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# Impact Of High School Financial Education Courses On Post-Adolescents & Topics To Implement Into Their Curriculum

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## I. Introduction

According to the S&P Global Financial Literacy Survey, only 57% of U.S. adults are financially literate (Cummings, 2022). Financial literacy, defined as a person's capability to comprehend and apply financial concepts (Servon & Kaestner, 2008), is crucial for the young, as they face financial decisions that can have long-term consequences throughout their life (Lusardi, 2015). Additionally, it provides them with skills to navigate and make well-informed financial decisions that have a long-lasting impact. When students are not provided with the basic financial knowledge they are often unprepared and do not have the adequate skills and knowledge to make and face financial decisions that can have enduring long-term effects. This causes adults to often carry high amounts of student loans or credit card debt, which hinder them from future financial success (Farinella et al., 2017).

Furthermore, evidence from increased household bankruptcy rates, consumer overindebtedness, and the mortgage crisis provide evidence to support this goal of financial literacy and improved financial education programs (Huston, 2010). Therefore, financial education needs to be effective so that people can make informed financial decisions that will help them achieve financial success (Farinella et al., 2017). However, the current financial education system is insufficient, and the lack of clear guidance causes many young adults to be uneducated on important financial skills, which are crucial as they are interwoven and affect almost everything we do (Cummings, 2022).

This research study aims to determine the long-term impact of various financial education programs provided in high school on post-adolescent financial behavior and literacy and determine topics to implement into such financial classes to enhance their effectiveness. By providing practical and adequate financial education early on in students' lives, post-adolescents are encouraged to make informed financial decisions as they grow. This leads to the guiding research question: How does participating in various financial education programs during high school impact the financial literacy and financial behavior of post-adolescents? Additionally, what topics can be implemented into the curriculums to enhance the effectiveness of financial education programs?

## II. Literature Review Targeted And Non-Targeted Financial Education Programs

Past research on the effectiveness of various financial education programs provided in high school and their impact on high school students themselves falls into two categories: targeted or non-targeted research studies. A targeted study evaluates specific financial education programs by testing solely on the topics that were discussed in the program, while a non-targeted study evaluates the general financial knowledge of respondents.

A targeted study was conducted by Ehrlich and Guilbault (2017) on a financial education course for high schools provided by the New Jersey Institute of Technology (NJIT). The purpose of the course was to teach high school students the fundamental concepts of personal budgeting, financial management, and financial investment. The results of the pre-test and post-test indicated that the curriculum was effective in improving the financial literacy of high school students.Similarly, another targeted financial education program is the FYF program, which is a DVD personal finance program for high school teachers to use with their students. The purpose of the program is to assess whether FYF materials increased student knowledge of personal finance by a pre-test and post-test. The study revealed that financial education makes a positive and important contribution to a high school student's knowledge of personal finance through the FYF program (Breitbach & Walstad, 2016). The targeted studies assess the effectiveness of targeted financial education programs and they consistently demonstrate a positive relationship between teaching on specific financial topics and then testing on those same topics.

In contrast, non-targeted research studies analyzing general financial literacy levels often show a lack of positive correlation. For example, the results of the National Jump$tart Coalition survey, a national survey of high school seniors, revealed that the average response scored less than 50% correct on their 31-item instrument testing financial literacy in general. More importantly, there was no indication that students who had taken a financial course performed better on this instrument, suggesting that financial education programs fail to increase financial literacy and knowledge (Mandell, 2008). Similarly, another non-targeted study examined financial literacy using the most recent wave of the National Longitudinal Survey of Youth, with respondents between the age of 12-17 years old. Once again, the study found that financial literacy is low; fewer than one-third of respondents possessed basic knowledge of interest rates, inflation, and risk diversification (Lusardi et al., 2010). In conclusion, both of the non-targeted studies display a lack of financial knowledge.

**Counterargument**

In contrast to many experts' beliefs that financial education is crucial for financial development and knowledge, Buck (2022) believes that school-delivered financial literacy courses are largely ineffectual. He argues that waving mock budgets and shifting fake money around in the hopes of mastering financial knowledge is not sufficient. Students are likely to forget whatever instruction they received by lunchtime, let alone remember it years later when they need it. In agreement with Buck, another study suggests that financial education overall has a low chance of improving the financial knowledge of students in high school (Mandell, 2005). While sources such as those by Buck and Mandell discuss the barriers in financial education methods, integrating more applicable topics and strategies could improve their effectiveness by providing students with essential financial knowledge and skills.

