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# A Case for Improved Financial Literacy Education in the United **States**

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### A Case for Improved Financial Literacy Education in the United States

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#### Abstract

The purpose of this paper was to analyze what financial literacy is and explain in detail the shortfalls that the United States is currently facing in their financial literacy education. This paper will lay out the movement of states and colleges including more personal finance curriculum in their graduation requirements, why a financial literate population is important to topics such as managing student loan debt, retirement planning, professional development, and mental health among others. It will then conclude covering ways to improve current financial literacy education strategies with technology, experiential learning, and transparency.

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#### I. Introduction

The term "financial literacy" was first invented by John Adams in 1787, when writing a letter to Thomas Jefferson. "All the perplexities, confusions, and distresses in America arise not from the defects of their constitution or confederation ... not from a want of honor or virtue, so much as from downright ignorance of the nature of coin, credit and circulation," Adams wrote [1]. In other words, the people of the United States were having difficulty grasping the mechanics of their financial system, leading to distrust in their government not soon after freeing themselves from the tyranny of another financially predatory regime. From there on out, the interest in creating a financially literate population in the United States grew, and has continued doing so nearly two and half centuries later. Today, the Corporate Finance Institute defines financial literacy as "the cognitive understanding of financial components and skills such as budgeting, investing, borrowing, taxation, and personal financial management," [2]. The Financial Literacy and Education Commission also includes earning, saving, and protecting as skills of being financially literate.

Individuals must first understand how to make money before having to save it, and after earning, they must learn how to set a budget, or figure out how much they are able to spend on groceries, entertainment, housing, etc. What's left over after expenditures is what they can save. Perhaps you want to save for retirement, or a house, or your children's college fund. Knowing when and how to create savings is also a component of financial literacy. If one doesn't have enough cash on hand for a purchase, they can look to borrow money. However, managing your borrowings, or debt, is possibly the most important component of financial literacy. Too much credit card, mortgage, or student loan debt can leave an individual fighting to pay it off for decades. Having a high credit score and knowing your debt capacity is critical. The final

component, protection, is often overlooked. Once a person builds savings and investments, it's important for them to regularly review their statements and be on the lookout for any suspicious activity or mistakes. Having the right fraud protection and insurance policies will keep assets secure. These are all complicated skills and if a person develops them, they can be considered "financially literate", meaning they are more suited to overcome financial hardships and distress at later points in life. The occurrence of these financial obstacles increases as one grows older, and so do the complexity of the situations one might find themselves in. Consumers in the United States currently face over \$860 billion in credit card debt, \$10.93 trillion in mortgage debt, and \$1.58 trillion in student loan debt [3]. Individuals must learn not only how to manage their debt, but even more importantly must understand how much debt they're able to take on to their personal balance sheets in the first place.

Stating the requirements for one to be financially literate is one thing. Going out and measuring it and determining whether or not they are is another. There are several strategies to do so, and there are often differences in the results of each method across variables such as age, gender, education and work experience. Questions asked in financial literacy quizzes typically cover five categories: "specific financial knowledge, financial mathematics, inflation rates, mathematics, and cognitive reflection," [4]. In 2011, Annamaria Lusardi and Olivia S. Mitchell set out to find the most effective way to measure financial literacy. They wanted measures that had four principles: simplicity, relevance, brevity, and have the capacity to differentiate [5]. Subsequently, they designed the "Big Three," a questionnaire that has been used as a benchmark to measure individual financial literacy in surveys and research for the past decade. Questions specifically focused on the participant's understanding of compounding, inflation, and risk diversification. For compounding, participants were asked "Suppose you had \$100 in a savings"

account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?" On inflation, the question was "Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?" Finally, Lusardi and Mitchell asked "Please tell me whether this statement is true or false. 'Buying a single company's stock usually provides a safer return than a stock mutual fund'. Although measuring financial literacy can be complicated, it's important to keep methodologies to do so simple and standardized. Understanding which components, the population lacks in knowledge will better help create more effective education programs.

Becoming financially literate should be easily attainable, affordable, and achieved early on in life. Yet, in a national study completed by the Financial Industry Regulatory Authority, it was found that only thirty four percent of respondents could correctly answer four out of five basic questions on topics such as mortgages, interest rates, and inflation. This number was forty two percent in 2009. The cost of not becoming financially literate has become too high for the average American, and the solution to this problem begins in the classroom, years before their first major financial decision.

