levels, house price, and default at a predefined period. While this allowed researchers to match borrowers who look similar, this method is less desirable than the first two, as unobservable characteristics across those who do and do not engage in financial education can drive the differences in outcomes.

8D. Public Communication

As the mortgage crisis has subsided since the 2007-2009 Great Recession, many lessons continue to resonate in the next decade. Some policy responses centered on financial education for borrowers that proved effective in reducing foreclosures and improving borrower outcomes.

9. Retirement Planning

Perhaps no other audience for financial education is as large and diverse as that for the topic of retirement planning. Unlike shorter-term financial planning goals like buying a car, or house, or even saving for a child's postsecondary education, retirement planning can literally take place for seven or eight decades from the start to the end of someone's adult life (e.g., 20s through 80s or 90s). Even among adults who are employed, workplace retirement planning programs often target a wide swath of demographics ranging from recent college graduates in their 20s to soon-to-retire employees in their 50s, 60s, and beyond. Financial education program objectives for each group will likely vary. For example, the focus for young adults is saving early and often, preferably with automated investment plan deposits. Another key topic for young adults is basic investment principles to help them make sound retirement plan asset allocations.

The words "retirement planning" have a very different meaning to financial education audiences at different stages of life. At ages 20-35, a key message is "time is on your side." For example, college students graduating at age 22 have 45 years of compound interest on their savings before they are eligible for full Social Security benefits at age 67. In the "middle years," ages 35 to 50, ongoing savings is key, especially in tax-deferred retirement savings accounts such as a 401(k) and 403(b), but there is also the problem of having too many other living or family expenses, so saving for retirement may be postponed or underfunded. In later adulthood, age 50 to 70, people are (hopefully!) empty nesters and can accelerate savings even further. A primary retirement planning concern of people age 70+ is making their savings last throughout their lifetime. The high costs of health care and long-term care are also major concerns.

9A. Key Programs and Resources

Websites from agencies and organizations (both for-profit and non-profit) provide valuable retirement planning resources that are frequently used by financial educators. Some sites provide general information and others focus on research results. What follows are four sites to visit: *My Retirement Paycheck* (National Endowment for Financial Education) contains information about eight key retirement decisions organized by topic (e.g., housing and retirement plans). *Retirement Confidence Survey* (Employee Benefit Research Institute, EBRI) is an annual survey that measures workers' attitudes about retirement and trends in how people are planning for retirement. *Retirement: Secure Your Future* (Iowa State Extension) is a source of workshop materials about retirement planning topics for learners in different life stages. The Social Security Administration provides publications and information on locating a local Social Security office, applying for benefits online, and obtaining an online Social Security benefit estimate.

Some websites help people with personalized retirement planning calculations and other planning tasks that are related to retirement planning. Three examples are: *Ballpark Estimate* (American Savings Education Council) is a simple planning tool that provides a rough estimate of the amount of money that someone needs to save for retirement. *Compound Interest Calculator* shows what an investment deposit will grow to at a specific interest rate over a specific number of years. *Life Expectancy Calculator* (Northwestern Mutual Insurance) provides an estimated life expectancy based on personal health and lifestyle factors as part of *The Longevity Game.*

9B. Major Topics and Literature Review

As noted above, the audience for retirement planning programs is large and diverse. Thus, major topics related to financial education programs will necessarily vary according to the needs of the target audience and their stage in the life cycle. Clark, Morrill, and Allen (2012a) note two key periods to teach retirement planning at workplaces: when a worker is first hired (to sign up for retirement savings plans) and near retirement (to make choices that optimize lifetime well-being). Topics for learners in the accumulation phase of retirement planning (roughly 20s through early 60s) include the impact of compound interest over time, how to do a retirement savings need analysis, characteristics of retirement plan investments (e.g., target date mutual funds), and basic cash flow management strategies to "find" money to save.