**Hypothesis**

The hypothesis, supported by various past sources from the Introduction and Literature Review, is that financial education programs provided in High Schools have minimal positive effects on adolescents' financial literacy and behavior. They tend not to discuss applicable areas of knowledge, showing a need for an improved curriculum addressing practical financial topics.

**Addressing a Gap**

The sources presented in the literature review display a major gap in research. They show that much research is done on the effects of courses offered to high school students and their impact on high school students themselves, but no research is done on how such programs fare in the future and their long-term impacts. Amagir, et al. (2020) highlights this same gap by arguing that "Longitudinal experimental research is needed to investigate the long-term effects of specific financial education programs on financial knowledge, behavior, and attitudes" (p.39).

The Organization for Economic Cooperation and Development argues that assessing financial literacy is a key component to creating an effective financial literacy system, enabling policymakers to identify gaps ("Measuring Financial Literacy," n.d.). Furthermore, Farinella et al. (2017) find that there is not much data that studies the financial literacy of young adults and Huston (2010) states that the literature on the cause-and-effect relationship between financial education and financial literacy is particularly limited. Therefore, the results of this study will be able to fill the gaps identified above by the various scholarly sources and the literature review, assessing the long-term impact of high school financial education courses on financial literacy and behavior.

## III. Methodology

The goal of this research study is to fill a gap in research by determining the long-term impact of high school financial education courses on the financial behavior and literacy of post-adolescents. Additionally, determine topics to implement into the financial education programs to improve their effectiveness.

**Population**

The selection of post-adolescents instead of high school students (as commonly seen in many of the aforementioned studies) is justified due to their greater involvement in making financially related decisions compared to high school students. This decision enhances the results of this study by accurately assessing the impact of financial education programs on post-adolescents, who face real-world financial decisions more often than high school students. For this study, the post-adolescent age range will be defined as 18-29, as ages below 18 are considered adolescence and ages above 30 would be well into adulthood.

**Method**

It is extremely important to collect accurate and quantifiable data to analyze the relationship between financial education courses in high school and their effects on post-adolescents. Thus, the most optimal method

to address the research question was a mixed-method survey (see Appendix), with five quantitative questions and one qualitativequestion.

First, the survey (created through Google Forms) provides background information about this study such as the goal, research question, and definitions of various words to give context to participants. Then the survey confirms respondents' consent to participate in the study and asks demographic questions such as which specific financial education programs respondents participated in during high school, age, and gender. The survey asks five opinion-based quantitative questions and respondents are asked to choose a number on the Likert Scale from 1 to 5 based on their opinion of how effective the class was (1 being the least effective and 5 being the most effective, respectively). These five questions address the first aspect of the research question which is to determine the long-term impact of high school financial education programs on respondents' financial literacy and behavior.

Several topics are addressed in the multiple quantitative questions based on the Likert Scale (note: responses are opinion-based, not content-based). Such as the course's impact on financial behavior, personal finance management, financial literacy, financial decision-making skills, and budgeting abilities among post-adolescents. These various topics are chosen as they align with the overarching aim of understanding the impact of financial education courses on thefinancial literacy and behavior of post-adolescents.

The singular qualitative question addresses the second aspect of the research question: asking about the specific topics students believe should be implemented into the financial education program curriculum. This will involve analyzing responses to the open-ended questions to create a list of implementations needed for each course's curriculum curriculum.

To ensure privacy, this survey does not collect any personal information ensuring accurate and unbiased answers and discouraging the Bradley effect, the distortion of accuracy of studies caused by the reluctance of respondents to admit to a preference that is regarded as socially unacceptable ("Bradley Effect Definition," n.d.).

***Comparison with Other Methods***

The chosen opinion-based mixed-method survey is the most optimal method compared to alternative options. For example, a method used by Lusardi et al. (2010) was a survey in which questions tested the knowledge of fundamental financial concepts such as questions on interest rate, inflation, and diversification which were content-based. Another method used by Mandell (2008) was the Jump$tart National Survey of high school seniors testing the financial literacy of high school students through content-based questions. These studies utilize content-based questions to evaluate individuals' understanding of financial concepts. However this study's survey focuses on the opinions of individuals, providing accurate data in relation to the actual effectiveness of financial education courses through the opinions of post-adolescents. By conducting an opinion-based survey, this study aims to gain a comprehensive understanding of the impact of financial education programs, instead of just measuring knowledge through contentassessments.