#### II. Current State of Financial Literacy Curriculum in the United States

Typically, in the United States education system, many students are not exposed to financial management topics in their coursework until their middle school years at the earliest, and most often not until they reach high school. Under the care of parents or guardians, it may seem as though this late education actually comes at an acceptable time of the student's life. But many students face major financial decisions long before adulthood, requiring them to understand complex concepts without the necessary knowledge and practice to do so. As a result, school

districts across the United States have taken steps towards introducing financial literacy curriculum in primary schools. Susan Sharkey, the director of the High School Financial Planning Program created by the National Endowment for Financial Education, says that "we should not wait until senior year to introduce students to financial literacy," [6]. But it's been a long road towards implementing this type of curriculum earlier on in a student's academic career. The demand for financial literacy coursework differs from state to state, and it's been found that those states who face the most difficult financial conditions are more inclined to require personal finance courses than those states with residents who are better off financially. Nan Morrison, the president of the Council for Economic Education (CEE), explained that the most often used excuse for not requiring personal finance and additional economic courses is being unable to find room in the larger curriculum of the school or district. To solve this, she goes on to say that the CEE is helping educators "how to integrate it into everyday life of the classroom in subjects such as math, business, social studies, civics and workplace learning," [7]. Lastly, even if the teachers and schools want to introduce financial literacy coursework, they may be handcuffed by the resources they possess. Educators must have specific training to properly each students' financial principles, and the funding for training programs is not always included in a legislative action, leaving the need and desire unfulfilled.

In 2020, the CEE conducted the "Survey of the States" and found immense progress in the number of states that are beginning to include financial and economic coursework in their graduation requirements [8]. Twenty-one states require high school students to take a course in personal finance while twenty-five require them to take one in economics in order to graduate.

Only seventeen and twenty-two states had these requirements, respectively, back in 2018. There

is still a lot of work to be done across the nation to better prepare students with handling their liabilities and reaching their financial goals.

One such state that took the step towards developing the next generation of financially literate Americans was North Carolina. In 2019, the state legislature and Governor Ray Cooper passed a bill stating that while in high school, students must take part in a full academic year course focused on economics and personal finance [9]. The bill states that the course shall teach, at a minimum, those topics and principles such as the "the true cost of credit, choosing and managing a credit card, borrowing money for an automobile or other large purchase, home mortgages, credit scoring and credit reports, planning and paying for postsecondary education, other relevant financial literacy issues," [9]. The class of 2024 is the first to take on this requirement, and for it to be implemented, a course on civics and government was eliminated. All civics and government curriculum will not be lost in the state of North Carolina though, as that content is still covered in three other social studies courses that are also required to graduate high school. The bill will also require that teachers receive the professional development necessary to effectively carry out the curriculum and ensure that all principles are passed on to their students.

Another state that recently added a personal finance course requirement in K-12 education is Florida, which had been looking to do so legislatively since 2011. On March 22, 2022, Governor Ron Desantis signed the Dorothy L. Hukill Financial Literacy Act, thus requiring, similarly to the North Carolina bill, financial literacy coursework to be completed to obtain a high school degree [10]. Florida Chief Financial Officer Jimmy Patronis went on to say that "these lessons are also critical to training future generations of Americans to appreciate America's capitalist system and grow our nation's pool of entrepreneurs," implying that the inspiration to innovate

and advance our economy and society stems from the knowledge we absorb early on in our education [10]. The required course will build off the state's goal of eliminating the Common Core curriculum, which hadn't previously included financial literacy in its standards for grade level.

Financial literacy education in the United States does not, and should not stop at secondary education. It has become widely popular to learn about among post-secondary schooling and college students. This is the age of which students are living away from their parents or guardians for the first time, and are tasked with managing their finances on their own. They might have a specific amount of spending money for the semester and have to budget it out for class materials, books, housing, meal plans, club dues, etc. Students run the risk of racking up too much debt or running out of living funds if they are not properly educated on saving and budgeting. This would force them to spend more time working at part-time jobs, possibly even turning them in to full-time, and committing less time and energy on course work. Working too much and incurring financial stress has even been found to decrease the odds of students completing their degree [11].

Despite all of this, many colleges do not require personal finance courses in their general education requirements for graduation. A few top universities, though, either on their own or partnering with third-parties have developed elective programs and courses to improve their student body's financial literacy. The University of Illinois partnered with iGrad, a platform that gives students the necessary tools to manage their personal finances, an created a certification program for instructors. Following a survey done by the National Endowment for Financial Education that reported less than twenty percent of educators felt "very competent" in being able to teach personal finance, the program focuses on faculty development and preparation [12].

Yale University has looked to their alumni groups to solve the issue, holding workshops at their campus and others around the country [13]. The workshops expand beyond the academic side of finance, which students are typically well versed in, and place more weight on the skills needed in the real world. Finally, at the University of South Dakota, a financial literacy class is made available to students of all majors and uses simulation learning to better translate concepts to real life [14].

Including more personal finance education in primary, secondary, and post-secondary education curriculum has been a popular topic of conversation among educators and legislators. Steps toward doing so are in motion, such as the allocation of \$160,000 in funds from the U.S. Department of Education at Montclair State to support financial-wellness training. But most school districts and education systems are still struggling to justify the need for this type of learning. Fortunately, there remains an abundance of supporting evidence of why they should.

