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# Financial Literacy in South Carolina

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FINANCIAL LITERACY IN SOUTH CAROLINA

By

Connor Pestovich  
and  
Matthew Travis

Submitted in Partial Fulfillment  
of the Requirements for  
Graduation with Honors from the  
South Carolina Honors College

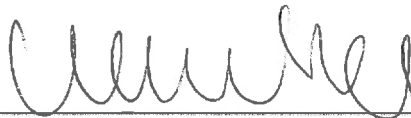
May, 2018

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## **Executive Summary**

Being wise with finances is a skill that many people tend to overlook as important. There are days when an individual can avoid using certain subjects learned in high school, but very rarely, if ever, is there a day when topics of finance are not used. This could be anything from purchasing food, driving to work, working on a computer, or receiving a paycheck. While most would agree that the ability to handle money wisely is very important, these concepts do not have a high priority of being taught in high schools in South Carolina. More than that, many parents are not having regular conversations with their children about financial topics. So this large discrepancy of where high school students in South Carolina are with their knowledge of financial topics, and where they need to be in order to be successful financially was the reason for our research. Our goal was to better understand where high school students were with their knowledge of financial topics. We accomplished this by sending out surveys to schools in South Carolina and then analyzing the results. The purpose of this thesis paper is to explain these findings in more detail.

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## Abstract

There are certain practical skills that nearly every member of society must possess to be successful. One of these practical skills is personal financial literacy. The statistics for lack of financial literacy in American adults are staggering: 76% of Americans are living paycheck-to-paycheck, fewer than 25% can cover their expenses out of their bank account, and 27% have no savings at all (Johnson, CNN). We, the authors, have witnessed in our internships first hand that financial instability leads to family instability. Financial instability can lead to an untold number of troubles for people and their families including debt, divorces, and stress related to finances. A simple knowledge and understanding of basic financial skills can reduce, and even eliminate, many of these predictable struggles due to finances.

The previous statistics illustrate the failure to educate prior generations on financial topics. Our goal is to identify strategies by which to prevent this failure to educate future generations on financial topics; however, we must first understand the current situation of financial education. To understand the current landscape of financial education, we set out to quantify the financial knowledge of high school students, and to determine where, if at all, high school students are receiving education on personal finances. Furthermore, we researched the current governmental policies in place to determine the extent of governmental action in providing current or future formal financial literacy courses for high school students.

Our belief is that there is a deficiency in the teaching of financial literacy in high schools in South Carolina. Using both our primary and secondary research, we hope to

start the conversation with educational leaders on the benefit of financial education, as well as, help break the stigma of avoiding discussing financial matters within families.

Our hypothesis is that high school students in South Carolina have no personal finance education sources, neither from their schools nor families; and therefore, these students are unprepared to handle their own finances in the future.

To test our hypothesis, we utilized a survey disseminated to students across the state of South Carolina that included both quantitative and qualitative questions. Using this survey, we have concluded that high school students in South Carolina do not have or utilize personal finance education sources, and that this has contributed to a lack of understanding of personal finance topics including budgeting, debt, and taxes.

## Introduction

As part of the South Carolina Honors College requirements, there must be primary research conducted and documented in a thesis. Since we are both South Carolina Honors College students, the following literature serves as our thesis. The opportunity to have supported research opportunities does not present itself often, so we decided that we wanted to focus our research on something that could have a significant positive impact on the community of South Carolina. At the same time, we also wanted to utilize our academic expertise in finance. At the intersection between the community's need and our understanding of finance is financial literacy. We are both finance majors in the Darla Moore School of Business with future aspirations to pursue careers in the finance industry. With our significant interest in finance, both of us have previously had hands-on financial literacy educational outreach to students. Combined, we have had multi-year experience in educating students in personal financial literacy topics in two different states, including South Carolina.

Our most important goal for this thesis was to have the opportunity to make a lasting long-term impact on the financial well-being of individuals in South Carolina. While our previous work revolved around the actual outreach activities, we wanted this thesis instead to focus on understanding the financial preparedness of South Carolina's high school students, who we deemed the most important population to prepare for handling personal finance, and identifying the avenues through which the students receive financial education. Understanding the preparedness of South Carolina students will allow us to utilize secondary research to recommend future steps to better prepare South Carolina's students for financial prosperity.

In Standard and Poor's Global Financial Literacy Survey, the United States was ranked as one of the most financially literate countries in the world (8). However, the United States is still only considered 57% financially literate by Standard and Poor's survey (25). It is abysmal that nearly half of the adult population of the United States is considered illiterate in personal finance, an aspect of life that nearly every adult has some responsibility in managing. Before we can sweepingly declare that changes must be made to develop personal financial management capacity, our research goal is to understand if South Carolina's high school students deviate from the national norm of being financially underprepared. Then we can use this information to prepare recommendations for the future of financial education in South Carolina.

To measure the financial preparedness of high school students in South Carolina, we developed a 28-question survey. This survey was distributed across the state with the help of South Carolina's social studies director, Mrs. Chanda Robinson. We received over 225 responses, and with this information we analyzed the financial preparedness of South Carolina high school students in order to further identify if there were resources that could be improved to better prepare high school students to undertake their personal finances in the next few years.

We are extremely pleased to have been given the opportunity to conduct this primary research, and present our findings in the following thesis. None of this would have been possible without help from a few individuals. Our thesis director, Janice Fergusson, Senior Lecturer in the Darla Moore School of Business, was instrumental in helping guide us through the planning and execution of the whole project. We also appreciate Laura Self, lecturer in the Darla Moore School of Business, for assisting in the



review process of the thesis. Further, we would have been unable to successfully distribute our survey, the basis of our research, without SC Economics connecting us with Mrs. Chanda Robinson who was able to help us receive responses on our survey from across the state. Thank you to all of those who assisted us in this research process.

### **Methodology**

To create a survey that would be statistically accurate and allow us to draw conclusions about South Carolina high school students' understanding of financial literacy, we needed to follow certain guidelines and statistical procedures before, during, and after administering this survey. The following section details how we went about ensuring an accurate survey.

We first needed to define the variables in our research. The population we were seeking to better understand by conducting this survey were all high school students in South Carolina. We decided on a confidence interval of 95%, which ensured that we could be very confident that our survey results were indicative of the true population averages. Our sample size needed to be large enough to be representative of the population of high school students in South Carolina. We needed over 100 students to respond to the survey for it to be statistically accurate, and over 225 students responded. We also needed to establish a common benchmark for our data to determine the financial understanding of these students. For this, we established that financial literacy is just as important for students as reading literacy. In South Carolina there is a standardized SC READY English language arts (ELA) test that is administered to students until the 8<sup>th</sup> grade. Since we were unable to determine the financial literacy rate in South Carolina for high school level students, we utilized the 8<sup>th</sup> grade performance on the SC READY ELA test to set a benchmark for the literacy rate we would expect from South Carolina students. From years 2015-2016, 77.6% of students approached or exceeded the ready level of literacy as determined by the state (Spearman 13). We rounded this number to 75%, which means for our null hypotheses, we used 75% as what would be “expected” in the state for financial literacy. We used this benchmark to decide if our individual

hypothesis for each question was statistically different or insignificantly different. For the first three survey questions, since there is no “correct” answer for qualitative questions, we had to create a null hypothesis that seemed to fit the population of South Carolina.

After these parameters were in place, we began to form our survey. Our survey included 28 questions, including 3 demographic questions and 25 qualitative and quantitative questions. None of the questions, or series of questions, could be traced back to the respondent so that our survey would be completely anonymous. Our survey, being the primary source of research for this thesis, needed to be compliant with the University of South Carolina’s survey requirements, which includes the Institutional Review Board certification.

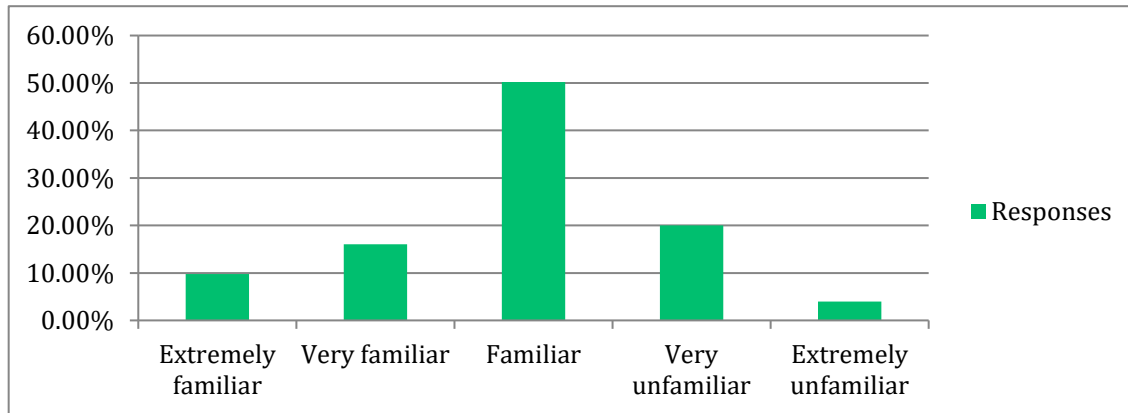
The final step in our primary research, before presenting our findings, was to analyze the data with the parameters we had previously established. We established these parameters by using our statistical understanding to find values such as the z-scores, p-values, and alphas. We could then compare the sample statistics we found in our research to the overall population. Later in this paper, we will expand on each question in our survey to include the statistics behind them and our conclusions.

**Statistical abbreviations and their meaning used throughout the paper:**

1.  $H_0$  = Null Hypothesis. This is the hypothesis where there is no significant difference between the populations that are being examined (i.e. our sample and the population of high school students in South Carolina) and any difference is solely from error.
2.  $H_a$  = Alternative Hypothesis. This is the hypothesis that is to the contrary of the null hypothesis (i.e. the results are from real effects, not simply error).
3.  $\bar{X}$  = Sample Mean. This is the average we observed from our sample that can be projected to observe the average of the population.
4.  $\mu$  = Population Mean. This is the average of the population that we set as the null hypothesis value. This is the value that we are trying to find the true parameter of by using statistics to either accept or reject the null hypothesis in favor of the alternative.
5.  $P$  = P Value Statistic. This is a statistic measure of the percentage of values that are “correct.”
6.  $P_0$  = P Value Statistic Null. This is the percentage of the population that we set as the null hypothesis value. This is like the  $\mu$ , except with percentages instead of averages.
7. STD dev = Standard Deviation. A number calculated to show the extent of deviation for a set number of values.
8.  $Z$  = Z Score (standard score). This number indicates how many standard deviations a value is away from the mean.
9. P-Value is the probability of observing a test statistic at least as large as the one calculated.

