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PERSPECTIVES ON EVALUATION IN FINANCIAL EDUCATION: LANDSCAPE, ISSUES, AND STUDIES

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PERSPECTIVES ON EVALUATION IN FINANCIAL EDUCATION: LANDSCAPE, ISSUES, AND STUDIES

Short title for running header: Evaluation in Financial Education

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Abstract: This review discusses the heterogeneity in the effectiveness of financial education programs that occurs because of the unique conditions for programs and methods to evaluate them.

The authors define six groups served by financial education: children; youth; college students and young adults; working adults; military personnel; and, low-income consumers. They then discuss research and evaluation literature for each group with a critical eye on program purpose, content, and evaluation. They also present findings affecting multiple groups on four issues: student loans, homeownership, retirement planning, and financial advising. The accumulated evidence on the effectiveness of financial education is positive, although the results are nuanced and sometimes limited. The authors argue that understanding this broad landscape in studying financial education is critical for future research and evaluation.

Keywords: financial education, financial literacy, program evaluation

JEL codes: A2, D12, D14

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This article is based on a longer paper sponsored by the National Foundation for Financial Education (NFFE) (<http://toolkit.nefe.org/Portals/0/NEFE%20Evaluation%20White%20Paper%20October%202016.pdf?ver=2016-10-31-154554-707>)).

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, aspects of evaluations that affect each group, and some major issues that cut across multiple groups. The descriptions serve to segment the broad and complex landscape of financial education that covers all individuals and reduce it to more manageable pieces to appreciate the findings from evaluations of financial education programs.

The descriptions that follow demonstrate the wide diversity in evaluations of financial education programs. That diversity arises because no single, standardized approach to financial education exists in terms of program purpose, groups served, content or issues covered, instructional methods for the delivery of content, program duration, or 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. Or as another example, 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 focused on paying off their student loans.

The factors that shape a particular financial education program in turn affect the methods used to evaluate it. The scope or depth of an evaluation depends both on the program constraints and the available resources. In this regard, each evaluation of a financial education program is unique and tailored to fit the group to be served and the conditions of the program for improving financial understanding, financial literacy, or financial behavior. A key point that should be remembered is how difficult it is to draw a single conclusion about the effectiveness of financial education based on one study or program. Despite the heterogeneity, each evaluation also provides

a microcosm of information. When it is combined with the findings from similar programs, the collective literature provides more insights about what works best for financial education. The accumulated evidence shows positive effects from financial education across a wide range of groups and issues, although the effects are nuanced and sometimes limited.

OVERVIEW: GROUPS AND ISSUES

The discussion that follows covers six specific groups and four financial topics. The six groups were chosen based on age ranges or a demographic characteristic. The issues were selected because the topic involved an important financial decision that cut across the different groups. The first group covers 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 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, a heterogeneous assortment of young adults, some of whom are enrolled in postsecondary education, others who have completed that postsecondary 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.

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 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 larger 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 who are young or working adults differ from adults with fewer income constraints because limited financial resources can restrict consumer choices and thus alter financial decisions.

Another 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. To illustrate this point, four major issues in financial education are discussed from multiple perspectives because each one is affected by the characteristics of the group and facets of the issue. Consider first the issue of how best to pay for a *college education*. Financing college can be a concern for high school students, college students, and their adult parents, and it involves 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, investing, credit, debt, or insurance means that adults at all ages may have to seek *financial advice* from different sources to manage their finances.

Two points should be noted about the review approach. The first is that it is written to provide a general overview of financial education programs for different groups or issues, so it is intentionally limited for brevity. The second is that it primarily serves as a selective guide to

evaluations and research studies 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 and Mitchell 2014; Hensley 2015; Xiao 2016; NEFE 2016).

CHILDREN

Financial education is benefiting from a time of national attention, particularly since the recent recession because of the recognition that it plays a vital 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 understanding within schools. Doing so provides some measure of confidence that accurate knowledge and information is being conveyed. It also provides more widespread coverage than solely relying on parents or limited life experiences to teach financial literacy to their children.

Beginning financial education in the elementary grades is important. Young children have experiences with finances through the receipt of allowances, gifts, and payment for chores, and they can be aware of the financial transactions of their parents. Financial education also 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. 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 and as preparation for school instruction at later grades.

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 program impact (intermediate and longer-term). 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)* curriculum. 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).

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. Using a control and treatment design with similarly trained teachers, the study reported significant differences between the posttest and pretest scores of the students in the treatment group. They also found significantly greater gains between the posttest scores among those students who had received FFFL and another financial literacy curriculum.