#### III. Importance of Financial Literacy Education

Possibly the clearest proof why the United States is in need of better financial literacy education is the fact that more than forty-three million Americans hold \$1.75 trillion in outstanding student loan debt [15]. This equates to each U.S. household having an average of \$57,520 in student loans [16]. Of the borrowers, those aged 25-34 are the most likely to have student loan debt while the age bracket of 35-49 holds the greatest amount with \$600 billion outstanding [17]. All this liability places a severe burden on the borrower and essentially prohibits them from participating in the economy as a consumer. Instead, they are left with high monthly interest payments and when pairing those with increasing cost of living and other expenses, it can be a miracle for some to save any money at all. In December of 2021, an average of fifteen percent of all student loans were in default at any time while twenty five percent

default within the first five years of repayment [18]. Defaulting on student loans can be drastic to a borrower's life. Consequences can include a loss of tax benefits, a decline in credit score, and portions of your paycheck may even be withheld until the loan is repaid in full, plus interest [18]. Possessing student loan debt has also been shown to have a negative correlation with satisfaction of life among borrowers when compared to persons with no student loans [19].

So, if fifty-five percent of millennial borrowers have concerns to pay off their debt, receiving an education in managing their risk capacity could reduce that share. Long-term financial behaviors and decisions are a product of that individual's earlier education [20]. Results from previous research has shown that millennials who have financial education are more likely to perform positive financial behaviors. These include knowing whether or not to take out student loans, and having more effective strategies to pay back that debt later [21]. Additional research even finds that students who fall behind in financial literacy underestimate their payments by more than \$1,000 monthly, while more literate students can expect lower payments relative to their income [22]. To go back even further in the decision to take out loans for education, evidence has shown that being more financially literate reduces loan aversion and increases willingness to borrow money for education purposes [23]. If that is true, given the facts about default and feelings of stress mentioned earlier in this paper, improvements must be made to current programming to effectively translate the risk student loans liability places on a borrower.

One goal that almost every worker would like to achieve at the end of their career is to be able to retire and live out the rest of their days comfortably and stress free. Correctly planning for retirement is an important part of being considered financially literate. Many decisions must be made early and throughout an individual's professional career that can impact their retirement. Included in those are when to start saving for retirement, whether or not to open a 401(k) plan,

how much of pre-tax income to set aside, and when to finally stop working all together once you feel your nest egg is large enough. Results have shown a strong correlation between those who received some type of personal finance education before entering the labor force and their readiness to retire when they reach an appropriate age [24]. It's been found that "older, better educated, and male respondents are more likely to be planners" when it comes to retirement; these also happen to be the characteristics of people with greater financial literacy [24]. When these factors and other socioeconomic factors are controlled, it's again found that financial literacy influences the likelihood of someone planning for retirement [24].

Simply thinking of retirement is not enough to have success in reaching retirement. Having the ability to make the most optimal choices in preparing for retirement is also influenced by the worker's financial literacy. Literate individuals are more likely to engage in investments toward retirement, such as entering a pension program or opening an individual retirement account. They are also more likely to work with investment advisors and participate in more growth investing [25]. In addition to having their own individual investments, many employees are offered a contribution plan by their employer in which their employer matches a deduction of pre-tax pay that gets put toward a retirement account. At the Federal Reserve, a study was completed with their own employees as the subjects. Those employees who took place in a personal finance learning module were more likely to contribute to a defined contribution retirement plan and take advantage of employer matching benefits. They were also contributing over two and a half more percentage points of their salary to the defined contribution plan, exhibiting their trust in their investment decisions and risk capacity [26].

There's an argument to be made that the global economy is supported by one thing: consumer balance sheets. If consumers are earning and saving more money year after year,

chances are the world's economies will thrive with them. But when those balance sheets take on additional, unnecessary risk, the stability of the entire financial system becomes threatened. In 2008, the global financial crisis caused millions of people to lose their jobs and trillions of dollars in savings, college funds, retirement funds, were all wiped out almost overnight. After years of an unstoppable bull market in housing and low, affordable mortgage rates, consumers and banks alike had finally suffered from the mispricing of their risk [27]. A significant portion of the blame can be placed on interest-only mortgages, which were popular among lower income households and only required the borrower to defer payment of principal till the end of the loan term. From 2002 to 2005, the share of new mortgages that were interest-only grew from six percent to thirty-one percent [28]. Borrowers of these loans were at mercy of their homes value. When the bull market finally ended, and housing prices declined nationwide, those same principal payments were still due in full. Borrowers couldn't refinance due to the drop in the value of their home, defaulted on their mortgage, and were subsequently foreclosed on. Research has shown since that great financial crisis that borrowers did not fully understand the concept of an interest-only mortgage and were offered "predatory loans" that had affordable interest payments [29,30]. Less financially literate borrowers were more likely to choose these types of mortgages or adjustable-rate ones, then fall victim to higher interest payments later in their loan term [31]. Focusing on borrowers' numerical ability of their financial literacy, those who belong in the bottom third ability group were found to miss almost fifteen percent of their mortgage payments during the GFC, compared to just six percent in the highest group [32].