**We will now present the survey questions, responses, and analysis for each topic.**

**Question 1:** How familiar are you with basic financial principles such as budgeting, saving, and investing?

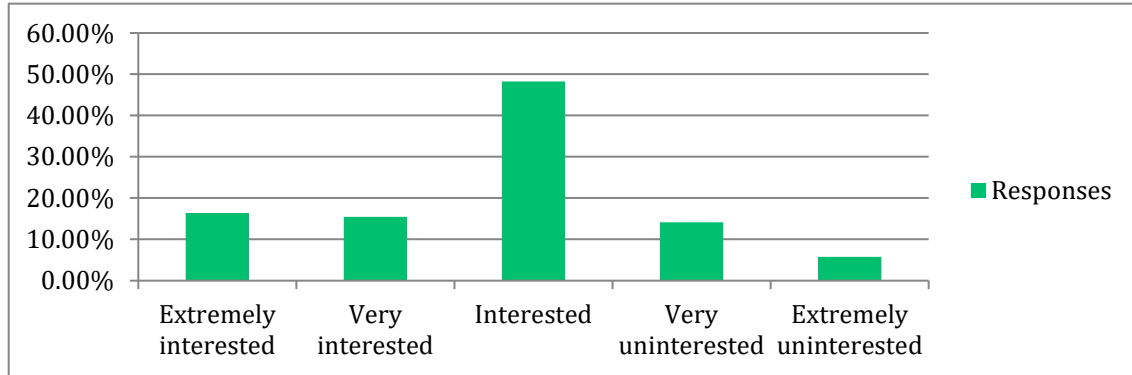


For question 1, we wanted to find out how much students in South Carolina thought they knew about basic financial concepts such as budgeting, saving, and investing. 76% of students we surveyed said they were at least familiar with basic financial principles. Our survey questions encompass these principles that students say they are familiar with. We wanted to ask this question first to get an unbiased estimator of where students perceive their understanding of financial principles.

Responses		Statistics	
Answer Choices	Percentage	Ho	$\mu = 2$
Extremely familiar	9.78%	Ha	$\mu > 2$
Very familiar	16.00%	X	2.92
Familiar	50.22%	$\mu$	2
Very unfamiliar	20.00%	STD Dev.	0.17
Extremely unfamiliar	4.00%	Z	5.51
		P-value	0

We set the null hypothesis as  $2^*$  because we believed that students should be very familiar or extremely familiar with basic financial topics. It is important to note that we set our alternative hypothesis as  $\mu > 2$ , which means we believed that students were not as familiar with these concepts as they should be. The p-value of 0 indicates that these students were less familiar with financial concepts than the base level financial literacy rate we set forth in our hypothesis.

\*We denoted “Extremely familiar” as 1, “Very familiar” as 2, “Familiar” as 3, “Very unfamiliar” as 4, “Extremely unfamiliar” as 5.

**Question 2:** How interested are you in learning about financial topics?

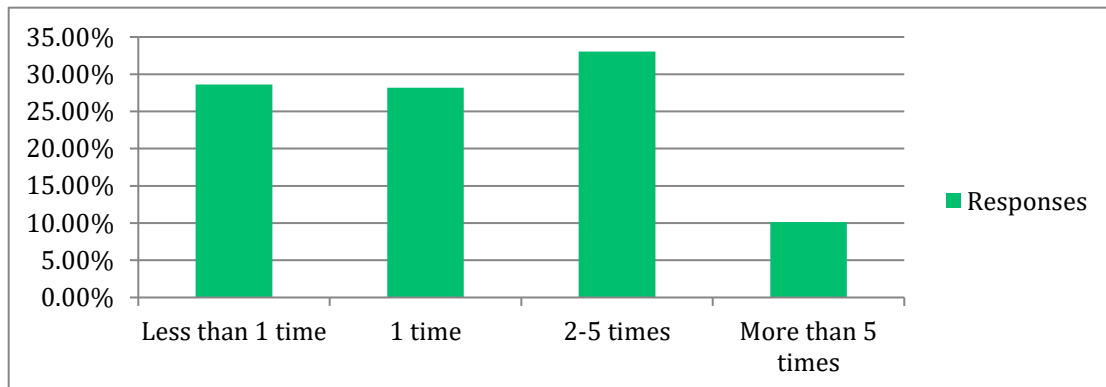
Our second question was trying to better understand if students would be interested in taking a formal financial literacy course if one was offered by their school. About 80% of students said they were at least interested in learning about financial topics. We believe this is a very positive sign that the target audience we are trying to educate about finances are, at least for the most part, open to the idea of learning more about these topics. Beyond the possible need for students to be learning this information, there is also an interest in this area that curriculum creators may not be aware of currently.

Responses		Statistics	
Answer Choices	Percentage	Ho	$\mu = 3$
Extremely interested	16.37%	Ha	$\mu < 3$
Very interested	15.49%	X	2.77
Interested	48.23%	$\mu$	3
Very uninterested	14.16%	STD Dev.	0.137
Extremely uninterested	5.75%	Z	-1.65
		P-value	0.050

We set the null hypothesis as  $3^*$  because we did not know the population mean, so we assumed it was the “average” or center of the data (3). We set our alternative hypothesis as  $\mu < 3$  because we believed that students would be more interested than not in learning about finance and how it works. The p-value of about .05 does not statistically conclude anything, yet does show that most of the students are interested.

\*We denoted “Extremely interested” as 1, “Very interested” as 2, “Interested” as 3, “Very uninterested” as 4, “Extremely uninterested” as 5.

**Question 3:** About how many times this past month did your parents talk with you about finances?

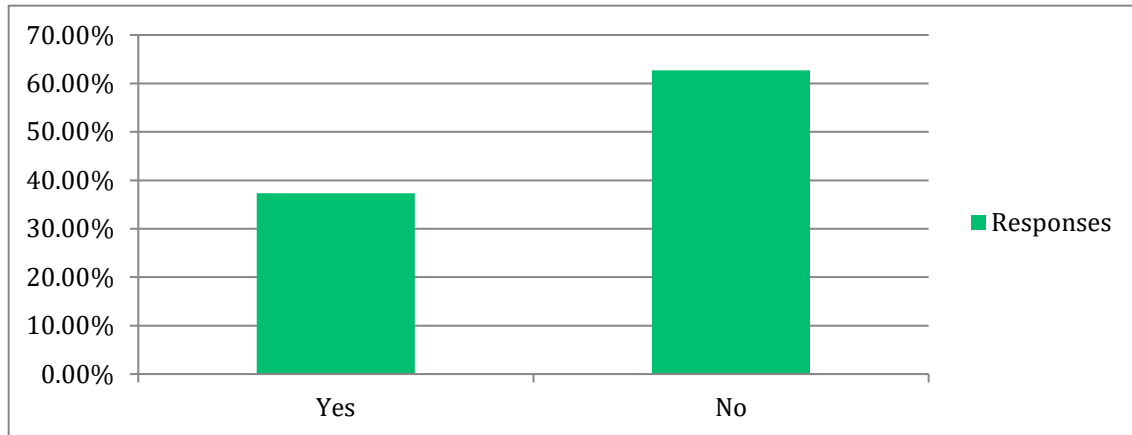


With this question, we wanted to find out if parents were talking to their children about finances, and if so, how often. Based on the responses, the average number of conversations between the adults of the household and the students about finances was about two times per month, which is very important data when looking at the possible change that could come out of this research. Students are provided everyday with opportunities to learn about how they should live with their finances, either wisely or unwisely from our society, with most students not having regular conversations with their parents about how to live prudently with finances. The “burden” of teaching the next generation how to live prudently with their finances is not solely on the school, but starts in the home.

Responses		Statistics	
Answer Choices	Percentage	Ho	$\mu = 2$
Less than 1 time	28.63%	Ha	$\mu < 2$
1 time	28.19%	X	2.25
2-5 times	33.04%	$\mu$	2
More than 5 times	10.13%	STD Dev.	0.12
		Z	2.13
		P-value	0.017

We set the null hypothesis as  $2^*$  because we believed that students are not being taught by their parents about finances. The p-value of about 0.02 indicates that parents talked to the students slightly more than we anticipated, yet the conversation is still happening far less often than it should.

\*We denoted “Less than 1 time” as 1, “1 time” as 2, “2-5 times” as 3, “More than 5 times” as 4.

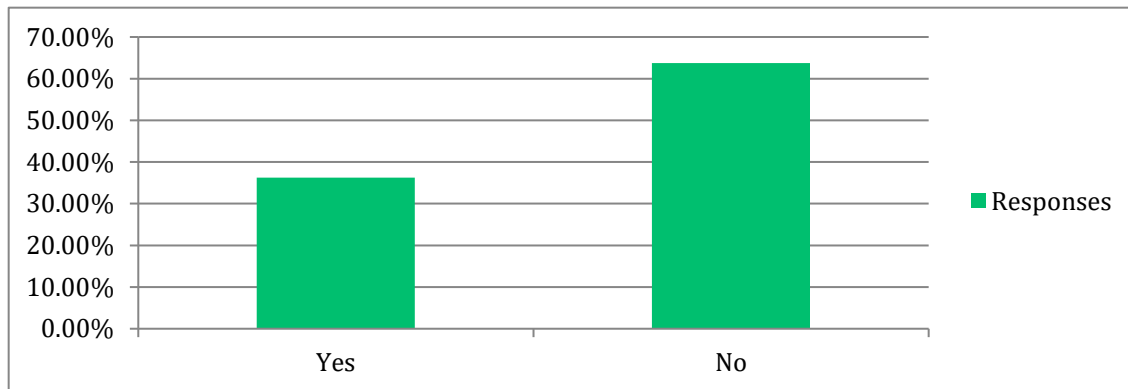
**Question 4:** Has your school taught you about budgeting?

Finding out if, from the students' perspectives, schools have been teaching students about budgeting was very important. This question was the basis of our recommendation (to be discussed later in the paper). Knowing that only 37% of the students we surveyed have been taught about finances in school (or remember being taught) shows that there is a deficiency in the importance that educators are placing on financial literacy.

Responses		Statistics	
Answer Choices	Percentage	Ho	$P = .75$
Yes	37.33%	Ha	$P \neq .75$
No	62.67%	P	0.37
		P0	0.75
		STD Dev.	0.03
		Z	-13.05
		P-value	0.000

We set the null hypothesis as 75% because we believed that students should be as familiar with financial literacy topics as they are with reading literacy. Because 63% of students said that schools had not taught them about finances statistically shows that the majority of students in South Carolina are not being taught something that will be required information once they become financially independent. There is a real need for education that may start in the home with conversations (discussed previously), but there also needs to be formal education in the classrooms.



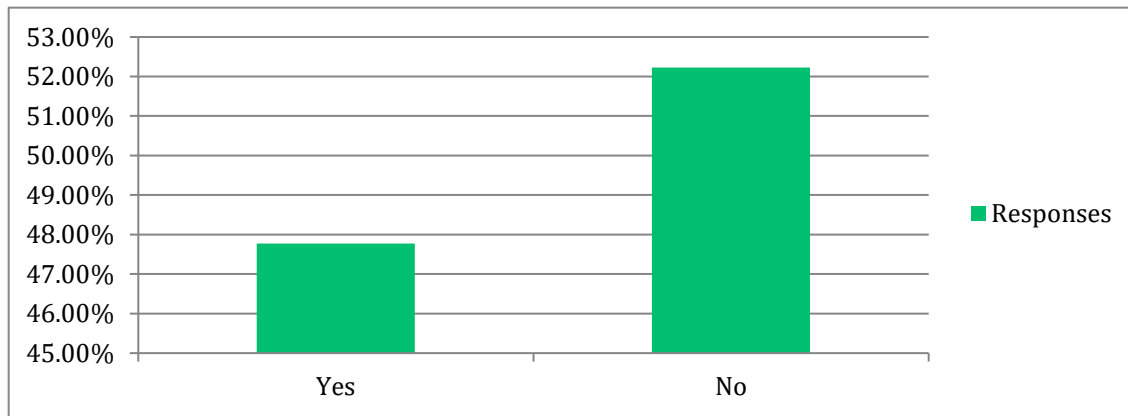
**Question 5:** Has your school taught you about debt?

Similar to whether or not students have been taught about finances (budgeting) in general, we chose to focus on a particular area, one that if students are not taught, will more likely than not lead to many hardships and financial troubles in the future – debt. Debt is a financial instrument that can be used for financial gain, but if not used with caution, can be disastrous financially. If students are not learning about debt and other financial instruments, how can we expect them to succeed when they are bombarded with advertisements to use these products in the future?