Another study with 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 did not use a control group but instead used a trend proxy—the difference between middle school pre-score and elementary school 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 students). The assessments given to students varied only in the level of the language—the same concepts were covered in each. Because 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. 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*). Children also were provided incentives for opening and contributing to savings accounts with 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.

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. Financial education, for example, 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 decision-making, how do we measure its acquisition with the same sort of rigor and attention to empirical modeling that we afford a more narrow definition?

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 understanding of basic financial concepts and their application to the financial issues that these students may experience later in life. Adult consumers today face a complex financial world and financial mistakes can be costly for them. 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 especially 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 personal finance.

The [Survey of the States](#) gives an overview of personal finance education in K–12 schools in the United States (CEE 2016). In 2016, 17 states required a high school personal finance course, but only five states required a semester course solely focused on personal finance. Many states with a personal finance requirement provide content guidelines and sample curricula. In addition, 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). The CEE also has its [National Standards for Financial Literacy](#) (CEE 2013; Bosshardt and Walstad 2014).

A variety of organizations offer financial education curricula and resources for secondary school teachers and their students. The [National Endowment for Financial Education](#) (NEFE)

supplies the [*High School Financial Planning Program \(HSFPP\)*](#). The [*Council for Economic Education \(CEE\)*](#) provides [*Financial Fitness for Life \(FFFL\)*](#) and [*Financing Your Future \(FYF\)*](#). The [*Jump\\$tart Coalition for Personal Financial Literacy \(Jump\\$tart\)*](#) has an online clearinghouse with financial education resources. [*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. Finally, the [*Federal Reserve System*](#), through some of its Reserve Banks, offers many personal finance resources, one of which is [*Keys to Financial Success \(Keys\)*](#), a one-semester personal finance program for high school students.

Good curricula and useful instructional resources, however, are only part of what needs to be provided to make personal finance instruction effective in the schools. A common issue across states is that teachers do not think they are well-prepared in course content and pedagogy for teaching personal finance (Way and 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 areas as math, science, or other major subjects and rarely receive training or specialize in teaching personal finance. 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.

Although financial education can be included in the school curriculum as a required course or unit its inclusion does not come without a cost. Adding personal finance as a course requirement may result in students forfeiting the opportunity to take courses in other subjects such as the arts, sciences, and mathematics. Thus, it is worthwhile studying the effects that high school instruction in personal finance has on student financial knowledge at the time of instruction or at a later point

in time, and also its influence on short-term and long-term financial behaviors because such studies help assess the benefits of financial education relative to its costs.

Several careful studies have examined the effect that various curricula have on the personal finance knowledge of high school students. First, Harter and Harter (2009), previously cited for their research with elementary students, also investigated the effectiveness of the *FFFL* curriculum with 433 Kentucky high school students using trained teachers and found that it significantly improved students' financial knowledge. Second, Walstad, Rebeck, and MacDonald (2010) showed that the CEE's *FYF* curriculum with trained teachers increased the financial knowledge of high school students from New York, Minnesota, Texas, and Maryland by testing 673 seniors who received the six hours of instruction, and 127 students in a control group who did not. Third, 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. Fourth, Asarta, Hill, and Meszaros (2014) reported that a sample of 967 students enrolled in a *Keys* course offered to high school students in Delaware, Pennsylvania, and New Jersey increased their financial knowledge, with improvements taking place in each of the standards and concept areas covered in the course.

Three caveats apply to studies of the effect of personal finance curricula on financial knowledge. First, studies may test the effects of curricula for only a small sample at one school. 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 challenging to determine if one curriculum is more successful than another, or if the effects are different for other populations of students. Second, testing students before and after their education is completed does not take into account what the

students *would have* learned anyway during that instructional period. Instead, a control group with similar students who were not exposed to the education should ideally be used in studies 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 critically important to understand if those knowledge gains persist and how actual financial behaviors change in the long run.

Some studies have investigated the long-run effects from personal finance mandates in high school on financial behavior. Bernheim, Garrett, and Maki (2001) used household survey data in 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. They 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. More recently, Cole, Paulson, and Shastry (2015) found that financial education mandates in high school did not affect credit behaviors later in life or asset accumulation. Using a similar empirical strategy, Brown et al. (2016) found that financial education in high school decreases delinquency, decreases collections, and decreases non-student debt for young adults (under age 29).

