THE ADEQUACY AND IMPACT OF FINANCIAL LITERACY EDUCATION IN THE UNITED STATES

by

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TABLE OF CONTENTS

I. ABSTRACT

This study examines the current landscape of financial literacy with a focus on the adequacy, unintended consequences, and areas for development of current programming. The main goal is to determine if financial literacy is effective in accomplishing the goals of the program and how it can be improved. The impact of different types of financial literacy such as coaching and small, targeted classes are also examined. The following research questions are incorporated:

1. What is the current environment of financial literacy education in the United States, and what are its shortcomings?
2. What is the impact of current financial literacy education practices and how is this measured?
3. How do existing programs of financial education address at-risk populations?
4. How can change in financial behavior be achieved with programs combining financial education and counseling?

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III. INTRODUCTION

Statement of the Problem

Financial literacy is an important part of a balanced lifestyle. However, as financial markets and instruments become increasingly complex, the need for adequate financial education becomes even more important. Today, consumers are confronted with an incredibly diverse range of options, and it can be difficult for the average individual to choose between increasingly complex financial instruments (OECD 2006). Many of the financial literacy resources and classes available today offer only a shallow, basic education on the fundamentals of financial literacy. However, it has been proven time and time again that such generalized courses do not show significant results (Brown 2014).

In aggregate, consumer habits are showing increasingly alarming trends. "According to the Federal Reserve Bank of New York, the total household debt in the first half of 2017 has already reached $12.8 trillion dollars, more than the $12.7 trillion peak seen during the 2008 mortgage meltdown. And unlike the financial crisis in 2008, this new high is being driven by non-housing related debt, primarily credit card, student loan, and auto loan debt (Menard)." The student loan default rate more than doubled between 2003 and 2011, and 40 percent of borrowers are expected to fall behind on their loans by 2023 (Nova 2018).

"The depressing truth is that financial literacy is impossible, at least for many of the big financial decisions all of us have to make. If these things are perplexing to people with PhDs in economics, financial literacy is not the right road to go down (Menard)." Trying to educate the average person enough for them to effectively distinguish between loan packages or investment opportunities would be impossible. Even if it were possible, research suggests that financial education does not have a significant impact on financial behaviors after the course. This means that even if a person knows certain financial behaviors are good for them (like paying off a credit card balance every month, for example), the person may not change their behavior or retain this information in the long term (Peeters 2018).

Although financial literacy is not the comprehensive solution that it is sometimes portrayed to be, there are some initiatives that have been proven to show positive change. "Instead, increased exposure to mathematics courses was associated with and explained positive financial behaviors. And according to the Consumer Protection Financial Bureau (CFPB), 'There's no clear link between taking personal finance classes and saving more, paying off debts or raising your credit score.' (Brown 2014)."

The most effective and efficient financial literacy education is targeted, specific, and practical. According to the CFPB, there are five principles of financial education that make the biggest difference between success and failure:

"Principle 1: Tailor information to the specific circumstances, challenges, goals, and situational factors of the individuals served. Avoid a one-size-fits-all approach.

Principle 2: Provide just-in-time-information that is relevant and actionable to a specific situation or goal, so that information and skills are more likely to be retained.

Principle 3: Build generalizable skills, such as knowing where to find reliable information to make decisions and how to process information.

Principle 4: Build on motivation by supporting people to focus on their own values and standards, to persevere in the face of challenges, and to build confidence that they can achieve their financial goals.

Principle 5: Help create habits and systems so that it's easy to follow through on decisions."

Taken as a whole, these principles could be accomplished most effectively through coaching (Menard). Financial coaching, as opposed to financial literacy, focuses on "capability" instead of literacy (Loomis 2018). Financial coaching reflects a marked shift from passive saving to active investing or decision making in the world of financial literacy. The goal of coaching is to empower individuals to make their own decisions and to take ownership of their own futures.

In an ideal world, financial coaching would be available and easily accessible to everyone in need. However, because of the significant costs associated with hiring a financial coach this is not a feasible approach on a large scale. Instead, coaching in smaller groups has been implemented with success (Ibarra 2017, Peeters 2018, Loomis 2018).

If coaching is not a possibility, targeted group classes are another way to facilitate successful financial education. For instance, workshops on budgeting, credit management, and debt relief that provide specific, practical steps on how to accomplish goals can fill a similar (if slightly less adequate) role to individual coaching. The key to group classes is finding the greatest needs and targeting them.

Historically, financial literacy curriculums and large scale education efforts tend to view financial literacy in a vacuum, with very little consideration given to the social, political, and economic contexts affecting an individual's ability to maintain financial security and build wealth (Soroko 2015).

Research Questions

In writing my thesis I have focused on the following research questions:

- What is the current environment of financial literacy education in the United States, and what are its shortcomings?
- What is the impact of current financial literacy education practices and how is this measured?
- How do existing programs of financial education address at-risk populations?
- How can change in financial behavior be achieved with programs combining financial education and counseling?

Although financial literacy is a topic of significant depth and breadth, I believe that focusing in on these specific questions will allow for the dissection of the most urgent issues. First, an examination of the current environment of financial literacy and the shortcomings is important to give context to the rest of the research and which areas to focus on. Second, examining the impact of current programs can help determine whether the current system is effective and efficient in accomplishing the goals of financial literacy. Third, I focused on how existing programs address at-risk populations, which can be more vulnerable to increasingly complex financial markets and systems. Lastly, I look at how changes in financial behavior can be achieved through various approaches in order to help determine which programs will be most useful to pursue in the future.