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Yes	36.28%	Ha	P ≠ .75
No	63.72%	P	0.36
		P0	0.75
		STD Dev.	0.03
		Z	-13.44
		P-value	0.00

As one might expect, a similar (almost exact) percentage of students said that their school was not teaching them about debt or budgeting. From a society with one of the largest economies in the world, this might be one of the greatest weaknesses - not teaching the next generation about what it means to live financially sound. By not teaching about debt, not only is the user of debt hurt but also the economy, for when people are in debt, they will at some point have less disposable income, which will hinder the growth of the market from discretionary spending.

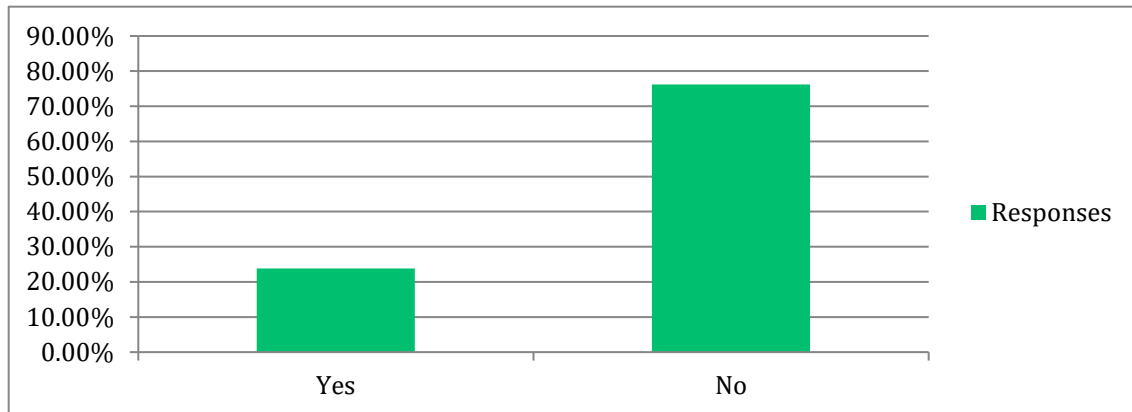
**Question 6:** Would you feel comfortable handling all aspects of your finances within the next year?



Per the demographics question (later in the paper), over 40% of the respondents were seniors. Of those seniors, 51 out of the 95 respondents answered that they would not be comfortable handling all aspects of their finances within the next year which paints a very clear picture of the lack of financial preparedness of students. If there were a formal financial literacy class that was required in schools, it is very likely that the number of respondents who responded negatively would drastically decrease.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Yes	47.77%	Ha	P ≠ .75
No	52.23%	P	0.48
		PO	0.75
		STD Dev.	0.03
		Z	-9.41
		P-value	0.00

Even excluding 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> graders (although it could be argued that some students will be working within the next year, regardless of their age), it is statistically significant that 12<sup>th</sup> grade students in South Carolina are not financially prepared. A positive angle to examine while analyzing the answers to this question is to see the opportunity for growth in the educational system by incorporating financial classes into the curriculum.

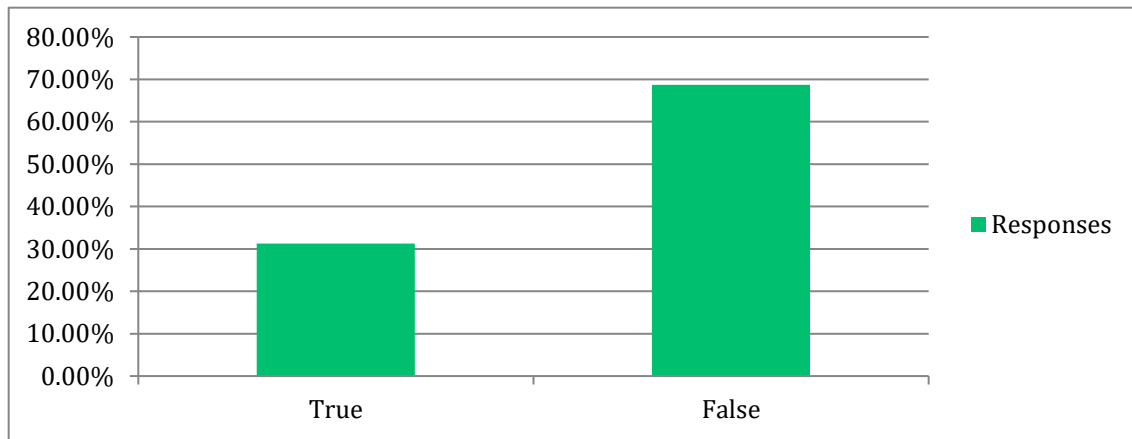
**Question 7: Do you use a credit card?**

With this question, we wanted to better understand the extent to which students in South Carolina were already exposed to one of the most common forms of debt, which is a credit card. Only about 24% of the students said they currently use a credit card. While one out of every four students may not seem like a lot, given the responses to previous questions regarding debt, the students that have credit cards are likely not using them wisely or with their financial future in mind, and those who are not using one simply may not have had an opportunity yet.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .62
Yes	23.77%	Ha	P ≠ .62
No	76.23%	P	0.24
		P0	0.62
		STD Dev.	0.03
		Z	-11.76
		P-value	0.00

We set the null hypothesis as  $p = .62$  because across the U.S. population, about 62% of Americans use credit cards. The fact that about 24% of the students responded “yes” to using a credit card shows that these credit card companies have already begun developing strategies to acquire customers younger, in hopes of creating loyal, lifelong customers. If the students are more than likely (62% of Americans is “more than likely”) going to use financial products such as credit cards, we need to prepare them for the responsibility that such products require of the user.

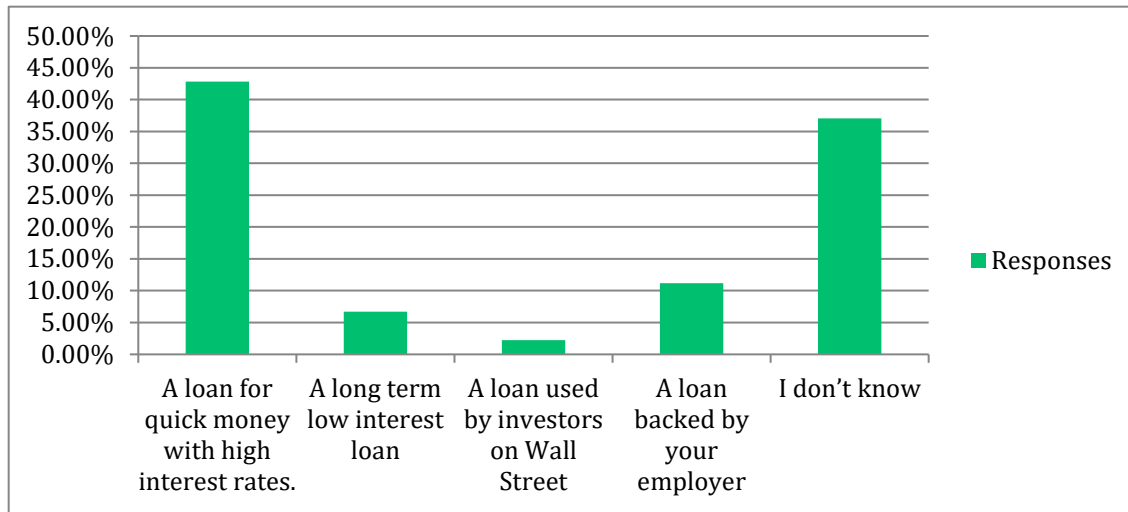
**Question 8:** If someone borrows money on a credit card, they only have to pay back the amount they borrowed.



To determine if students understand basic financial concepts, we asked basic financial questions to see how well they responded. Question 8 is a great example of a basic financial concept that should be fairly understood by high school students (especially those who say they are at least familiar with basic financial topics). The fact that 31% of the students surveyed answered “true” to this question statistically shows that students did not grasp this concept per the benchmark of the 75% financial literacy rate.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
True	31.28%	Ha	P ≠ .75
False	68.72%	P	0.69
		P0	0.75
		STD Dev.	0.03
		Z	-2.18
		P-value	0.03

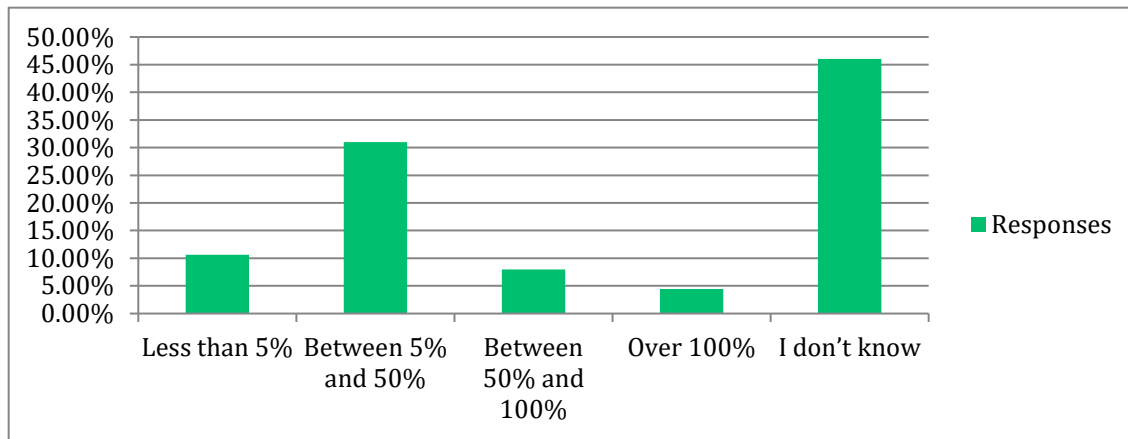
As with each of the questions, the goal was to better understand where students are with regards to their overall knowledge of financial concepts. Even while the 31% of students answering this question is in the minority, it still means that 31% of the many high school students in South Carolina may be in danger of misunderstanding and/or misusing a credit card.