Topics for learners in or approaching the distribution (a.k.a., decumulation) phase of retirement planning, where savings is converted into retirement income, are quite different. They include determining if retirement savings are adequate, Social Security benefits, catch-up retirement planning strategies, calculating required minimum distributions (RMDs) from tax-deferred savings plans, planning for health and long-term care expenses, and determining the amount of money to withdraw from savings to create a "retirement paycheck" and avoid outliving one's assets (NEFE, 2016b). As noted by Lusardi and Mitchell (2007b, p. 9), "education programs will be most effective if they are targeted to particular population subgroups, so as to address differences in savings needs and preferences."

Americans are increasingly in charge of providing for their own financial security in later life. During the past four decades, they have gone from needing to know very little about their retirement plans to having to decide if, when, how much, and where to invest and to choose among various retirement plan investment options. They have also had to learn investment terminology (e.g., dollar-cost averaging, target-date funds) and contribute a portion of their earnings to savings plans without a guarantee that their savings will support them throughout their lifetime. Unfortunately, many Americans display limited knowledge and understanding of public and company-provided retirement benefits with misperceptions about eligibility ages and plan generosity that lead to sub-optimal choices (Clark, Morrill, & Allen, 2012b). Financial illiteracy is widespread among older Americans, particularly women, minorities, and the least educated (Lusardi & Mitchell, 2011).

Not surprisingly, financial education related to retirement planning often takes place at worksites. Previous studies have documented that workplace financial education may have positive effects. For example, Joo and Grable (2005) found that persons exposed to workplace financial education were more likely than other workers to have a retirement savings program and that having retirement savings was related positively to retirement confidence. Similarly, Kim, Garman, and Quach (2005) found that financial education program attendance was positively related to employees' and their spouses' retirement savings contributions. Collins and Urban (2016) used a randomized field study and found that employees offered access to financial education increased retirement plan savings by $30 per month, suggesting the effectiveness of retirement programs to increase retirement planning and saving behavior.

Clark and d'Ambrosio (2003) found evidence that high quality financial education can be effective in altering retirement income goals. After receiving information on the level of retirement income needed to continue pre-retirement consumption, seminar participants amended their income goals and, in many cases, their investment asset allocation. Clark, Lusardi, and Mitchell (2014) explored associations between financial knowledge and retirement savings plan performance and found that risk-adjusted annual expected returns were 130 basis points higher for the most financially knowledgeable employees. Xiao and O'Neill (2016) explored the potential effects of financial education received at a workplace on five different measures of financial capability, both objective and subjective, and found positive associations with these financial capability indicators as well as for financial education received in high school, college, or from any source.

Bayer, Bernheim, and Scholz (2008) examined the effects of workplace education on financial decision-making and found that both participation in, and contributions to, voluntary savings plans were significantly higher when employers offered retirement seminars. The effect is typically much stronger for non-highly compensated employees than for highly compensated employees. Bernheim and Garrett (2003) found evidence to support the hypothesis that employer-based financial education stimulates saving, both in general and for retirement. Creative motivational strategies may enhance workplace financial education efforts; for example, providing vivid images that enhance participants' emotional responses.

Herschfield et al. (2011) found that people save more after being shown digitally altered pictures of themselves at an older age. In other words, seeing your "future self" increases the likelihood of favoring long-term rewards (over consumption) by saving. In addition, simplifying the process of enrolling in an employer retirement savings plan may motivate employees to save. Lusardi, Keller, and Keller (2009), in research funded by the National Endowment for Financial Education, used a flyer that broke the retirement plan enrollment process down into seven steps and a video. They found a 56 percent increase in plan election within 30 days of viewing communication programs, versus employees who were not exposed to them, and sustained differences over 60-90 days. Another motivating influence for saving is knowing how much income can be withdrawn from a retirement savings account in retirement. Goda, Manchester, and Sojourner (2013) found that workers who received a brochure showing increased income from increased savings saved $1,150 a year more than those who did not get the pamphlet.

Lusardi (2003) found evidence that retirement seminars can foster saving and wealth accumulation and bolster financial security in retirement. By offering financial education, net worth increases sharply, particularly for families at the bottom of the wealth distribution and those with low education. Lusardi and Mitchell (2007a, 2005) found that respondents who reported planning for retirement had higher wealth levels in later life. In addition, planning was strongly correlated with financial literacy and the relationship between planning and wealth remained strong even after controlling for many sociodemographic factors. Similarly, van Rooij, Lusardi, and Alessie (2012) found evidence of a strong positive association between financial literacy and net worth even after controlling for many determinants of wealth. They concluded that financial literacy may facilitate wealth accumulation by increasing the likelihood of investing in the stock market and fostering development of a savings plan, which has been shown to boost wealth. Conversely, ignorance about basic financial concepts can be linked to lack of retirement planning and lack of wealth (Lusardi, 2008).