Purpose and Impact

The ultimate goal of this paper is to examine the current environment of financial literacy with a practical, solutions-focused mindset. The most pressing issues facing financial literacy, such as lack of long term impact, low participation rates, and selection bias, will be analysed, and pragmatic solutions to them will be explored.

IV. BACKGROUND

Financial Literacy Defined

Interestingly enough, many studies on financial literacy do not include a formal definition, and there is no universally accepted meaning outside of academic studies. According to one literature review, 72% of the studies examined did not include a definition of financial literacy (Huston 2010). Of those that did include definitions, they were often inconsistent, with some of them focusing on financial ability and others on financial knowledge. The definitions used by the U.S. Financial Literacy and Education Commission and the Jump$tart Coalition were very similar. They included both knowledge and ability, and stated an intended outcome like lifetime financial security.

"Not having a precise and consistent construct conception limits the ability to conduct comparative analyses or assess financial literacy rates and their subsequent impact on financial well-being. This is a critical barrier because all other stages of instrument development depend on having a complete and well-defined construct (Huston 2010)." Research on financial literacy is significantly less effective if there is not a complete or consistent understanding of what financial literacy actually is.

An important distinction to highlight is the difference between financial literacy and financial capability. Financial literacy has two dimensions, firstly, understanding personal finance knowledge (literacy), and secondly, the successful use or application of that knowledge (ability). Financial knowledge is an integral dimension of, but not equivalent to, financial literacy. For the most part, when people promote financial literacy, they do so with the implication than an individual is capable of applying that knowledge to their own unique situation. For the purposes of this paper, financial literacy will be defined as measuring how well an individual can understand and apply information related to personal finance.

History of Financial Literacy in the United States

Financial literacy education in the United States has a long, uneven history. Since 1957, various US states have been adopting mandates to include financial education in the curriculum of high school students (Bover 2018). In 1998, when national governmental financial literacy programs first began to be tracked, only 21 states included personal finance in the state board educational standards, and only one state required a course to be taken by high school students. Personal finance education increased in prevalence until 2009, when new program growth largely stagnated. According to the Council for Economic Education, today there are 45 states that include personal finance in the state board standards, but still only 17 states that require a course to be taken by high school students.

Measuring the impact and adequacy of these programs has never been a formalized or common practice. In fact, "there currently are no standardized instruments to measure financial literacy (Rajapakse 2017)." In 2018, seven states require standardized testing of personal finance concepts. However, because there are no standardized instruments to measure financial literacy on a national level, each of the exams are created by individual state legislatures, making it impossible to compare results between state programs. In addition, standardized testing immediately after the completion of a course does little to determine the long term impact or retention of knowledge.

It is a widely held belief that more financial literacy education leads to more desirable outcomes for consumers, such as a better understanding of the economy, greater propensity to save for retirement, reduced personal debt, increased emergency savings, and lower likelihood of using high-costs methods of borrowing (Survey of the States 2018). However, there is very little empirical evidence to back up these broad claims (Willis 2009).

The U.S. Financial Literacy and Education Commission was established under the Fair and Accurate Credit Transactions Act of 2003. Its mission is to spearhead the federal government's involvement in financial literacy education. In a 2006 report issued by the Commission, many claims were made about what financial literacy education can achieve, although the report also says that "there is little research on successful methods for financial education (Willis 2009)."

Supporters of financial literacy programs often advocate for educational programs by presenting statistics that demonstrate how uninformed Americans are about financial matters and how poorly they manage their financial affairs. But this approach only illustrates the problem, it does not prove the efficacy of a solution. Policymakers sometimes require mandatory financial education and counseling to help with bankruptcy and home mortgage foreclosures without proof that the education will help, or analysis on what types of education produce the best results. Considering the resources spent on financial literacy education and the opportunity costs of pursuing financial literacy, as opposed to other public policies that might improve consumer financial conditions, a thorough examination of the possibilities is needed.

Current Landscape of Financial Literacy

Age of Participants

Different age groups have different financial needs. College students, who are navigating student loans and credit card debt, have different needs and desires than people who are near the end of their careers and focused on retirement planning. In terms of financial literacy education, the majority of programs today focus on high school students. Other commonly targeted age groups are college students, elementary school students, and selected groups of adults.

Many financial literacy programs target high school students because, theoretically, they are old enough to understand the mathematical concepts behind interest calculations, but they are still young enough that they have not yet had to make consequential financial decisions. Mandating financial literacy education in high schools is also a way to reach a significant portion of the population. Even though this is by far the most common age group targeted, there is virtually no research to validate these assumptions, or to determine the ideal age to begin financial literacy education.

Over the past decade, financial education policies have also begun to include financial education in earlier grades. For example, in April of 2015, the Consumer Financial Protection Bureau issued a report recommending that policy makers consider infusing financial education throughout the K12 curriculum (Batty 2017). According to the report "When we start early with age-appropriate and relevant financial education and consistently reinforce those lessons throughout the K-12 years, we can give young people more chances to develop positive habits and behaviors (CFBP 2015)."