**Question 9:** Which of the following accurately describes a payday loan?

A payday loan, as defined by Oxford Dictionaries is “a relatively small amount of money lent at a high rate of interest on the agreement that it will be repaid when the borrower receives their next paycheck.” A common misunderstanding of payday loans is that they are similar to auto loans with respect to their interest payments. The truth about payday loans is that they are normally targeted at people who have less education or need quick cash, and this population is more vulnerable to being taken advantage of in the marketplace for loans. Another interesting topic to note on payday loans is that the stated interest rate is normally for the period of the loan, not annual, as a common way for these companies to deceive customers. For example, a payday loan may be for \$2,500 for two weeks charging 16% interest (APR of 400%). 37% of students surveyed did not even attempt to answer this question, showing a lack of knowledge surrounding this dangerous and predatory lending practice.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
A loan for quick money with high interest rates.	42.86%	Ha	P ≠ .75
A long-term low interest loan.	6.70%	P	0.43
A loan used by investors on Wall Street.	2.23%	P0	0.75
A loan backed by your employer.	11.16%	STD Dev.	0.03
I don't know.	37.05%	Z	-11.11
		P-value	0.00

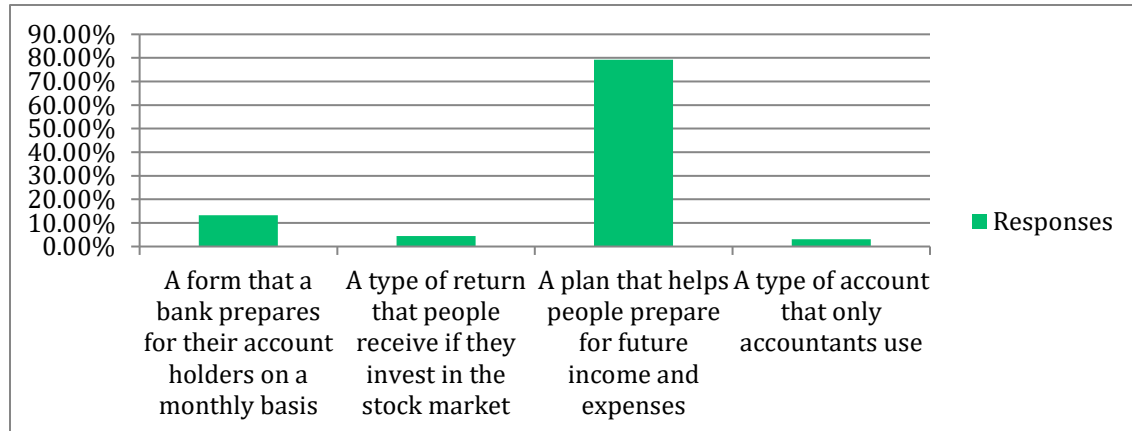
**Question 10:** The average payday loan in America has an annual interest rate of which of the following:



Many people don't understand the basic implications of debt, yet use debt as a primary means to acquire the lifestyle they choose. Using debt in general, if not properly understood, can be a problem even when dealing with a credit card that has low interest rates, not to mention a payday loan that has very high interest rates. Many people think that payday loans are there to help in a period of hard times, yet generally what happens, is when people receive the money from the loan, they do not change the situation that "required" them to get the loan in the first place. They are merely putting a band-aid on the situation to stop the bleeding, but don't seek to fix the problem (either too low an income to survive on or too high of spending).

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .25
Less than 5%	10.62%	Ha	$P \neq .25$
Between 5% and 50%	30.97%	P	0.04
Between 50% and 100%	7.96%	P0	0.25
Over 100%	4.42%	STD Dev.	0.03
I don't know	46.02%	Z	-7.14
		P-value	0.00

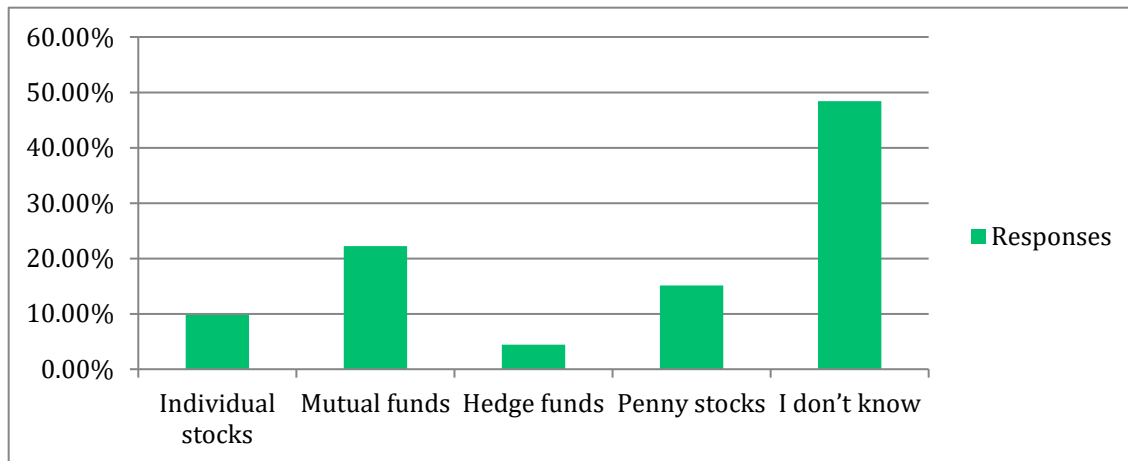
We set the null hypothesis at  $p = .25$ , because 25% is the inverse of the literacy rate in South Carolina that we set as the standard null hypothesis; meaning that we believed that the percentage of people that would answer this correctly would be the same as the non-literate rate in South Carolina, indicating that not many people would come close to knowing this question, even though we should all be aware of payday loans.

**Question 11: What is a budget?**

We were pleasantly surprised by the responses to this question. Students do seem to understand and are familiar with the concept of a budget, but the dismaying part is that, per the other questions of the survey, students don't understand the specific financial areas comprising a budget. What is even worse is that students may believe they are proficient with financial topics (as this question may lead some to believe) but are far less prepared than they perceive. This could lead to educators believing that they are teaching students about the financial topics they need, when in fact, there is an unhealthy deficiency in South Carolina high school students' education. A possible upside to the positive results of this question is that a formal course for financial literacy could spend more time on utilizing and applying financial mechanics rather than simply memorizing vocabulary.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
A form that a bank prepares for their account holders on a monthly basis.	13.27%	Ha	P ≠ .75
A type of return that people receive if they invest in the stock market.	4.42%	P	0.79
A plan that helps people prepare for future income and expenses.	79.20%	P0	0.75
A type of account that only accountants use.	3.10%	STD Dev.	0.03
		Z	1.46
		P-value	0.14

79% of the students surveyed knew the definition of a budget. This is more than the minimum benchmark for literacy in South Carolina adults, and is therefore not statistically different than the null hypothesis of 75%. A p-value of 0.14 further shows that at the 5% confidence level (established in the methodology), the null would not be rejected.

**Question 12:** Which of the follow investments historically has the least risk?

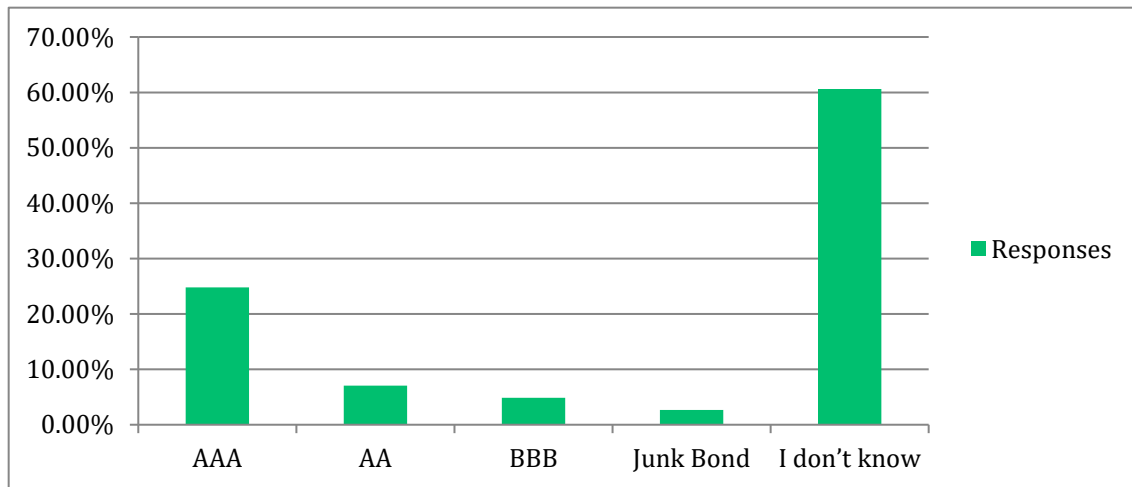
Question 12 was the first question where we attempted to glean a better understanding of where South Carolina high school students' knowledge was with regards to investing. Question is more challenging than some previous questions, yet is still within the realm of what we believe students should have a basic understanding. The stock market has been described as a tool the wealthy use to get wealthier, yet (with proof from this question) we believe that individuals do not use a great resource that is available to all people simply because they do not understand basic terminology. As we will discuss later, if students at a young age can understand the stock market and its positive opportunities, family trees can be positively impacted for generations to come.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Individual stocks	9.78%	Ha	P ≠ .75
Mutual funds	22.22%	P	0.22
Hedge funds	4.44%	P0	0.75
Penny stocks	15.11%	STD Dev.	0.03
I don't know	48.44%	Z	-18.28
		P-value	0.00

We weren't sure which statistic spoke louder: the 22% of students who answered correctly, or the 48% of students who did not even attempt to answer (more than likely showing that these students have never been introduced to investments). With all this being said, there is great opportunity for growth with students, meeting them where they are and helping them become more prepared for financial independence.



**Question 13:** Assuming no default, which bond has the highest potential return?

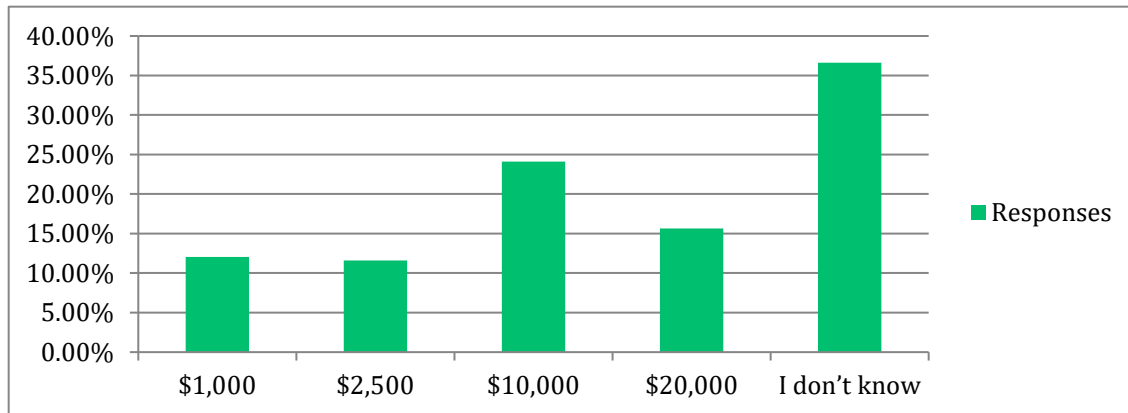


Question 13 is one of the more challenging questions on the survey. The goal was to further examine how familiar students are with investment options. The answer option “Junk Bond” is the correct response because it generally is the riskiest investment option in bond portfolio and generally offers the highest return on the investor’s money. Junk bonds are also called “High-Yield” bonds based on this same premise.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
AAA	24.78%	Ha	P ≠ .75
AA	7.08%	P	0.03
BBB	4.87%	P0	0.75
Junk Bond	2.65%	STD Dev.	0.03
I don't know	60.62%	Z	-25.12
		P-value	0.00

Due to the higher level of understanding this question was targeting, we will not spend too much time on the statistics. Only 6 students answered this correctly and over 135 students responded that they did not know the correct response. While a formal financial class in high school may not get into the depth of knowledge that this question seeks to ask, understanding investments and investment options would be of great value for the students to learn.