Several measurement challenges arise in assessing the effects of financial education mandates on financial behaviors. First, while some mandates require content to be taught through the years in any course, others simply recommend that a course be offered, and still others require a full-year course with standardized testing covering the topics. It is thus important to look at specific content and requirements and ask what works instead of whether or not financial education in high school works in general. Second, the year a mandate is passed is often not the year the first graduating class is required to take a personal finance 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 individuals live in the same state in which they attended high school, which again can produce imprecise measurement of high school education.

To control for the heterogeneity in state mandates, Urban et al. (2015) chose three states (Georgia, Idaho, and Texas) that had rigorously implemented mandates post-2000. In their study, 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 instruction in personal finance 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.

YOUNG ADULTS: COLLEGE STUDENTS AND YOUNG WORKERS

The target group for this section is young adults, ages 19–29 years old. It is mixed 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 are making 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. 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 their financial literacy is often low (e.g., Lusardi, Mitchell, and Curto 2010; Shim et al. 2010).

Young adults receive financial education in several ways. They may have been exposed to financial lessons through their parents, their employers, or through a workshop or consultation at their financial institution. This education can be general in coverage, or specific to a household experience such as the retirement plan of an employer, or the products offered at a financial institution. Few financial education programs are specifically 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, although few college graduates have taken a specific personal finance course. They however are more likely to take at least one economics course (54 percent) or business course (51 percent), both of which might have applications to personal finance, and many college graduates take more than one economics or business course (Bosshardt and Walstad 2017).

Various financial institutions 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 college-based program is [*CashCourse*](#), which is a no-cost online resource adopted by over 1,000 colleges and universities. The program, managed by NEFE, 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.

Young adults face many financial decisions that affect their lives and for which financial education can be beneficial. Young adults are applying for credit cards or taking out loans for purchases involving such items as automobiles, appliances, and education. Learning how to manage credit and debt can be important because high interest rates and poor credit terms can increase debt burdens. In addition, housing decisions are made in considering renting an apartment or purchasing a house as young adults move out of their parents' houses. They apply for and work at jobs and start to make decisions that shape their careers and incomes. Choices about marriage and family made at this stage of life change the compositions of households and household budgets and expenses. Young adults 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 a single one-size-fits-all policy or program for financial education that unambiguously improves their welfare and which also makes it difficult to conduct evaluations of such programs.

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 Midwestern universities affected four risky credit card behaviors. Students who took a financial education 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 the 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 were 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.

Evaluating the effects of financial education for young adults has many limitations, as indicated by work with college students. First, interventions at the college level 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 (Cude, Danes, and Kabaci 2016). Second, financial education at the college level lacks a standard curriculum among courses and programs, and also among institutions, so while it is good practice to customize financial education to the audience, it can make comparisons for research purposes difficult (Lyons et al. 2006). Third, 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 college students who would have been less susceptible to financial mistakes anyway. Or, college students 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. Fourth, linking financial education to increased financial knowledge is a first step, but it is equally important to determine if the education changes behavior over time.

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 situations. 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 changing economic and financial markets, financial decisions are increasingly complex and an

understanding of basic financial concepts is becoming an increasing priority, and workers are prime candidates for financial education programs.

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.

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 who were 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.

Evaluations aimed at understanding the effects of workplace financial education on financial knowledge and financial decision-making comes in three types, each of which has limitations. The first type is field studies that randomize financial education in the workplace, allowing 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 sample, as studies have shown that one program can have heterogeneous impacts for different demographics. A second type 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 anyway. A third type 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, but it could be that individuals choose to enter a firm at a time they are most focused on financial literacy training.

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. 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.

Service members are often found to have low levels of financial literacy (FINRA 2013), 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 and Zinman 2014), and are more likely to report their home is “underwater” (FINRA 2013). The 2016 National Defense Authorization Act includes a mandate that requires financial literacy training for members of the uniformed services. The training is to focus on career and life milestones that may require financial education.

The two main sources for financial education programs for active duty and retired military members are from the U.S. government and nonprofit organizations. For example, the U.S. Department of Defense provides financial education and assistance through Military OneSource, which is a Web-based resource covering everyday issues, military benefits, relocation information, and personal finances. Various nonprofits also provide financial education specific to the needs of military members. FINRA provides resources for financial educators, some of which target military members. The Military Families Learning Network (MFLN) provides professional

development training via webinars, blogs, and social media for professionals who serve military families.

Limited research has been done on the effectiveness of financial education for the military. Brand et al. (2011) examined the effectiveness of a two-day personal finance course completed by new enrollees into the Army and 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. Skimmyhorn (2016) examined the effects of an eight-hour personal financial management course on 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.