Improving your financial literacy can also yield better results in your professional development and path towards career aspirations. In May of 2020, PricewaterhouseCoopers found in a survey that 54% of America's workforce felt their financial standing was the largest

contributor to their stress, a number that has more than likely increased due to the length and severity of Covid-19's impact on the American economy [33]. Stress is something that everyone deals with, but when money problems are added, the side effects become much worse. A 2019 survey by Salary Finance found struggling employees are "8.1 times more likely to have sleepless nights, 5.8 times more likely not to finish daily tasks, 4.3 times more likely to have troubled relationships with work colleagues," [34]. Receiving an education in personal finance and money management has been shown to reduce the stress of employees. Employee Benefit News saw the percentage of participants in a survey who said they felt "highly stressed" drop from 52.4% to 19.2% after completing a financial wellness program offered by their employers [35].

When an employee has poor financial literacy, they lose productivity and turnover costs skyrocket. The same survey by Salary Finance mentioned above reported that "the cost of this in terms of lost productivity and greater staff turnover equates to 11-14% of total salary cost for the employer, or almost \$500 billion annually for corporate America as a whole," [34]. Employees' minds will no longer be focused on their works and tasks at hand if they have money problems, and might spend as much as six hours per workday thinking about their personal finance issues, according to Global Financial Literacy Excellence Center [36].

Not only does improving the financial literacy of your workforce reduce stress and increase productivity, but it can also lead to a sharpening of business skills. If only about a third of Americans can answer four out of five questions of a financial literacy quiz correctly, it's concerning when you consider that of the other two thirds, many must have some responsibility over a budgets or expenses in their careers [37, 38]. The demand for financial skills in the workplace is expected to rise by sixteen percent by 2028 as businesses look to gain competitive

advantages in their respective industries. A financially secure and literate employee can make more informed decisions at work, and an improved business acumen can lead to better deal making, negotiating and budgeting skills [39].

It's not only traditional employees who reap benefits from being more financially literate, but self-employed workers do as well. Small businesses make up about 99.7% of employer firms in the United States and the majority of those small business owners are self-employed [40, 41]. Self-employed workers are expected to pass the number of traditional workers in the workforce by 2027 as entrepreneurship becomes more popular for younger generations and automation continues to eliminate traditional jobs in the economy. Millennials and Gen-Z actually represent over half of the independent workforce, being the generations that have grown up in the digital age [42]. They've now shifted towards pursuing personal passions for work, particularly in technology, writing, and design-based careers. This is known as the gig economy. Through being self-employed, these individuals must take on more personal financial responsibility and require a higher caliber of financial literacy in their decision making. They become responsible for everything that happens in their business, including, but not limited to: covering their own healthcare rather than be a part of their company's plan, paying higher taxes as both an employer and employee, and not receiving vacation or sick leave [43]. Undeniably, the required skillset for running your own business while also being the employee of that business is much more diverse than that of a traditional worker; and financial literacy is one of the most important. If the American economy is going to rely on self-employed entrepreneurs to support the majority of output in the near future, its imperative that it provide sufficient financial education.

Evidently, there is a severe shortfall of financial literacy in the United States. This crutch has left millions of Americans will trillions of dollars in student loan or credit card debt with no plan

of how to pay it back. Younger generations are unsure if they will ever be able to get married and start a family, buy a house, or retire due to a lack of savings. The American and global economies have fell victim to some of the worst financial crises in history due to a lack of financial literacy. Businesses who implement a financial wellness program in to their training, or employees who are educated on concepts at an earlier age in school, will both receive a return on their investment with regards to their health, personal, and professional success. Why we must improve the financial literacy of our country is clear and has been answered. Attention now has to shift toward answering "how do we improve?"

### IV. How to Improve Financial Literacy Education

The need for financial literacy education leads to the question "how can the country improve financial literacy education?" Current standards are typically unsatisfactory and do not help students achieve the financial independence the world is requiring of them. Studies have attempted to review the current conditions of financial literacy coursework and develop strategies for improvement. When the Federal Reserve reports that 45% of Americans who were laid off over a previous year would be unable to pay their bills in full or cover a \$400 emergency charge, it's clear that steps must be taken towards equipping children and young adults with adequate skills and knowledge [44].

For starters, it's important to note how integrated the financial world and our banking or payment systems have become with technology. The field of finance is very computational, and thus requires a heavy use of computers and other information technologies. That's why some believe that integrating financial literacy material with computer programming curriculum will produce a more literate populace. Researchers from the IEEE Education Society designed and developed learnings materials with two primary objectives: "to help students learn programming

and financial literacy simultaneously through the seamless integration of both topics" and "to enhance students' learning effectiveness through solving problems that concern their lives," [45]. They believed that traditional personal finance courses simply provided the same basic formulas for solving financial problems over and over again. If programming skills were integrated, however, it would allow students to analyze scenarios relevant to their own personal lives and financial decisions that may not be covered in a traditional text. An example of a learning module the researchers developed was for the students to write a program using formatted output skills that would produce a personal balance sheet and assess their own financial health. Another module focused on improving investment skills, by assigning students to write programs that store vast amounts of information on different investment products and allow them to sort by differing criteria. The goal of these learning modules was to teach students the value of saving and investing their money both early and responsibly.