Women have unique retirement planning needs compared to men. They live longer and earn less, on average, and are more likely to have gaps in their employment history due to family care-giving responsibilities. In addition, some women rely on a spouse for income and risk becoming a “displaced homemaker” if the relationship ends. Some also defer financial management tasks to others (Brennan & O’Neill, 2014). Lusardi and Mitchell (2008) found that women display much lower levels of financial literacy than the older population as a whole. Also, women who are less financially literate are less likely to plan for retirement. Clark (2003) examined the impact of participation in financial education seminars and found that participants planned to change their retirement savings behavior based on knowledge gained at the seminar. Women were more likely than men to alter their retirement goals and saving behavior.

Another key area of retirement planning research is the issue of how much can be withdrawn from retirement savings without exhausting the pool of financial resources. Retirement research that began with Bengen (1994) suggests that initially withdrawing about 4 percent of savings (whatever the dollar amount) and increasing it annually for inflation has a high success rate (i.e., chance of not running out of money) over 30 years. New research findings with “floor and ceiling” withdrawal strategies (Klinger, 2011), “decision rules” (e.g., freezing income during periods of negative investment returns), and rising equity glide paths (Kitces & Pfau, 2014) have been shown to increase success rates even further.

9C. Evaluation Practices, Strengths and Limitations

Many financial education programs related to retirement planning use data collection methods that include paper or online surveys, pre- and post-program knowledge quizzes, focus groups, interviews, observations, and follow-up evaluation surveys. Koundinya et al. (2016) found that an electronic survey with two-month follow-up intervals yielded significantly higher response rates than other methods.

A commonly-used survey method is the post-then-pre (retrospective) evaluation that asks participants to assess their pre- and posttest knowledge and attitudes about a topic, such as retirement planning, only after an intervention (e.g., class series, webinar, financial coaching) (Moore & Tananis, 2009). The reason that the post-then-pre assessments are administered once at the end of the intervention is to avoid biases resulting from people thinking that they know more than they know at the outset of a program.

Typical surveys include items that measure changes in knowledge, motivation, confidence, and abilities, both planned and actual (e.g., dollars saved) changes in behavior, future programming needs and preferences, and demographic characteristics of participants. There are a number of readily available evaluation survey templates such as those contained in the NEFE *Financial Education Evaluation Toolkit* (NEFE, 2016a). Strengths of the above-mentioned survey methods include relative simplicity and little or no administration cost for financial educators with limited program evaluation budgets.

A major weakness of evaluation of programs for retirement planning is the serious methodological issue of selection bias; i.e., the lack of comparison of financial education program participants with a control group who did not receive the financial education. Those who choose to attend a retirement financial education program may be different (e.g., more conscientious or focused on their personal finances) than others who do not. Many program evaluations also use self-reported data, which introduces the risk of response bias, and cross-sectional studies limit inferences about causal impacts (Collins & O'Rourke, 2010). Another weakness is the lack of capacity in many organizations with multiple program units to aggregate impacts using common indicators such as those listed above. Also, the use of control groups and longitudinal studies in financial education evaluation is relatively rare. Many educators simply don't have the technical expertise and/or funding for these types of data analysis.

9D. Public Communication

Responsibility for financial security in retirement has been transferred, for the most part, from government and employers to individuals. Many Americans are financially unprepared for retirement, including millions of "middle Americans" with annual household incomes of $30,000 to $100,000 who have low savings, high debt, and a tendency not to consult professional advisers (Neiser, 2009). Inadequate savings and uneducated choices (e.g., incorrect required minimum distributions and retirement asset withdrawals) pose a threat to both these individuals themselves and the nation as a whole.

