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Today's College Student: Measuring the Effectiveness of Financial Literacy Education and Effect on Subsequent Student Debt

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TODAY'S COLLEGE STUDENT: MEASURING THE EFFECTIVENESS OF FINANCIAL LITERACY EDUCATION AND EFFECT ON SUBSEQUENT STUDENT DEBT

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This mixed-method study investigates the level of financial literacy in junior and senior-level college students and the effect on subsequent student debt.

Two-hundred-fifty-four junior and senior level students at Indiana University of Pennsylvania were surveyed using the Jump$tart Coalition® for Personal Financial Literacy college survey and seven students participated in a focus group session. Analysis of this research determined that level of financial literacy is not an effective predictor for student debt. A Chi-squared Automatic Interaction Detection (CHAID) technique revealed that it is the interaction of multiple factors, first-generation status, parent income, and student major, which more accurately reflected a student more likely to incur student debt.

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CHAPTER 1

INTRODUCTION

In today's society, individuals are faced with financial pressures at a very early age. It is unreasonable to expect that young people will be able to navigate the complicated world of finance, even basic personal finance, without an introduction to the subject. College students, for example, are faced with significant decisions about finances before they have been provided with adequate financial education. "Formal and informal financial education can affect the financial behavior and socialization of individuals and households" (Schuchardt, Hanna, Hira, Lyons, Palmer, & Jing Jian, 2009, p. 87). Understanding basic financial literacy can have a life-long impact on one's personal well-being and needs to be emphasized as an important component of a comprehensive education.

The trends in debt in the United States also support the need for more education about financial matters. In the years 2001 through 2006, consumer debt grew at more than a fourfold rate over the rate of the increase in debt in the 1990s (Weller, 2007). While consumer debt has recovered somewhat in the years since 2006, it is now beginning to rise again; however, this time it is not attributed to the housing market but to financed cars, goods, and education (Bloomberg, 2014). This increase has become such a critical issue that some experts have stated that consumers must re-set their point of view and change behaviors such as incurring debt for immediate gratification or to emulate the lifestyle of peers (Starr, 2010). Students, in particular, need this information in advance of beginning their higher education experiences, when they may have their first experience with making significant financial decisions. Rather than students being reactive and, often times regretful, after excessive borrowing has occurred, providing them

with the competencies to make informed decisions about debt early in their lives could prevent future financial burdens.

In some families, the discussion about money and budgeting may have begun early in a student's life. Learning about maintaining and balancing a checking account is a skill that can be comprehended by even younger children. Older children can be taught about paying bills and the negative ramifications on one's credit history if bills are not paid in a timely fashion. Those in the household who are ready to go to college likely have an awareness about the salary level of an entry level position in a particular field of study after graduation; therefore, coaching students to understand that the debt they incur while in college will need to be repaid after leaving college is critical. Unfortunately, many students do not have this knowledge base. By further exploring Erikson's theory of identity versus role confusion, it may explain why students, even those fairly well versed in finances, sometimes need to have experiences to learn valuable lessons (Cooper, 1983). Students who have not worked or saved to pay for college and plan to simply borrow as much as possible to attend school will learn that after college they may not be living the lifestyle that they expected due to their level of student debt. Others may have a more immediate lesson learned by not being able to return to school to finish their degree because of the debt level incurred.

According to the Project on Student Debt (2014), nationwide, 2013 college graduates had an average student loan debt of $28,400.00, which is a 2% increase over the graduating class of 2012. Between the 2007-2008 and 2008-2009 academic years alone, the dollar amount of student loan disbursements to higher education institutions have increased by 25% (Kuzma, Thiewes, & Kuzma, 2010). Based on this fact, and because students arrive on campus with varying levels of financial knowledge, it is imperative that institutions of higher education consider this rising debt

as a serious issue and intervene in an attempt to reduce the debt burdens of college graduates or, at least, to assist students by providing the tools to make wise borrowing choices. Minimally, institutions of higher education should strongly consider mandating the topic of financial literacy as part of their required curricula.

A quandary that is often created for students eager to assimilate into the peer group is the ability to discern between "wants" and "needs." "Wants" are very often the result of experiences with the peer group and acknowledgment of those things that the group, as a whole, consider important. These include such things as the newest electronics, designer clothing and shoes, high-end handbags, nail and hair services. Students must decide if having these things is worth spending money that could otherwise be spent for items that are considered true "needs," such as housing, food, books, and toiletries. Students who realize that they cannot be frivolous and live beyond their means and are able to determine their personal priorities instead of those of their peer groups, would utilize their meal plans to the fullest, be satisfied with their wardrobes, carry standard cell phones, and live with other students to reduce the cost of housing.

In addition to the primary goal of educating students, providing financial literacy education for students would benefit universities as well. Federal requirement mandates that schools maintain a specific level of federal cohort default rate for its student loan borrowers. The federal cohort default rate is the percentage of a school's borrowers who enter into repayment of Federal Stafford loans during a particular federal fiscal year (October 1 to September 30) and default, in other words fail to pay one's loan, on their federal student loans prior to the end of the next fiscal year. If a school has a cohort default rate of 25% for three consecutive years or 40% for any one year, those schools will no longer be able to participate in federal student aid programs. If rates exceed 10%, schools must disburse loans to students who are first time

borrowers 30 days after the start of the term, rather than at the beginning of the term, and schools must disburse loan funds in two disbursements rather than one disbursement per term (Electronic Code of Federal Regulations, 2008). These sanctions disadvantage a school's student body but also have a significant impact on the institution's cash management, sometimes as significantly as suspending participation in the federal student financial aid programs. Providing strong financial literacy programs and reaching out to students early in their educations regarding accumulating too much student debt, is a win for students and a win for schools. It is important that administration is aware of the cohort default rate regulations and the potential influence that financial literacy education may have on the cohort default rate.

This mixed-methods study analyzes factors, such as history and type of financial literacy education, gender, ethnicity, first-generation student status, major of study in college, and family income, that affect the level of financial literacy of college students and, subsequently, if any of these factors influence the level of student loan and credit card debt. Additionally, a focus group provided first-hand insight into the reasons students utilize student loans and credit cards, their opinions of "wants" and "needs," and shared their own personal stories of financial literacy education.

Background

Students are entering college with varying degrees of financial knowledge. For many, it is the first time that parents are not involved with every financial decision. Research has shown that students, especially freshmen students, have not been prepared prior to college to understand finances (Avard, English, & Manton, 2005). As part of the federal government's effort to assist students with their understanding and management of the debt that results from borrowing loans to secure higher education, the Higher Education Act of 1965, as amended, requires schools to

provide educational loan entrance counseling to students (Code of Federal Regulation, 2008). Many schools utilize a self-guided, on-line entrance counseling tool created by the U.S. Department of Education to satisfy this requirement. While this tool provides students with the basic rights and responsibilities of being a student loan borrower, it does not provide students with the information necessary to increase their overall financial literacy which is key to helping reduce debt. Palmer, Bliss, Goetz, and Moorman (2010) conducted a mixed-methods study of a group of college students who were given a "financial management intervention." This intervention required introspection on the part of the student participants, who were asked to analyze what and why they were spending money. The program was designed with the assumption that students would not borrow as much and would be more considerate of their spending if given a tool to become more aware of spending habits. The outcomes showed that students who had this intervention were more aware of their spending habits after beginning participation in this program and thus modified their behaviors and habits regarding their spending.

According to Trends in College Pricing (2014), from the 1984-1985 academic year to the 2014-2015 academic year, tuition and fees at public four year higher education institutions has risen by 225%. This rise in costs, coupled with the current economic challenges that threaten state and federal grant programs (Kantrowitz, 2011), are making it necessary for students to borrow more loans in order to attain their degrees. According to *How America Pays for College: A study by Gallup and Sallie Mae* (2012), 34% of students borrow federal loans and an additional 10% borrow private education loans. These percentages do not include other loans that parents or other family members borrow on behalf of the student's education.

Statement of the Problem

The debt level, for both education and consumer debt, is rising at a significant rate (Weller, 2007); therefore, it is imperative that effective financial literacy education be provided and those factors affecting the level of financial literacy, identified. The Jump$tart Coalition® for Personal Financial Literacy high school survey conducted in 2002 revealed that high school seniors answered only 57% of the questions regarding financial issues correctly and, of that 57%, only 11% indicated that they learned their financial literacy at school (Wilhelm & Chao, 2005). Compounding the problem is that, in addition to not learning the basics of financial literacy in schools, families are also not providing adequate lessons regarding finances and financial topics (Peck). Shim, Barber, Card, Xiao, and Serido (2009) found that the role of parents in a student's financial knowledge is actually greater than a student's work experience or any education in high school dealing with finances.

Mandell and Klein (2009) noted a finding regarding the ineffectiveness of high school financial literacy education. This premise was also supported by the results of the Jump$tart Coalition® for Personal Financial Literacy high school survey in 2002. This survey showed that even when students did receive financial literacy education in high school, it did not translate into a higher level of financial literacy when in college. Scores were comparable to others who did not have high school financial literacy education. The lack of effectiveness at the high school level may be due, in part, to the lack of opportunity to put into practice what was taught. Providing the financial literacy education to students when they have the opportunity to apply the knowledge may provide for a stronger impact on student behaviors thus supporting offering this education during the first year of college when students will begin to borrow loans and are faced with new financial challenges, such as living within a budget. Franklin (2007) described a

significant effort made by Meeker High School in Meeker, Colorado, which attempted to incorporate financial literacy topics into the other subjects in which students are enrolled. This made the topic of financial literacy more relevant to students. According to Lalonde and Schmidt (2011), student interest in the subject of financial literacy is a significant indicator in a student becoming more financially literate. They go on to state that "since motivated and interested students do better on tests of financial literacy it would seem the first step toward helping students become more financially literate would be to increase their interest in, and motivation to learn the subject matter" (p. 8).

Definition of Terms

The following definitions are utilized within this study:

Financial literacy: "degree to which one understands key financial concepts and the degree to which one feels she or he has the ability and confidence to manage personal finances" (Remond, 2010, pp. 290-291).

College grade level: Students' academic level in college. For purposes of this study, freshmen will be undergraduate students with 0-29 earned credits, sophomores will be students with 30-59 credits, juniors will be students with 60-89 earned credits, and seniors will be students with 90 or more earned credits. (IUP Undergraduate Catalog, 2013-2014, p. 24).

Education debt: "Any amount of money, funds, or property that an appropriate official of the Department has determined an individual owes to the United States under a program we (United States Department of Education) administer" (34 CFR 34.3).

First-generation students: Undergraduates whose parents never enrolled in postsecondary education (National Center for Education Statistics, 1998).

Business-related major: For this study, any student answering the survey question regarding major or interest in college as "Business or economics," will be considered a business-related major (IUP Undergraduate Catalog, 2013-2014, p. 47).

Level of financial literacy: The knowledge about financial literacy that the student possesses based on the Jump$tart Coalition® for Personal Financial Literacy survey score (Mandell & Klein, 2009).

Research Questions

The purpose of this mixed-methods research is to identify the factors that may affect the level of financial literacy and subsequent student debt, both student loan and credit card debt. The following research questions were investigated:

1. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education in high school and those who did not?
2. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education or a related course in college and those who did not?
3. Is there a statistically significant difference in the level of financial literacy based on gender, ethnicity, first-generation student status, major, or family income?
4. Is there a statistically significant difference in the level of financial literacy of students who own and use credit cards and those who do not?
    a. For what purposes are students using credit cards?

5. Is there a statistically significant difference in the estimated level of student debt for those students who demonstrate a high level of financial literacy and those who demonstrate a low level of financial literacy?
    a. Beyond direct payment to school, what are other reasons students are borrowing student loans?

Limitations

While this study offers insight into the factors affecting financial literacy, there are some limitations. This study researched undergraduate, junior and senior level students only. It did not include graduate students who may have more of an ability to relate to the topics presented in a financial literacy program because of life experience (Mandell & Klein, 2009).

Another limitation was the type of institution where the study was being conducted. This is a mid-size, public, state university where 28% of its financial aid applicants self-identify as first-generation college students and a Pell grant recipient population (i.e., high financial need) of 39%. Educational institutions with students who have more students from affluent backgrounds could translate into students needing to borrow fewer loans and students who may already possess some level of financial literacy from their family. This result is consistent with the findings of Shim et al. (2009), regarding the strong influence of parents on the financial knowledge of students.

A final limitation factor was that the researcher is a staff member of the institution being studied. It was important to ensure that no participant in the study felt pressured to participate or respond to surveys for fear of negative consequences to the student's financial aid eligibility. In order to control for this factor, students were made aware of the fact that this is an educational study and in no way would have an impact on the types or amounts of financial aid awarded to

the students. The researcher was not involved in the day-to-day activity with awarding financial aid. As with any study, students had the opportunity to discontinue participation in this study if he or she, at any point, decided to do so.

Summary

As college costs continue to rise and state and federal financial aid grant programs are dwindling (Kantrowitz, 2010), students are borrowing both federal and private loans at an increasing level (Project on Student Debt, 2013). Recognizing the fact that student loan debt is on the rise, institutions have a responsibility to provide their students with the most effective and comprehensive programming regarding financial literacy. This study aimed to provide data to identify those factors that affect a student's level of financial literacy and if the level of financial literacy correlated to student debt levels. By studying these factors, information may be used in the future to produce more effective financial literacy programs, as well as to provide more supporting data for the need for financial literacy programs.

CHAPTER 2

REVIEW OF LITERATURE

A review of literature surrounding the topic of financial literacy and student debt must include many different factors that can affect the effectiveness of any financial literacy education that a student may have previously received. First, documentation regarding the issue of debt, both consumer and student loan debt, will explain the facts surrounding the level of debt that students are incurring. An exploration of developmental and learning theories may help to explain how the chronological or psycho-social time in a person's life can affect borrowing decisions, as well as the ability to grasp abstract ideas, such as understanding the complications of finances. Additionally, other demographic factors need to be explored to determine if they have any effect on a student's level of financial literacy. Finally, this chapter explored possible strategies for successful financial literacy education.

Statement of the Problem and Defining Financial Literacy

The debt level, for both education and consumer debt, is rising at a significant rate (Weller, 2007), therefore, it is imperative that effective financial literacy education be provided and those factors affecting the level of financial literacy be identified. Shim, Serido, Bosch, and Chuanyi (2013) note "a well-established financial identity will facilitate the development of young adults' positive financial attitude and behaviors within a society, while the lack of a sense of clear financial identity may lead to the development of risky financial behaviors" (p. 129).

When reviewing literature regarding financial literacy, the Jump$tart Coalition® for Personal Financial Literacy, an organization whose primary goal is to improve financial literacy, is a leader in the field. According to the organization's website, www.jumpstart.org, they aim to "improve the financial literacy of pre-kindergarten through college-age youth by providing

advocacy, research, standards and educational resources." Jump$tart studies and the surveys conducted by this organization are widely utilized in the study of financial literacy. For example, Wilhelm and Chao (2005) utilized the results of the 2002 Jump$tart financial literacy survey, which revealed that high school seniors answered only 57% of the questions correctly and, of those 57%, only 11% indicated that they learned financial literacy at school, to provide support for their analysis that high school students do not have adequate financial literacy. Throughout this literature review, it will be noted that several researchers utilized this tool in their respective studies.

As described in Chapter 1, students are faced with credit card offers that are available in many different settings such as school, shopping malls, and on-line. Credit card use is increasing with young people in America. A 2009 study by Sallie Mae indicated that 21% of undergraduate students carry credit balances between $3,000 and $7,000, with the average being $3,173. This increase in debt is the single largest leap in history in credit card debt for students. It is an increase of 74% between 2004 and 2008 (Jassim & Taylor, 2010). Because of disturbing trends such as this one, a study regarding financial literacy is incomplete without a discussion about credit card debt.