An important question to consider is whether or not learning about finances is appropriate at younger ages. Research on children's cognitive development and economic understanding indicates that children can understand financial concepts at younger ages than high school, and that their understanding is developed as early as age 12 (Batty 2017). But there are financial literacy programs that target age groups even younger than that. According to a 2017 study on elementary school students, experiential learning programs made a significant difference in financial knowledge, budgeting, socialization, and financial experiences after 10 weeks of participation in the program (Batty 2017). Knowledge gains made by students of a similar age group during a 3-5 hour formal instruction program on financial literacy also showed significant progress. However, more long-term studies are needed to assess the impact of education at earlier ages. One theory is that financial education that occurs earlier in life is forgotten more easily than education that occurs later in life. This phenomenon has been observed in some long-term studies on high school students (Brown 2014). There is a higher risk of this occurring in programs that target younger groups of students.

One of the most important age groups that need targeted financial education is college students. Student credit card debt has declined due to the Credit Card Accountability, Responsibility and Disclosure Act of 2009, but student debt usage has only shifted towards student loans (Wann 2017). The student loan balance in the United States is projected to be over $2 trillion by 2022, and some experts predict that a significant portion of it will never be repaid; currently almost a quarter of student loan borrowers are in a state of delinquency or default. Because of the high debt burden taken on by students, many Americans are unable to buy houses and cars, start businesses and families, save or invest (Nova 2018).

"College students are at risk for dropping out of school due to financial problems. The National Center for Education Statistics (2012) found that 31% of college students leave school due to financial reasons (Wann 2017)." College is also the first time that many people need to make significant financial decisions that could impact the rest of their lives. Many colleges have individual financial literacy programs; however they are rarely incorporated into the college curriculum and are often incomplete or surface level.

The last major group that is often targeted by financial literacy programming is selected groups of adults. Adult financial literacy education tends to be more topical and targeted, as opposed to a wide group of people with generalized education. For example, some state governments require debt counseling for people who declare bankruptcy.

Throughout a person's life, financial literacy follows an inverted-U shape with respect to age (Xu 2012). Financial literacy levels peak when a person is middle aged, perhaps because this is when a person is making many major financial decisions, and is therefore more likely to apply and understand personal finance concepts. Financial literacy also declines in old age, perhaps because the market has changed significantly, the impacts of age-based cognitive decline, or because after retirement many people are no longer as concerned about actively managing their affairs. More research is needed to determine the cause of this pattern and how it can be remedied.

Types of Education

There are several different types of financial education, including coaching, targeted classes, and generalized classes. High school students often take generalized classes. During the course students are given a broad overview of concepts that are important to financial literacy. The idea behind generalized education is to give students a foundation upon which to build knowledge of more complex topics. This approach can become problematic when applied to a vulnerable population like low income families. A family with a net income of less than 20,000 a year will have very different financial needs than a family with an income of 65,000 a year. And yet, most financial literacy curriculums do not address the unique challenges that individuals face, instead opting for a prescriptive, one-size-fits-all approach (Soroko 2015).

A second, extremely different approach to financial literacy is coaching. Essentially the opposite of a one-size-fits-all strategy, coaching is an individual approach to financial literacy education were consumers are paired with "coaches" whose goal is to help them accomplish their financial goals. Coaches can be financial professionals with a wealth of knowledge and experience, or they can be fellow citizens with training in motivation and empowerment (Loomis 2018).

As opposed to generalized financial education, financial coaching is anchored in behavioral change instead of transferring financial knowledge (Peeters 2018). It is often tailored to the specific needs of the individual. It can be administered face-to-face, but credit counseling through telephone has also become a widespread practice. Coaching is most often used as a solution to a specific problem among adult consumers.

For example, a study conducted by the U.S. Department of Housing and Urban Development found that "housing counseling can be an effective intervention in helping distressed homeowners avoid foreclosure (Myhre 2017)." During 2008, the subprime mortgage crisis plunged global financial markets into chaos. Although greed, fraud, ineffective consumer protections, and deeply flawed financial modeling were all contributing factors to the crisis, many borrowers lacked the knowledge necessary to make informed decisions. For instance, an Option Adjustable-Rate Mortgage (Option ARM) loan, which was one of the most popular mortgage choices during the lead up to the financial crisis, allowed borrowers to make very small payments on their debt, an attractive feature for low-income borrowers. However, many borrowers did not realize that the loan amount might actually increase over time if the payments were not sufficient to cover interest costs as rates increased. Many consumers lacked the financial sophistication to realize the risk of a loan like this, which unscrupulous lenders were quick to take advantage of.

With housing prices skyrocketing and financial institutions relaxing their lending standards to dangerous levels, misleading, overly optimistic information began to saturate the media. Opportunistic and predatory lending behavior, like ARM loans and other unethical practices, reached new heights. The complexity and variety of mortgage products offered made it almost impossible for the everyday citizen to make the right decision for their own unique situation, regardless of their level of knowledge about generalized financial literacy concepts.

As a defensive measure, mortgage counseling grew in popularity in the years after the financial crisis. According to a study of over 240,000 loans, clients who received mortgage counseling were 2.83 times more likely to receive a loan modification, and were 70 percent less likely to re-default on a modified loan than were similar borrowers who did not receive counseling (Myhre 2017). The study also found that longer hours of counseling significantly reduced the probability of withdrawing from the loan modification process. Specifically, eight additional hours of counseling doubled the odds of avoiding foreclosure.