To test their study, the researcher issued pretests and posts tests to two groups of students; ones that were enrolled in a course with the learnings materials, and another that was enrolled in the course that did not use them. The assessments asked questions on concepts such as debt ratios, net worth, and student loan amortization. Results from their analysis were promising, with a mean posttest gain in score of 5.4 points for the treatment group compared to only a mean of 1.0-point gain for the control group. Self-reflection assignments were issued to the students afterwards, and the support of improving financial literacy through integrating programming continued as one student stated "I learned exactly how much expenses I incur per year. Never did I think to add up all my expenses, and when it was done through this program, I came to the realization that I can save a lot of money if I cut back just a little," [45]. As is evident, connecting students to real life decisions that they will have to make and doing so with the

advancements of technology as our society and the financial sector progresses, will yield returns on the populations financial literacy in the future.

The millennial population may be the generation that currently struggles the most with becoming financially independent. They are more likely to mismanage their money, which could eventually lead to poorer health, academics, and even relationships. Researchers at Bringham Young University set out to find what the best ways for parents to educate their children on financial principles were and answer the questions "What financial principles and knowledge do Millennials believe will be most essential for teaching their own future children? What prospective parenting ideas do they project will be most effective in teaching about finances? Where did their own parents go wrong (or do well)?" [46]. Initial research found that parents who educate their children financial principles and practices have a significant impact on their children's future financial well-being and that those children go on to have less debt in their adulthood than those who were not educated. Further, children who were even introduced to the topic of charities were more likely to donate later on in life and save for their own education at more successful rates.

In the survey, the researchers asked a random sample of undergraduate students both "What did your parents teach you about money?" and "How did they teach you those things?" For the findings regarding how the students were taught by their parents, two major themes emerged. The first was for parents to communicate the family's finances with their children. This creates transparency and could be done at an age-appropriate manner while the child grows. To implement this in to a classroom setting, educators could encourage their students to ask their parents to be open with them about the family's finances. Seeing the real-life examples from their families could more clearly explain key principles.

The second theme from the findings was that opportunities for responsibility. The students believed that children should attempt to be financially independent of their parents and the rest of their family before adulthood, with some even saying they should be before leaving for college. One student stated "It's important to get money in children's hands early on, even if it's just small amounts to start out..." [46]. This statement can support the strategy of using experiential learning to better teach financial principles, rather than have students and children learn formulas and do computational programs from a textbook. Lessons of hard work and taking responsibility of your financial decisions early on is what students believed should be transferred from parents to their children. This creates value of that money early on and can lower overall risk tolerance later in life. Many participants in the study agreed that letting children earn money through chores, or receiving an allowance, and then letting them manage what they do with that money is the best way for them to make mistakes and learn from them. If a child were to make a mistake with managing their money at a young age, they will be much less likely to commit that mistake again. While this study focused mainly on the education parents can give their children, the results can be used to adjust high school and post-secondary coursework. For example, teachers can attempt to create a sense of responsibility through simulation games, in which the students manage a virtual investment portfolio or a business budget. Based off of real-world events, they will have to make complex decisions that will have significant impact on their money. The success of their decisions will come from their financial literacy.

Experiential education can even be effectively implemented in to curriculum as soon as elementary school. Economists at the Federal Reserve and University of Wisconsin-Madison performed a field study using the My Classroom Economy program, a simulated economy that allows the students to make financial and economic decisions daily [47]. They chose to use this

program in order to address common barriers and shortfalls that traditional financial literacy education faces. The first of which is that instructors typically feel unprepared or are not trained well enough to sufficiently teach the concepts. The My Classroom Economy program comes with materials already prepared for teachers to implement, relieving them of most, if not all, additional preparation time. The second barrier typically seen is that financial literacy education is too expensive to add to existing curriculum. My Classroom Economy can be used at no monetary cost to the teacher, making it practical for any school's budget. Results from the study found that students who participated in the My Classroom Economy saw gains in their financial literacy quiz scores, and even do not lose academic success in other areas such as math, since the knowledge learned in the program can be applicable to several other core subjects.

Continuing the topic of improving financial literacy education as society and technology swiftly advances through the twenty first century, consideration must be made as to whether or not students will develop the skills necessary in becoming financially literate more efficiently in a digital or in person setting. People and financial systems have become more connected globally, and with that, the financial decisions that take place grow in complexity. When the Covid-19 pandemic struck the world in 2020, most education systems were forced to move to some type of a virtual learning format. Today, many courses have kept this teaching modality due to its efficiency and perceived effectiveness. That's why researchers at the George Washington University School of Business and The University of Rome La Sapienza in Italy performed an experiment to test if digital learning is best for financial literacy education [48].