In a study of undergraduates at the U.S. Military Academy, Skimmyhorn et al. (2016) investigated the effectiveness of using a principles-based or rules-of-thumb methodology for a personal finance lab that was included as part of a principles of economics course. The cadets were randomly assigned to either type of treatment. They found that both teaching methods increased nine outcomes likely to be related to financial decision making: topical knowledge on a multiple-choice test; five knowledge items used in other research; self-assessed knowledge; self-efficacy; motivation to learn; likeliness to seeking financial advice, willingness to take risk; loan allocation to long-term savings; and, the application of problem solving to new situations. The only

difference in the two methods was that principles-based instruction increased self-efficacy and rules-of-thumb instruction reduced the likelihood to seek financial advice.

LOW-INCOME CONSUMERS

Low-income consumers are economically vulnerable and need help to increase their economic security and quality of life. Nielsen, Fletcher, and Bartholomae (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. In addition, low-income consumers often have lower levels of education and financial literacy (Lusardi and Mitchell 2011).

In addition, low-income consumers often have lower levels of education and financial literacy (Lusardi and 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.

Financial education programs targeting low-income consumers take various forms, but three types are noteworthy: First, financial education programs can be 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). Second, financial education can be integrated into social or human services such as ones for economically vulnerable youth or young adults (Loke, Choi, and Libby 2015). Third, financial education can be provided in topical counseling such as credit counseling and homeownership (Delgadillo 2016) or through financial coaching, a form of financial education that generally involves one-on-one sessions between a coach and client (Collins 2016).

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, and financial outcomes such as sustainable employment, reduced debts, improved credit profile and increased savings. Financial education programs for low-income consumers are broadly defined in 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 and O'Neill 2016).

Several studies evaluate the effectiveness of financial education programs on low-income consumers' economic well-being. One study examined the impact of financial education on savings outcomes of participants in individual development account (IDA) programs and showed that 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 than counterparts who had not completed the program (Grinstein-Weiss et al. 2015). Another 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 2012a). It found 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. Financial counseling encourages the counseling of clients to reduce undesirable debt behaviors and increase desirable behaviors (Agarwal et al. 2010; Elliehausen, Lundquist, and Staten 2007; Moulton et al. 2015).

At least five issues are 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.

STUDENT LOANS

Student loans are a large investment often made by 18- or 19-year-olds beginning their postsecondary education pursuits. Prior to entering college, students complete 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. They often 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, but it may not be optimal, 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.

Colleges also are beginning to implement interventions that provide counseling for students who have taken out loans, where sessions include creating a budget, selecting a major, assessing 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.

Heterogeneity across students makes it difficult to define one policy or program that improves well-being for all students. A first outcome from financial education 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 while other students may quickly realize that college education is costly, thus 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 that 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. Any outcome that captures the likelihood that students apply for scholarships can be thought of as an improvement in student outcomes. A third outcome from financial education is to reduce the probability of loan default. If students optimally choose their loan amounts and graduate from postsecondary education institutions, they should not default on their student loans.

Research suggests that filling out the FAFSA is sufficiently complex to prevent students who need aid from completing the application (Dynarski and Scott-Clayton 2006). Bettinger et al. (2012) confirmed this finding 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 investigated 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 that also provided academic information and an incentivized offer for financial counseling targeted at students with high debt levels for their standing in college. The letter did not change future loan amounts, but it improved retention for these high-debt students. Another 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 (Darolia 2016). Although 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 loans. Although the study found that states with personal finance mandates had higher student loan debt, the personal finance mandates do not necessarily require that high school students complete a course prior to graduation. It is difficult to determine if an increase in student debt results from a greater investment of students in their education or from students just taking out the maximum allowable student loan amount.

Evaluation of student loans is plagued by a lack of data. Limited research has studied the effect of financial education on student loan default rates probably because the default data is often only reported for colleges as a whole, instead of for each student. Federally required education products, such as online education prior to obtaining a student loan, are difficult to evaluate because they are required for everyone, which precludes researchers from determining what would have happened in the absence of the policy.

HOMEOWNERSHIP

Within the category of homeownership, four groups could benefit from financial education. First, *first-time homebuyers* who are obtaining a mortgage could benefit from timely education surrounding this decision because of their lack of knowledge and experience with mortgages and home buying. A second group are *low- and moderate-income (LMI) homebuyers* because this group frequently has less savings in other types of assets in the event of an unforeseen shock and may be less numerate. 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. The fourth group are older homeowners who may need to live on their home equity using reverse mortgages, sale leaseback or some other financial strategy.

Several key programs have been established for homeowners and potential homeowners to obtain financial information and education. First, the federal government, and also state governments, through various departments and agencies, offer 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. Nonprofit 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 includes mortgage and home-buying education on its banking Web site.