**Question 14:** About how much money would you need to invest annually in the stock market in order to have \$1,000,000 when you retire 50 years later? (Assume 10% rate of return)

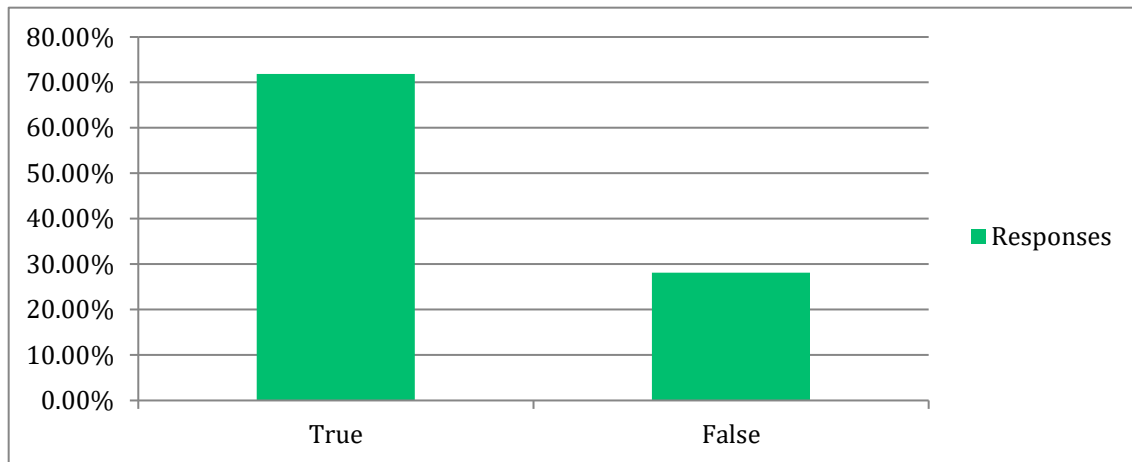


If offered one million dollars in retirement, with the relative small cost of less than \$1,000 per year, would you at least be interested in how to make that a reality? We know there are tools to help people succeed financially in life, but many students are not being taught these tools when they are in high school. This could potentially result in the next generation not being trained in how to handle their finances responsibly, which would lead to them being unable to teach the youth around them, and the cycle continues. If 75% of the students in South Carolina knew that you only needed to invest about \$100 per month and you could retire with close to \$2,000,000, how different would the state of South Carolina look in a few decades? With this survey, research, and the conclusions that follow, the goal to make this education widely available to high schools may become more of a reality.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
\$1,000	12.05%	Ha	P ≠ .75
\$2,500	11.61%	P	0.12
\$10,000	24.11%	P0	0.75
\$20,000	15.63%	STD Dev.	0.03
I don't know	36.61%	Z	-21.76
		P-value	0.00

\*In the question, we were not inquiring about the volatility of the stock market, but rather simply about the opportunity for compound interest.

**Question 15:** The balance on your debit card is limited to the amount of money in your checking account.

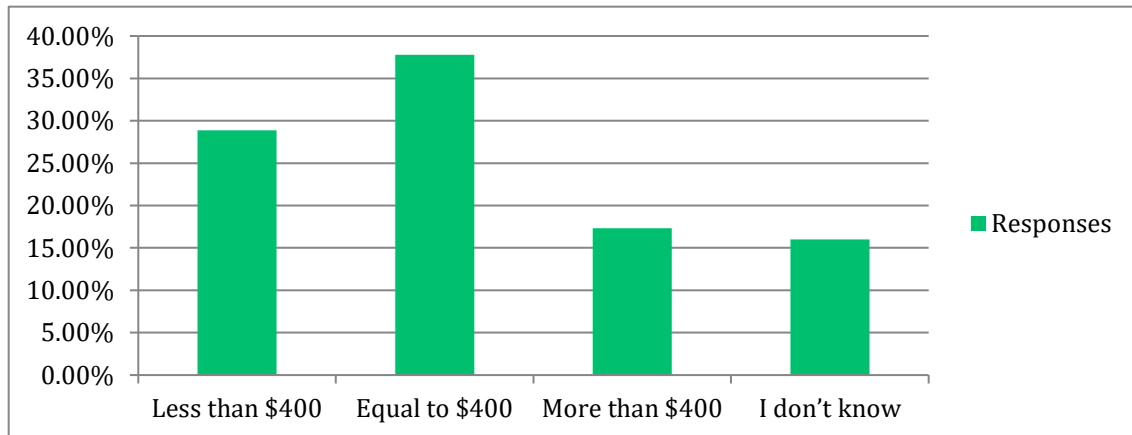


Question 15 sought to understand students' knowledge of debit cards. Debit cards are different from credit cards because a person cannot spend more on a debit card than they have available in their account, whereas a person with a credit card can spend more than he or she has in their financial account (savings or checking) up to a certain limit. Knowledge of debit cards can help to minimize the risk that credit cards can bring for its users.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
True	71.88%	Ha	P ≠ .75
False	28.13%	P	0.72
		P0	0.75
		STD Dev.	0.03
		Z	-1.08
		P-value	0.28

Statistically, the students we surveyed understood (compared to the benchmark) what a debit card was and the limitations of funds offered to its users compared to credit cards users. This means that the surveyed students are right in line with the American literacy rate. However, almost a third of students not understanding how to use a debit card is still too many students.

**Question 16:** Suppose you work during the summer making \$10/hour and you work 40 hours for the summer. Assuming you don't spend any of the money, how much should you have at the end of the summer?

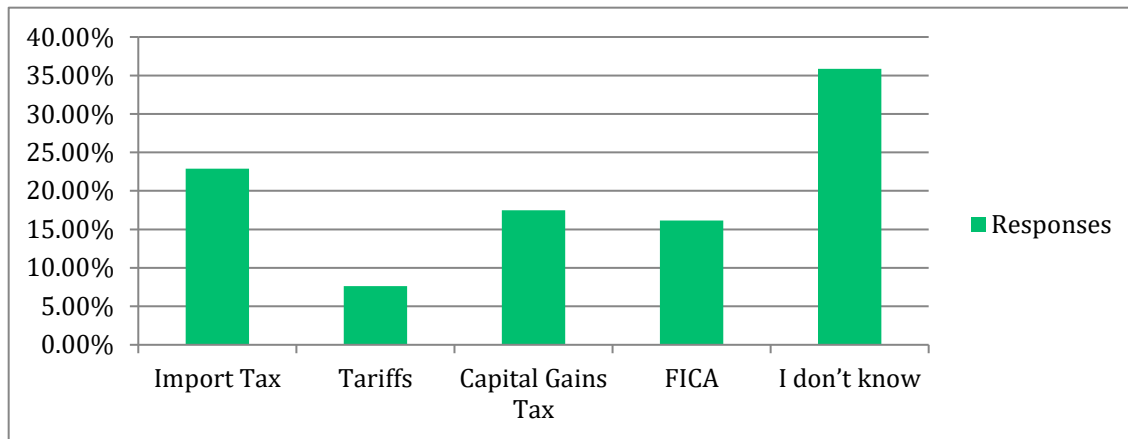


For question 16, we wanted to see if students understood, or have ever been exposed, to how income works and the difference between gross and net income. Only 29% of students understand that deductions will be withheld from paychecks, whether that is taxes, FICA, or other withholdings. Our deduction is either the students surveyed have never worked, or the students that have worked, or are working, have not paid attention to their paystubs. Those students could be taken advantage of by several parties, including their employers if they do not have an understanding of these concepts.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Less than \$400	28.89%	Ha	P ≠ .75
Equal to \$400	37.78%	P	0.29
More than \$400	17.33%	P0	0.75
I don't know	16.00%	STD Dev.	0.03
		Z	-15.97
		P-value	0.00

It is interesting to note that more than 17% of students answered “More than \$400” for this question, which if not comical, shows a gross confusion with how income works. While a possible explanation to this specific response of “More than \$400” may be that the students were unclear as to if they could receive interest on the money they earned, this is not a likely explanation as the students have shown that they do not understand the concepts of investing throughout this survey. Our intention was to gauge if students felt comfortable examining their paycheck to make sure that what they agreed to be paid is actually what they received.

**Question 17:** Regardless of your income, every wage earner in South Carolina has which of the following taken from their paycheck?

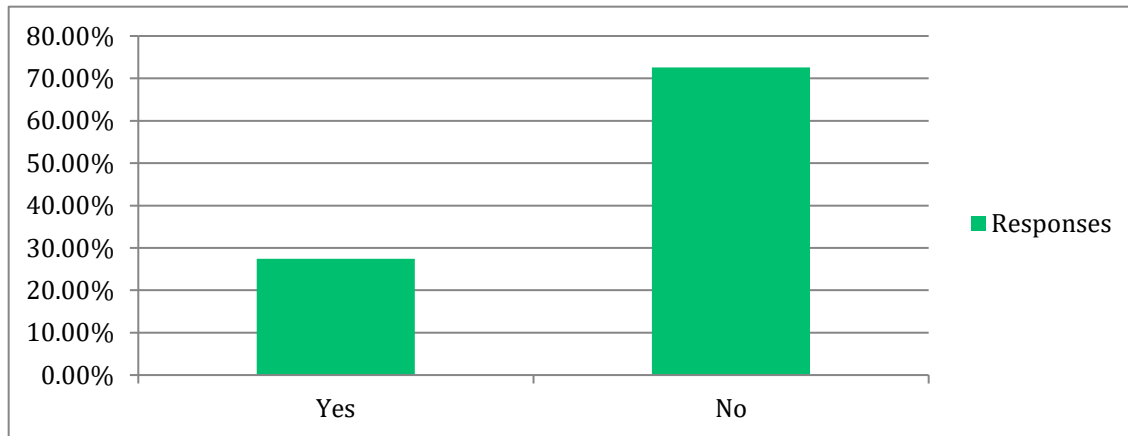


Like the last question asking about the amount of income, here we wanted to ask if students knew the difference between different types of withholdings such as FICA. FICA is composed of 1.45% of your income going to Medicare and 6.2% of your income being withheld for social security benefits. FICA's 7.65% is withheld from every wage earner in South Carolina, regardless of income or any other criteria.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Import Tax	22.87%	Ha	P ≠ .75
Tariffs	7.62%	P	0.16
Capital Gains Tax	17.49%	P0	0.75
FICA	16.14%	STD Dev.	0.03
I don't know	35.87%	Z	-20.30
		P-value	0.00

Only 16% of the students we surveyed understood what was withheld from every paycheck in South Carolina, while almost half of the students answered incorrectly (the other 35% answered "I don't know"). Having the p-value of 0 indicates statistically that we were correct in the alternative hypothesis in believing that students are not equally taught in financial literacy as they are taught in reading literacy, or that there is less understanding of financial literacy topics.

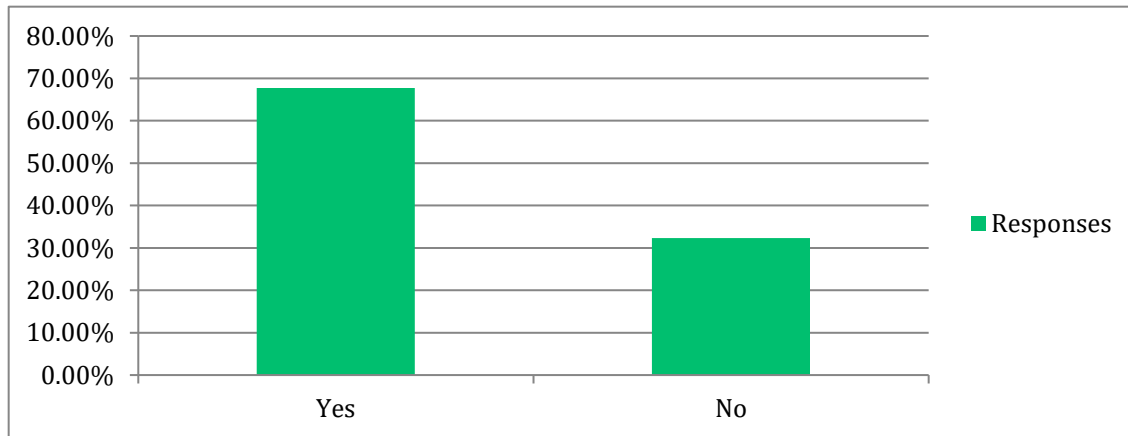
**Question 18:** Would you be prepared to file your taxes with the IRS within the next year?