**Data Collection**

To maximize the population represented by the sample size while keeping an accurate representation of post-adolescents in the United States, the survey was emailed to college professors across the United States. This was to ensure a wide range of responses that accurately represent the post-adolescent demographic in the United States. This survey was organized using Google Forms, through which data was collected over a two-month duration, providing sufficienttime to gather a significant number of responses.

**Data Organization and Processing**

The data from Google Forms was transferred to Google Sheets and organized based on the various financial education courses respondents had participated in. This type of coding allowed individual analysis of each course and avoided generalization, considering differences in the curricula of various courses. Google Sheets applied many functions to discover trends, patterns, and relationships by creating charts and graphs for each specific class. The charts and graphs were then color-coded in a gradient scale to better visualize trends in the quantitativedata.

**Limitations**

The primary limitation of this research study is sample selection bias. Sample selection bias is caused by a sample selection that does not accurately reflect the target population (Alexander et al., n.d.). Even though the survey was distributed to college professors nationwide to share with their students, there is a good possibility that some didn't share the survey, meaning the responses may disproportionately represent one geographical area more than another.

Furthermore, while post-adolescents make more day-to-day financial decisions than high school

students, there is a chance that they do not fully recall their high school experience in the specific financial education class. Another limitation is that the data is self-reported, potentially containing many sources of bias such as selective memory and exaggeration bias ("Organizing academic research papers," n.d.).These limitations could affect the accuracy of the findings and the ability to effectively answer the research question.

**Findings**

To address the research question and fulfill the research goal, an opinion-based mixed-method approach was used to conduct the survey.

**Findings: Demographics**

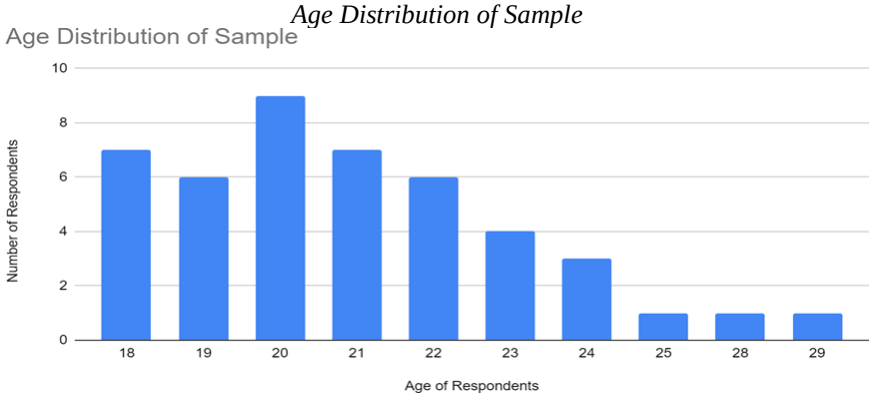
The demographics questions of the survey inquired about the age distribution of the sample, the gender, and the specific financial education class each respondent participated in during high school. The gender of the sample was deemed insignificant concerning financialliteracy thus it is not included in the data analysis.

***Age Distribution of Sample***

Figure 1 below displays the age distribution of the sample. All selected respondents are between the ages of 18 and 29. Note: six responses were received from ages 30 and older which were omitted from the data analysis as they would be irrelevant and non-applicable as ages 30 and above are not considered post-adolescents and thus these respondents would not correctly address the research question. Figure 1 displays the age distribution of the sample after six of thenon-applicable responses were removed.