Using a sample of six hundred and fifty Italian high school students, two groups were assigned; one that was delivered a traditional method of four in person lessons and another that was delivered lessons via that online platform "Kahoot". Students have live interactions with

their instructor and the goal is for them to "learn by entertainment" and are additionally motivated by a competition aspect of digital quizzes. Each group was given an assessment before and after they took part in their respective course. The results found that the effect of traditional, in person teaching was significant in improving the financial literacy of the students both three weeks after and three months after completion of the course. For the digital course, it was only effective in improving financial literacy in the short run of three weeks after completion. But additional factors must be taken in to account to determine which instruction method is best suited for Generation Z's absorption of financial knowledge. It was found that a traditional course was more expensive, at an average cost of 11.04 euros per student, and in reality, would be even higher if course materials needed to be made. The digital method is both cheaper, scalable and "to have the same increase in probability to become financially literate for the digital course the amount of euros invested would be equal to 6.5 per student," [48]. Thus, evidence does show that a digital instruction method may be more feasible and effective for the institution, with respect to their applicable budget.

The way people process and absorb information changes just as much person to person, as it does generation to generation. Nevertheless, innovation and new schools of thought need to drive the growth of our financial literacy.

#### V. Conclusion

The concept of being "financially literate" isn't new to the United States. It's a goal and an accomplishment that has alluded millions of Americans for centuries. Setbacks that have crippled the country many more times than one would wish include: depressions, recessions, failed businesses, bankruptcies, generational poverty, delayed retirements, etc. The list continues

far beyond that, and there is an argument to be made that almost all of those can be linked to insufficient financial literacy.

Current curriculum is inadequate, and evidence shows that poor financial literacy has left the country saddled with trillions of dollars in student loan debt, mortgage liabilities, and credit card debt. Employees are spending less time completing their tasks at work and more time stressing about their money problems. The majority of stress of the labor force is financial, causing business to lose billions of dollars from poor productivity and increased turnover. Removing these stressors should also lift away feelings of depression and anxiety and once again, improve productivity of the whole American economy. More and more states are passing legislation to include some sort of personal finance or economic coursework in their requirements to graduate. Most of these courses are to be taken at the high school level, but primary schools are also considering introducing basic concepts or encouraging parents to be open with their children about financial decisions.

The definition of being financially literate has changed fluidly for decades, and will continue to do so for decades more. As society advances further in to the twenty first century, education systems and institutions must alter the way they teach financial concepts as well. The financial systems will continue being more globally connected and technologically based, thus, skills such as coding and knowing your way around a computer will be important. The Covid-19 pandemic accelerated the use of digital instruction. It's practicality and ease of use is certain to keep it as a popular modality of teaching. Finally, if students are exposed to financial concepts and money management at an earlier age, it may be beneficial to introduce experiential learning after establishing base concepts. Applying those concepts to real-life situations and decision making

will allow seamless translation, create a sense of responsibility, and perhaps, reduce risk taking later in the student's life.

There's not only a need, but also a strong desire to learn about personal finance in the United States, and the solutions to improve the knowledge of our population must begin in the classroom.

#### References

- 1. "Strengthening the Roots of Financial Resilience in Financial Education | United Nations | UNSGSA Queen Máxima." *United Nations | UNSGSA Queen Máxima*, 20 Apr. 2016, https://www.unsgsa.org/speeches/strengthening-roots-financial-resilience-financial-education.
- 2. "Financial Literacy Overview, Benefits, Importance." Corporate Finance Institute, https://www.facebook.com/corporatefinanceinstitute.cfi/, https://corporatefinanceinstitute.com/resources/knowledge/finance/financial-literacy/. Accessed 28 Apr. 2022.
- 3. "Household Debt and Credit Report FEDERAL RESERVE BANK of NEW YORK." FEDERAL RESERVE BANK of NEW YORK Serving the Second District and the Nation FEDERAL RESERVE BANK of NEW YORK, https://www.newyorkfed.org/microeconomics/hhdc. Accessed 28 Apr. 2022.
- 4. Rieger, Marc Oliver. "How to Measure Financial Literacy?" Journal of Risk and Financial Management, no. 12, MDPI AG, Dec. 2020, p. 324. Crossref, doi:10.3390/jrfm13120324.
- 5. Lusardi, Annamaria, and Olivia S. Mitchell. "Financial Literacy Around the World: An Overview." SSRN Electronic Journal, Elsevier BV, 2011. Crossref, doi:10.2139/ssrn.1810551.
- 6. Whitmer, Regina. "Knowing Money." District Administration, vol. 51, no. 4, Apr. 2015, pp. 49–52. EBSCOhost, https://search-ebscohost-com.ezproxy.lib.uconn.edu/login.aspx?direct=true&db=aph&AN=103337013&site=ehost-live.
- 7. "Financial Literacy By State." MoneyRates, https://www.moneyrates.com/research-center/financial-literacy.htm#:~:text=According%20to%20the%20CEE%2C%2021,financial%20behavior%20of%20their%20residents. Accessed 28 Apr. 2022.
- 8. "Survey of the States by CEE." Council for Economic Education, https://www.councilforeconed.org/survey-of-the-states-2020/. Accessed 28 Apr. 2022.
- 9. "Governor Cooper Signs Three Bills into Law | NC Gov. Cooper." Home-Page | NC Gov. Cooper, https://governor.nc.gov/news/press-releases/2021/04/09/governor-cooper-signs-three-bills-law. Accessed 28 Apr. 2022.
- 10. "Governor Ron DeSantis Signs Financial Literacy Bill to Support Florida's Students." Florida Governor Ron DeSantis, https://www.flgov.com/2022/03/22/governor-ron-desantis-signs-financial-literacy-bill-to-support-floridas-students/. Accessed 28 Apr. 2022.