The question that arises, then, is not *if* financial literacy education should be introduced to our young people, but *when* financial literacy education should be introduced and what factors affect the financial literacy of students. The subject of this mixed-methods study was to determine those factors that affect college students' level of financial literacy.

Debt

Research regarding debt, both student loan and consumer debt, was explored in order to identify current trends with students, and society in general, with respect to levels of debt.

Because not all students may attend an institution of higher education, or may have had other means with which to pay for higher education, reviewing credit card debt is discussed since student debt is not exclusively the only debt a young person may incur.

Student Loan Debt

Reflecting on the information provided by the Project on Student Debt (2013), which noted a 2% increase in student loan debt between the 2012 and 2013 graduating college classes, these rising college costs over the past several years is one of the major factors in students having to borrow. The National Center for Public Policy and Higher Education reported, with an adjustment made for inflation, that tuition and fees at colleges have increased 439% between 1982 and 2007 (Civil Engineering, 2009). According to Steverman (2009):

> A President's Advisory Council on Financial Literacy issued a 57-page report in January just before President Barak Obama took office. Among other recommendations, the council said states and the federal government should mandate financial education from kindergarten to grade 12, and require college students to take a financial literacy course before taking out student loans. (p. 3)

At this time, the recommendation from the President's Advisory Council on Financial Literacy has not been implemented.

Simpson, Smith, Taylor, and Chad (2012) explored risk factors for students incurring debt and if those risk factors affect the students' willingness to borrow. The risk factors that were explored included loan knowledge, money management skills, debt-tolerance attitude, and estimation of future earnings. Additionally, they explored whether the understanding of these topics affected a student's college choice. The researchers used a survey tool to conduct their

research. Their results showed that “freshmen students lacked personal and general loan knowledge and had unrealistic expectations of future income at graduation” (p. 24).

Credit Card Debt

Credit cards are also a cause of debt that could perhaps be diminished with the appropriate lessons in financial literacy. As Wang (2011) stated:

> Given the importance of financial well-being to many indicators of student success, wealth advisors and financial educators who understand and acknowledge their influence on college students’ financial learning and behavior in relation to credit card use will be able to have a positive effect on college students’ financial future. (p. 98)

The purpose of a study conducted by Cochran (2010) was to determine whether the use of credit and debit cards (i.e., electronic banking), negatively affects the knowledge gained by children on financial topics such as budgeting, saving, investments, and other financial practices. This study concluded that students who have only the experience of electronic banking are, indeed, negatively affected in their knowledge and practices regarding finances; however, the study further showed that students do have interest in these topics once they are introduced. Research has been conducted by Wang and Xiao (2009) to determine those factors that influence a college student’s spending habits. The survey and interviews conducted by these researchers resulted in findings that show that students’ credit card debt and habits are dependent on their peer groups and on their patterns of spending; specifically, compulsive buyers have more debt and those with strong social networks have less debt on credit cards. Cude, Lawrence, Lyons, Metzger, Lejune, Marks, and Machtmes (2006) studied college students by both survey and focus groups in order to “explore and . . . learn more about college students’ financial management practices and their attitudes about financial management” (p. 104). Part of this

study focused on credit card debt. It was found that those students with low levels of financial literacy (identified as “at risk”) generally held more credit cards and were not as adamant about paying off the debt each month. They displayed attitudes of being able to take care of the debt in the future so it was not so much a current concern.

Leclerc (2012) demonstrated in her study that the trend of students qualifying for and receiving credit cards prior to exiting high school is of concern when coupled with the lack of financial knowledge of students. She reviewed the sociological factors that were influential in a student possessing credit card debt. “Students who are female and of a minority race, who perform poorly academically, and are older are more likely to be in debt compared to other students” (p. 155). She further states that “easy access to credit cards makes students susceptible to accumulating debt” (p.155). A study that compared scores from the Jump$tart survey with credit card ownership and use, agrees stating that there was an “inverse trend of rising credit card ownership rates among students with falling financial literacy scores” (Scott, 2010, p. 158).

In their study regarding students and credit card debt, Dale and Bevill (2007) summarized their study by noting six recommendations to assist students with understanding their finances. Those steps include a recommendation that schools should “promote personal financial education in high schools; this will enable students to come to college prepared to handle the credit card offers they are likely to be hit with during their first weeks on campus” (p. 125). Because of the age group being targeted for credit card or student loan debt, a discussion regarding the developmental and learning theories may be able to explain why students feel they need to borrow.

Theoretical Perspectives

Adult Developmental Theoretical Perspectives

There are developmental theories that include the age of high school and college students and, by understanding the stage of development of these young people, these theories might assist with identifying strategies to help students better understand debt and gain financial literacy. Peer group pressure, for example, can entice students to make poor purchasing decisions. Since late high school and college-aged students are in the developmental stage, as defined by Erik Erikson, of identity versus role confusion, Erikson theorizes that young people are introspective and cognizant of the context in which they live (Cooper, 1983). This theory is consistent with students' awareness of peers and those objects that might be interpreted as having status. This effect of peer pressure is especially true for students who have a lesser amount of parental influence at home, since studies show that parental influence is a key factor in decision making for adolescents (Rice, 1996).

Developmental psychologist James Marcia expanded on Erikson's theories. Marcia's work concentrated on "crisis" and "commitment." From out of a crisis situation, a commitment is made (Index of Learning Theories and Models, 2008), he theorizes. A hypothesis may then be made that a student's future attitude toward money could be, in part, the result of a crisis or a point in time when a critical decision had to be made. An example of a critical decision could be a young person's ability to differentiate between "wants" and "needs."

David A. Kolb described experiential learning theory as describing learning, not just from a developmental perspective, but from a culmination of life experiences (Index of Learning Theories and Models, 2008). He lists the four stages of learning as:

- Concrete experience (or “do”)
- Reflective observation (or “observe”)
- Abstract conceptualization (or “think”)
- Active experimentation (or “plan”)

Kolb’s theory seems to correlate to the adage “children learn what they live” (Nolte, n.d.). If students are raised in a family where the parent(s) value financial health and stability and educate the children about debt and managing finances, students will more likely be more responsible in the financial arena. An implication of this theory is that students who are not raised in such an environment, many times have to learn about financial matters by first-hand experiences.

Bloom’s Taxonomy

While developmental theory may explain the reasons behind decisions that are made at this point in a young person’s life and the obstacles that prevent more mature judgment, the final outcome of studies in financial literacy should be to identify better ways in which to educate young people on this topic. Benjamin Bloom wrote extensively about the way in which people acquire knowledge. This research has become known as Bloom’s Taxonomy. The basis for Bloom’s theory revolves around the following “cognitive domains” (Englehart, Furst, Hill, & Krathwohl, 1956, p. 201): knowledge, comprehension, application, analysis, synthesis, and evaluation. An examination of each of these domains as they pertain to financial literacy education will be a key to unlocking effective financial literacy programs.

Knowledge refers to “the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting” (Englehart, et al., 1956, p. 201). Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pentrich, . . . Bloom (2001) also refer to this stage as “remembering.” Remembering is key in the transfer of information to young people

so that they may utilize the skills in practical ways in the future. Mandell and Klein (2009) noted in their research that, while the skills learned by students during financial literacy training seemed to be retained in the short term but over time, the skills were not retained. By providing a financial literacy education plan that addresses strategies to improve the retention of information provided to students, the effectiveness of the program will be increased.

Comprehension is "a type of understanding or apprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications" (Englehart, et al., 1956, p.205). This type of understanding allows the learner to make connections to the knowledge he has gained and the ways in which this knowledge may be used. This connection could be referred to as "why" something is important. It is for this reason that a research design that includes survey data and focus groups is so important. Young people need to understand how having a high level of financial literacy affects them in their day-to-day activities. Grody, Grody, Kromann, and Sutliff stated:

> The current educational literature, teaching aids, and school curricula for the elementary school age group appear to be variations of the same old theme of teaching kids solely through old age piggy bank savings and numeration techniques. . . . Our premise is that understanding the relationship of work and money, money and ATM machines, money and investments, credit cards and tangible product acquisition, bill payment mechanisms, monthly statements, retirement savings, taxes, deficits, et al., is a more fundamental and current foundation for a financial education in our modern age. (as cited in McCormick, 2009, p. 73)

Application is “the use of abstractions in particular and concrete situations” (Englehart, et al., 1956, p. 205). As has been demonstrated in financial literacy research (Mandell & Klein, 2009), the ability to utilize what has been learned in a practical manner serves to solidify the understanding of the subject. By providing pertinent examples and real-life situations that would require the use of the learned skill, students are more likely to grasp the topic being introduced.

Analysis refers to “the breakdown of communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit” (Englehart, et al., 1956, p. 205). Chang, Franklin, Shelot, Ozercan, Reuter, En, and Moriarty (2011) created a financial literacy course utilizing the “second life” virtual world computer technology with the expectation that it would provide an opportunity for teens and young adults to learn and apply the financial literacy skills that were being taught. This course went beyond the application phase of learning and gave the students an opportunity make decisions based on the knowledge that they have gained and to know where it was most prudent to apply the knowledge.

Synthesis occurs when one is able to “put(ting) together (of) elements and parts so as to form a whole” (Englehart, et al., 1956, p. 206). Anderson (2001) describes this phase as more of an evaluative phase and defines it “mak(ing) judgments based on criteria and standards” (p. 31). Mandell and Klein (2007) noted that students need to understand the relevance of a topic and possess prior education from other courses to fully grasp the subject. By providing the opportunity for students to “connect the dots” and discover how making sound financial decisions can affect other parts of their lives will solidify understanding of the topic.

Evaluation is the final step of the taxonomy and refers to the person making “judgements about the value of material and methods for given purposes” (Englehart, et al., 1956, p. 207). For

Anderson (2001), evaluation is a step prior to evaluation. Instead, Anderson describes the last stage as his stage of synthesis, or "create—Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure" (p. 31). Mandell and Klein (2007) stated in the discussion of their research that students need to realize that they "are responsible for their futures and that happiness of these futures can vary dramatically based upon their actions" (p. 114). During the evaluative phase of this taxonomy, students would have the opportunity to reflect upon how significant a role that being financially literate plays for the remainder of their lifetimes.

The Appropriate Time to Educate About Financial Literacy

Financial literacy education may be taught in at various points in a person's life; however, research regarding the effectiveness when administered at various points in time does not always agree as far as the optimal time to educate on this topic. The following information delves into this subject regarding the appropriate time to educate young people about financial literacy.

Preparation in High School

The results of a 2009 survey of undergraduate students conducted by Sallie Mae indicated that 84% of students felt they need more education on financial management topics; 64% would have liked to receive information about financial management topics in high school (Lusardi, Mitchell, & Curto, 2010). Knowing this data, the researchers investigated how financially literate high school students really were because they had concern about students entering into debt before being armed with appropriate knowledge. Their findings led to this statement, "It is likely beneficial to provide financial education *before* individuals engage in contracts and *before* they start making financial decisions (Lusard et al., 2010, p. 376).

Avard et al. (2005) surveyed freshman students at Texas A & M University in order to determine their levels of financial knowledge. It was found that freshman demonstrated a low level of financial literacy and that high school curricula did not prepare students to make even basic financial decisions. A consideration was made, though, that the lack of effectiveness at the high school level may be due to the lack of opportunity to put into practice what was taught. Providing the financial literacy education to students when they have the opportunity to apply the knowledge may provide for a stronger impact on student behaviors thus supporting offering this during the first year of college when students will begin to borrow loans and find that they must live within a budget. In another study, Valentine and Khayum (2005) surveyed and found that a group of high school students in Southwestern Indiana only received an average score of 51% on a financial literacy test.

Debt is being incurred by students even before they leave high school. Policies banning credit card solicitation on college campuses have led to credit card companies to distribute credit card applications directly to high school students (Scott, 2010). This practice is the beginning of a history of debt for consumers who have not yet acquired a level of financial literacy to understand the significance that excessive borrowing may have on their futures. While some studies indicate that financial literacy education in high school is ineffective, Mandell and Klein (2007) studied the reasons why this education may be ineffective. One significant finding of their study is that high school students need to be motivated. Additionally, instructors need to emphasize to their students that "they are responsible for their futures and the happiness of these futures can vary dramatically based upon their actions" (p. 114).

Beverly and Burkhalter (2005) are in favor of financial literacy being taught to students in high schools. They note that social workers agree. The researchers indicated that the primary

reason for educating during high school is that education in high school has the propensity to reach the most students, since not all students continue education beyond high school. "By advocating for expanded and improved financial education, especially in public schools, social workers may help individuals achieve greater short-term and long-term economic security" (Beverly & Burkhalter, 2005, p. 124). This opinion is supported by a study by Walstad, Rebeck and McDonald (2010) which measured students' financial literacy after utilizing a financial literacy program delivered by students via a series of DVD presentations. The students' financial literacy level was measured by a pre-test and post-test of the viewing of this information. The results showed that students did have an increase in their overall financial literacy level; however, the researchers acknowledged that this research was a short-term study and whether the students retained this information was not assessed. Franklin (2007) described a Meeker, Colorado, high school that attempted to incorporate the other subjects in which students were enrolled into their financial literacy unit as well as encourage other faculty to integrate financial literacy into their courses. By integrating lessons about financial management and decisions into other coursework, students can learn everyday applicability to this education which can have a lasting effect on future consumer decisions.

There has been some movement toward school districts creating financial management curricula that all students must attend prior to graduation (Wilhelm & Chao, 2005). This coursework would be an opportunity to reach a "captive audience" since students may not have the freedom to opt out and not attend the class. Making a course(s) mandatory would allow schools to have the opportunity to educate students about this valuable life skill. Huddleston, Danes, and Boyce conducted research to show that early intervention regarding financial education has a positive effect on the financial skills of students in high school (as cited in Peng,

Bartholomae, Fox, & Cravener, 2007, p. 266). Peng et al. also noted the research of Bernheim, Garrett, and Maki (2001) who indicated that the effects of financial literacy intervention last into adulthood (as cited in Peng et al., 2007).

The effect of the economy has certainly been felt by schools and "dwindling resources can cripple plans to renew curriculum" (Fisher, 2010, p. 109). School districts may state that they do not have the resources to enter into a curriculum that includes courses that they may consider non-essential; however, Valentine and Khayum (2005) also pointed out that there are resources available from the No Child Left Behind act that "makes resources available that can be used for this purpose given the emphasis on promoting consumer economic, and personal finance education through the teaching of personal financial management skills" (p. 8). They also hypothesize that there is not enough personal financial topics available for students in a high school curriculum and that adding emphasis to this type of education would potentially be another opportunity to reach out to students (Valentine & Khayum, 2005).

Financial Literacy as Part of the College Curriculum

Between the 2007-2008 and 2008-2009 academic years, the dollar amount of student loan disbursements to higher education institutions have increased by 25% (Kuzma, Thiewes & Kuzma, 2010). This student loan debt is in addition to the credit card debt that may have been carried from high school into college or new credit card debt secured while in college. Due to the growing debt incurred by college students, it appears logical that college would be the most appropriate time to provide education to students about the rights and responsibilities of being a borrower, options available to them upon entering repayment for those loans, and other issues regarding finances. The new found independence and the pressure to assimilate can cause a

student to make decisions to purchase items out of peer pressure (Norvilitis & Santa Maria, 2002) and a credit card may seem like a very convenient way to do so.