Educating workers about retirement planning and workplace retirement plans has gone from nice to necessary in today's YOYO (you're on your own) economy with complex monetary products and later-life financial decisions. The audience for retirement financial education worksite programs can span three different generations (Baby Boomers, Generation X, and Millennials), each with its own unique learning needs that require targeted programs.

The timeline for retirement planning is the longest of any financial planning goal. Even small amounts of savings, given decades to grow, can accumulate handsomely over time. As a consequence, retirement financial education encompasses much more than IRAs and 401(k) plans; it often includes basic skills such as balancing a checkbook, controlling a budget, using credit wisely, and "finding" money to invest for the future. There is some evidence that appealing to people's emotions (e.g., showing them what they'll look like in their 80s), breaking financial actions down into simple steps, and creating personalized retirement income illustrations can prompt increased retirement savings.

Saving for retirement is especially difficult for workers with low take-home pay and/or fluctuating incomes. Barriers need to be addressed and any step forward (e.g., increasing savings by 1 percent of pay or completing a $100 savings challenge) should be viewed as progress. There is some evidence that the most disadvantaged persons with low incomes and educational levels, who are at the highest risk for financial insecurity in later life, experience the greatest effects from financial education programs.

10. Financial Advising

Financial literacy is attained a number of ways during an individual's lifetime. Many adults rely on learning-by-doing (and paying for mistakes made along the way) while others seek out financial education and advice from other non-professional sources. For example, some adults turn to social networks (Chang, 2005) for financial advice and information. While friends in social networks can provide some information, many people may not fully trust this information or are uncomfortable sharing financial data with others.

An alternative to using social networks for financial information is to consult with a professional advisor. Approximately 28 percent of adults have used a financial planner according to the Certified Financial Planner Board of Standards (PSB LLC, 2010), which means planners can be an important source of financial education. As described by Collins (2012a), a financial planner or advisor can be helpful in many ways, such as providing information, defusing biases to avoid mistakes, helping clients think about issues, and dealing with emotional concerns. Advising, of course, is an educational process so some advisors will be better than others at providing sound advice, and an assessment of the quality of advisors can be difficult.

Financial advising can be relatively labor-intensive, making it costly for many consumers. To reduce this cost, many financial firms use automated systems to provide financial education and advice. These programs often include rudimentary financial training, followed by advice which is generated by an algorithm. The client is encouraged to act on the advice. Because the education is closely linked to financial decisions, the quality and delivery of the education can significantly affect the lives of the consumer.

10A. Key Programs and Resources

According to the U.S. Bureau of Labor Statistics (2016), approximately 250,000 people were employed as personal financial advisors in 2014, with growth of 30 percent expected by 2024. The financial education and advice provided by these individuals is theoretically tailored to the needs of the individual clients. In that regard, it is difficult to identify a specific curriculum. The CFP Board outlines eight categories of knowledge needed for certification of its members: professional conduct and regulation, general financial planning principles, education planning, risk management and insurance planning, investment planning, tax planning, retirement savings and income planning, and estate planning (CFPBS, 2015).

For investment decisions, an alternative to personal contact is some type of automated advice, which is provided by a large number of firms. Most of the automated firms use the terms "automated" or "algorithms" in the description of their services. Some services are fully automated, while others include periodic human review. The following are some the larger firms, with some firms offering both automated as well as personal advisor services: (1) Wealthfront ("an automated investment service"); (2) Betterment ("letting our advanced algorithms do all the work"); (3) WiseBanyan ("we use the power of algorithms and software"); (4) Charles Schwab Intelligent Portfolios ("service that builds, monitors, and rebalances your portfolio"); (5) FutureAdvisor ("diligent algorithmic monitoring that auto-rebalances your accounts"); and (6) Blooom ("we will use our algorithm to…identify the right investments").