**Figure 1**

*Age Distribution of Sample*

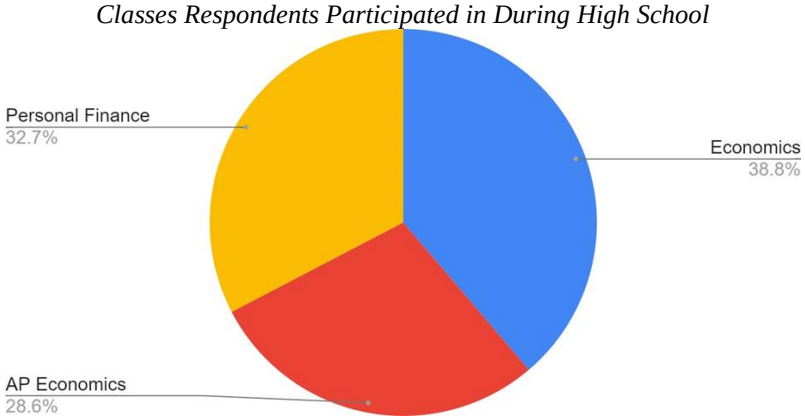



***Classes Respondents Participated in During High School***

Figure 2 below displays the various classes respondents participated in during high school. Some respondents participated in multiple financial classes during high school, resulting in the total number of classes surpassing the total number of participants. It is important to note that as previously mentioned, six survey responses were omitted from the data analysis, resulting in only the three classes being analyzed, leading Family and Consumer Sciences and Basics of Economics to be removed from the analysis. These three classes include AP Economics, Economics, and Personal Finance. The sample includes 28.6% AP Economics students, 38.8% Economics students, and 32.7% Personal Finance students.

**Figure 2**

*Classes Respondents Participated in During High School*



**Findings: Quantitative**

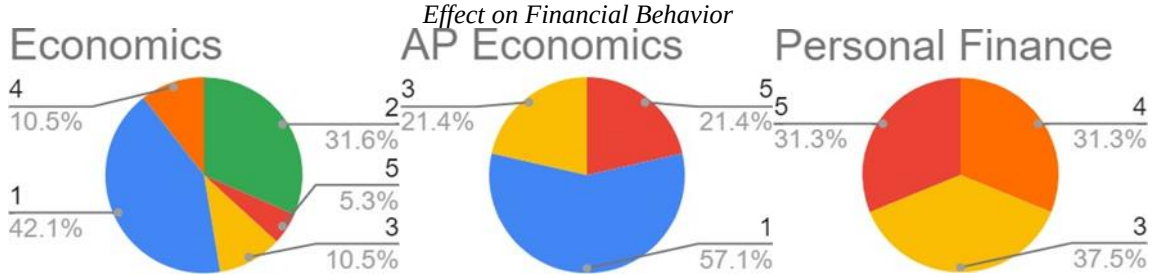
The quantitative data analysis process will assess each of the financial education classes separately to identify the shortcomings in each and avoid generalizations. For each of the five Likert scale quantitative questions, three graphs will be presented from the three different financial education classes (Economics, AP Economics, and Personal Finance). This method aims to identify the specific problems in each. Figures 3 through 7 display three pie charts each, representing students in Economics, AP Economics, and Personal Finance, with a corresponding label above each pie chart. Each number on the Likert scale is both color-coded and labeled numerically from 1 to 5: 1 (blue), 2 (green), 3 (yellow), 4 (orange), and 5 (red). For this study, numbers 1 (blue) and 2 (green) will be considered cool colors, and numbers 4 (orange) and 5 (red) will be considered warm colors. This gradient-based color-coded setup will help tovisualize trends and patterns.

***Effect on Financial Behavior***

Figure 3 below displays respondents' opinions on the topic of how participation in financial education programs during high school positively affected their financial behavior as post-adolescents, rated on a scale of 1 (low positive effect) to 5 (high positive effect). For Economics, 73.7% of participants believe that it has a low positive effect and for AP Economics, 57.1% believe that it has a low positive effect as well as they chose either 1 or 2 (cool colors) for their response. On the contrary, 62.6% of Personal Finance students believe that the class has a high positive effect because they chose 4 or 5 (warm colors).