"It is reasonable to expect that as college students take on higher levels of personal financial responsibility, their interest in personal finances heightens and learning takes place" (Peng et al., 2007, p. 280). This study showed that taking a finance class in college, rather than in high school, increased students' financial literacy level. In part, the authors concluded that the increase in financial literacy level may be due of the relevance of finances in college students' lives. Providing this type of education when a student does not have any "vested interest" does not appear to be as effective as when the student actually needs to know this information. Lalonde and Schmidt's study (2011) found that interest in the subject of financial literacy, the number of credit cards held by the student, and gender are all predictors of financial literacy but that gender was not a contributing factor to financial literacy. Their study found that "the most significant predictor of financial literacy in our survey is student interest" (p. 7).

Because studies show that the financial literacy education given in high school is lacking in effectiveness, (Avard et al., 2005), institutions of higher education must incorporate this learning into their curriculums on a regular basis, starting with the time when students first enter college. Kezar and Yang (2010) agreed, stating "We argue that financial literacy, as a life skill, as a requisite to citizenship, and as a critical intellectual competency, is an essential component of a college degree" (p. 15).

Consistent with Bloom's Taxonomy, relevance is a strong argument for providing this education after students enter college. Providing the financial literacy education to students when they have the opportunity to apply the knowledge may provide for a stronger impact on student behaviors. This theory of relevance supports offering financial literacy education during the first

year of college at the time when students will begin to borrow loans, must live within a budget and experience other financial hurdles; in other words, life experience provides relevance to what they are learning regarding finances (Mandell & Klein, 2009).

Mandell and Klein (2009) noted the ineffectiveness of high school financial literacy education with the results of their Jump$tart survey. This survey revealed that even students who did receive financial literacy education in high school did not ultimately demonstrate a higher level of financial literacy when in college as compared to others who did not have high school financial literacy education. Harrelson (2010) agreed that the high school curriculum currently being utilized does not adequately educate students in the subject of finances and this can have a significant impact on the futures of these students. The purpose of his qualitative study was to determine the level of financial literacy of high school students. The research questions surrounded the following topics: the financial literacy of high school seniors as compared to the level that they should have, as per previous research, the preparedness for future decisions gained by following the current curriculum, what information is most effective with this group of students, and the perception of these students toward their current curriculum. The researcher gathered his data by interviewing four students and then coded the transcripts of these conversations. The outcome of this study was that these seniors were, indeed, lacking in financial knowledge and that future educators should take this into consideration when designing curriculum.

Some researchers, while attempting to investigate the proper time to provide such education, concede that more research in the field regarding the timing of financial literacy education is needed (Schuchardt et al., 2009). As a result, it would be difficult to state that

financial literacy education in high school is more effective than that which might be provided in college and vice versa.

Factors Affecting Financial Literacy

There may be many factors that affect the level of financial literacy that a person possesses. Chen and Volpe (1998) conducted a study and found that women, students who are not business majors, students younger than age 30, and students who have not had much work experience are less financial literate than their counterparts. First-generation, female college students were studied by Eitel and Martin (2009). Age, ethnicity, and college grade level were also among the variables being measured. Age had a slight effect on the results of the financial literacy survey administered to these students, with scores increasing with age. Survey scores were significantly higher for those students who self-identified as Caucasian versus those who self-identified as African-American or Hispanic-American. Students closer to earning a degree had a higher level of financial literacy.

Lalonde and Schmidt (2011) studied financial literacy in college students to determine what contributes to a student's ability to be financially literate. A survey tool was utilized and measured knowledge surrounding the topics of income, money management, savings and investments, and spending and debt. This research was compared to the previously completed research and made a comparison of the results. Findings showed that interest in the subject of financial literacy, the number of credit cards held by the student, and gender are all predictors of financial literacy.

First-Generation Status and Parental Influence

In today's society, young people are faced with increasing financial pressures at a very early age and yet, in some instances, families have not even introduced their children to any

financial topics. “Part of the problem seems to be that parents don’t talk with their kids about financial literacy and competence” (Peck, 2004, p.10). “Formal and informal financial education can affect the financial behavior and socialization of individuals and households” (Schuchardt et al., 2009, p. 87). Therefore, providing formal education regarding finances is necessary to build a society that makes sound and informed decisions surrounding money. Shim et al. (2009) contended that their earlier research found that the role of parents in a student’s financial knowledge is actually greater than a student’s work experience or any education in high school dealing with finances.

While general financial literacy has been examined quite often by researchers, Sabri (2011) studied what he feels are unanswered questions in the study of student financial literacy. His research concentrated on the manner in which students derive their financial literacy, including students’ exposure to financial decisions and topics in childhood and how it affected future financial behavior. It also included academic ability as a factor in the level of financial literacy of students. The sample was 2,519 college students in Malaysia. This researcher administered a test, which was subject to various analyses (bivariate t-tests, analysis of variance, and multiple regression analysis), to determine students’ financial knowledge. This study found that family involvement with financial education had a positive effect on students’ financial literacy. The study further found that students who were familiar with saving and other financial tools had a more positive financial well-being.

Heckman and Grable (2011) conducted a study to find the determinants of a student’s level of financial knowledge. It was believed that factors such as income, parental attitudes toward debt, and the dependency status would play a role. The research questions were as follows: (1) is there a relationship between parents with attitudes against debt and students with

greater financial knowledge? (2) does a college student's income correlated with higher financial knowledge? (3) does dependency to parents influence financial knowledge? and (4) is there a relationship between a student's financial knowledge and their belief about their financial well-being? The investigators conducted the survey via questionnaire to college students and found that these factors did, indeed, have a positive correlation with financial knowledge and financial self-efficacy.

Different than the above studies, though, Calamato (2010) tested undergraduate students in order to determine the effect of their parents on their financial behaviors. The research question was whether students whose parents taught them financial topics would have a higher financial literacy level than students whose parents had not taught them about financial literacy, which most previous research indicates has a positive correlation. The results showed that there was not a significant relationship between parental education about finance and subsequent financial literacy of the student.

A study that included the comparison of gender and household income and their relationship to undergraduate student credit card use was completed by Jasim and Taylor (2010). They wanted to determine if there was a relationship between these two factors. In addition, these researchers compared undergraduate college students with the general population, something that was not done in Murphy's (2005) study. This factor is important because it may account for other independent variables, such as age, education, or major course of study in college. A questionnaire tool was utilized to survey the students, who were mostly business students, and the results of the survey showed that there is no difference in credit card usage for college students versus the general public and insignificant differences in use by males versus females. Household income, also a part of this study, proves to be an intervening factor for the

number of credit cards a student used. While this study does not directly measure financial literacy, it does point to financial habits of students.

Parental influence can also reach beyond household income and role-modeling. An indirect influencing factor for level of financial literacy and student debt is a student's status as a first-generation college student. According to Lee and Mueller (2014):

> The following insights can be drawn about first-generation students in comparison to their continuing-generation counterparts: (a) they rely more heavily upon student loans, (b) they are more likely to believe they can afford higher education only by incurring debt, and (c) they are more likely to scrutinize the decision to incur debt. (p.716)

Eitel (2007) provides a different perspective. She studied the attitudes of first-generation female students and their perceived financial literacy needs. In this research, two main themes regarding financial literacy emerged from the focus group. The first was that the participants in the group had a struggle of "not knowing vs. not wanting to know" about financial literacy and the second was "the graduation cure" (p.127). The participants projected an attitude that they do not need to worry about finances until absolutely necessary and that, for some, graduation or "winning the lottery," would resolve any financial issues they may face.

Flores (2014) hypothesizes that first-generation students are likely to be less financially literate since they "may have less exposure to personal financial resources due to structural barriers" (p. 99). "The challenges this group (first-generation students) faces range from financial and emotional difficulties to academic and social experiences" (Lightweis, 2014, p. 466). These students are keenly aware of their need to rely on finances, in many cases, for their continued education and their parents, while perhaps supportive, lack the knowledge to help students

navigate higher education, including the financial aspects (Irlbeck, Adams, Akers, Burris, & Jones, 2014).

Major

The purpose of a study conducted by McKenzie (2009) was to investigate the financial literacy of college seniors who were about to graduate by utilizing Mandell's study (2004), which administered the Jump$tart questionnaire. The students were measured by comparing the level of financial literacy of the students as compared to their debt. The research questions being investigated were (1) whether there was a difference in debt level based on a student's major and (2) whether gender, employment status, ethnicity, and family income predicted debt and financial literacy levels. In this case, financial literacy was not found to be a good indicator of debt and business majors showed to have a higher level of financial literacy than students in other majors. Finally, over half of the participants would have been interested in taking a personal finance course while in college but most learned any financial capability from their families or independently.

Chen and Volpe (1998) also conducted a study and found that female, non-business majors younger than 30 years of age, and students who have not had much work experience, are less financially literate than their counterparts. Supporting the possibility of education playing a part in the financial literacy level, Chen and Volpe (1998) also conducted a study and found that female, non-business majors younger than 30 years of age, and students who have not had much work experience, are less financially literate than their male counterparts. This finding also supports that a discrepancy can occur in levels of financial literacy within gender groups based on these other outside influences.

Chinen and Endo (2012) concur with the theory that education background is a significant factor in the differences in financial literacy levels. They argue that, while reviewing educational background that gender alone does contribute to financial literacy but it is not gender in and of itself that is the contributing factor. The educational background of the student makes more of an impact. They note that "the common characteristics in those studies about the relation to financial literacy are *gender*, *academic major*, and *experience and circumstances in investments"* (p. 35). However, in their study, when controlling for these variables, gender did not appear to be a statistically significant factor in determining the level of financial literacy. College major, however, did appear to be statistically significant, especially with those majoring in "numeric" majors (i.e., business-related courses), showing a higher level of financial literacy versus those in "non-numeric" majors (i.e., liberal arts or education).

Gender

In his study at a primarily Black university (PBU), Murphy (2005) administered a survey and the results showed that, while both sexes had a low level of financial literacy, males had a higher level of financial literacy than women. Donohue (2011) studied financial literacy and women. She indicated that this type of study was valuable since women are increasingly facing situations that deal with finances and that gender-based research needs to be completed surrounding the topic of financial literacy. The research question asked was whether women will reach a "certain level of financial behavior" by simply receiving financial literacy training. The study results suggested that the widely-held research findings that financial literacy training leads to more responsible actions later needs to be re-examined and that there may be a component of financial literacy that is missing that addresses financial literacy differently for men versus women.

Fonseca, Mullen, Zamarro, and Zissimopoulos (2012), agreed that financial literacy levels for women are statistically significantly below that of their male counterparts. They offer an explanation, though, that one reason could be that it is traditionally the males who are responsible for finances in the home and therefore make the lion's share of financial decisions, thus they have more practical experience. Even when measuring financial literacy for women who are the primary financial stakeholders in a family, there still appears to be evidence of lower financial literacy for these women. The authors acknowledge that further research needs to be completed to find out why this phenomenon occurs. When controlling for education level, however, the financial literacy levels started to become even, suggesting that higher levels of education may attribute to finding the topic of financial literacy more relevant and thus, contributing to an increased understanding of the topic.

Gender and household income and their relationship to undergraduate student credit card use was also studied by Jasim and Taylor (2010) in order to determine if there was a relationship between these factors. In addition, these researchers compared undergraduate college students with the general population, something that was not done in Murphy's (2005) study. A questionnaire tool was utilized to survey the students, who were mostly business students, and the results of the survey showed that there is no difference in credit card usage for college students versus the general public and insignificant differences in males versus female.

Studies are beginning to look at secondary factors that may influence why males have a higher level of financial literacy than females and that research may prove more enlightening than simply accepting the fact that there is a gender difference. Kindle (2010) provided research that indicated, when controlling for gender, the lack of financial literacy knowledge could be more fully attributed to students' perceptions of relevance.

> A level of financial knowledge and skill that is sufficient to protect a middle-class consumer from participation in the high-cost alternative financial services sector may be woefully inadequate for a person with low income whose only access to credit is in this sector. (p.478)

Though Murphy's (2005) study showed that both genders had a low level of financial literacy, but males had a higher level of financial literacy than women, in his discussion, he noted that other independent variables appeared to have a more significant effect on financial literacy. He does not provide any evidence that it is gender, alone, that accounts for the differences in the levels of financial literacy, but his finding that other factors are more significant, does contribute to the theory that gender alone is not the only factor that distinguishes the differences in financial literacy levels.

Donohue (2011) argued that more gender-based research needs to be completed surrounding the topic of financial literacy. The results of this study indicated that there may be a component of financial literacy education that is missing. That component is the possibility that financial literacy education may need to be addressed differently for men versus women in order to equalize the level of financial literacy between the genders. The study results also showed, then, that the widely-held research conclusion that financial literacy education leads to more responsible actions later, needs to be researched further. Doing so would provide more evidence regarding those financial topics that may not be addressed in financial literacy education that if presented differently for men versus women, could begin to close the gap in the levels of financial literacy between men and women. This study supports the hypothesis that gender, alone, is not the reason for the difference in the financial literacy and that other factors within the actual financial literacy education itself may attribute the difference in gender.

McKenzie (2009) agreed with the gender discrepancy. Like many other studies, her study also found that males outscored females on financial literacy measures but she also postulates that further studies need to be conducted "to identify what contributes to this gender difference, which might lead potentially to changes in the manner in which future financial literacy educational programs are developed" (p. 97). However, Chen and Volpe (2002), in their study regarding financial literacy and gender, indicate that:

> We find supporting evidence that gender is associated with financial literacy. Even after controlling the impact of other factors, we find that the gender factor is still statistically significant, indicating women are less knowledgeable about finance then men. The weight of evidence leads us to conclude that women are less knowledgeable about finance then men. (p. 305)

What these researchers failed to demonstrate though, was the reason women were less knowledgeable.

Another factor that has been show to affect level of financial literacy and was explored between genders was a study by Jorgensen and Savla (2010). They propose that a reason for the differences that some studies have shown regarding the level of financial literacy between males and females may be explained, not by gender alone, but by the level of parental involvement in financial literacy education. This hypothesis supports the concept that interest or familiarity on the topic may be a more significant reason for the lack of financial literacy knowledge then gender. Their study also showed a surprising outcome, though. It appeared that parental involvement did not have as much as an equalizing factor for men and women.

> After looking at the interaction effect of gender, we found that only men who learned implicitly about finances from their parents had a significantly higher financial

knowledge score, yet women's financial knowledge score did not significantly differ by how they learned about finances from their parents. (Jorgensen & Salva, 2010, p. 475)

Mandell and Klein (2007) concur, noting that "our research demonstrates that motivation is an important driver of financial literacy. After controlling for other important determinants of financial literacy, we find that questions relating to motivation add significantly to explaining student financial literacy scores" (p. 114). One of the variables in this study was gender, and it was found to not be "significantly related to financial literacy scores" (p. 109). They further stated that "equally low financial literacy scores of those who have or have not taken relevant coursework can be partially explained by the fact that many students just don't care about their personal finances" (p.113).

As yet another study shows, it is apparent that more than simply gender seems to play a significant role in the ability to learn and retain lessons of financial literacy. For example, in their study about how to change college students' financial knowledge and behaviors, Borden, Lee, Serido, and Collins (2008) found a trend that females are not shown to display as high a level of financial literacy as males, but believe that it goes beyond simply a matter of gender as the primary reason for the discrepancy in financial literacy levels. Employment status and ethnicity, for example, also affected financial literacy levels.

Looking at the effect of major on financial literacy, students of the same major were studied by Seyedian and Yi (2011), who determined that, depending on method of instruction to students who are in a business major taking a two different finance courses, female students were outperformed by their male counterparts in pre-tests; however, after being provided with training in an area of importance to the students' major and future careers, females significantly increased their scores on financial tests during post-tests after attending the course and thus this resulted in

no significant difference in the scores of males versus females. These scores demonstrated that being educated in content that is relevant and important has an effect on overall financial literacy and is not supporting the notion of males always being more financially literate than females.