Because counseling must be conducted on an individual basis and preferably by qualified financial professionals, counseling programs are much more expensive than generalized education. However, generalized education is not always an efficient solution, because it does not address specific needs and often fails to adequately prepare consumers for a complex and occasionally malicious marketplace.

A third type of financial literacy education involves a mixture of the two previous approaches. Small, targeted classes, where financial literacy is taught in a setting similar to group therapy can also be very effective. Peeters found that, "group and individual interventions are comparable in their effectiveness. The efficiency of group work makes it preferable over individual therapy from a policy-based perspective by reducing costs and staff deployment (Peeters 2018)." An added benefit to group based methods is that when groups are selected carefully and are composed of members in the same peer group, they can act as social supports by encouraging members to make positive behavioral changes, while simultaneously holding each other accountable.

Curriculum Contents

In addition to the structure of the financial literacy education program, the content of the programming is also a source of contention. According to Peeters, "there seems to be no consensus in the literature on which personal finance principles are needed by every adult (Lyons, White, and Howard 2008; Sprow 2010). Cultural factors and differences in financial systems between countries make it difficult to reach consensus. Many programs have been developed, mainly in the United States, but the content and the approach of these programs differ substantially (Peeters 2018)." Unsurprisingly, studies have found correlation between the content of programs and their effectiveness (Brown 2014). For example, programs that had a greater focus on debt were associated with lower rates of default.

A review of the literature found that over the past 10 years, there are four distinct content areas commonly found in courses on financial literacy: personal finance basics, borrowing, saving/investing and protection (Huston 2010). Personal finance basics included topics such as time value of money, purchasing power, and budgeting. The section on borrowing focused on the use of credit cards, consumer loans, and mortgages. The saving and investing portions often stressed the importance of saving present resources for future use by utilizing savings accounts, stocks, bonds or mutual funds. Protection was included less often than the other three, but still occurred with significant regularity. Protection included topics such as insurance products and other risk management techniques.

The challenge with deciding which content is most effective is that it often depends upon the participants, their age, stage of life, and individual backgrounds. This is another reason that generalized education is less effective than individual coaching or targeted classes.

International

It should be noted that the analysis in this paper is focused on financial literacy in the United States. Financial literacy goals and structure vary widely across countries, under the influence of different cultural values, states of economic development, financial infrastructure, and country history. For example, because of the history of apartheid, South Africa has a much greater disparity of financial literacy along racial lines. According to a FinScope survey, in South Africa only 57% black people have bank accounts, compared to 91% of white people (Xu 2012).

Although each country has unique problems and challenges when it comes to financial literacy, in general, high-income countries view financial literacy as a complement to consumer protection. One of the primary goals of financial education is therefore to equip individuals with the capability to navigate a complex array of financial products, including pensions and mortgages, and to make sound financial decisions.

However, in low-income countries, financial outreach is much more limited, and more complex consumer products are usually only accessible to a small percentage of the population. Therefore, the goal of financial literacy is often increasing access to and participation in financial services. Another important factor to consider is that people in low-income countries rely significantly on microenterprise for their livelihood. Acquiring capital or business skills and knowledge is a more relevant component of financial capability in low-income countries than for the typical worker in a developed country.

Regardless of the level of development, surveys around the world consistently find that financial literacy levels are low in both high and low income countries (Xu 2012). The World Bank has organized several global financial literacy initiatives, however it should be noted that any large scale initiatives to promote financial literacy must, at the very least, take into account the unique aspects of that individual country and the needs of its citizens.

V. ADEQUACY OF FINANCIAL LITERACY EDUCATION

The definition of financial literacy for this paper is how well an individual can both understand and apply information related to personal finance. Therefore, the adequacy of a program is judged by two criteria: comprehension of material and significant, positive behavioral change. Although there are no comprehensive, long-term studies on the impact and knowledge retention of current financial literacy programs, there are a few piecemeal studies that provide empirical evidence about the effectiveness of specific approaches. In addition, several parts of financial literacy education are potentially problematic and should be addressed.

In this section of the paper I will explore some of the unintended impacts of current approaches, what those findings implicate about future financial literacy education efforts, and significant areas for development within current financial literacy frameworks.

Unintended Consequences

Spending Habits

A major focus of many financial literacy program is budgeting, with a focus on an individual spending within their means. The common assumption is that educating consumers on budgeting techniques will cause them to reduce spending, resulting in higher savings and a more healthy financial profile. This assumption, while logical, is incorrect. A study conducted by the World Bank of more than 100,000 credit card clients found that a financial education workshop and personalized financial coaching actually significantly increase spending, although there were also increases in other positive financial behaviors, such as a higher likelihood of paying credit cards on time and making payments above the minimum (Ibarra 2017).

In fact, the same study showed that "receiving coaching results in a 5.9 percentage point increase in the likelihood of paying more than the minimum payment, a 2.6 percentage point reduction in the likelihood of delaying payment, 51.9 percent higher monthly spending on the credit card, and a 7.8 percentage point increase in the likelihood that the client is profitable for the bank (Ibarra 2017)." Although the study provided evidence of small positive changes such as a 2.6 percent reduction in delaying payments, the more significant and alarming 52 percent increase in credit card spending as a result of financial literacy is an unintended consequence that needs to be analyzed much more closely. However, the study was only conducted over the span of two months. More studies are needed to determine if this is a widespread problem, the long-term impact that financial literacy has on spending habits, and to find the root cause of the increase in spending as a result of more financial literacy education.