**Figure 3**

*Effect on Financial Behavior*

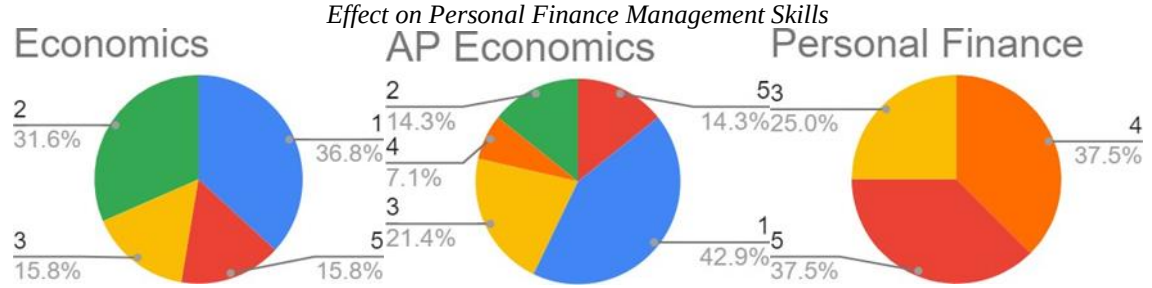



***Effect on Personal Finance Management Skills***

Figure 4 below displays respondents' opinions on their confidence in managing personal finances after completing high school, rated on a scale of 1 (low confidence) to 5 (high confidence). For Economics, 68.4% and similarly, with AP Economics, 57.2% of students chose either 1 or 2 (cool colors) meaning the program did not teach them personal finance management skills. Contrastingly, all Personal Finance respondents chose 3 and higher, with 75% of students choosing 4 or 5 (warm colors), displaying that the class provides students with adequate skills tomanage personal finances.

**Figure 4**

*Effect on Personal Finance Management Skills*

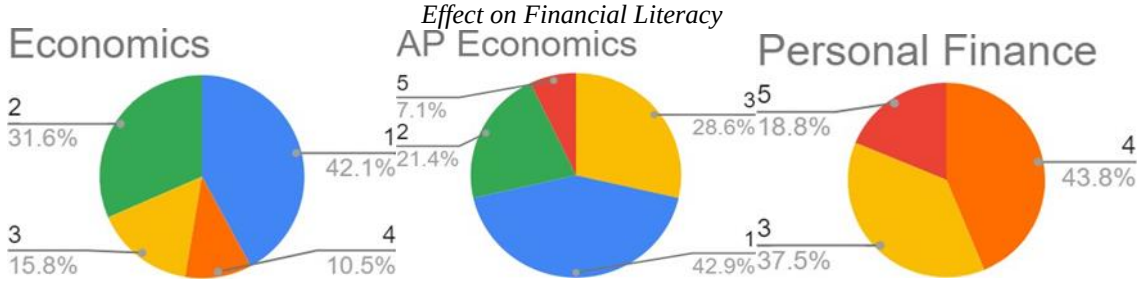



***Effect on Financial Literacy***

Figure 5 below displays respondents' opinions on the effectiveness of the specific financial education programs they attended in high school on their financial literacy, rated on a scale of 1 (low effectiveness ) to 5 (high effectiveness). For Economics, 73.7%, and for AP Economics, 64.3% of respondents felt that the financial education class had a low effect on their financial literacy because they chose either 1 or 2 (cool colors). While 100% of Personal Finance students chose numbers 3 and higher from which 62.6% thought it had high effectiveness on their financial literacy as they chose 4 or 5 (warm colors).

**Figure 5**

*Effect on Financial Literacy*



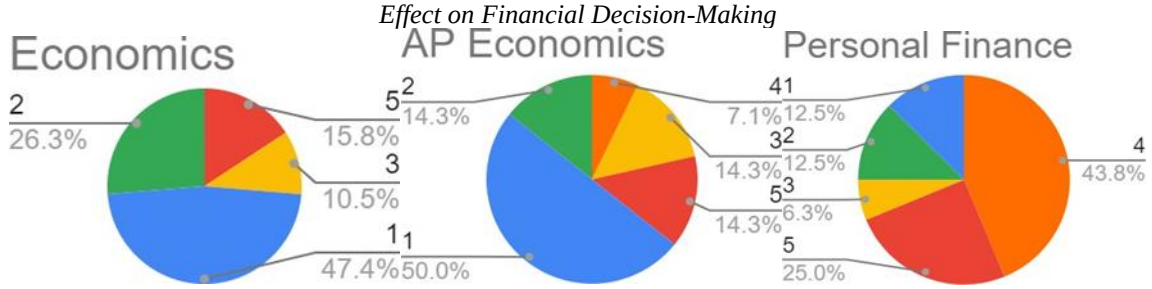

Effect on Financial Decision-Making

Figure 6 below displays particpants's answers to a question asking how often they apply the knowledge gained from high school financial education programs to help financial

decision-making now, rated on a scale of 1 (not often) to 5 (very often). From Economics, 73.7%, and AP Economics, 64.3% of students chose answers between 1 and 2 (cool colors) showing that the topics taught in those classes do not aid in financial decision making skills. On the other hand, 68.8% of Personal Finance students chose 4 or 5 (warm colors) displaying that almost 70% of Personal Finance students believe that they use the knowledge gained from the class to help in financial decision-making very often.