For question 18, we were trying to ascertain how comfortable students are with handling their finances. We wanted to examine this further by asking if they would be prepared to file with the IRS within the next year. Only 28% of students said they would feel comfortable to do this. While there is some complicated terminology associated with taxes, students should have a basic understanding coming out of high school about how to file their taxes in the future. A very important item to note is if students are at least introduced to tax topics, then when they come across it in life or are faced with difficult financial situations, they will at least have been introduced to the concepts and they will know that there is information that will be able to help them.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Yes	27.43%	Ha	P ≠ .75
No	72.57%	P	0.27
		P0	0.75
		STD Dev.	0.03
		Z	-16.51
		P-value	0.00

The p-value being rounded down to 0 shows that statistically, the students we surveyed would not feel comfortable to handle their taxes within the next year.

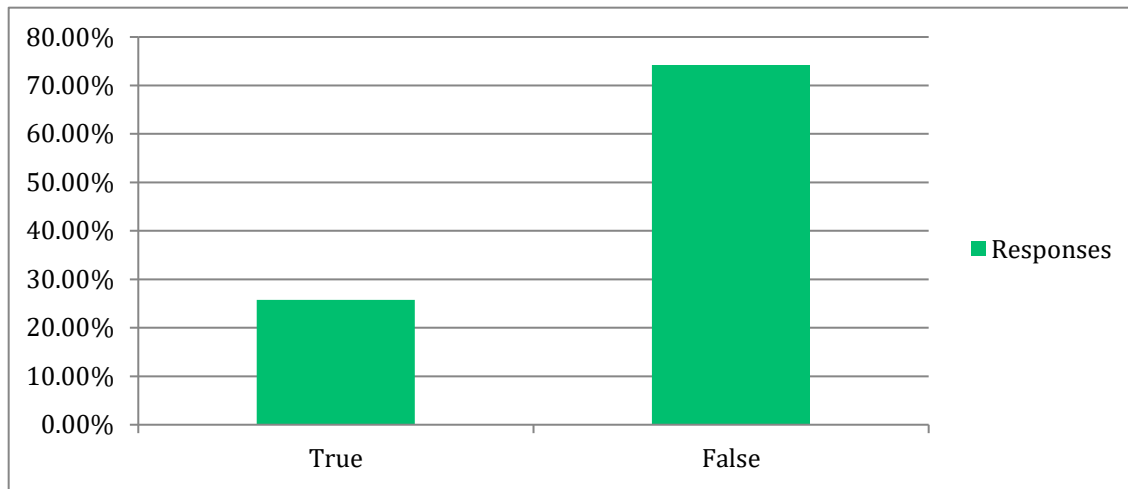
**Question 19:** Could you correctly write a check today?

If this question were to be asked to anybody over the age of 40, the answer would most likely be a resounding “yes”. Why is this? Writing checks is something that most of the working population will have to do throughout their lifetime for various reasons. This is also a very good indicator to the scarcity of financial knowledge students possess. A possible practical reason for this lack of knowledge is the emergence of automation in banks. A younger person may not have ever had to write a physical check because of the development of this type of transaction. Regardless, it is still a very important skill that people in society need to be able to understand.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Yes	67.70%	Ha	P ≠ .75
No	32.30%	P	0.68
		P0	0.75
		STD Dev.	0.029
		Z	-2.53
		P-value	0.011

As we continue to use the term “students”, please keep in mind that yes, these 14 to 19 year-old students do not have a big financial impact on society or on the economies they are a part of...yet. If the focus is simply on the here and now, we have problems as a society. The students that we have asked these questions (like “can you write a check”) will indeed become teachers, lawyers, accountants, politicians, engineers, city workers, and all the very necessary parts of society, and if we are not equipping them to handle their finances with wisdom for their good and for the good of society, then we are doing a profound disservice to the next generation and to ours.

**Question 20:** True or False: The source of funds used when writing a check is borrowed money.

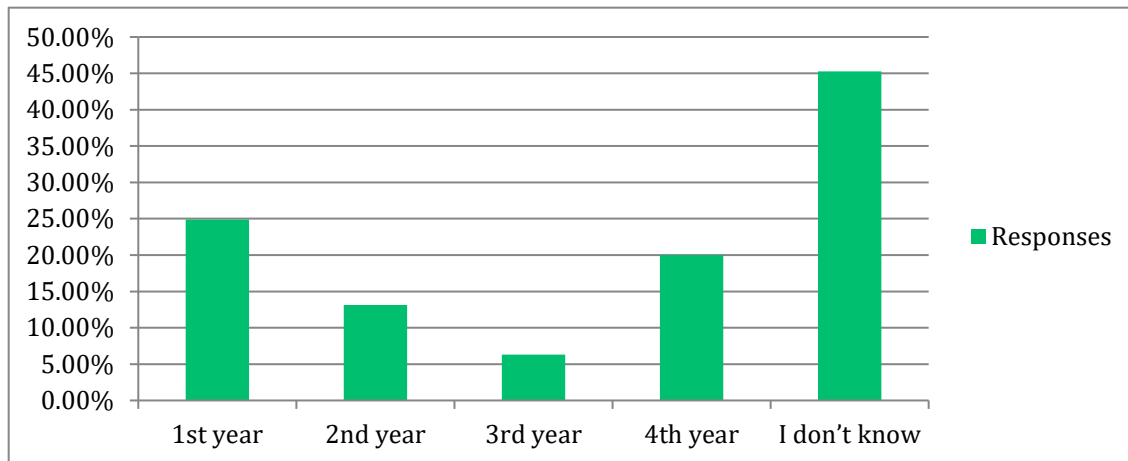


Comparing this question to one earlier about the use and limitations of a debit card, the funds of a check are the same as the funds of a debit card. About 74% of students responded correctly, which was almost exactly our benchmark, meaning that the students we surveyed with regards to this question are as literate as the population of the state of South Carolina is with regards to reading literacy. Because this is a topic that seems to be more familiar with high school students, if a formal course were to be implemented into the curriculum, there could be less time spent on teaching topics regarding checking accounts and the money you have in an account, and more time spent on money that is used in debt (such as credit cards or loans).

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
True	25.78%	Ha	P ≠ .75
False	74.22%	P	0.74
		P0	0.75
		STD Dev.	0.029
		Z	-0.27
		P-value	0.79

With the p-value being about 0.79, we can, with statistical confidence of 95%, conclude that the true proportion of students who responded to this survey understood this financial concept about a checking account and how it relates to check writing and the source of funds.

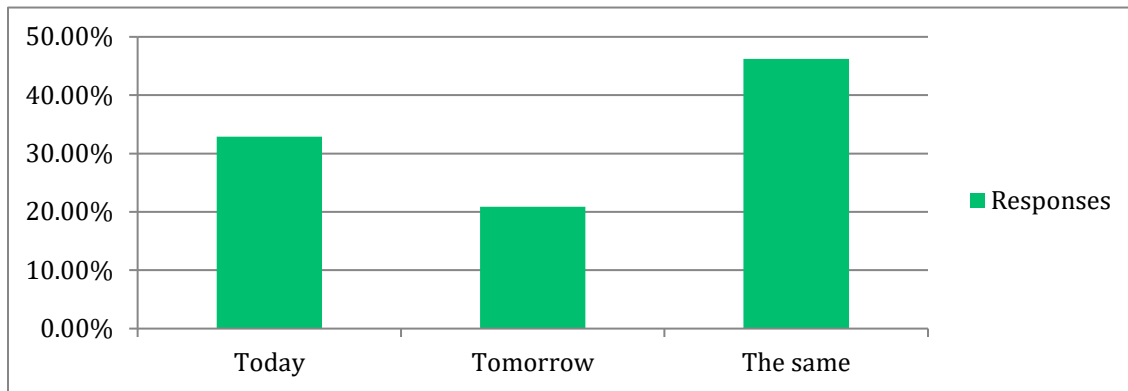


**Question 21:** When is depreciation on a new car the greatest?

Depreciation of a new car is understood to be the greatest in the first year. One reason this is true is because the value of a new car is said to lose about 5% of its value once it is driven off the lot. There are millions of new cars in America every year, and our goal with this question was to understand if students in South Carolina could understand the practical implications of these financial topics.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
1st year	24.89%	Ha	P ≠ .75
2nd year	13.12%	P	0.25
3rd year	6.33%	P0	0.75
4th year	20.00%	STD Dev.	0.029
I don't know	45.25%	Z	-17.20
		P-value	0.00

Because only 25% of students chose the correct response (1<sup>st</sup> year), we could statistically conclude that students do not have a basic understanding of this concept. Buying a new car is not bad by any means, but understanding what happens to the value of the car, even on a very basic level, is very important to make a wise financial decision. Analysis of the individual's financial situation can determine if a new car is affordable, or if a used, cheaper option is the one the individual should select.

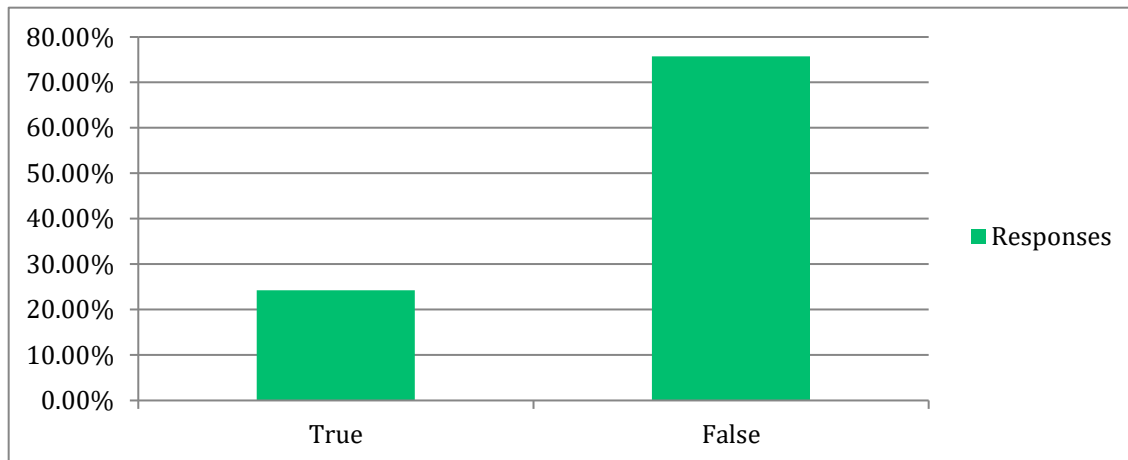
**Question 22: Is \$100 worth more today or tomorrow?**

Question 22 seeks to measure the respondents' understanding of the time value of money concept. The time value of money concept is something that many adults do not understand (hence why we are seeking to implement financial education in high schools so these students can become adults who know and understand these topics). Time value of money is a valuable concept to understand because it is the premise for why someone would invest in the stock market (or a similar instrument) vs. keeping his or her money in cash. If someone knew about the time value of money but had not been taught about investing, they may conclude that since \$100 is worth more today than tomorrow, they should spend all they have today and enjoy the greater spending power. But once introduced to investing, discipline is taught simultaneously to teach that if they do hold off on purchasing today and invest with hopes of greater spending power in the future, one's opportunity for income in the future is greatly increased. This is the essence of why we recommend teaching students about basic financial principles, so that they might be well rounded, financially wise adults in the future.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Today	32.89%	Ha	P ≠ .75
Tomorrow	20.89%	P	0.33
The same	46.22%	P0	0.75
		STD Dev.	0.029
		Z	-14.59
		P-value	0.00

Again, the p-value is near to 0, which means that statistically, we can reject the null hypothesis that states that 75% of student will understand this concept in favor of the alternative hypothesis that the true proportion is different than 75%.