10B. Major Topics and Literature Review

Financial Advisors. The literature on financial advice includes both theoretical and empirical studies (Inderst & Ottaviani, 2012). One topic for study is the characteristics of people who seek financial advice. Calcagno & Monticone (2015) provide a theoretical model in which consumers choose between delegating the choice of investment to an advisor, seeking advice from the advisor, or selecting their own portfolio choice. Consumers seek advice from an advisor who has better knowledge on the assets but who has incentive to sell their services. The model shows that more knowledgeable consumers receive more financial information from advisors. They concluded that financial knowledge and good advice are complements, not substitutes. The model also suggested that those with less financial knowledge are more likely to delegate their choices to an advisor. They concluded that "there is a scope for various types of financial education initiatives, such as financial education initiatives targeted at the population groups with the highest private costs for accessing financial knowledge, for rules that reduce the conflicts of interests between clients and intermediaries, as well as the subsidization of independent advisors" (p. 364).

Empirical evidence confirms the theoretical work. Calcagno and Monticone (2015) found that higher financial literacy (measured by eight questions) increases the demand for advice and the demand for holding risky assets. Collins (2012) also found that financial knowledge increases the demand for advice on investing, saving, mortgage, insurance and tax planning. However, financial knowledge was inversely related to debt planning. He concluded that financial literacy and advice are complements as opposed to substitutes. Finally, Robb et al. (2012) used the FINRA National Financial Capability Study dataset to confirm Collins results. They also note the fact that more research is needed to "assess to what degree the positive effect of financial knowledge reflects a cause or consequence of advice on saving, insurance or tax."

Mullainathan et al. (2012) provided the most comprehensive evaluative study of the information given to consumers by professional advisors. The study used an audit-style methodology in which trained auditors were sent to financial advisors with one of four portfolios that were randomly assigned. The study sought to see to what extent low fee diversified portfolios were recommended. The study found that advisors did not correct inaccurate biases that their clients had. Advisors would often encourage biases that were favorable to the advisor (in terms of fees collected) and tended to push clients to actively managed accounts with higher fees. Gine et al. (2014) also conducted an audit-style study of bank branches near Mexico City. While the auditors sought loan or savings products, not advice on investment portfolios, the study also found that consumers with more financial knowledge were given more information about the products offered.

Automated or Robo-Advising. Recently, automated advising has come under increased scrutiny by regulators (SEC, 2015). At the core of these concerns is whether the consumer understands the underlying assumptions behind the model and the implications for the consumer if the assumptions of the model are incorrect. Another issue of concern is whether consumers understand the reasons for information sought by an investment tool and how that information will impact the output of the investment tool.

Consumers may have too much confidence in advice provided by automated services. They may incorrectly assume that the use of algorithms will (a) automatically generate higher returns (b) yield results that are consistent from one tool to another and (c) offer recommendations that are free from bias. A recent study by FINRA (2016a) documents these concerns numerically. The study reports the results from seven tools with the optimal percentage of equity assets recommended for a hypothetical consumer ranging from 51 to 91 percent. The report notes many consumers may not realize that bias exists in that the tools do not necessarily choose from the entire universe of investment opportunities, but are generally limited.

The FINRA report highlights the sophisticated financial knowledge required of consumers to evaluate the advice given by automated advising programs. Requirements include an understanding of what should be asked by the program in order to be properly advised (it is not clear how the naïve consumer is to know if something is omitted), understanding how rebalancing and tax strategies are performed, as well as knowing when conflicts of interest might arise. In sum, the need for financial knowledge is increased with the use of these programs. The degree to which the automated programs provide explanations on why specific information is gathered, the theoretical basis of the algorithms, and why the algorithms recommend a particular strategy has not been well documented. As with human advisors, more information is needed on how financial knowledge drives the demand for these products and what consumers are taught (explicitly or implicitly) through the programs and their use.

Little empirical evidence exists in the academic literature (the term "robo advisor" returns only one result on EconLit, for example) in terms of examining the educational experience provided by the automated advisors. The popular press has provided more comparisons (see Nerd Wallet, 2016; Moyer 2015a; Moyer 2015b). These comparisons focus primarily on features and little on the information required to open an account or the information shared with the consumer.

10C. Evaluation Practices, Strengths and Limitations

The evaluation of the relationship between financial advising and educational outcomes has been examined with two primary methodologies, surveys and audits. Surveys assess consumers who have used an advising service to see if any changes in financial knowledge, attitudes or competencies are measured. Surveys are relatively easy to administer and ultimately provide information on the correlation between professional advice (automated or otherwise) and financial knowledge. The inherent problem in survey studies is that causality is difficult to show. In general, most surveys are not longitudinal, so whether financial education drove the consumer to the advisor or whether the advisor educated the consumer is difficult to ascertain.