Even if financial literacy education is successful in reducing spending, this is not an effective solution for all consumers. There are some instances where overspending is not the root cause of financial troubles, and is therefore useless as a tool for change. For example, if a consumer has an extremely low income and has already reduced spending to the bare necessities, it would be a much more effective solution to teach strategies for increasing income, such as educating the consumer on educational options or developing entrepreneurial skills. These areas are often neglected in traditional financial literacy education.

Debt

Debt is one of the most important aspects of financial literacy education. Most consumers will utilize debt in some form or another in their lifetime. If utilized properly, debt can be a powerful financial tool. However, debt can also be debilitating if used incorrectly, as seen during the financial crisis of 2008.

Financial literacy programs often focus on debt and borrowing topics. There have been several studies that analyzed the long term impact of debt education on high school students. The results were surprising. "Empirical analysis reveals that exposure to financial and quantitative education has sizable impacts on the debt-related outcomes of 19 to 29 year olds. Additional mathematics training leads to improved creditworthiness (as measured by the Equifax risk score, which is similar to the FICO score), and decreases adverse outcomes such as bankruptcy and delinquencies. It also leads to (economically and statistically) significant impacts in the propensity to have debt: an additional year of math, for example, decreases the probability of having mortgage debt by 0.7 percentage points (on a base of 9%), and of having auto/credit card debt by 0.9 percentage points (on a baseline prevalence of 78%). Math education, however, has no impact on the extensive margin, that is, the likelihood of having a credit report. Impacts of math education seem to fade out over time in early adulthood (Brown 2014)."

The findings are interesting because they draw a distinction between traditional financial literacy and increasing math education. The link between more math education and better financial decisions later in life is not obvious, but it could be an intriguing option. However, correlation is not causation, and more research is needed to determine if students that take more math make better financial decisions. Another possibility is that the type of student that was inclined to take more challenging mathematical courses is also one that would have done well financially regardless of exposure to mathematics. More research is needed to uncover a stronger link. According to the same study, traditional financial literacy reduces exposure to housing and consumption debt and reduces the prevalence of bankruptcy, but it also increases the chance of third party collections. Financial literacy education also resulted in a lower likelihood of having any outstanding debt (a decrease of 1.4 percent) and of ever having housing or auto/credit card debt. As in the case of math education, the impacts of financial literacy training also seem to fade out with age.

Clearly, the impact of debt education is mixed, and debt behavior in life is affected by many complex factors, such as the level of mathematical education. The results are even more complicated by the complexity behind many financial decisions. For example, debt can be a useful tool to build wealth and therefore a higher level of debt might not necessarily be a negative indicator, depending on the individual's background and current financial goals.

Overall, additional math and financial literacy education exposure appears to decrease the incidence of adverse outcomes, like bankruptcies, and reduces the likelihood of youth carrying debt. Considering the low financial literacy rates among US youth and an effective delinquency rate of over 30% on student loans for young borrowers (Brown 2014), financial literacy with a focus on debt education is a critical component of effective education efforts.

Risk Tolerance and Overconfidence

An interesting and unforeseen impact of financial literacy is the increase of risk tolerance and overconfidence caused by financial literacy programs. One common metric used to show the impact of programs is for participants to “self-assess” their progress at the end of the course. However, self-assessments are more of a measure of confidence, or overconfidence, than actual financial ability. Consumers consistently rate themselves very highly on these assessments. In one experiment, Americans who completed a financial literacy course were surveyed about their perceptions of their experience. Nearly 90% of them said that they “increased their financial knowledge.” But comparing self-assessments to performance tests showed that in reality the course was much less effective (Bover 2018).

This is not a phenomenon unique to financial literacy education initiatives. In anonymous surveys unconnected with financial literacy education initiatives, Americans overstated their positive financial habits and understated their negative habits. For example, about 60% of respondents claimed that they pay off their credit card balances in full every month, but card issuer data shows that in reality only about 40% of people pay off their balances every month. In the Survey of Consumer Finances, families disclose on average about a third as much credit card debt as issuers report to the Federal Reserve (Willis 2009). On average, regardless of financial literacy education, people tend to believe that they are more financially literate than they are in reality. Additional financial literacy only appears to heighten this disparity by causing consumers to believe that they have made significant gains in knowledge even when they have not.

Although at first glance this incongruence might seem harmless, studies have concluded that self-assessment of financial literacy due to biases leads to imprudent financial behavior. Especially in a market with a great deal of complexity, it can be very dangerous for people to be overconfident. This can lead to consumers taking on more risk than is wise, and making poor financial decisions. This is especially true when it comes to investments. People are more willing to bet on their own judgements when they feel “skillful” or “knowledgeable.” If these beliefs about themselves are incorrect it can lead to a higher likelihood of poor investment decisions or higher susceptibility to malicious fraudulent activity (Verma 2017).

It should be noted that financial coaching addresses many of the problems associated with overconfidence by adding a neutral, unbiased observer and not relying on the financial knowledge of the consumer alone.