Ethnicity

First-generation, female college students were studied by Eitel and Martin (2009). Age, ethnicity, and college grade level were among the variables being measured. Age had a slight effect on the results of the financial literacy survey administered to these students, with scores increasing with age. Survey scores were significantly higher for those students who self-identified as Caucasian versus those who self-identified as African American or Hispanic American. Students closer to earning a degree had a higher level of financial literacy.

In the study by Murphy (2005), which analyzed financial literacy among students at a PBU, race was positively identified as a factor in lack of financial literacy. Murphy cited a study by Joo et al. (Joo, et al., 2003, as cited in Murphy, 2005) that found minority students in predominantly Caucasian institutions of higher education had a lower level of financial literacy. The significance of Murphy's findings, which supported the question regarding race as a factor in financial literacy, was that the finding was translatable to universities where the majority were of the same race.

Race and gender were identified as two major factors influencing a student's credit card debt in a study by Wang (2011). The results showed that African-American and Hispanic students accrued higher levels of debt than other students. For male students, African-Americans tended to have a higher debt level and for female students, Hispanic students had a higher debt level. The author noted "this study emphasizes the effect of ethnicity and gender on college students' credit card debt, which underscores the importance of targeting educational programs

for vulnerable populations in the financial socialization of college students" (p. 98). Jackson and Reynolds (2013) studied the effect of student loan debt on the college persistence of African-America and Caucasian students. They stated that "loans reduce racial inequality" because "they benefit black college students more than white students in terms of enrollment persistence and, ultimately, degree completion" (p. 355). The authors then concluded that "the black-white gap in college completion would be greater if college loans were not available" (p. 356). The researchers described the conundrum of debt versus degree attainment by calling it a "Catch-22," meaning that much good can come from having debt, particularly when needing to close the racial inequality gap, but it can also lead to issues resulting from the debt, such as default on the loans.

Borden et al. (2008) postulated that more research needs to be completed to determine the effects of race on financial literacy level. In their study, they found that "white male students showed the most responsible attitudes toward credit card use, followed by non-White female students" (p. 35). This led the researchers to determine that "a more theoretical understanding of the social meaning behind financial knowledge and behaviors" (p. 35) needs to occur.

Methods of Delivery for Financial Literacy Programs

Various methods of delivery of financial literacy have been proposed by researchers. These can range from non-credit, first year experience programs taught by faculty, peer led programs, and required classroom courses. Cheang (2007) administered a needs-assessment survey in order to determine those financial topics that interested students, as well as to determine students' opinions on the most effective method of delivery for this information. Topics that students wanted to explore included budgeting. As for the preferred method/time of

delivery of a program, students indicated that this information could be part of a financial aid interview, an extra credit assignment for class, or during the freshman orientation program.

According to Martin (2007), there is a need for more effective approaches to financial education. A study of a group of college students who were given a "financial management intervention" showed that students who had this intervention were more aware of their spending habits after beginning participation in this program and thus modified their behaviors and habits regarding their spending (Palmer et al., 2010). This study was both quantitative and qualitative and required introspection on the part of the student participants since they were asked to analyze on what and why they were spending money. This program was designed with the assumption that students would not borrow as much and would be more considerate of their spending if given a tool to become more aware of spending habits.

Borden et al. (2008) noted that, when examining retention about financial matters, the way in which financial literacy education is presented can have an effect, and "change in students' intentions to engage in more effective financial behaviors and less risky financial behaviors is indeed an indicator of program effectiveness in enhancing participants' future financial behaviors" (p. 35). Therefore, if a student is motivated, perhaps by the information presented to him, that this information could in turn change his or her attitude or interest in the subject, thus increasing his or her retention and knowledge on the topic. In this particular study, the seminar format of presentation of financial literacy showed enough promise that the researchers felt it was worth further study in the future. "Shorter and more accessible formats may offer an attractive, affordable and effective alternative, both for college students and for educators, particularly for introductory information on personal finance" (p. 37).

Peer Educators

> In order to develop a successful personal financial planning program, one must consider more than just the courses to be offered. A successful program also requires: Gaining Program Support, Attracting Students, Pivotal First Course, Professional Community Involvement, and Continuous Assessment. (Martin, 2007, p. 79)

Martin (2007) also stated that it is important to garner the interest of students as early in the education plan as possible. He cites the use of interactive and engaging exercises, case studies, real world applicability, and guest speakers as ways to engage the students. Another approach to student engagement on this topic is offered by Goetz, Durband, Halley, and Davis (2011) where they propose the use of peer-mentors in financial literacy education. The full engagement of students can be a win for both the students being educated as well as the strong co-curricular education being received by the students who are conducting the programs. McWilliams (2008) concurs stating:

> College freshman need information during college orientation about the dangers of credit card abuse. However, some students may regard such presentations from a CPA or professor as a boring adult telling them what to do. It may be more effective to include as co-presenters college seniors who made mistakes with credit cards in their freshman year. To be successful with supposedly uninteresting subjects such as personal finance, the discussion must become real to the young people involved. College students can bring credibility to discussions of financial matters with other young people. (p. 315)

Delivery During Orientations and First Year Experience Programs

Kezar and Yang (2010) identified some common methods of delivery for financial information. These delivery methods range from required seminars during the first year

orientation experience, to web based products supplied by the for-profit sector to student fairs on campus. They also describe ways that these standard methods might be improved. An example may be collaborating with various constituents on campus who have expertise in areas that could be of value: professors of finance, career development staff, on-campus banks, academic advising, and financial aid professionals. This group could then analyze the campus itself and determine ways in which they could offer information to students in a valuable way. Finally, Kezar and Yang identified their interpretation of "best practices" for financial education: when to teach this topic, the methods with which it should be taught, and the results of outcomes assessments. Their recommended method included "using active, experiential, and problem-based learning techniques" (p. 20).

Classroom Instruction

Brown (2009) conducted his study in order to determine the effectiveness of student loan debt counseling on the health sciences student population and whether it had an impact on the borrowing levels of these students. The content of these programs was examined. In order to determine the outcome, a mixed-methods study was performed. One part was a written survey and the other consisted of a series of focus group meetings. The outcome of this study was that this counseling did, indeed, have an impact on student borrowing and it had a positive effect on students' decisions about credit cards. Additionally, the study concluded that evidence showed that these programs were also influential on other areas of financial literacy such as budgeting.

In support of having financial literacy taught in the high school curriculum, more specifically the Family and Consumer Science curriculum, Mimbs-Johnson and Lewis (2009) outlined various aspects of teaching financial literacy. While their method was classroom instruction, as evidenced by the purpose of this study, which was to improve this curriculum,

they did identify core curricular areas that should be addressed. They deemed this the "socially responsible perspective." Referencing O'Neill, Bristow, and Brennan (as cited in Mimbs-Johnson & Lewis, 2009), they identified the following:

1. Starting with the "basics."
2. Building on the positives.
3. Starting a campaign.
4. Using "hooks" to reach learners.
5. Taking a multi-pronged approach.
6. Helping learners assess readiness for change.
7. Helping learners assess their programs.
8. Focusing on learner interests.
9. Monitoring financial changes over time. (p.7)

McWilliams (2009) also offered his suggestions of "best practices":

1. Collaborate with those responsible for freshman orientation programs or courses.
2. Provide support for participation in sessions (allow time off from class or extra credit for attendance).
3. Identify campus student organizations in need of community service activities.
4. Use public space tables and offer prizes for correct answers to financial questions (Feed the Pig "loot").
5. Collaborate with the campus financial aid office for financial-aid-focused presentations. (p. 316)

The premise for the study conducted by Munoz (2009) was that "a balanced economy assures a participatory system where both consumption and economic equality is valued and

practiced" (Abstract). The question being asked is whether or not behavior change would occur with financial literacy education. The researchers conducted both qualitative and quantitative research to provide data for her study. The findings in this study provide recommendations for future knowledge about effective ways to provide this education: it must be reinforced and taught repetitively, the audience must be considered when determining the training, and the programs can be very successful if administered at the correct point in time when the learners will have the most motivation.

The purpose of McCann's (2010) dissertation was to determine the effectiveness of the financial literacy curriculum at the Washington Township High School Career and Technology Education Department as compared to the benchmarks of the New Jersey Core Curriculum Content Standards (NJCCCS). This study was a quantitative study utilizing a questionnaire that was administered to 304 students. The research questions that were being investigated were to determine if the financial literacy skills of these students improved over the next academic year, to compare those students involved in a financial literacy course with those that did not complete a financial literacy course, and to determine if the school district's current curriculum meets the needs according to the NJCCCS benchmarks. The results of this study did not show significant differences between groups that did and did not receive financial literacy training and a recommendation was made to have future studies be longitudinal to determine if the future financial literacy is affected by the current curriculum.

Unlike much other research on the topic of financial literacy, the purpose of Otter's (2010) study was to research the teachers instead of students. In this study, 1,200 classroom teachers were surveyed and descriptive statistical methods utilized to analyze the responses. The research questions being asked were: (1) what are the teachers' attitudes/beliefs are about

personal financial literacy education, and (2) what is the level of financial knowledge of the teachers themselves. The results of this study showed that the teachers overwhelmingly support financial literacy education but they would like professional development in the form of a workshop to prepare them to teach this subject.

Lifelong Learning

Based on these findings, there is strong evidence to reach out to the citizens of our country to ensure that they are equipped with the tools to understand and control their borrowing and begin a strong financial future. As the research supports, financial literacy education is beneficial at both the high school and the college level financial literacy information be provided to students in order for them to understand the complexities of being financially responsible. What this research also supports, however, is that neither high school nor college alone is the optimum resource for financial literacy education. Instead, it needs to be an ongoing process which is introduced early in a child's life by the family, even before formal education and continue through high school and into the college level. As described by Willis (2009, p. 421):

> Consumer financial education is conducted through classroom teaching, self-study materials, informational websites, interactive games, and the educational component of counseling. Programs vary in content, audience, and methodology. But they all aim to achieve welfare-enhancing financial behavior engaged in by consumers as the result of acquired financial literacy. Such literacy requires both cognitive knowledge and skills and a well-calibrated degree of psychological confidence in that knowledge and those skills. (p. 421)

As this excerpt suggests, financial literacy education requires often requires a building block strategy for effectiveness both on learned knowledge and psychological readiness. For example, understanding credit card debt may be a simple concept to grasp for high school students who see the relevance of this type of education, since they are consumers who may already hold credit accounts with major banks or retail stores. On the other hand, budgeting may be more prudent for college students who are, likely for the first time in their lives, experiencing the need to live within a certain level of income. It has more relevance. Finally, it may not be until middle age that some people find that education regarding retirement actually affects behavior, once the reality of future retirement and recognition of lifestyle has been established. Remund (2010) points out that "money-related struggles do not necessarily disappear as consumers move through adulthood; they often evolve or change" (p. 277).

An indirect outcome of college financial literacy training was suggested by Kezar and Yang (2010), who are proponents of making financial literacy part of the required college curriculum, either by course work or co-curricular activities. They recommend having campuses offer financial literacy programs to staff and faculty in order to promote and support their teaching in this area; however, they also recognize that this type of training would have the additional beneficial outcome of providing as a personal development opportunity for staff as well. This further supports the concept that financial literacy should not be limited to one point in time in a person's life.

Yates and Ward (2011) conducted a study which assessed, in part, the effectiveness of financial literacy education in high school, college and in adulthood. One of the recommendations that were summarized in this study was to develop a "comprehensive financial literacy instrument for each level of analysis: high school, college, adults" (p. 76). Again, this

supports the suggestion that financial literacy should continue to be taught and assessed throughout the various stages in a person's life. Further, these researchers went on to specifically state that there should be a course for high school students in financial literacy, a competency requirement for financial literacy at the college level that must be accomplished prior to graduation and workshops for continuing education after college.

While there has been much literature about financial literacy and the most optimal time to introduce it to students, Yates and Ward (2011) took the concept of learning financial literacy and studied how that knowledge is transferred as a person progresses through life stages. The relevant theory used by the researchers was Bloom's taxonomy and they utilized the Jump$tart Survey as their measurement tool to determine initial financial literacy levels. The purpose, as noted by the authors, "is to better understand the financial learning process by studying how knowledge is being 'transferred' from high school, college, and to adulthood" (p. 65). The results may produce information that improves the way in which financial literacy is taught. Results showed that colleges should include a financial literacy course as part of the general education curriculum and that college graduates should be tested on level of financial literacy; however, it appears that both high school and college students are not retaining financial knowledge to the level of moving it onto adulthood and that our current financial education of society does not promote adequate financial literacy.

Summary

This chapter identified the results of the work of many researchers and supports the need for increased financial literacy education. Distinguishable groups who have shown to possess more financial literacy than others have been identified. Finally, understanding the population that needs educated is paramount to finding an appropriate and effective way to communicate

this important topic. Best practices in method of delivery of financial literacy education is an area.

As college costs continue to rise and state and federal financial aid grant programs continue to dwindle (Kantrowitz, 2010), students are borrowing both federal and private loans at an increasing level (Project on Student Debt, 2013). Recognizing the fact that student loan debt is on the rise, institutions have the ethical responsibility to provide their students with the most effective and comprehensive programming regarding financial literacy. By providing students with only the minimal requirements to understand the debt that they are incurring while in college, and with the research demonstrating that students are not receiving or comprehending issues regarding finances prior to beginning higher education, we must go beyond the requirements of providing simple loan rights and responsibilities during loan entrance counseling to students and provide a holistic financial literacy learning experience.

Understanding the population that one is attempting to influence is a key to success in any educational program. It is a fact that student debt is on the rise but parents, schools, and peers can and do contribute significantly in educating students on the importance of managing debt levels. Developmental and learning theorists like Erikson, Kolb, and Schaie offer insight into students' stages of development which provides a framework for understanding that these students are in a critical phase in their lives for learning major life lessons. Researchers have reinforced that parental influence is still paramount to student decision-making but also that peers contribute greatly to students' decisions, as well. Schools should utilize this information to meet the challenge by providing thoughtful and meaningful counseling early in students' education so that they are clearly aware of the impact that high debt may have on their futures. This education should include real-life examples of debt to income ratios based on the likely

careers of the students, as well as offering assistance to students through creating simulated monthly budgets to highlight the fact that high loan payments can certainly alter one's future lifestyle.

CHAPTER 3

METHODOLOGY

This chapter identifies the methods used during this study to investigate the effectiveness of financial literacy education, factors affecting level of financial literacy, and the effect on subsequent student debt. Studies have shown that students, even those who have been educated about financial literacy during high school, often display low levels of financial literacy when entering college (Mandell & Klein, 2009). As a result, it is vital that students receive effective financial literacy training as part of their curricular and/or co-curricular education while in college to be prepared for financial decisions that will follow them for the rest of their lives. To be more prepared to address the dilemma of lack of financial literacy among our college students, research is needed to determine what factors affect the level of financial literacy education.

In this study, a random sample of junior and senior-level, undergraduate students at Indiana University of Pennsylvania (IUP) were surveyed using the Qualtrics survey tool. Academic grade level and student email addresses were identified via the university's student records system and a random sample of students were provided to the researcher by the Indiana University of Pennsylvania School of Graduate Studies and Research. The survey was emailed to the randomly-selected students at their university email account. Students were subsequently sent a follow up email if the survey was not completed after one week from the initial notification. A third request was planned; however, due to the response rate from the first two requests (6.4%, 254 students), a third email was not sent. The survey was available for a total of two weeks. A survey tool was used since it could provide statistical of data for the quantitative analysis of this study. The tool that was used, the Jump$tart Coalition® for Personal Financial Literacy survey,

has been utilized in many studies involving financial literacy (Appendix C). Questions from the original survey were not altered in any way, due to the requirement from the Jump$tart Coalition® for Personal Financial Literacy that questions and responses could not be changed but questions could be added. Within the survey, a question was added to determine if the student would be willing to participate in a focus group to discuss financial literacy and the reasons that students borrow during college. Forty-eight students indicated willingness to participate were asked to provide their contact information and a subsequent focus group meeting was arranged (Appendix E and Appendix F).