- 11. Joo, S., Grable, J. E., & Bagwell, D. C. (2003). Credit card attitudes and behaviors of college students. College Student Journal, 37 (3), 405–420.
- 12. "IGrad Introduces Financial Literacy Instructor Certification." IGrad: Financial Literacy Platform, https://www.igradfinancialwellness.com/blog/iGrad-and-the-University-of-Illinois-Launch-Online-Financial-Literacy-Certificate-Course-for-Educators. Accessed 28 Apr. 2022.
- 13. "Two Years in, Financial Literacy Workshops Remain a Success Yale Daily News." Yale Daily News, 2 Apr. 2015, https://yaledailynews.com/blog/2015/04/02/two-years-in-financial-literacy-workshops-remain-a-success/.
- 14. Talk, Zach Wetzel For the Plain. "A Day in the Life of a University Professor | Local News | Plaintalk.Net." Vermillion Plain Talk, https://www.facebook.com/pages/Vermillion-Plain-Talk/362426717117570, 13 Mar. 2015, https://www.plaintalk.net/local\_news/article\_c47beeee-c91e-11e4-88f7-ff9c488a0156.html.
- 15. Board of Governors of the Federal Reserve System (US), Student Loans Owned and Securitized [SLOAS], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SLOAS, April 28, 2022.
- 16. "American Household Credit Card Debt Statistics: 2021 NerdWallet." NerdWallet, https://www.facebook.com/NerdWallet, https://www.nerdwallet.com/blog/average-credit-card-debt-household/. Accessed 28 Apr. 2022.
- 17. Helhoski, Anna. "How Many Americans Have Student Loan Debt? NerdWallet." NerdWallet, http://www.facebook.com/NerdWallet, 20 May 2021, https://www.nerdwallet.com/article/loans/student-loans/how-many-americans-have-student-loandebt.
- 18. "National Student Loan Default Rate [2022]: Delinquency Data." Education Data Initiative, Education Data Initiative, 5 Oct. 2020, https://educationdata.org/student-loan-default-rate.
- 19. Kim, K.T., Anderson, S.G. & Seay, M.C. Financial Knowledge and Short-Term and Long-Term Financial Behaviors of Millennials in the United States. J Fam Econ Iss 40, 194–208 (2019). https://doi.org/10.1007/s10834-018-9595-2
- 20. Mottola, G. R. (2014). The financial capability of young adults—a generational view. In Insights: Financial capability—march. Washington, DC: FINRA
- 21. Friedline, T., & West, S. (2016). Financial education is not enough: Millennials may need financial capability to demonstrate healthier financial behaviors. Journal of Family and Economic Issues, 37(4), 649–671. https://doi.org/10.1007/s10834-015-9475-y.

- 22. Nikolaos Artavanis & Soumya Karra (2020) Financial literacy and student debt, The European Journal of Finance, 26:4-5, 382-401, DOI: 10.1080/1351847X.2019.1711435
- 23. Boatman, Angela, and Brent J. Evans. "How Financial Literacy, Federal Aid Knowledge, and Credit Market Experience Predict Loan Aversion for Education." The ANNALS of the American Academy of Political and Social Science, vol. 671, no. 1, May 2017, pp. 49–68, doi:10.1177/0002716217695779.
- 24. ---. "How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness." Quarterly Journal of Finance, no. 03, World Scientific Pub Co Pte Lt, Aug. 2017, p. 1750008. Crossref, doi:10.1142/s2010139217500082.
- 25. Nguyen, T. A. N., Polách, J., & Vozňáková, I. (2019). The role of financial literacy in retirement investment choice. Equilibrium. Quarterly Journal of Economics and Economic Policy, 14(4), 569–589. doi: 10.24136/eq.2019.027
- 26. Clark, Robert, et al. "EMPLOYEE FINANCIAL LITERACY AND RETIREMENT PLAN BEHAVIOR: A CASE STUDY." Economic Inquiry, no. 1, Wiley, Aug. 2016, pp. 248–59. Crossref, doi:10.1111/ecin.12389.
- 27. Gallery, Gerry, and Natalie Gallery. "Rethinking Financial Literacy in the Aftermath of the Global Financial Crisis." Griffith Law Review, no. 1, Informa UK Limited, Jan. 2010, pp. 30–50. Crossref, doi:10.1080/10854667.2010.10854667.
- 28. Seay, Martin C., et al. "Financial Literacy and the Use of Interest-Only Mortgages." Journal of Financial Counseling and Planning, no. 2, Springer Publishing Company, 2017, pp. 168–80. Crossref, doi:10.1891/1052-3073.28.2.168.
- 29. Lusardi, Annamaria, (2011), Americans' Financial Capability, No 17103, NBER Working Papers, National Bureau of Economic Research, Inc, https://EconPapers.repec.org/RePEc:nbr:nberwo:17103.
- 30. Fishbein, A. J., & Woodall, P. (2006). Exotic or toxic? An examination of the non-traditional mortgage market for consumers and lenders. Washington, DC: Consumer Federation of America
- 31. Smith, H., Finke, M. S., & Huston, S. J. (2011). The impact of financial sophistication on adjustable rate mortgage ownership. Journal of Financial Counseling and Planning, 22(2), 3–15.
- 32. Gerardi, Kristopher S., et al. "Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data." SSRN Electronic Journal, Elsevier BV, 2010. Crossref, doi:10.2139/ssrn.1600905.