Areas for Development

In addition to the gaps in financial literacy coverage, there are several significant challenges to financial literacy that have not been adequately addressed in the current literature. These challenges are pervasive across the entire industry and need to be addressed before financial literacy can have a significant positive impact on a national level.

Retirement Planning

Retirement planning responsibilities have shifted from the public sector to become an individual responsibility (OECD 2006). Life expectancy for U.S. citizens is increasing, which only increases the burden and importance of retirement planning, because consumers will be spending more time in retirement.

Pensions programs, where the burden of retirement security falls on the corporation as opposed to the individual, have virtually become obsolete (Menard). Instead of relying on a company's defined benefit plan, consumers are expected to save for retirement using 401(k) and Individual Retirement Accounts (IRAs). This is extremely problematic because of the complexities associated with retirement planning and calculations. In order to determine how much to save for retirement, a consumer must have sophisticated knowledge of the time value of money, and be able to correctly predict inflation rates and market conditions for the next several decades, a task which many financial professionals have difficulty with. In addition, there are many different financial products available to save for retirement, and selecting the best one often requires detailed knowledge about tax laws and individual circumstances.

Unsurprisingly, lack of retirement related-knowledge is widespread (Xu 2012). Many employees in the U.S. nearing retirement have a limited knowledge of company retirement benefits, and have misconceptions regarding their expected age of retirement. According to Xu, awareness about Social Security in the U.S. is low as well. Studies have found that lack of planning for retirement is widespread and correlated with financial literacy education. Using high school financial education mandates as an instrument for financial literacy, studies indicate that financial literacy results in more awareness about the importance of saving for retirement and higher participation rates (Willis 2009, Xu 2012, Rajapakse 2017).

However, even though financial literacy provides some benefit to retirement planning, the effect is limited. Consumers are more likely to participate in programs, but they did not increase the consumer's ability to make good financial decisions at a statistically significant level, most of them continued to overestimate retirement income by many years (Willis 2009).

One partial solution to the retirement planning is a growing focus on programs that are subtly compulsory in nature. For example, making financially beneficial selections the default option and requiring consumers to choose to opt out. This is particularly effective for the decision to participate in retirement programs such as voluntary 401(k) contributions in the workplace. In the majority of workplace retirement programs, workers have to decide to opt into these programs. If this were reversed, it would mean much higher participates rates (McCormick 2009).

However, higher participation rates alone are not enough fix the systemic problems in the retirement industry. Because pensions are not likely to become widely available again, financial coaching could be used to assist in the complex decisions, however any type of financial literacy education alone is unlikely to fix such widespread issues. More consumer protections are needed to assist consumers when selecting between retirement options and to encourage more proactive saving habits.

Low Take-Up and Self-Selection Bias

Voluntary participation rates in financial literacy programs are often very low, even when opportunities to participate in financial literacy programs are plentiful. For example, in a study on experimental efforts by different credit card providers in the United States that provided online financial literacy training to delinquent and at-risk credit card holders, operators made calls to 80,982 cardholders, only spoke with 6,417 of them, offered half of those people the chance to participate in a financial literacy program, and had only 28 people log in, and only 2 people completed the course (Ibarra 2017). This is an extreme example, but there are many other programs with take up rates below 1%.

This clearly poses a problem for any attempt to measure the impact of financial literacy on the general population based on a randomized experiment. This issue is compounded by the fact that take up rates for surveys on program effectiveness are also low. "The National Endowment for Financial Education advertises that three months after completing its ten-hour High School Financial Planning Program, over half the students improved their spending and saving habits. However, only 17% of the students responded, meaning that about 10% of the students who completed the program reported improved financial habits (Willis 2009)."

Financial literacy programs also suffer from a selection bias (Ibarra 2017, Willis 2009). Studies have shown that more financially literate clients self-select into participating in the treatment, while clients with poor financial habits tend to self-select out of the treatment. "The more often an individual paid above the minimum payment in her card, the higher the likelihood she signed up for the workshop (figure 1 panel A) or the coaching (Figure 1 panel B). For instance, an individual assigned to the coaching group who paid more than the minimum for six months is more than twice as likely to complete the coaching session than an individual who paid more than the minimum in three months only (Ibarra 2017)."

The self-selection bias implies that a direct comparison between the outcome of financial literacy programs with a control group will yield biased results, because the people that already possessed financial literacy skills opted in. People with high financial literacy skills will probably not learn as much as other participates, and therefore participation in the program will not have a significant impact on individuals financial behavior. In addition, when comparing positive financial outcomes to the general populace, the overall financial health of the consumers taking the course as compared with those who did not could be biased because they had higher levels of financial literacy to begin with.

Several studies have analyzed this effect. In one, college students who completed an online financial literacy course had better financial behaviors than students who were offered but declined the course. The initial results of the study showed that credit counseling produced a 66 point average increase in credit scores of debtors who had low scores prior to the counseling and a 30% reduction in predicted likelihood of bankruptcy. However, after statistical techniques to reduce selection effects were applied, the authors discovered that the credit counseling produced less than a single point increase in credit score, indicating that the self-selection bias, instead of the financial literacy programing, was responsible for the higher credit scores of counseled consumers. Most studies on financial literacy education impact do not adjust for selection effects.