The survey used was developed by the Jump$tart Coalition® for Personal Financial Literacy. By utilizing this tool and analyzing the results against demographic and biographic information of the participants, we were able to determine if certain factors affect the level of financial literacy of students and, if so, specifically which factors have impact. Additionally, we utilized the results of the survey to determine if any of the demographic factors affect student debt. Knowing this information will assist institutions of higher education with planning appropriate and effective financial literacy initiatives.

The focus group instrument allowed for a richer scope of information in order to conduct the qualitative portion of this study. A questionnaire was developed in order to guide the discussion (Appendix F). While the questionnaire did provide initial questions, subsequent conversation about other financial literacy topics emerged from the group that was also used during the qualitative analysis in Chapter 4.

Statement of the Problem

The rising debt level, for both education and consumer debt, is rising at a significant rate (Weller, 2007), therefore, it is critical that effective financial literacy education be provided and those factors affecting the level of financial literacy and debt identified.

Research Questions

The purpose of this mixed-methods research was to identify the factors that may affect the level of financial literacy and subsequent student debt, both student loan and credit card debt. The following research questions were investigated:

1. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education in high school and those who did not?
2. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education or a related course in college and those who did not?
3. Is there a statistically significant difference in the level of financial literacy based on gender, ethnicity, first-generation student status, major, or family income?
4. Is there a statistically significant difference in the level of financial literacy of students who own and use credit cards and those who do not?
    a. For what purposes are students using credit cards (qualitative-via focus group)?
5. Is there a statistically significant difference in the estimated level of student debt for those students who demonstrate a high level of financial literacy and those who demonstrate a low level of financial literacy?

a. Beyond direct payment to school, what are other reasons students are borrowing student loans (qualitative-via focus group)?

Population

A random sample of junior and senior-level, undergraduate students at IUP were invited to participate in an online survey. This large-scale survey was conducted in order to ensure that students of various genders, majors, ethnicities, and economic backgrounds were included in the study, and therefore allowed the researcher to fully assess a cross-section of students on the subject of financial literacy and debt. The use of a survey tool allowed for intensive analysis to determine similarities and differences in these populations with respect to various factors that may affect the level of financial literacy. The results of this detailed analysis have implications that may be utilized when schools, knowing their populations of students, may need or desire to produce a more targeted approach to their financial literacy education. Based on the outcomes, this study is transferrable to various categories of institutions of higher education.

Academic grade level was identified utilizing the university's information system and a random selection was provided to the researcher by the IUP School of Graduate Studies and Research with the goal of a 5% completion rate. Of the 3,971 students who received the survey request, 402 students began the survey (10.1%), and 254 students completed the survey (6.4%). The median time to complete the survey was 17 minutes. The mean score for the students in the quantitative portion of this study was 63.2%, which was slightly higher than the mean score for the nationally administered 2008 Jump$tart survey, which had a mean score of 62.2%. From the 254 students who completed the survey, 48 self-identified as being willing to participate in the focus group and, of those, seven actually participated in the focus group session.

Research Setting

This study was conducted at IUP. IUP is a mid-sized university with a total student enrollment in fall 2014 of 14,369. It is a doctoral granting institution and is one of the largest of the 14 universities that comprise the Pennsylvania State System of Higher Education (PASSHE). At IUP, approximately 28% of students who file the Free Application for Federal Student Aid (FAFSA) identify as first-generation students. Nearly 39% of the undergraduate population receives a Federal Pell grant, which is largest of the need-based, federal financial aid grant programs. The 2011 three-year Official Cohort default rate for IUP, which is the most recently released official figure from the Department of Education, was 8.8%. For comparison, the average fiscal year 2011 national official cohort default rate was 13.7% and the average for Pennsylvania was 11.6 %. The cohort default rate measures the number of students in a fixed cohort, from a particular institution, who default on federal Stafford loans. Schools that have a default rate below 15% are eligible for benefits to their student body such as single disbursements of loans each semester and no delay in loan disbursements beyond the federal requirement. Because of these benefits, it is a measure that schools may desire to affect by coordinating a successful financial literacy program.

Data Collection Instrument

This study was conducted as a mixed-methods research study based on a survey design created by the Jump$tart Coalition® for Personal Financial Literacy (see Appendix B and Appendix C) and a follow-up focus group interaction with those students who indicated on the survey that they had interest in participating in the focus group. In order to assess the factors that could potentially affect level of financial literacy, the survey methodology was utilized so that student responses could be analyzed and variables considered when making conclusions about

the outcome of the study. Using a quantitative tool is favorable, as noted in Creswell (2003), when "the researcher seeks to establish the overall tendency of responses from individuals and to note how this tendency varies amount people" (p. 51).

The qualitative, focus-group method was utilized in order to provide a richer analysis of the rationale by students of their borrowing behaviors. As noted by Simpson et al. (2012), when describing their research about risk factors for student debt, "The utilization of interviews and focus groups would enhance a self-reported questionnaire and provide broader depth on the research topic" (p. 24).

Tool

The survey tool used in this study was created by the Jump$tart Coalition® for Personal Financial Literacy Among College Students (see Appendix C). This survey consists of two parts: part one includes 31 questions that measure financial literacy knowledge, and part two contains 25 classification/demographic questions and questions regarding personal financial habits. Approval for use of the survey was secured from the Jump$tart Coalition®; specifically, the tool approved for use was the Jump$tart Coalition® for Personal Financial Literacy Among College Students. This distinction is being made, since this organization also surveys high school students using a different tool. When the use of the tool was approved, guidelines for use were sent (see Appendix B). These guidelines include that the user may use all or some of the questions but must not alter any specific question. Additionally, credit for the ownership of this survey tool was to be attributed appropriately.

The goal of this survey was to determine the factors that affect the level of financial literacy by associating specific questions on the survey to the various factors that we were measuring during this study. This tool had the added advantage of gathering information about

credit card debt and anticipated student loan debt levels, which was necessary for an analysis of any influence of financial literacy on debt level. Unlike the results of the 2008 Jump$tart Coalition® for Personal Financial Literacy Among College Students study conducted by the Jump$tart Coalition® for Personal Financial Literacy, this study took into consideration the effect of the level of financial literacy on student debt and not simply whether a student is financially literate.

Another study that utilized the Jump$tart Survey questionnaire to assess the level of financial literacy and debt for college seniors was done by Mckenzie (2009). This study also reviewed the level of financial literacy due to major, level of financial literacy and debt, and demographic data, such as gender, employment status, ethnicity, and family income. The researcher found that being a business or business-related major did have a higher level of financial literacy than those in non-business majors, level of financial literacy did not affect the debt of the students, and that "gender, employment status, ethnicity, and college major were predictors of students' financial literacy levels (Mckenzie, 2009).

In addition to the Jump$tart survey, the focus group was convened to discuss more qualitative measurements about student debt. The research questions for this focus group were the following, with the intention for rich discussion to follow: 4 a. For what purposes are students using credit cards? and 5 a. beyond the direct payment to a school, what are other reasons students are borrowing student loans (Appendix F)? Adding this qualitative research to this study allowed the study to go beyond factors that affect level of financial literacy but why students are borrowing at the levels they are borrowing.

Establishing Reliability and Validity

Prior to the administration of the survey, the original author of the survey, Dr. Mandell, was contacted via email to determine if he had any data regarding the validity and/or reliability of his Jump$tart survey (Mandell, personal correspondence, August 29, 2013); unfortunately, Dr. Mandell indicated that he did not have any information to provide regarding the validity or reliability of his survey tool. Upon further research, a study authored by Thomas Lucey (2005) was identified. This research specifically reviewed the validity and reliability of the 1997 and 2007 Jump$tart surveys. The researcher compared the data sets from both of these survey results and employed the Kuder-Richardson formula to determine the internal consistency of the surveys. In addition to the full survey, sub categories were investigated as well. The results showed that the surveys "possess moderately high inter-correlation consistency overall and some degree of face and content validity" (Lucey, 2005, p. 293). In addition to the Lucey (2005) study, this study, since it is mixed methods, had the advantage of triangulation of the results. This process will enable the researcher to find that there is consistency between the quantitative tool (the survey) and the qualitative measures (the focus group).

Pilot Study

The survey tool was administered to a small group (40 students) of first year graduate students prior to administration of the full survey. First year graduate students were utilized for the pilot to insure that these students are not included in the actual study and because this particular group of first year graduate students were generally directly out of their undergraduate studies. This pilot group included both males and females of various majors, ethnicity, parental education, and economic background and will not be included in the final survey. There were no

issues that were discovered through this process that needed to be corrected prior to administration of the actual survey to junior and senior level students.

Table 1

Research Questions and Applicability of Research Instrument

Research Question Number	Applicable Survey Questions
1	1 through 32
2	1 through 31, 33
3	1 through 31, 35, 36, 37, 38
4	1 through 31, 39, 40
4a	N/A (focus group)
5	1 through 31, 41
5a	N/A (focus group)

Analyzing Data

Quantitative Analysis

Data was analyzed using the Statistical Package for the Social Sciences (SPSS). The testing initially included analysis of variance (ANOVA) and independent t-tests to determine differences between and among groups: gender, ethnicity, major of study, highest level of parental education, parental income, self-reported projected student debt, credit card possession, and prior financial literacy education in college and high school. An ANOVA was favorable over

a t-test analysis in some instances to enable the comparison of several means to determine their effects on the level of financial literacy, debt, and credit card ownership.

After review of the ANOVA and t-tests, it was determined that interaction among categories of variables would be important to a final analysis of this study. A Chi-square test for independence was used to determine this. Additionally, a Chi-squared Automatic Interaction Detection (CHAID) tree was created to identify, specifically, if, or how, the different variables interacted to predict the level of financial literacy for a student, the factors that are present for students who have high versus low anticipated student loan debt levels, and the demographics of students more likely to have credit cards.

Qualitative Analysis

A focus group session was held with survey participants who self-identified on the survey tool that they would be willing to be part of a focus group. During the focus group, open ended questions were posed by the researcher in order to assess the reasons students borrow or utilize credit cards at the levels they do, on what items or activities they spend their funds, and their experiences with financial literacy education. Since this was presented in an informal group setting, the participants were permitted to go outside of the parameters of the original questions, as appropriate. The focus group session was recorded and responses coded. During the coding, categories were established in order to summarize the information provided by the participants. The main themes that emerged were: the difference between "wants" and "needs", the need for lifelong learning about financial matters, the role of family in a student's financial knowledge, financial health as a component of physical health, and the concept of borrowing beyond educational expenses.

CHAPTER 4

RESULTS

Financial literacy, or lack thereof, has become an increasingly popular topic; however, it is one that requires further study to determine if there is a relationship between lack of financial literacy and the debt of college-aged students. The results of this study demonstrates the level of financial literacy for the students surveyed, those intervening factors that may lead to that level of financial literacy, the anticipated student debt and credit-card usage for the students, and how a single factor alone may not be a predictor of financial literacy level or student debt.

This study has built upon previous research regarding the factors that affect financial literacy and, in order to gain further understanding, has included the following research questions:

1. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education in high school and those who did not?
2. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education or a related course in college and those who did not?
3. Is there a statistically significant difference in the level of financial literacy based on gender, ethnicity, first-generation student status, major, or family income?
4. Is there a statistically significant difference in the level of financial literacy of students who own and use credit cards and those who do not?
    a. For what purposes are students are using credit cards?

5. Is there a statistically significant difference in the estimated level of student debt for those students who demonstrate a high level of financial literacy and those who demonstrate a low level of financial literacy?
    a. Beyond direct payment to school, what are other reasons students are borrowing student loans?

In this mixed-methods study, a random sample of all junior and senior-level, undergraduate students at IUP were surveyed using the Qualtrics survey tool. In addition, members of the group of randomly selected students were asked to identify if they were willing to participate in a focus group to be held at a later date. The utilization of a mixed-methods design was the result of the desire to provide richer, more personal experiences and opinions regarding financial literacy and financial literacy education, in addition to gathering quantitative data.

Survey Participants

On the survey, students self-identified in the major that most closely resembled their major at the institution where the survey was administered. The major with the highest participation was "other," with 21.2% participation, and the identified major with the highest participation in the study was "business or economics" (16.5%). The major with the lowest participation in the study was "engineering," with only a 2.3% participation (see Table 1). Reasons for this low-end participation rate are addressed in the details of the analysis of the major as a contributing factor for level of financial literacy.

Table 2

Distribution of Survey Participants by Major

	N	Percent
Arts	20	7.87
Business or Economics	42	16.54
Engineering	6	2.36
Humanities	34	13.39
Nursing	19	7.48
Science	49	19.29
Social Science	30	11.81
Other	54	21.26
Total	254	100.00

To compare the respondents' demographics as compared the university as a whole, the participation by gender was 29.5% male and 70.4% female (see Table 2). This is disparate from the gender distribution of the university, with 45% male and 55% females in the total population.

Table 3

Distribution of Survey Participants by Gender

	N	Percent
Male	75	29.53
Female	179	70.47
Total	6	2.36

The ethnicity breakdown of the survey respondents' response to ethnicity was 90.5% "White or Caucasian," which had the highest level of participation, and "Hispanic-American"

having the lowest participation at 1.2%. In the overall university, 16% of the students identify as minority (see Table 3). Again, the disproportionate number of respondents identifying as "White or Caucasian" will be addressed in the analysis of ethnicity and level of financial literacy.

Table 4

Distribution of Survey Participants by Ethnicity

	N	Percent
White or Caucasian	230	90.55
Black or African-American	8	3.15
Hispanic-American	3	1.18
Asian-American	5	1.97
Other	8	3.15
Total	254	100.00

The focus group was comprised of seven students: Five females and two males (see Table 4). These students, since they were self-selected from the original randomly selected group of survey participants, were also all junior or senior-level students. All members of this group identified as "Caucasian" students.

Table 5

Distribution of Focus Group Participants by Gender

	N	Percent
Male	2	28.57
Female	5	71.43
Total	7	100.00

Analysis

Financial Literacy Education in High School

Research question 1. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education in high school and those who did not?

Initially, all students in the survey indicated that they had some sort of financial literacy education in high school. In order to analyze the data results, the length of the high school financial literacy education was categorized as long term and short term. Long term is defined as an entire course in personal money management or personal finance or an entire course in economics. Short term is defined as having a portion of a course where at least one week was focused on personal money management or personal finance, a portion of a course where at least a week was focused on economics, or a course in which a stock market game was played. These categories were based on the actual responses on the survey tool.

An ANOVA was conducted to compare the level of financial literacy between those students who received short term versus long term financial literacy education in high school. As illustrated in Tables 5 and 6 and contrary to what may be assumed, it was the students in the short term financial literacy education category who scored significantly higher than their counterparts who received long term financial literacy education (M = 18.23, SD = 4.621) and those who received short term financial literacy education in high school (M = 19.42, SD = 3.524), p = .051. While the size of the groups was not equivalent, the partial eta squared was .123, indicating only a small effect size.

Table 6

Mean Scores for Financial Literacy Survey for Those with Long Term versus Short Term High School Financial Literacy Education

	N	Mean	Standard Deviation
Long Term Program	183	18.23	4.621
Short Term Program	71	19.42	3.524
Combined Total	254	18.56	

Table 7

ANOVA Results for High School Literacy Level by Type of Program

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	72.808	1	72.808	3.858	0.051
Within Groups	4755.666	252	18.782		

Financial Literacy Education in College

Research question 2. Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education or a related course in college and those who did not?