**Figure 6**

*Effect on Financial Decision-Making*

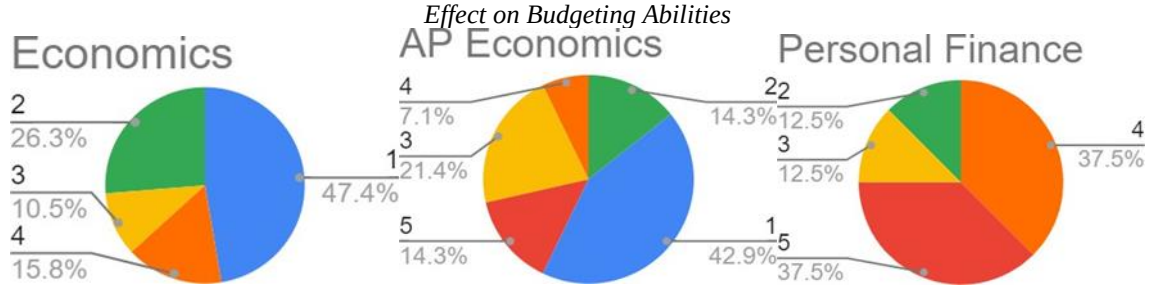



***Effect on Budgeting Abilities***

Figure 7 below displays respondents' answers to a question asking about how the specific financial education program has positively affected their ability to create and stick to a budget as a post-adolescent, rated on a scale of 1 (low positive effect) to 5 (high positive effect). 73.7% of Economics respondents chose 1 or 2 (cool colors) while none chose 5. Similarly, 57.2% of AP Economics respondents chose 1 or 2 (cool colors), this displays that both Economics courses do not positively affect students' ability to create and stick to a budget. Personal Finance students display the opposite as 75% of Personal Finance students believe that class had a high positive effect on their ability to create and stick to a budget as they chose either 4 or 5 (warm colors).

**Figure 7**

*Effect on Budgeting Abilities*




**Discussion: Quantitative**

Five topics addressed in the quantitative data analysis were financial behavior, personal finance management skills, financial literacy, financial decision-making skills, and budgeting abilities. Both Economics and AP Economics scored extremely low on all topics. In contrast, Personal Finance classes displayed a significant positive correlation between the class and the impact it had on students concerning the five topics.

**Findings: Qualitative**

The singular qualitative question focuses on identifying new topics for implementation for each class's curriculum for a solution. Responses to the question, "What topics do you believe would have better prepared you and should be implemented into the financial education programs curriculum?" will be analyzed by the class to better understand the specific improvements needed for each class to enhance their effectiveness.

***Economics***

Overall, respondents who took Economics said that topics such as"budgeting", "money management", "trust funds, mutual funds", "credit knowledge", and "trading and the stock market" should be implemented into the Economics class curriculum. The different topics listed above were very common and redundant in many of the responses.

One economics participant said, "If I knew more about credit importance I wouldn't have waited till 20 to start building credit. Our high school mainly told us never to get a credit card, I will admit most students shouldn't but if used responsibly it can open a window to building strong credit. I'm 28 now and have perfect credit but, the length of credit history being under 7 years was holding me back for so many years. Those two extra years could have saved me a lot."This response displays that high school economics classes should discuss the importance of understanding credit scores to avoid potential setbacks. Another respondent says, "I feel like the financial education curriculum needs to cover real-life topics so that people have a better understanding of how to manage their money". These responses reiterate what was displayed in the pie charts: that there is a need for a more applicable curriculum in high school so students are prepared to make financial decisions and have basic financial skills as they enter adulthood.

***AP Economics***

Overall, the respondents who took AP Economics said that topics such as "stock market literacy", "investment accounts", "macroeconomics and personal finance ", "budgeting", "loans", "credit scores" and "taxes" should be implemented into the AP Economics curriculum. These topics listed above were repetitive in many responses, thus they were combined to createthe list above.

Going more in-depth, one respondent stated, "Personal financing in general would have better prepared me. As a student who has taken AP Economics as my required economics credit, this class has taught me a lot about the economy but not much about how I can improve my wealth". These responses display a large deficit in the effectiveness of the AP Economics course in improving the financial knowledge of students. Similar to the findings of this study concerning both Economics courses, Farinella et al. (2017) states that prior studies of high schoolstudents consistently find that they are not receiving a good education in personal finance.