It does not matter how effective a financial literacy program is if no one participates in it. The most obvious and crude solution would be to make more financial literacy programs mandatory. However, this is virtually impossible to do with adult programs, and mandatory programs also lead to less engaged participants. Another solution would be to make programming more appealing by providing content that consumers desire. There has also been some success in using peer-based programs, because group members helped keep their fellow participants accountable. But this still does not address the issues caused by self-selection. One of the main drivers behind self-selection bias is the stigma behind financial literacy. An individual's credit score and level of indebtedness are often very personal, sensitive information, and they may be less comfortable sharing that information with a counselor.

One solution could be to provide incentives to participants, to encourage participants with less financial literacy skills to participate. This is a tactic frequently used in court-mandated debt counseling. The low take-up rates and participant self-selection are pressing problems that need to be addressed before financial literacy can become an effective means of consumer protection.

Addressing Key Demographics

As previously discussed, financial literacy is most effective when it is targeted. Many traditional financial literacy programs do not target the individual, but rather take a blanket approach to educating consumers. This is ineffective in a number of ways, but one of the most damaging is the fact that many populations have specialized needs that are not being addressed. Even coaching, which takes an individualized approach by nature, often has a core curriculum that might not take into account the difference in needs of different demographics.

Low Income Individuals

People living in poverty are undoubtedly one of the most vulnerable populations and stand to benefit the most from financial literacy education, and yet, impoverished individuals are less likely to engage in financial literacy programming or participate in counseling services (Ibarra 2017, Myhre 2017, Willis 2009).

High school students in public schools vs. private schools offer an interesting comparison between students who come from high income households and students from working class families. One study found that financial literacy education had a greater impact on students who attended public school compared to the same program offered at a nearby private school. "Compared to their peers in the non-public system, students in public schools are more likely to be grade repeaters, expect to leave the educational system before professional specialization or have parents not working. We highlight two findings from that subgroup analysis. The first one is that while mean responses of financial knowledge are very similar across both types of schools, changes in the distribution of test scores are not. In public schools, we observe a marked improvement in the lower part of the distribution of scores, possibly due to grade repeaters and students expecting to drop out early. Secondly, the results from the incentivized saving task also suggests a statistically significant propensity to delay payments among students in public schools. Both findings indicate that financial education can motivate students with relatively weaker performance (Bover 2018)."

More studies are needed to define the relationship between income level and impact of financial literacy courses. Despite the promising preliminary results, there are also many parts of financial literacy programs that do not adequately address the needs of low income populations.

Even the basic premise behind offering financial literacy implies that poverty is an individualistic issue, and can be solved by prudent financial decisions. "By making a client responsible for his or her own financial destiny, this approach makes it appear as if the solution to poverty is discipline, agency and access to credit, rather than a living wage, adequate social support or reparations to address centuries of racialized wealth dispossession (Loomis 2018)."

Poverty does not occur in a vacuum, and there are complex social, political, and economic contexts affecting individuals' ability to maintain financial security and build wealth (Soroko 2015, Loomis 2018). Few, if any of these dimensions of poverty are addressed in financial literacy programs. Even if they were, it would be impossible for them to be adequately addressed in such a limited scope.

Additionally, topics of relevance to people who are poor as well as their perspectives and experiences are not included in the majority of financial literacy curriculums, which instead focus on the experiences and viewpoint of middle class individuals. Financial education that is tailored specifically to the needs of student populations, whose financial literacy needs could vary based on neighborhood demographics, is much more efficient and effective (McCormick

2009). For example, for urban low income students, an introduction to financial institutions could feature pawn shops and their costs and benefits and move from there to a discussion of banks and banking functions so that students can relate the discussion to institutions they are more familiar with.

College Students

As discussed earlier, college students are a critical demographic that need more targeted financial literacy and consumer protections. Despite the fact that college students are making consequential financial decisions that could affect them for the rest of their lives, a majority of college students fail basic financial literacy tests (Brown 2014).

Student loans are one of the most pressing issues faced by college students today. "A recent government report found that some schools hire companies that don't present student loan borrowers with their best options. Meanwhile, one of the largest student loan servicers — Navient, is being sued by five states and the Consumer Financial Protection Bureau for allegedly misleading borrowers. The bureau accuses Navient of steering struggling borrowers toward multiple postponements of their loans instead of into income-driven repayment plans, which cap monthly payments at a percentage of the borrower's income (Nova 2018).

Compounding the issue, while tuition costs have been steadily rising for colleges, graduating salaries have failed to keep pace with rising costs. Financial literacy is not a solution to the complex problems faced by college students, but transparent education on debt options and ethical, impartial debt counselors can help alleviate some of the problems students face when it comes to predatory lenders.

Race and Gender

Although beyond the scope of this paper, there are complex effects that racial and gender identity have on personal financial behavior. Many financial literacy programs subscribe to a false "neutrality" created by assuming that there are no differences between participants in a program (Soroko 2015). The issue is also evident in financial coaching. Evidence from a study examining racial differences in household spending found that reducing spending, a common strategy suggested in coaching sessions, would not close the racial wealth gap between black and white households (Loomis 2018). The reason was that individual behavior, which is what financial coaching programs target, is not the driving force behind income or wealth disparities in the United States. Systemic changes are needed in order to address the wealth gap among Americans, which are beyond the capabilities of financial literacy education.