Based on the survey responses, 100% of the respondents indicated that they either had received direct financial literacy education or had a related course in college. Based on this fact, the students were grouped into those who responded that they had "an entire course in personal money management or personal finance" or "a portion of a course where at least a week was focused on personal money management or personal finance" (referred to in Table 3 as Direct Personal Money Management), and those who responded that they had "an entire course in economics," "a portion of a course where at least a week was focused on economics," or "a course in which we played a stock market game" (referred to in Table 7 as Indirect Personal Money Management). The rationale for this grouping was that the focus of the former was more specific to financial literacy than the later.

Table 8

Mean Financial Literacy Scores Based on College Money Management Education

	N	Mean
Direct Personal Money Management	166	18.37
Indirect Personal Money Management	88	18.92

Note. $n = 254$.

An independent-samples t-test was conducted to compare the level of financial literacy between those students. There was no significant difference in the level of financial literacy between students who received direct personal money management education and those who did not ($p = .343$, see Table 8). The partial eta squared was .08, indicating a small effect size.

Table 9

Independent T-Test for Type of Personal Money Management Education

	t	df	Sig (2-tailed)	Mean Difference	Standard Error Difference
Equal Variances Assumed	-0.0949	252	0.343	-0.547	0.0576
Equal Variances Not Assumed	-0.997	203.586	0.32	-0.547	0.548

Table 10

Levene's Test for Equality of Variances for Type of Personal Money Management Education

	F	Sig.
Equal Variances Assumed	1.476	0.226
Equal Variances Not Assumed		

Gender, Ethnicity, First-Generation Student, Major, Family Income

Research question 3. Is there a statistically significant difference in the level of financial literacy based on gender, ethnicity, first-generation student status, major, or family income?

Gender

An independent-samples t-test was conducted to compare the level of financial literacy between male and female students. As illustrated in Tables 10 and 11, the results indicate that there is no significant difference in the level of financial literacy between males (M = 19.20, SD = 4.916) and females (M = 18.30, SD = 4.104)(p = .133). The partial eta squared was .11, indicating a small effect size. Based on these results, neither males nor females display a significantly higher level of financial literacy.

Table 11

Mean Financial Literacy Score by Gender

	N	Mean	Standard Deviation	Standard Error Mean
Male	75	19.2	4.916	0.5680
Female	179	18.3	4.104	0.3070

Note. n = 254.

Table 12

Independent T-Test for Financial Literacy Level by Gender

	T	df	Sig (2-tailed)	Mean Difference	Standard Error Difference
Equal Variances Assumed	1.508	252	0.133	0.904	0.599
Equal Variances Not Assumed	1.401	119.3	0.164	0.904	0.645

Table 13

Levene's Test for Equality of Variance for Financial Literacy by Gender

	F	Sig.
Equal Variances Assumed	2.657	0.104
Equal Variances Not Assumed		

While these results demonstrate the level of financial literacy, further analysis was required to determine if gender, in and of itself, results in higher level of anticipated student debt and a greater number of credit cards owned. Utilizing the results of the survey, the level of debt was categorized as high debt (greater than $19,999.00 in anticipated student debt) and low debt (less than or equal to $19,999.00 in anticipated student debt) and the number of credit cards owned was categorized as having one or more credit cards or no credit cards.

Comparing the anticipated level of student debt by gender, a higher percentage of females responded that they expect a higher level of student debt (see Table 13); however, results of a Chi-square analysis indicate that gender does not dictate any significant difference in level of anticipated student debt, $p = .264$ (see Table 8).

Table 14

Level of Anticipated Loan Debt by Gender

	>$19,999.00	<=$19,999.00	Total
Female	102	77	179
Percent within Gender	57.00%	43.00%	100%
Male	37	38	75
Percent within Gender	49.30%	50.70%	100%

Note. n = 254.

Table 15

Chi-Square Test of Anticipated Student Debt by Gender

	Value	df	Significance (2-sided)
Pearson Chi-Square	1.248	1	0.264
Continuing Correction	0.959	1	0.328
Likelihood Ratio	1.245	1	0.264

Ethnicity

To measure if there was a difference in financial literacy level between ethnicities, a one-way ANOVA was conducted to compare the level of financial literacy among racial groups. This analysis indicated that there was no significant difference in the level of financial literacy between Caucasian students (M = 18.0391), African-American students (M = 18.375), Hispanic-American students (M = 16.6667), Asian-American students (M = 16.000), and students of other racial groups (M = 17.972), F(4, 249) = .420, p = .794.

Table 16

Mean Scores for Differences in Financial Literacy Levels by Ethnicity

	N	Mean
White/Caucasian	230	18.039
Black/African-American	8	18.375
Hispanic-American	3	16.667
Asian-American	5	16.000
Other	8	17.375

Note. n = 254.

Table 17

ANOVA Results for Financial Literacy Between Ethnicities

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	29.743	4	7.436	0.42	0.794
Within Groups	4409.064	249	27.707		

To analyze further, since there was no significant difference between groups (likely due to the small sample size in the non-Caucasian groups), racial groups were combined into two group: Caucasian and Non-Caucasian (all other ethnicities combined). An independent-samples t-test was conducted to compare the level of financial literacy between Caucasian and non-Caucasian students. Again, there was no significant difference in the level of financial literacy between Caucasians (M = 18.62, SD = 4.412) and non-Caucasians (M = 18.04, SD = 3.973), t(252) = .614, p = .540 (Tables 17 and 18).

Table 18

Table of Mean Scores for Financial Literacy with Ethnicities Combined

	N	Mean	Standard Deviation
Caucasian	239	18.62	4.412
Non-Caucasian	24	18.04	3.973

Note. n = 254.

Table 19

Independent T-Test Results for Financial Literacy with Ethnicities Combined

	T	df	Sig (2-tailed)	Mean Difference	Standard Error Difference
Equal Variances Assumed	0.614	0.252	0.540	0.576	0.938
Equal Variances Not Assumed	0.668	29.254	0.509	0.576	0.861

Table 20

Levene's Test for Equality of Variances for Financial Literacy with Ethnicities Combined

	F	Sig.
Equal Variances Assumed	0.837	0.361
Equal Variances Not Assumed		

While ethnicity does not indicate a difference in level of financial literacy, further review regarding its impact on level of debt was studied as well. Reviewing the factors of anticipated student debt and owning credit cards as indicators of student debt, neither factor showed significant differences in Caucasian versus non-Caucasian students. Overall, the number of students combined who anticipated high loan debt was 54.72%, with 55.65% of Caucasian students expecting a higher loan debt and 45.83% of the non-Caucasian students expecting higher loan debt (Table 20).

Table 21

Table of Anticipated Level of Student Loan Debt: Caucasian and Non-Caucasian Students

	>=$19,999.00	<$19,999.00	Total
Caucasian	128	102	230
Percent of Total for Caucasian	55.65%	44.35%	100.00%
Non-Caucasian	11	13	24
Percent of Total for Non-Caucasian	45.83%	54.17%	100.00%
Total	139	115	254

To determine the significance of these differences, a Chi-square analysis was performed on ethnicity as a factor in the anticipated level of student debt. Results of this test are in Table 21. Similar to those performed to determine the significance of the level of financial literacy with ethnicity, the test showed no significant difference between the groups regarding level of student debt ($p = .358$).

Table 22

Chi-Square Analysis of Level of Anticipated Student Debt by Caucasian Versus Non-Caucasian Students

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	0.846	1	0.358		
Likelihood Ratio	0.841	1	0.359		
Fisher's Exact Test				0.394	0.24

Note. n = 254.

While anticipated student loan debt is one type of student debt being studied, a review of credit cards was also performed for the Caucasian and non-Caucasian groups. When reviewing the number of credit cards held by Caucasian and non-Caucasian students, 40.1% of all respondents indicated that they held at least one credit card. Caucasian students as a group reported that 40.8% held at least one credit card and the number of non-Caucasian students who reported at least one credit card was 50% (Table 22).

Table 23

Credit Cards by Caucasian Versus Non-Caucasian Students

	Has Credit Cards	Does Not Have Credit Cards	Total
Caucasian	94	136	230
Percent within Ethnicity	40.87%	59.13%	100.00%
Non-Caucasian	8	16	24
Percent within Ethnicity	33.33%	66.67%	100.00%
Total by Category	102	152	254
Percent by Category	40.16%	59.84%	100.00%

Again, a Chi-square test (see Table 23) was performed to determine if there was a significant difference in these two groups regarding the possession of credit cards. Based on this analysis, there is no significant difference in Caucasian and non-Caucasian students with regard to whether the students held credit cards ($p = .520$).

Table 24

Chi-Square Test: Ethnicity and Credit Cards

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	0.514	1	0.474		
Likelihood Ratio	0.524	1	0.469		
Fisher's Exact Test				0.520	0.313

Note. n = 254.

First-Generation Student Status

An independent-samples t-test was conducted to compare the level of financial literacy between first-generation students and non-first-generation students. The results indicate that the level of financial literacy of students who were not first-generation students (M = 18.376, SD = 4.017) was significantly higher than first-generation students (M = 16.859, SD = 4.467), $t(250) = -2.611$, $p = .01$. The partial eta squared was .16, indicating a small effect size.

Table 25

Table of Means for Financial Literacy Score by First-Generation College Status

	N	Mean	Standard Deviation
First-Generation College Student	71	16.8592	4.4666
Not First-Generation College Student	181	18.3757	4.0170

Note. N = 252.

Table 26

Independent T-Test for Financial Literacy by First-Generation College Status

	t	df	Sig (2-tailed)	Mean Difference	Standard Error Difference
Equal Variances Assumed	-2.611	0.250	0.010	-1.516	.5808
Equal Variances Not Assumed	-2.493	116.885	0.014	-1.516	0.608

Table 27

Levene's Test for Equality of Variances for Financial Literacy by First-Generation Status

	F	Sig.
Equal Variances Assumed	0.58	0.447
Equal Variances Not Assumed		

While a significant difference in level of financial literacy was found between those students who were first-generation and those who were not, further analysis was needed to determine if there was a significant difference in the level of anticipated student debt between these two groups of students. Students' anticipated debt level was grouped into "high" (greater than $19,999.00 in student loan debt) or "low" ($19,999.00 or less in student loan debt) (See Table 27). By percentage, both groups overall indicated that they anticipated "low" debt levels; however, even with a significant difference in level of financial literacy between these two groups, a Chi-square analysis indicated that there was not a significant difference in the anticipated level of student loan debt between these two groups ($p = .547$). Table 28 shows the outcome of the Chi-square analysis. Implications of this finding will be discussed in Chapter 5.

Table 28

Raw Scores: Anticipated Loan Debt of First-Generation Versus Not First-Generation Students

	>$19,999.00	<=$19,999.00
First-Generation	41	30
Percent of Total	57.75%	42.25%
Not First-Generation	98	85
Percent of Total	53.56%	46.44%

Note. n = 254.

Table 29

Chi-Square Test: Anticipated Loan Debt of First-Generation Versus Not First-Generation Students

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	0.363	1	0.547		
Likelihood Ratio	0.364	1	0.644		
Fisher's Exact Test				0.577	0.323

To review another source of student debt, the number of credit cards possessed by students by first-generation status was reviewed in order to determine if ownership of credit cards was more prevalent in one group over the other. As opposed to students in the first-

generation group indicating that they anticipate less student debt, this group responded that they have, as a group, a higher percentage of students who note that they hold credit cards. Of the first-generation students, 46% self-reported having credit cards to the 38% of non-first-generation students (Table 29).

Table 30

Credit Cards by First-Generation Status

	Has Credit Cards	Does Not Have Credit Cards	Total
First-Generation	33	38	71
Percent of Total for First-Generation	46.48%	53.52%	100.00%
Not First-Generation	69	114	183
Percent of Total for Not First-Generation	37.70%	62.30%	100.00%
Total	102	152	254
Percent by Total	40.16%	59.84%	100.00%

By applying a chi-square analysis to this data, the significance of this difference is able to be measured. It was determined that there was no significant difference between the first-generation students and students who were not first-generation students with regard to having credit cards, p=.201. (Table 30).

Table 31

First-Generation College Student and Credit Cards Chi-Square Test

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	1.639	1	0.201		
Likelihood Ratio	1.625	1	0.202		
Fisher's Exact Test				.204	.128

College Major

A one-way ANOVA was conducted to compare the level of financial literacy among students of different academic major. There was no significant difference in the level of financial literacy among students majoring in Arts (M = 16.650, SD = 5.499), students majoring in business or economics (M = 18.333, SD = 3.662), students majoring in Engineering (M = 19.500, SD = .4.593), students majoring in Humanities (M = 17.412, SD = 3.893), students majoring in nursing (M = 17.158, SD = 4.810), students majoring in science (M = 14.347, SD = 4.889), students majoring in social science (M = 19.033, SD = 3.586) and students majoring in other areas (M = 18.241, SD = 3.398), $F(7, 246) = 1.316$, p = .24. The partial eta squared was .04, indicating a small effect size (see Table 31).

Table 32

Mean Scores for Financial Literacy Level Between Majors

	N	Mean	Standard Deviation	Standard Error
Arts	20	16.650	5.499	1.23
Business or Economics	42	18.833	3.662	0.565
Engineering	6	19.500	4.593	1.875
Humanities	34	17.412	3.893	0.668
Nursing	19	17.158	4.81	1.104
Science	49	17.347	4.889	0.698
Social Science	30	19.033	3.586	0.654
Other	54	18.241	3.398	0.462

Note. n = 254.

The ANOVA test for these groups of students determined that there was no significant difference in level of financial literacy between majors (p = .243) (see Table 32).

Table 33

ANOVA for Financial Literacy Level Between Majors

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	160.223	7	22.889	1.316	0.243
Within Groups	4278.584	246	17.393		

After further review of this group, and considering the majors offered at the institution where these students attend college, it was determined that grouping of majors to most closely resemble those at the institution was important. As a result, Social Science was grouped into humanities, and engineering was grouped into science, to more closely reflect those majors at the study institution. Table 33 demonstrates those comparisons on a single major to major comparison. As the table shows, there is no single significant difference among majors when compared directly with one another.

Table 34

Multiple Comparisons of Majors Using Combined Majors

Majors	Majors	Mean Difference	Std. Error	Sig.
Arts	Business	-2.326	1.185	0.572
	Humanities	-1.678	1.118	0.812
	Nursing	-0.534	1.398	1.000
	Other	-1.666	1.142	0.631
	Science	-0.977	1.139	0.981
Business	Arts	2.236	1.185	0.572
	Humanities	0.648	0.866	0.990
	Nursing	1.792	1.206	0.819
	Other	0.661	0.898	0.990
	Science	1.349	0.894	0.809
Humanities	Arts	1.678	1.118	0.812
	Business	-0.648	0.866	0.990
	Nursing	1.144	1.140	0.962
	Other	0.013	0.806	1.000
	Science	0.701	0.802	0.979

Table 34 (continued)

Multiple Comparisons of Majors Using Combined Majors

Majors	Majors	Mean Difference	Std. Error	Sig.
Nursing	Arts	0.534	1.398	1.000
	Business	-1.792	1.206	0.819
	Humanities	-1.144	1.140	0.962
	Other	-1.131	1.164	0.967
	Science	-0.443	1.161	1.000
Other	Arts	1.665	1.142	0.831
	Business	-0.661	0.898	0.990
	Humanities	-0.013	0.806	1.000
	Nursing	1.131	1.164	0.967
	Science	0.688	0.836	0.984
Science	Arts	0.977	1.139	0.981
	Business	-1.349	0.894	0.809
	Humanities	-0.701	0.802	0.979
	Nursing	0.443	1.161	1.000
	Other	-0.688	0.836	0.984

Note. $n = 254$.

A one-way ANOVA was conducted to compare the level of financial literacy between these majors grouped with this refined definition of major (Table 34). Again, there was no significant difference in the level of financial literacy between majors, $F(5,248) = 1.135$, $p = .342$.