**Question 23:** If you have \$400 in your checking account, you could purchase a \$500 iPhone using a debit card?

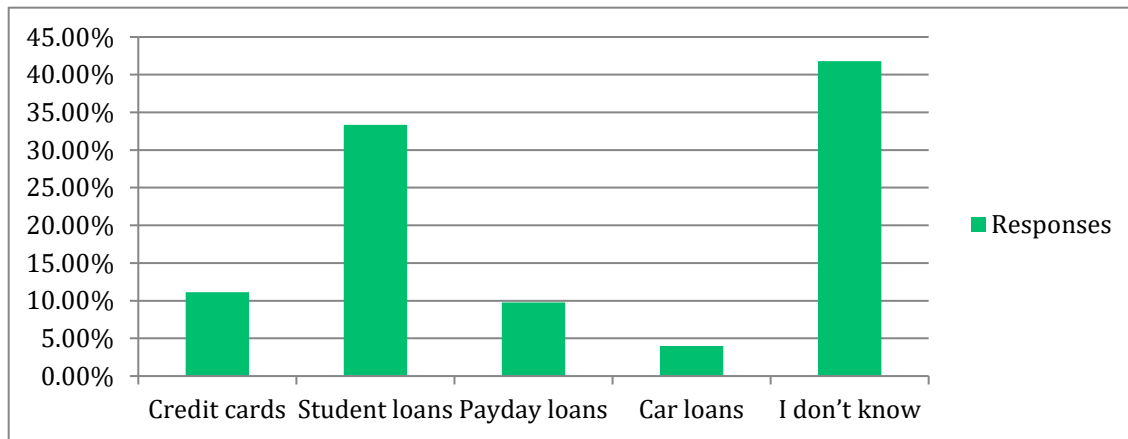


In question 23, we again sought to focus on high school students in South Carolina and if they understand the difference between debit card transactions and credit card (debt) transactions. The results are very similar to previous questions and repeat the same conclusion that most of the students we surveyed understand, for the most part, the difference between the two types of transactions (debit vs. credit), yet there is still approximately 25% of the students who are still lacking in this area.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
True	24.23%	Ha	P ≠ .75
False	75.77%	P	0.76
		P0	0.75
		STD Dev.	0.029
		Z	0.27
		P-value	0.79

Due to the value of the test statistics being so low (0.27), the p-value correctly reflects that the null hypothesis cannot be rejected in favor of the alternative hypothesis. This means that the 75% benchmark that we set as the null hypothesis is not incorrect, and we cannot conclude that students are not 75% financially literate. In conclusion, the students we surveyed are financially literate for this topic according to our benchmark.

**Question 24:** Which of the following debts generally is not cleared during personal bankruptcy?

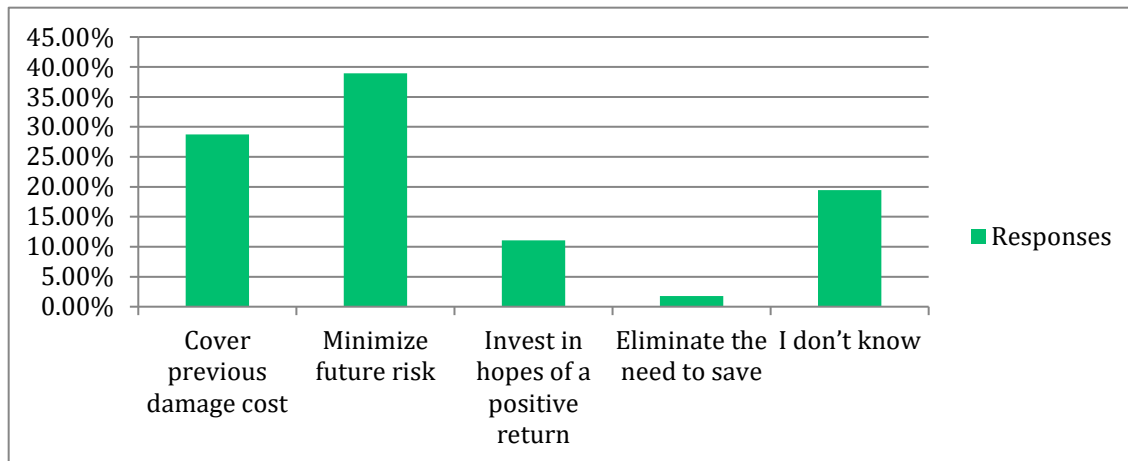


Question 24 was another one of the more challenging questions on the survey, and not knowing how apt students were with financial topics, we wanted to ask more difficult questions just in case they were more proficient than we were thinking to get a better understanding of their true level of knowledge. It is clearly seen by the responses to this question that their financial knowledge is not at the level that this question was designed to inquire about. With this question, the goal was to understand if students knew the difference between different types of debt and how they are treated in the hypothetical situation of going bankrupt. The correct answer is student loans.

Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Credit cards	11.11%	Ha	$P \neq .75$
Student loans	33.33%	P	0.33
Payday loans	9.78%	P0	0.75
Car loans	4.00%	STD Dev.	0.029
I don't know	41.78%	Z	-14.43
		P-value	0.00

It is encouraging that the number two response behind “I don't know” is the correct answer with 33% of students answering “Student loans”. It appears that many students have never been taught about bankruptcy or the implications it has on a person's finances. We believe that students should not only be taught about bankruptcy in general, but should also be taught about how not to be in a bankrupt situation in the first place.

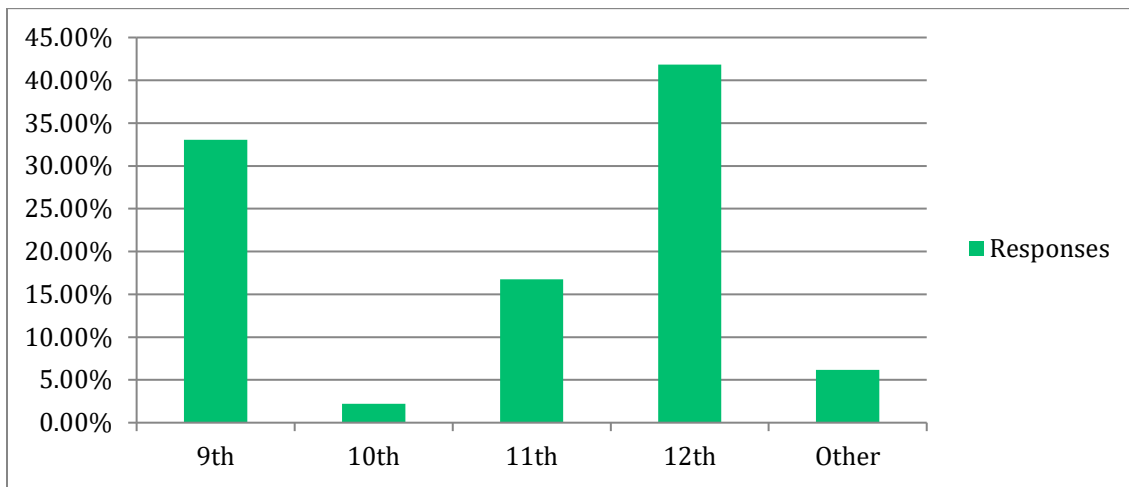
**Question 25:** The purpose of insurance is to:



Question 25 is a very important topic to understand-insurance. The purpose of insurance is to transfer risk for the person who purchases or owns insurance (minimize future risk). Insurance is a financial tool that invariably all people should own, whether that be for a car, house, life, or other area. Not only is the general topic of insurance important to understand, but also what type of insurance would be best for an individual is necessary. Students should have at least a basic understanding of the different types of insurance, and the different purposes of each one. For example: term life insurance for those with less disposable income with short term, high coverage needs, or whole life insurance for those wishing to build up a cash value in their policy.

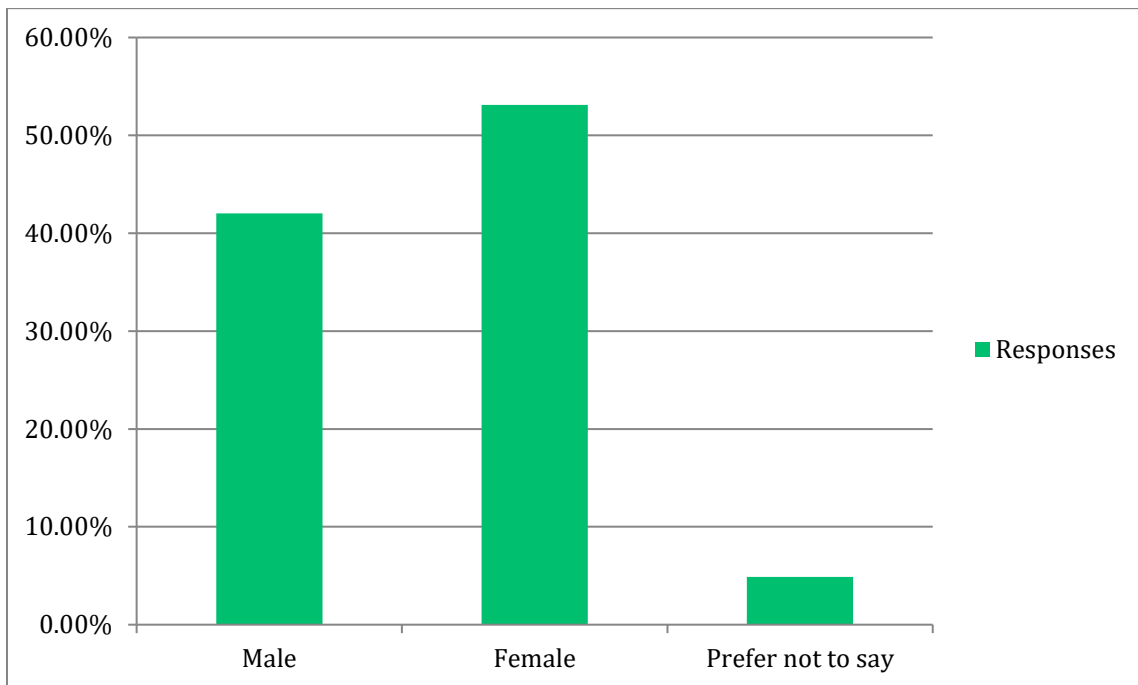
Responses		Statistics	
Answer Choices	Percentage	Ho	P = .75
Cover previous damage cost	28.76%	Ha	P ≠ .75
Minimize future risk	38.94%	P	0.39
Invest in hopes of a positive return	11.06%	P0	0.75
Eliminate the need to save	1.77%	STD Dev.	0.029
I don't know	19.47%	Z	-12.52
		P-value	0.00

39% of students did answer this question correctly, but almost 61% of students (who will become adults in our society) did not know the purpose of insurance.