***Personal Finance***

Students who participated in Personal Finance classes during high school had fewer reservations about the curriculum than the other classes, many participants even praised the class. One respondent said "The personal finance class was very helpful for me, helping to create budgets and teaching me about taxes but we barely learned anything about investing in stocks and cryptocurrency and how to gain interest in our money. Such topics would have been good to learn". Another respondent agrees with the previous respondent by saying that learning "how to invest in stocks safely" should be implemented. Overall the respondents felt that investing in "stocks" and "cryptocurrency" should be implemented into the curriculum. The areas for implementation for Personal Finance classes, in comparison with Economics and AP Economics, are drastically less, and this same relationship is seen and reiterated throughout Figures 3 to 7.

**Solution**

A solution to enhance the effectiveness of various financial education classes and to address the second part of the research question is to implement the topics given by various students above. To address enhancing the effectiveness of both AP Economics and Economics (either one of these is required in a majority of states during high school) on the financial literacy and financial behavior of post-adolescents the curriculum should implement adding topics such as the stock market, credit scores, investment accounts, personal finance, budgeting, taxes, money management, trust/mutual funds, loans and credit knowledge. Both Economics and AP Economics were addressed together as students' suggestions were very similar for each. To enhance the effectiveness of Personal Finance, topics about E-commerce, such as stocks and cryptocurrency, should be discussed. If these changes are implemented, high school students will be better prepared to make reasonable financial decisions and have basic financial knowledge.

Similarly to the proposed solution for the change in curriculum, Herman and colleagues identify 6 topic areas that should be at the core of every financial education curriculum. These include 1, earning and income; 2, investing and saving; 3, spending; 4, credit and borrowing; 5, financial decision-making and financial

responsibility; and 6, risk management and insurance (Herman et al., 2015). Personal finance classes address many of these essential topics but economics classes lack them. Thus, implementing these topics into the curriculum will addressmany of these core topics, making them more applicable and effective.

It is important to recognize, though, that Economics classes are not made to teach personal finance skills, because Economics is not about personal finance. Currently, 28 states require Economics classes to graduate ("Survey of the States," 2024), which does not provide students with adequate financial knowledge for their future. Another viable solution, although it does not directly address the research question, is to mandate personal finance as well.

Economics classes are not sufficient for learning personal finance skills for students.

## IV. Conclusion

The goal of this research project was to fill a research gap on the long-term effectiveness of various high school financial education programs. This was done by identifying the long-term impacts of high financial education programs on post-adolescent financial literacy and financial behavior and identifying what topics should be implemented into the curricula of the financial education classes to enhance their impact.

The original hypothesis was proven partially correct by the responses relating to AP Economics and Economics, from which both did not seem to make any significant positive impact on students' financial behavior and literacy abilities. However, Personal Finance courses did seem to have a significant positive effect on students' financial literacy and behavior, meaning the initial hypothesis was not fully accurate.

The answer to the first part of the research question is that both Economics and AP Economics have extremely low impacts on different aspects of post-adolescent financial behavior and literacy. In contrast, Personal Finance classes displayed a significant positive correlation between the class and the impact it had on post-adolescence. The answer to the second part of the research question is to implement or add new topics (listed above for each class) into the curricula of financial education classes to enhance their effectiveness. Another solution, which does not directly address the research question, is to mandate the Personal Finance class. The Personal Finance class is more successful in teaching basic and important financial skills, whereas both Economics classes are not.

## V. Limitations

The primary limitation of this study is the lack of awareness and knowledge regarding the concentration of the distribution of the survey. Incorporating a question on respondents' locations provides a better understanding of the distribution of the survey and its potential impact on the finding's accuracy. However, due to privacy concerns, the location of respondents was not collected. Another limitation is the time gap between when the students took the class and when they took the survey. Post-adolescents may not fully recall the effectiveness of the course which could alter the results. Another limitation is the teaching style, students may have retained less or more information based on the teacher and their teaching strategies, which could also skew results.

## VI. Implications

The results of this study reveal concerning trends regarding the effectiveness of various financial education programs provided in high school on post-adolescents. Many common financial education classes, such as Economics and AP Economics, fail to provide sufficient financial skills, which leaves students unprepared to face important financial decisions in the future.

Regarding education and policy professionals involved in financial education, this study displays the need for changes in policy, mandates, and curriculum enhancements for such courses. If action is not taken, this concerning trend will continue to negatively impact post-adolescents creating a world of financially illiterate adults.