Table 35

ANOVA for Financial Literacy Levels Between Combined Majors

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	107.994	5	21.599	1.135	0.342
Within Groups	4720.498	248	19.034		

Note. n = 254.

In addition to financial literacy level between majors, debt between majors was also reviewed (see Table 35). Analyzing the anticipated student loan debt for students in various majors, unlike the analysis of level of financial literacy and major, did demonstrate a significant difference in anticipated debt levels between majors (p = .015) (see Table 36). Arts, nursing, and science have significantly higher anticipated loan debt than business, humanities and "other" (p = .001).

Table 36

Raw Scores: Anticipated Loan Debt by College Major

	<=$19,999.00	>$19,999.00	Total
Arts	4	16	20
Percent of Total for Arts	20.00%	80.00%	100.00%
Business	24	18	42
Percent of Total for Business	57.14%	42.86%	100.00%
Humanities	30	34	64
Percent of Total for Humanities	46.88%	53.13%	100.00%

Table 36 (continued)

Raw Scores: Anticipated Loan Debt by College Major

	<=$19,999.00	>$19,999.00	Total
Nursing	6	13	19
Percent of Total for Nursing	31.58%	68.42%	100.00%
Science	20	35	55
Percent of Total for Science	36.36%	63.64%	100.00%
Other	31	23	54
Percent of Total for Other	57.41%	42.59%	100.00%
Total per Debt Level	115	139	254
Percent of Total for Debt Level	45.28%	54.72%	100.00%

Total 37

Chi-Square Table for Major

	Significant Value	df	Asympt Sig (2-sided)
Pearson Chi-Square	14.02	5	0.015
Likelihood Ratio	14.522	5	0.013

Family Income

A one-way ANOVA was conducted to compare the level of financial literacy among students with different family income levels. There was no significant difference in the level of financial literacy among students whose parents earned less than $20,000.00 (*M* = 17.333, *SD* = 5.122), students whose parents earned between $20,000.00 and $39,999.00 (*M* = 16.974, *SD* =

3.969), students whose parents earned between $40,000.00 and $79,999.00 (*M* = 18.293, *SD* = 3.998), and students whose parents earned more than $90,000.00 (*M* = 18.197, *SD* = 3.957) , F(3, 216) = 1.172, *p* = .32. The partial eta squared was .02, indicating a small effect size (see Tables 37 and 38).

Table 38

Group Statistics for Family Income and Financial Literacy Levels

	N	Mean	Standard Deviation	Standard Error
<$20,000.00	24	17.333	5.121	1.045
$20,000.00-$39,999.00	38	16.974	3.964	0.644
$40,000.00-$79,000.00	82	18.293	3.998	0.442
>$90,000.00	76	18.197	3.957	0.454

Table 39

ANOVA Table for Family Income and Student Financial Literacy Levels

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	59.514	3	19.838	1.172	0.321
Within Groups	3657.32	216	16.932		

To further analyze this factor, categories were combined to make three groups instead of four: less than or equal to $39,999.00, greater than or equal to $40,000.00, and do not know. A one-way ANOVA was conducted to compare the level of financial literacy among students with

these different family income levels. Again, there was no significant difference in the level of financial literacy among students whose parents earned less than $40,000 (M = 17.56, SD = 4.640), students whose parents earned $40,000.00 or more (M = 18.87, SD = 4.099), and those who did not know their parents' earnings (M =18.97, SD =4.908), F(2, 251) = 2.170, p = .116 (see Tables 39 and 40).

Table 40

Mean Financial Literacy Scores by Parental Income Levels Combined

	N	Mean	Standard Deviation
$39,999.00 or less	62	17.56	4.64
$40,000.00 or more	158	18.87	4.09
Do not know	34	18.97	4.91

Table 41

ANOVA Table for Literacy Scores by Parental Income Levels Combined

	F	Sig.
Between Groups (combined)	2.17	0.116
Within Groups (combined)		

While no significant differences were found with parental income and level of financial literacy, analysis was performed to determine if parental income, without regard to financial literacy level, had any impact on student debt, both anticipated loan debt and the ownership of credit cards.

Table 35 outlined the anticipated loan debt by the combined parental income levels of $39,999.00 or less, $40,000.00 or more, and do not know. Analyzing through a Chi-square test, it was determined that there was no significant difference between income groups and their anticipation of high versus loan student debt (p = .463) (see Table 41).

Table 42

Raw Scores for Anticipated Loan Debt by Parental Income

	High Anticipated Loan Debt	Low Anticipated Loan Debt
$39,999.00 or less	38	24
$40,000.00 or more	84	74
Do not know	17	17

Table 43

Chi-Square Analysis of Parental Income and Anticipated Student Debt

	Significant Value	df	Asympt Sig (2-sided)
Pearson Chi-Square	1.54	2	0.463
Likelihood Ratio	1.55	2	0.46

Analysis of the impact on parental income on a student holding credit cards indicated a different outcome than parental income and anticipated student debt. Of the participants, 75.8% with parental incomes of $39,999.00 or less indicated that they do not have credit cards (see Table 37). Based on the results of a Chi-square analysis (Table 43), this was a significant

difference from those students who indicated they have a parental income of $39,999.00 or less and do have credit cards. The significance level between groups of .008 demonstrates that parent income does have an impact on student credit card ownership.

Table 44

Ownership of Credit Cards by Parental Income

	Has Credit Cards	No Credit Cards
$39,999.00 or less	15	47
Percentage by Income	24.2%	75.8%
$40,000.00 or more	69	89
Percentage by Income	43.6%	56.4%
Do not know	18	16
Percentage by Income	52.9%	47.1%

Note. n = 254.

Table 45

Chi-Square Analysis of Credit Cards by Parental Income

	Significant Value	df	Asympt Sig (2-sided)
Pearson Chi-Square	9.699	2	0.008
Likelihood Ratio	10.09	2	0.006

Financial Literacy Level and Credit Card Use

Research question 4. Is there a statistically significant difference in the level of financial literacy of students who own and use credit cards and those who do not?

An independent sample t-test was conducted to compare the level of financial literacy between students who hold credit cards and students who did not have any credit cards. As tables 45 and 46 demonstrate, there was no significant difference in the level of financial literacy between students who had credit cards (M = 17.922, SD = 4.143) and those who did not have any credit cards (M = 18.007, SD = 4.232), $t(252) = .874$, $p = .87$. The partial eta squared was .05, indicating a small effect size.

Table 46

Mean Financial Literacy Score by Credit Card Ownership

	N	Mean	Standard Deviation
No Credit Card	152	18.007	4.232
Has Credit Card	102	17.922	4.143

Table 47

Independent Sample T-Test for Credit Card Ownership and Financial Literacy Level

	F	Sig	t	df	Significance (2-tailed)	Mean Difference
Equal Variances Assumed	0.123	0.726	0.158	252	0.874	0.08501
Equal Variances Not Assumed			0.159	219.89	0.874	0.08501

Table 48

Levene's Statistic for Credit Card Ownership and Financial Literacy Level

Levene Statistic	df1	df2	Sig.
1.832	2	251	0.162

To further analyze, in order to see if the number of credit cards had any effect on the level of financial literacy, the number of credit cards owned was used instead of only yes or no to owning a credit card. These were grouped as follows: 0, 1, 2 or more credit cards.

A one-way ANOVA was conducted to compare the level of financial literacy among students with different numbers of credit cards (see Table 48). There was no significant difference in the level of financial literacy among students who did not have a credit card (M = 18.59, SD = 4.409), students who had one credit card (M = 18.95, SD = 3.739), and those who had more than one credit card (M =17.93, SD =5.043), F(2, 251) = .0679, p = .508 (Table 49).

Table 49

Mean Financial Literacy Scores for Students Based on Number of Credit Cards

	N	Mean	Standard Deviation
0	152	18.59	4.409
1	60	18.95	3.739
2 or more	42	17.93	5.043

Table 50

ANOVA Table for Number of Credit Cards and Financial Literacy Level

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	25.968	2	12.984	0.679	0.508
Within Groups	4802.524	251	19.134		

Financial Literacy Level and Anticipated Student Loan Debt

Research question 5. Is there a statistically significant difference in the estimated level of student debt for those students who demonstrate high levels of financial literacy and those who demonstrate a low level of financial literacy?

After reviewing the numbers of students in the debt categories, it was determined that combining the "nothing" category and "less than $5,000.00" category would result in a more substantial group size for students anticipating borrowing in the lowest category. A one-way ANOVA was conducted to compare the level of financial literacy among students with different anticipated student debt levels (see Table 50). There was no significant difference in the level of financial literacy among students who anticipate borrowing less than $5,000.00 (M = 18.36, SD = 4.482), students who anticipate borrowing $5,000.00 to $9,999.00 (M = 19.43, SD = 4.110), students who anticipate borrowing $10,000.00 to $19,999.00 (M = 18.49, SD = 4.331), students who anticipate borrowing $20,000.00 to $29,999.00 (M = 18.22, SD = 4.681), students who anticipate borrowing $30,000.00 to $49,999.00 (M = 18.98, SD = 4.267) and those anticipate borrowing more than $49,999.00 (M =18.21, SD =4.313), $F(6, 247) = 0.412$, $p = .851$ (see Table 51).

Table 51

Mean Levels of Financial Literacy by Anticipated Loan Debt

Loan Debt	N	Mean	Standard Deviation
Less than $5,000.00	55	18.36	4.482
$5,000.00-$9,999.00	23	19.43	4.11
$10,000.00-$19,999.00	37	18.49	4.331
$20,000.00-$29,999.00	46	18.22	4.681
$30,000.000$49,999.00	55	18.98	4.267
More than $49,000.00	38	18.21	4.313

Table 52

ANOVA Table for Financial Literacy Levels by Anticipated Loan Debt

	Sum of Squares	df	Mean Square	F Value	Significance
Between Groups	51.149	6	0.525	0.441	0.851
Within Groups	4777.343	247	19.341		

A final question to be answered regarding high school financial literacy programming is the degree to which it effects future anticipated student loan debt. Table 52 demonstrates the type of financial literacy program students in this study experience while in high school. As described earlier in this chapter, since all participants indicated some financial literacy education, the type of education received was grouped into long term and short term financial literacy programs.

Chi-square analysis of these variables do show that students participating in short term high school financial literacy programs do have a significantly higher anticipated student debt (p -.056 (see Table 53).

Table 53

Anticipated Student Loan by High School Literacy Program

	High Anticipated Loan Debt	Low Anticipated Loan Debt
Long Term	66	63
Percent of Total	51.10%	48.90%
Short Term	49	76
Percent of Total	39.20%	60.80%

Table 54

Chi-Square Analysis of High School Literacy Program and Student Loan Debt

	Significant Value	df	Asympt Sig (2-sided)
Pearson Chi-Square	3.667	1	0.056
Likelihood Ratio	3.677	1	0.055

Chi-Square Automatic Interaction Detection Analysis and the Interaction Effect

Chi Square Automatic Interaction Detection (CHAID) analyses were performed to determine the interaction of any of the variables described above and if it is a combination of factors, rather than just one significant factor, that led to a student's level of financial literacy

(Figure 2), student debt (Figure 3), or the possession of credit cards (Figure 4). The CHAID analysis utilized all of the factors described in research questions and determined those that, in conjunction with another factor, led to a resulting condition (i.e., level of financial literacy, student debt, and having credit cards). This is an important feature of this analysis because it provides the information a researcher requires to predict the set of variables that may exist to make a student more likely to have a lower financial literacy level, higher anticipated student debt, and the possession of credit cards.

Financial Literacy Level

In order to utilize the CHAID analysis to predict a student who may have a higher or lower level of financial literacy, financial literacy levels first needed to be defined as either high level or low level. A high level of financial literacy was defined as having an above average number of questions correct on the survey questionnaire (19 or more correct). A low level was defined as having answered an average to below average number of questions on the questionnaire (less than 19 correct). This scoring was based on the average score for all participants (18.56).

The results of the CHAID analysis (see Figure 2) provided information to conduct further analysis utilizing the Chi-square test of independence. As was found in the t-test analysis demonstrated previously in this chapter, a student's status being a first-generation college was found to be statistically significant factor for predicting level of financial literacy. This analysis showed further, however, that students whose parents attended but did not graduate from college also had a lower level of financial literacy than students who were not first-generation or indicated that they did not know their parents' higher education status (please note: there were only two students in this category who indicated that they did not know their parents higher

education status) (p = .002) (see Table 54). Of the students in the first-generation or parents not graduating from college group, 54.84% showed a low level of financial literacy. Their peers in the group whose parents graduated from college or they did not know their parents' status, only had 35.39% of the participants with a low level of financial literacy.

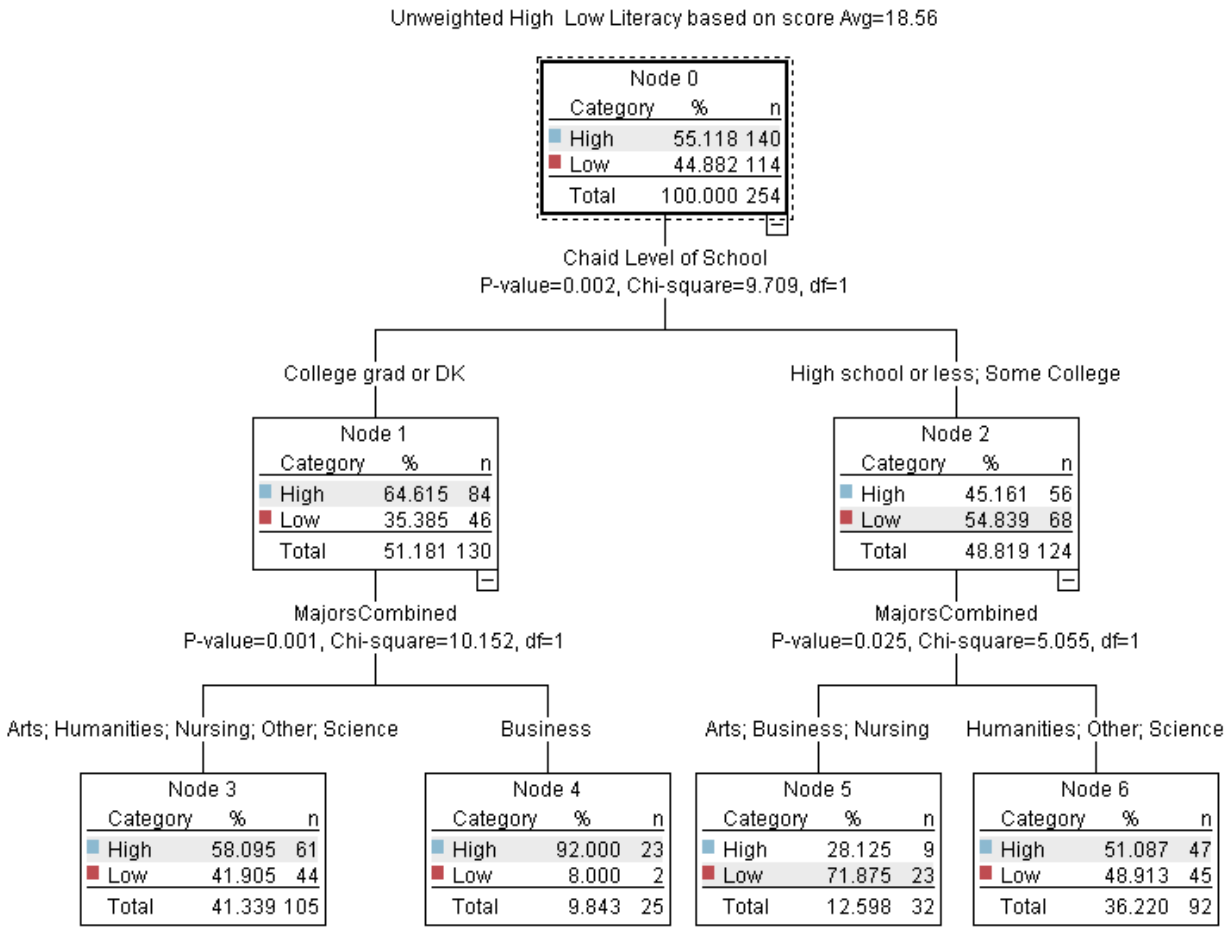

Figure 1. CHAID tree analysis of factors leading to level of financial literacy.