An ideal survey study would follow a cohort of consumers over time and examine those who consulted with advisors over the period of the study and those who did not. Of course such a study still faces the selection problem of people choosing to go to an advisor. A more controlled study could randomly assign consumers seeking advice to either a seminar experience or sending them to financial advisors. Measuring learning and behavior before and after different types of interventions could provide the data needed to compare the two financial education delivery methods. Measurable outputs could include responses to financial literacy questions or decisions made after the intervention. Of course, this style of study would be relatively expensive to administer.

The auditing style of evaluation, where an auditor plays the role of an individual seeking advice, while also costly, can provide a richer understanding of the educational process itself. For example, an audit targeted more toward assessing financial education could assess whether consumers were told about trade-offs between risk and return or the benefits of diversification. The audit can measure the time spent by advisors educating their clients and whether the advisor checks for understanding.

Although auditing is costly in evaluating human advisors, it is considerably eary with robo-advising because auditors do not have to physically travel to the agencies. Another advantage is that the "visit" is identical, so multiple auditors can be used to control for reviewer reliability. A rubric can be easily created for these audits as compared to live visits, and records of the visits could be easily kept. For example, the rubric could include: (1) the information requested from the consumer; (2) the type of basic financial education that is provided; (3) whether an explanation of algorithms and how they work is provided to the consumer; and (4) the recommendations that are given and the rationale for the recommendations.

10D. Public Communication

The issue of the quality of the education and information provided by financial advising are extremely important because most people receiving advice frequently make important financial decisions. Despite a fair amount of research on financial advising, the empirical question of the extent that financial advising – robo or otherwise – results in the acquisition of financial literacy is still an open question. The question is an important one. If consumers are supposed to learn from their financial experiences, the quality of the information they receive needs to be examined. If the results of these investigations find that little good knowledge is acquired, then this problem needs to be addressed. This is particularly true as consumers move toward automated products that may not fully explain their features and limitations.

Individuals seeking advice from professional advisors or through automated advising websites is not as well defined as other groups in this paper, but a growing literature exists about how professional advice is given to consumers. Focused research, however, on what people actually learn from the information received from professional or automated advisors is limited, offering opportunities for further research.

Conclusion

Financial education encompasses a broad landscape as shown by the sections in this paper. Programs for financial education primarily differ based on the characteristics of the groups served and the content to be taught or the information to be shared. Financial education for children and youth may focus on basic financial concepts and their application to a range of financial issues that these students might face later in life. By contrast, financial education for working or older adults may be devoted to a single financial issue or topic, such as saving for retirement, for which there is a current need for instruction or advice. Each financial education initiative will be unique in some way because it will have a particular purpose and target a designated group or groups of individuals.

From an evaluation perspective, what this situation means is that there will be no one standard method for assessing financial education programs. Evaluations in financial education will differ substantially based on the characteristics of the financial education program they are designed to assess. These characteristics include the target group for financial education, the length of the program, the in-person and technological delivery of content, the background and preparation of instructors, counselors, or coaches, the location and arrangement for the program, and many others. In addition, such factors as resource constraints, data collection issues, quality of the outcome measures, sample selection concern, and suitability of the statistical analysis can all affect what is possible to do when conducting an evaluation study and reporting findings. Simply stated, evaluation in financial education is a daunting task for researchers and others who accept the challenge.

Regardless of these differences and concerns, the results from each evaluation of a financial education program provides additional information about effectiveness of financial education. The findings accumulate over time and begin to reveal insights about what works in financial education and how it works to improve financial outcomes and well-being for people. The collective evidence presented in this paper shows that financial education can be effective in many ways across the broad landscape of groups and issues it covers. These encouraging findings, of course, vary in extent based on program conditions and other influences, but the overall assessment is a generally positive one. As more evaluation studies are conducted, more evidence will accumulate to enrich our understanding of what works in financial education and how it can be made more effective for the groups served and financial topics covered.

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