In terms of gender disparity, women consistently show lower levels of financial literacy almost everywhere in the world. "The gender gap in financial literacy is of particular concern as women are also more likely than men to become economically vulnerable due to longer life spans, shorter work experiences, and other factors (Xu 2012)." Older women in the U.S., who are more vulnerable to poverty after retirement because they have longer life spans, are less financially literate than the older population as a whole, and less likely to plan for retirement. Currently, very few financial literacy education programs focus on reaching women and addressing their unique financial needs.

Corporate Sponsorship

Financial education programs are offered by governments, nonprofits, and financial institutions. Some of the largest facilitators of financial literacy are financial institutions. However, sponsored financial literacy may not always have the consumer's best interests in mind. For example, in a study on the results on financial literacy that was sponsored by a credit card company, researchers focused on how the programming could increase profitability for the bank, even at the expense of the consumers (Ibarra 2017).

"Many of the financial services marketplace providers offer approaches to financial education that teach students to be effective, reliable, and "safe" consumers of financial services and products. These emphases are not necessarily coterminous with the best interests of individual consumers, and a distinction must be made between holistic financial education and sponsored curricula focused on consumers in the financial services marketplace. Willis (2008) said that 'the advantage in resources with which to reach consumers that financial services firms enjoy puts firms in a better position to capitalize on decision-making biases than educators who seek to train consumers out of them' (McCormick 2009)."

Although financial institutions have vast resources and are capable of funding many financial literacy programs, care should be taken to protect consumers from potentially biased instruction. There should be some oversight on financial literacy programs to ensure programing is truly neutral and beneficial to consumers.

VI. CONCLUSIONS AND RECOMMENDATIONS

Overall, the prevailing theme is that more research is needed to determine the best course of action when it comes to financial literacy education. The majority of programming decisions today are based upon assumptions, such as the central assumption that more education leads to behavioral changes. However, before more research can be conducted, there must first be a standardized definition for financial literacy that is agreed upon by researchers and policymakers alike.

Based upon the research that has already been conducted, the current environment of financial literacy education is clearly inadequate in a myriad of ways. Firstly, many programs are generalized and focused on targeting younger groups. Although the content of these programs is not standardized, the majority of them focus on generic topics that may not be applicable to all participants. Even when they are they are applicable, the financial literacy classes taken in high school do not have lasting impact on students, who quickly forget the formula for compounding interest and the specific factors that impact a credit score.

Promising research has shown that instead of teaching traditional financial literacy courses in high school, a curriculum that focuses on the practical applications and financial attitudes can be much more effective (Batty 2017). By teaching students financial attitudes, such as how to use debt effectively, and giving them a setting to apply those new concepts, such as in a simulated classroom economy, it heightens engagement and builds associations that last longer than a traditional lecture format with little emphasis on application.

Because there is a wealth of free financial literacy solutions available online, one of the most critical lessons for financial literacy in schools is to teach why financial literacy is important, and to empower students to take charge of their own financial futures.

The world of finance is infinitely complex, and consumers have to make extremely difficult decisions that could adversely impact the rest of their lives. This is where the second type of financial literacy, coaching, can help consumers navigate those decisions. By having an impartial guide with a deep understanding of financial topics, consumers can make better decisions and become less susceptible to fraudulent and misleading practices. Financial coaching can also be used to target vulnerable populations such as low income families, minorities, and women.

However, there are still issues with financial literacy education that need to be addressed, such as the retirement savings crisis, overconfidence of consumers, overspending as a result of financial literacy programming, selection bias, low take-up rates and corporate sponsorship. All of these are critical issues that need to be addressed on a national policy level and considered when designing new programs.

Even if financial literacy education was completely reformed to address all of the current issues,“Resource constraints, job loss, disability, discrimination, and natural disasters can prevent consumers from enjoying good financial outcomes no matter how high their literacy and how welfare-enhancing their behaviors (Willis 2009).” Since the financial crisis, financial literacy education has become a bipartisan platform in order to promote soundness of financial markets and the integrity of the U.S. economy. However, at its very best financial literacy is an important tool to help consumers, but not a sweeping solution to the systemic problem of consumer sophistication in an overly complex financial market.

VII. LIMITATIONS OF STUDY

The main limitation to this study is the lack of high quality, consistent data to support financial literacy initiatives. Multiple literature reviews were incorporated in this paper in order to get as wide a sampling as possible (Peeters 2018, Rajapakse 2017, McCormick 2009). Of the research on financial literacy that has been conducted, the results are often contradictory or inconclusive. Selection bias, as discussed earlier, also needs to be addressed in the body of researching going forward.

VIII. AREAS OF FURTHER STUDY

As highlighted throughout this paper, there are many potential areas for further study. The current environment of financial literacy is built upon many assumptions, one of the most integral is the fact that increased education has a positive impact on behavior. The causal aspect of the relationship between financial knowledge and corresponding financial behavior remains one of the largest gaps in the literature on financial education (Verma 2017).

There are numerous aspects of financial literacy that need further investigation, especially those highlighted earlier in this paper such as the effect of financial literacy education on spending habits and the influence of corporate sponsorship. More analysis is needed on the potential policy changes to protect consumers, with a focus on proven methods as opposed to assumptions.

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