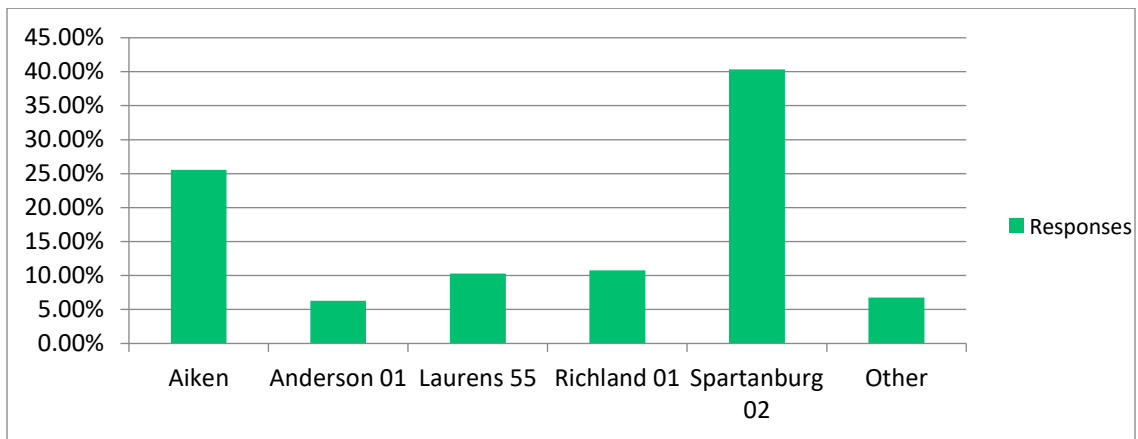
**Question 26:** What grade are you in?

For the last three questions, we asked the students demographic questions to be able to analyze the data further. We specifically put the demographic questions at the end so that there would not be a bias to answer the quantitative and qualitative questions one way or another based on their perception of how they answered the demographic questions.

<b>Responses</b>	
Answer Choices	Percentage
9th	33.04%
10th	2.20%
11th	16.74%
12th	41.85%

**Question 27:** What is your gender?

<b>Responses</b>	
Answer Choices	Percentage
Male	42.04%
Female	53.10%
Prefer not to say	4.87%

**Question 28:** What school district do you attend?

<b>Responses</b>	
Answer Choices	Percentage
Aiken	25.56%
Anderson 01	6.28%
Laurens 55	10.31%
Richland 01	10.76%
Spartanburg 02	40.36%
Other	6.74%

We sent the survey to all school districts in South Carolina, and these 5 districts represent the districts from which we received the most responses.



## **Recommendations**

Based on our data analysis, we concluded that high school students in South Carolina are financially unprepared. These students lack the financial skills and background to successfully handle their own finances within the next year, but about 80% of these students indicated some interest in receiving personal finance education. After considering the magnitude of these students' financial preparedness and their interest in financial education, our recommendations are for a mandatory personal finance class in South Carolina high schools and a promotion of finance as an important family discussion.

### **High-School Class Recommendation**

Only approximately one third of students are being formally taught on the use of budgets. Budgets are one of the most useful and widely used financial tools, and it shows that if students are not being taught how to use a budget, they are likely not being taught about other financial tools and topics in schools.

We wanted to look at the states that have implemented required personal finance classes to see if the students are better financially prepared in states where personal finance course are mandatory. As ranked by Champlain College's State Financial Report Card, there are just five states that mandate standalone courses in personal financial literacy: Alabama, Missouri, Tennessee, Utah and Virginia. To understand if these efforts to provide standalone courses have positively benefited the financial preparedness of high school students in these states, we chose one state to study - Utah. We made this choice because students in this state must pass a third party created financial literacy test to pass the required General Financial Literacy course.

While the General Financial Literacy course of Utah has been integrated into the curriculum for Utah schools since 2008, the competency test that is administered at the end of the course has only been conducted for the last three years. Therefore, we were unable to draw any conclusions on the trend of financial literacy for these students because of the short observation times. However, part of our recommendation is suggesting further research. So our recommendation is that the results of this test be closely followed over the next few years. Per an informational interview with Travis Cook, the Financial Literacy Specialist for the Utah State Board of Education, a pre-test will soon be adopted. Once this pre-test is implemented, there will be substantial data to determine whether formal required financial literacy education is positively impacting high school students in at least one state.

In talking with Mr. Cook, we discussed whether there was any correlation to financial success with the implementation of the General Financial Literacy course. While Mr. Cook stated that direct correlation was hard to pinpoint with the General Financial Literacy course at this stage, he did mention that Utah has the lowest debt-to-student ratio for post-secondary students. The Institute for College Access & Success 2015 report on state-by-state student debt supports this claim: Utah was the lowest student debt state for the class of 2014 with the average student having \$18,921 in debt upon graduation (5).

Mr. Cook also made it very clear that one of the goals for the General Financial Literacy course was to encourage students to consider all options before they choose future paths, because these alternative decisions can have lasting financial impacts. Utah's low student debt figure could show that Utah's high school students learned to

think critically about higher education as a viable option, or the sources of funding for that higher education. It is important to note that as far back as 2004, Utah has been the lowest student debt state, but Utah's growth of student debt from 2004 to 2014 has continued to be below the average national growth. From 2004 to 2014, Utah's student debt increased by 53% versus 56% at the national level (TICAS 7-10).

To further quantify our findings from talking with Utah's Mr. Cook we also looked at Financial Industry Regulatory Authority's (FINRA) financial capability survey to examine the differences in financial capability between the populations of Utah and South Carolina. Specifically, we focused on FINRA's five question section of the survey that measures financial literacy. Utah's General Financial Literacy program started with the class of 2008, and if you look at the FINRA's financial literacy section of the survey, you can see that Utah has exceeded South Carolina in financial preparedness over the last six-year period.

Over the period of 2009 to 2015, South Carolina had a 9% decrease (44% to 35%) of adults answering four to five questions of the five-question survey correctly. Utah on the other hand saw a level average of about 45% of adults answering 4 or more questions on the survey correct over the same period. The survey results could be a result of the students who were required to complete a financial literacy course in Utah joining the population of this survey, helping Utah maintain a certain level of financial literacy.

In 2009, South Carolina and Utah had very similar financial literacy statics in this FINRA study with 44% and 46% of the population answering four to five questions correctly, respectively. This is important to note, because these 2009 numbers can serve as a proxy for a benchmark for the General Financial Literacy program since the program

had been only running for approximately one year in Utah. In other words, since Utah's introduction of the General Financial Literacy requirement, Utah's population has outperformed South Carolina in financial literacy despite starting with similar financial literacy numbers in 2009. Utah's performance not only exceeds South Carolina, but the United States as well. From the period of 2009 to 2015, the United States had a decrease of 6% of the population answering four to five questions correctly, while Utah only decreased by 5% for the same time period, and had an inter-period increase of 3% from 2009 to 2012.

If required financial literacy courses are helping other states better prepare their students for the real world, why does South Carolina not have these courses? South Carolina enacted the 2005 Financial Literacy Trust Act to establish a board to oversee the introduction and maintenance of integrated financial education within schools from K-12 grades. Through our research, we have determined that the South Carolina has underperformed in preparing South Carolina students for undertaking their own finances by the time they are at the high school level. Therefore, we must start to look for different ways of attacking the problem of financially unprepared students. Integrating financial education as enacted by the 2005 Financial Literacy Trust Act has been unsuccessful; therefore, our recommendation is to split financial education into a standalone class like Utah has done with their General Financial Literacy course. Specifically, a financial literacy course in South Carolina should be modeled after other states and be a one-semester course in the students' junior or senior year. Structuring the class this way would ensure the financial education of nearly every student in South Carolina at a

critical age. An age of both being able to understand and utilize the information of a personal financial literacy course.

We understand that our recommendations may receive pushback from the public, so when we were talking with Mr. Cook, one of the things we wanted to understand was if there was any resistance to enacting the General Financial Literacy course in Utah. Mr. Cook said there was some pushback from the community, but it was not because of the content. Most of the pushback had to do with parents not wanting academic credits used to learn about personal finance, since they believed there were other classes that could benefit their children better. We understand some individuals might be reluctant to add a required course to the curriculum, but our belief is that personal finance is a topic that is mostly unavoidable. Schools should be preparing students with practical knowledge along with formal academic education. Therefore, financial literacy could provide students with practical skills they are likely to regularly utilize.

Lastly, Mr. Cook discussed the merits of financial literacy as a required course for underprivileged populations. In underprivileged communities, there can be a hard-to-break socioeconomic cyclicity; those that were brought up in these underprivileged communities can remain there if they are not exposed to tools to mitigate their problems. One of these problems is “money”. If every student was required to finish a financial literacy course, there is a strong likelihood that students that need financial literacy the most to break from their socioeconomic background will receive that education. Financial literacy courses can provide students from lower-income backgrounds with the tools to possibly move up into a higher income bracket later in life. Financial literacy courses may even be the key to addressing larger poverty issues than just the future generation.

### **Guidance from Parents Recommendation**

Schools are only one educational source that students can utilize to better prepare themselves financially. We also wanted to examine the extent to which students have learned finances from their family. Based on our analysis, we realized that students discussed finances with their parents more than what we originally estimated, but we still feel the skew towards one or less times a month to be something that needs to be addressed. According to the American Psychological Association's 2014 Stress in America survey, 95% of respondents said that parents should talk to their children about finances, yet only 64% of these respondents were taught financial topics from their own parents. Furthermore, only 37% of respondents said they regularly talk to their children about finances. We see a significant population that believes that it is beneficial for parents or guardians to discuss finances with their children, but according to both this survey and our survey, there is a significant proportion of parents or guardians who do not regularly discuss financial topics with their children. Our recommendation is to do further research into what makes families unlikely to discuss finances among themselves, and then try and develop campaigns to break the stigma we have observed in South Carolina. Another possible recommendation once this research is conducted, is to provide seminars to the community that would educate parents on how to discuss finances with their children.

Finally, our last recommendation is to research ways to inspire South Carolina students to pursue personal financial education on their own. If the formal educational system or families are unable to provide financial education to students, we recommend additional research to discover ways to inspire these students to seek out the knowledge

themselves. This type of research would need to focus on the best ways to interest students in personal finance (e.g. virtual games), and then determine the best way to provide the financial education (perhaps online courses). Our survey showed that about 80% of students were at least interested in learning about financial topics; in the future we must find ways to provide the opportunities and learning experiences for these students to learn more about personal finance.

## Conclusion

When we think about the courses that we took in high school, which ones do we continue to use daily? Considering the 12 years of schooling that every student in South Carolina is required to attend, which courses have helped students the most throughout their lives, regardless of career? Most of the population may be able to avoid using the science, physical education, and home economics courses they attended, but it is nearly impossible to avoid money management on a daily basis. Because of this reality, the need to make sure students are financially literate is imperative. Furthermore, if these students are not financially literate, action is needed to address this deficiency.

Our thesis attempts to answer the question of where exactly the high school students in South Carolina are with their knowledge and understanding of basic financial concepts. We found that most of the students we surveyed did not have an adequate understanding of investing, taxes, credit, debt, and other financial topics. Many of the students throughout the survey responded that they did not know the correct response to the question, more than likely showing that they have never been introduced to the topics we were asking about, further supporting our findings that schools are not formally educating students in these topics, nor are parents regularly talking to students about finances in the home.

We identified two major sources of educational influences for high school students: schools and parents. South Carolina has no formal financial literacy curriculum, yet South Carolina Bill 4707 established financial literacy as an educational priority in 2006. South Carolina Bill 4707 created a committee that could enact new curriculum changes to improve financial literacy within the state. Our recommendation is that those powers be exercised by requiring a financial literacy course for every high school student,



providing more of an opportunity for personal financial success in the future. With regards to the parents of the students, our recommendation is to enable these parents to become financial resources for their children, even if that means simply having regular conversations about financial topics. We also believe there is a need to inspire the parents to become advocates of financial literacy education within schools. All in all, we were able to glean a lot of information about high school students' financial preparedness in South Carolina. Based on our findings, it may seem like there is little to no positive financial future for the next generation. However, with the knowledge of this deficiency, there is a great opportunity for growth in our educational system.

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