- 33. PricewaterhouseCoopers. "2020 Employee Financial Wellness Survey: PwC." PwC, https://www.pwc.com/us/en/services/consulting/workforce-of-the-future/library/financial-wellbeing-retirement-survey.html. Accessed 28 Apr. 2022.
  - 34. THE EMPLOYER'S GUIDE TO FINANCIAL WELLNESS. Salary Finance, 2019.
- 35. Singer, Mark. "How to Speed up Financial Wellness Learning? Simplify It | Employee Benefit News." Employee Benefit News, Employee Benefit News, 13 June 2018, https://www.benefitnews.com/opinion/how-to-speed-up-financial-wellness-learning-simplify-it.
- 36. "The 2020 TIAA Institute-GFLEC Personal Finance Index | TIAA Institute." Research That Drives Thought Leadership | TIAA Institute, https://www.tiaainstitute.org/publication/2020-tiaa-institute-gflec-personal-finance-index. Accessed 28 Apr. 2022.
- 37. "Financial Capability Study: U.S." Financial Capability Study, https://www.usfinancialcapability.org/results.php?region=US. Accessed 28 Apr. 2022.
- 38. WellRight. "4 Benefits of Financial Literacy Education at Work." Employee Wellness Programs | WellRight, https://www.wellright.com/blog/benefits-financial-literacy-education-work#:~:text=Fortunately%2C%20implementing%20a%20financial%20literacy,even%20improving%20employees'%20business%20acumen. Accessed 28 Apr. 2022.
- 39. "The Importance of Financial Literacy in Business | HBS Online." Business Insights Blog, 26 May 2020, https://online.hbs.edu/blog/post/importance-of-financial-literacy.
- 40. "FAQs SBA's Office of Advocacy." SBA's Office of Advocacy, https://advocacy.sba.gov/category/research/facts-about-small-businesses/faqs/. Accessed 28 Apr. 2022.
- 41. Murray, J. (2019). What does it mean to be self-employed? The Balance Small Business, 64–83. https://doi.org/10.4324/9780429289620-5
- 42. "MBO Partners State of Independence in America Report 2021 MBO Partners." MBO Partners, https://www.facebook.com/mbopartners/, https://www.mbopartners.com/state-of-independence/. Accessed 28 Apr. 2022.
- 43. Halpin, J., & Cook, M. (2010). Social Movements and Progressivism: Part Three of the Progressive Tradition Series. Center for American Progress, April 14, 2010
- 44. "The Fed Report on the Economic Well-Being of U.S. Households in 2020 May 2021 Dealing with Unexpected Expenses." Board of Governors of the Federal Reserve System,

https://www.federal reserve.gov/publications/2021-economic-well-being-of-us-households-in-2020-dealing-with-unexpected-

expenses.htm#:~:text=Forty%2Dfive%20percent%20of%20adults,who%20were%20not%20laid%20off. Accessed 28 Apr. 2022.

- 45. Compen, Boukje et al. "Improving Students' Financial Literacy by Training Teachers Using an Online Professional Development Module." Education economics. (2022): 1–25. Web.
- 46. LeBaron, A. B., Rosa-Holyoak, C., Bryce, L. A., Hill, E. J., & Marks, L. D. (2018). Teaching children about money: Prospective parenting ideas from undergraduate students. Journal of Financial Counseling and Planning, 29(2), 259-271. doi:http://dx.doi.org/10.1891/1052-3073.29.2.259
- 47. Batty, Michael, et al. "Experiential Financial Education: A Field Study of My Classroom Economy in Elementary Schools." Economics of Education Review, Elsevier BV, Oct. 2020, p. 102014. Crossref, doi:10.1016/j.econedurev.2020.102014.
- 48. Sconti, Alessia. "Digital vs. in-Person Financial Education: What Works Best for Generation Z?" Journal of Economic Behavior & Companization, Elsevier BV, Feb. 2022, pp. 300–18. Crossref, doi:10.1016/j.jebo.2021.12.001.