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 receive modifications only 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 overconfident in their ability to pay. They then document that this overconfidence measure is negatively associated with the acceptance of free financial coaching. Their results suggest that overconfident 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 who were 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 were 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 2008–11 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.

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 the most motivated individuals—the least likely to miss payments—or those who are already behind on their mortgage—most likely to miss payments. Thus, most evaluation of housing education must overcome the selection into the education.

Other evaluation issues are related to the three main types of evaluations. First, some 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 insufficient resources to allow all access to the education. Thus, a lottery is the most equitable way to allocate the education. Second, natural experiments are used 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 event at their time of default. Third, researchers use 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 influence the outcomes.

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, 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 and 60s.

Financial education program objectives for each group will likely vary at different stages in life. At ages 20–35, a key message is “time is on your side.” In the “middle years,” ages 35 to 50, ongoing savings is key, 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, ages 50 to 70, people may be able to accelerate savings even further. A primary retirement planning concern of people age 70+ is making their savings last throughout their lifetime.

Web sites from agencies and organizations (both for-profit and nonprofit) provide valuable retirement planning resources that are frequently used by financial educators. Some sites provide general information and others focus on research results. *My Retirement Paycheck* (NEFE) contains information about eight key retirement decisions organized by topic (e.g., housing and retirement plans). *Retirement Confidence Survey* from the Employee Benefit Research Institute is an annual survey that measures workers' attitudes about retirement and trends in how people are planning for retirement. Some Web sites help people with personalized retirement planning calculations and other planning tasks that are related to retirement planning. *Ballpark Estimate* from the 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.

The major topics related to financial education programs and retirement planning will necessarily vary according to the needs of the target audience and their stage in the life cycle. Clark, Morrill, and Allen (2012) identify 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, and characteristics of investments for retirement plans. Topics for learners in or approaching the distribution (a.k.a., decumulation) phase of retirement planning include determining if retirement savings are adequate, Social Security benefits, and catch-up retirement planning strategies.

Not surprisingly, financial education related to retirement planning often takes place at work sites and is likely to have a positive effect. 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. 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. More recently, Xiao and O'Neill (2016) explored the potential effects of financial education received on five different measures of financial capability, both objective and subjective, and found positive associations with these financial capability indicators for workplace financial education and for financial education received in high school, college, or from any source. (The section on working adults also describes three other studies showing a positive association between financial education and retirement savings: Bernheim and Garrett [2003]; Bayer, Bernheim, and Scholz [2008]; and, Collins and Urban [2016]).

Creative motivational strategies may enhance workplace financial education efforts; for example, providing vivid images that enhance participants' emotional responses. Hershfield 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) 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 more than those who did not get the pamphlet.

A major weakness of evaluation of programs for retirement planning is the 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. Another weakness is the lack of capacity in many organizations with multiple program units to aggregate impacts using common indicators.

FINANCIAL ADVISING

Financial literacy is attained in 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 nonprofessional sources. As described by Collins (2012b), 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 challenging. The financial education provided by advisors also is tailored to the needs of the individual clients so no set content or curriculum exists.

The literature on financial advice includes both theoretical and empirical studies (Inderst and Ottaviani 2012). One topic for study is the characteristics of people who seek financial advice. Calcagno and 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. 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 increases the demand for advice and the demand for holding risky assets. Collins (2012b) 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, Babiarz, and Woodyard (2012) used the FINRA National Financial Capability Study dataset to confirm Collins' results.

Mullainathan, Noeth, and Schoar (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.

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 that is generated by an algorithm. The client is encouraged to act on the advice. The following are some of 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) Bloom (“we will use our algorithm to...identify the right investments”).

A concern with automated advising 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 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. The available survey evidence indicates that 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 ([FINRA 2016](#)). Little empirical evidence exists in the academic literature examining the educational experience provided by the automated advisors.

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. 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.

The issue of the quality of the education and information provided by financial advising are important because most people receiving advice frequently make financial decisions. The question of whether financial advising—robo or otherwise—results in the acquisition of financial literacy is still an open question. If consumers are supposed to learn from their financial experiences, the quality of the information they receive needs to be studied. If the results find that insufficient or biased knowledge is acquired, then this problem needs to be addressed. This concern is especially paramount as consumers move toward automated products that may not fully explain their features and limitations.

CONCLUSION

Financial education encompasses a broad landscape as shown by the sections in this article. 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. For example, 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, these conditions suggest that no single or standard method will be used 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 concerns, 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 provide additional information about the 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 article 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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