Table 55

Chi-Square Table of Financial Literacy Level and Parental Education Level

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	9.709	1	0.002		
Likelihood Ratio	9.769	1	0.002		
Fisher's Exact Test				0.002	0.001

Based on the CHAID analysis, the next interaction that indicated significance was the student's college major. When combining college major with level of financial literacy and parental education status, those students who were first-generation college students or parents did not graduate from college, who had majors in the humanities, science, or "other," had significantly higher financial literacy levels than students who were first-generation college students or parents did not graduate from college with majors in the arts, business, or nursing ($p = .025$). Students whose parents were college graduates or the students did not know their parents' education level showed significantly higher financial literacy levels if they were business majors ($p = .001$) (see Table 55). Only 58.09% of the students in the arts, humanities, nursing, science, or "other" majors had high financial literacy levels as compared to the 92% of business majors who demonstrated high financial literacy levels.

Table 56

Chi-Square Table of Financial Literacy Level, Parent Education Level, and Major

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	10.152	1	0.001		
Likelihood Ratio	12.212	1	0		
Fisher's Exact Test				0.001	0.001

Anticipated Student Loan Debt

The CHAID analysis for anticipated student loan debt was based on a student having an anticipated debt level of less than $19,999.00 (defined as "low debt") or greater than or equal to $19,999.00 (defined as "high debt"). Though no significance was found in anticipated student debt between majors, the CHAID analysis found that students who majored in art, nursing, or science had a statistically significantly higher level of anticipated student debt (68.09% indicated high debt) than their peers in business, humanities, or "other" majors (46.88% indicated high debt) ($p = .032$) (see Table 56). Further, arts, nursing, or science majors with a parental income of $39,999.00 or less have a statistically significant higher level of anticipated debt than students in these same majors with parents who have incomes of more than $39,999.00 ($p = .017$) (see Table 57).

Table 57

Chi-Square Analysis of Anticipated Student Debt for Arts, Nursing, and Science Majors as Compared to Business, Humanities, and Other Majors

	Significant Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	10.152	1	0.001		
Likelihood Ratio	12.212	1	0		
Fisher's Exact Test				0.001	0.001

Table 58

Chi-Square Analysis of Anticipated Student Debt for Arts, Nursing, and Science Majors by Parent Income Level

	Value	df	Asympt Sig (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	5.704	1	0.018		
Likelihood Ratio	6.261	1	0.012		
Fisher's Exact Test				0.018	0.013

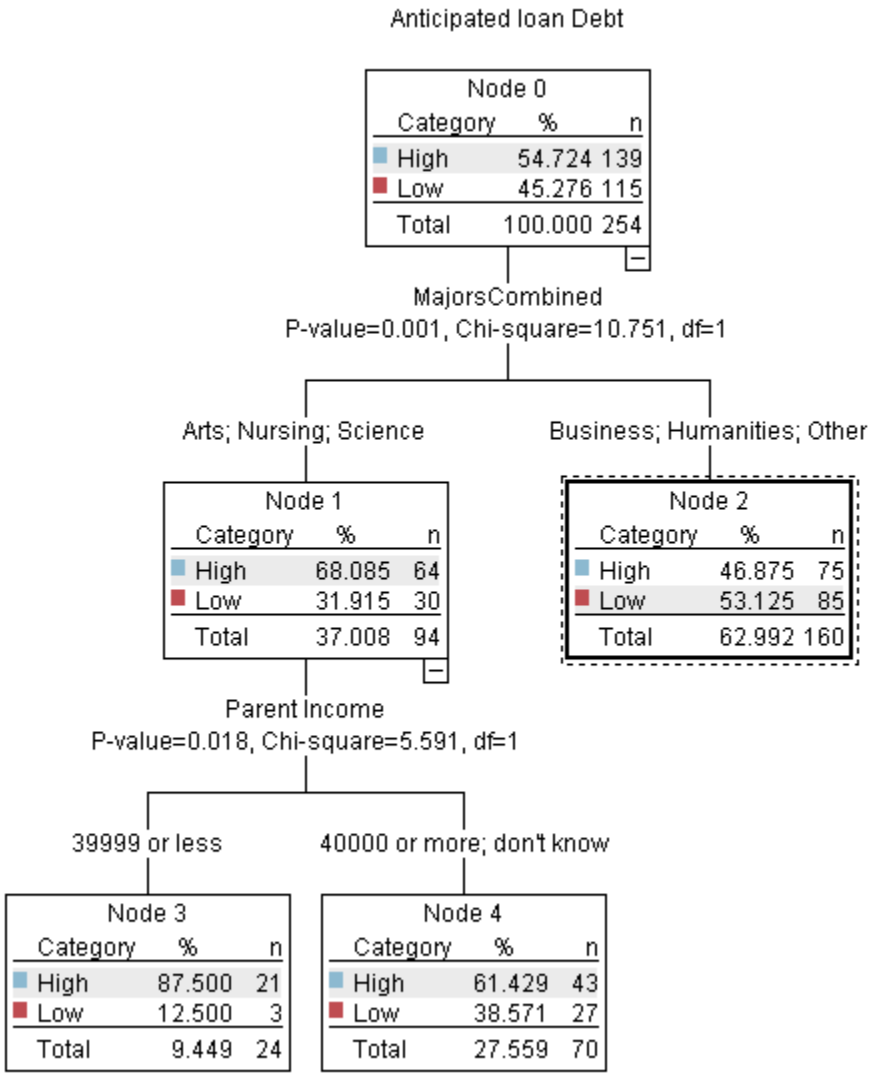

Figure 2. CHAID tree for factors contributing to anticipated loan debt.

Credit Cards

The CHAID analysis for credit cards (see Figure 4) was based on a student either having at least one credit card or having no credit cards. From the analysis, parent income was determined to be a significant factor in students having credit cards, with students whose parents earn $40,000.00 or more per year, or do not know their parents' income being more likely to have a credit card. Of those who have parents earning $39,999.00 per year or less, 24.19% indicated that they have a credit card versus 45.31% of those students whose parents earn $40,000.00 or more per year, or do not know their parents' income ($p = .003$, Chi-square = 8.698).

The CHAID tree also identified that 68.42% of students with a parental income of $40,000.00 or more per year, or do not know their parents' income, and parents who did not go to college have a credit card. This is significantly higher than students whose parents completed college or they do not know if their parents completed college, of which 39.61% of the students indicated having credit cards ($p = .001$, Chi-square = 10.209).

While there were no additional significant factors affecting those students whose parents did not go to college, analyzing the group whose parents did complete college showed that major of study had a significant impact on whether the student had a credit card. Of those students who were arts, business, or "other" major, 29.17% noted having credit cards; however, 48.78% of humanities, nursing, and science students indicated that they had a credit card ($p = .013$, Chi-square = 6.166).

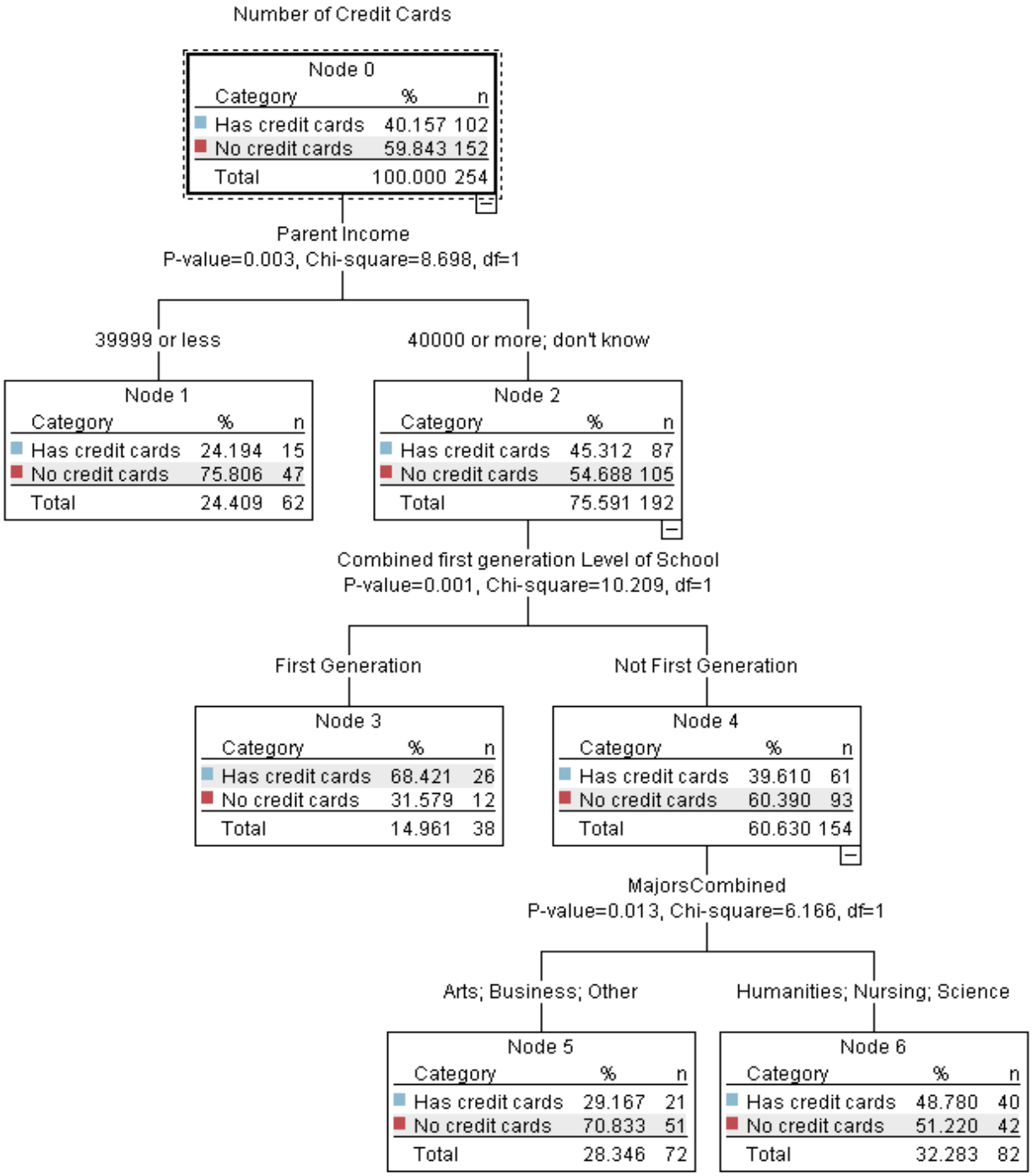

Figure 3. CHAID tree for factors affecting number of credit cards.

Table 59

Chi-Square Analysis of Ownership of Credit Cards by Parent Income of $40,000.00 or More or Do Not Know

	Value	df	Exact Sig. (2-sided)
Pearson Chi-Square	8.698	1	0.003

Table 60

Comparison of Ownership of Credit Cards by Parent Income

	Has Credit Cards	Does Not Have Credit Cards
$39,999.00 or less	15	47
Percentage within $39,999.00 or less	24.2%	75.8%
$40,000.00 or more or do not know	87	105
Percentage within $40,000.00 or More or do not know	45.3%	54.7%

Table 61

Comparison of Ownership of Credit Cards by Parent Income of $40,000.00 or More or Do Not Know and First-Generation Students

	Has Credit Cards	Does Not Have Credit Cards
Not First-Generation	61	93
Percent within First-Generation	39.6%	60.4%
First-Generation	26	12
Percent within First-Generation	68.4%	31.6%

Table 62

Chi-Square Analysis of Ownership of Credit Cards by Parent Income of $40,000.00 or More or Do Not Know and Parent Completed College Status

	Value	df	Exact Sig. (2-sided)
Pearson Chi-Square	10.209	1	0.001

Table 63

Comparison of Ownership of Credit Cards by Parental Income of $40,000.00 or More, or Do Not Know, Not First-Generation Status, and Majors Combined

Majors	Has Credit Cards	Does Not Have Credit Cards
Humanities, Nursing, Science	40	42
Percent within Humanities, Nursing, Science	48.8%	51.2%
Art, Business, Other	21	51
Percent within Art, Business, Other	29.2%	70.8%

Table 64

Chi-Square Analysis of Ownership of Credit Cards by Parental Income of $40,000.00 or More or Do Not Know, Parent Completed College, and Humanities, Nursing, and Science Majors

	Value	df	Exact Sig. (2-sided)
Pearson Chi-Square	6.166	1	0.013

The significance of the CHAID analysis is that it demonstrates that there is an interaction between factors that more clearly predicts those students who would be more likely to incur student debt as opposed to a single factor, with the exception of the first-generation status.

Additionally, neither major, ethnicity, gender, possession of credit cards, nor anticipated student loan debt alone can predict the level of financial literacy.

Focus Group

In the focus group, three of the seven students indicated that he/she had a course on financial literacy education in high school (42.8%). This is less a representative sample than the overall survey group, which indicated that 72% had some type of long term financial literacy education in high school. Only one student indicated having financial literacy education in college or a course that included financial literacy. Again, this is a lower percentage than in the overall survey, 14% as compared to 18% of the survey respondents who indicated that they had some type of financial literacy education in college.

During the session, in addition to responding to the prescribed research questions regarding the purposes for which students are using credit cards and student loans, five themes emerged during open discussion: "wants" versus "needs", financial literacy as lifelong learning, family as a key influencer of level of financial literacy and debt, the role of financial health in overall physical/emotional health, and borrowing as a tool to complete one's education. Most of these topics were not part of the initial questions being raised to the group by the researcher, instead they grew organically as part of the discussion. The students supported these subjects with candid, first-hand knowledge or by anecdotal situations that they have experienced with peers.

For What Purposes are Students Using Credit Cards

All but one of the focus group students indicated that they did not possess at least one credit card (86%). This is compared to 60% of the overall survey respondents who

indicated they do not have at least one credit card. The student without a credit card student shared that there is no current balance on the credit card and, when it is used, it is only used for emergencies or to purchase books and supplies directly related to college.

In open-ended conversation with the students it was agreed that credit cards should only be used for emergency purposes. They indicated that from their interactions with other students, it is difficult for some students to distinguish "wants' from "needs," citing students' needs for the latest clothing, shoes, gas/transportation, and going out to eat or to evening activities as how some students use credit cards. One student mentioned that he drives a very old car as opposed to some of his peers who drive more recent or luxury cars. He also said that he had to withdrawal from school at one point due to a car accident where he was unable to repair his car with the money that he had. He was not willing to consider debt to do the repairs. He felt that postponing his education for a semester was a more fiscally sound decision. Finally, a student, who shared that his family is likely considered "upper income," stated that he would not use credit cards at this point in his life because his family was very good role models and he knew that he did not have the means to repay the credit cards. It was not that he was opposed to credit card use, but only if one could afford to pay the debt as it is incurred.

Beyond direct payment to school, what are other reasons students are borrowing student loans?

Six of the seven focus group members indicated that he or she currently has borrowed student loans to attend school (85.7%). Reasons for the need to borrow for their educations included parents' inability to pay the entire cost of school, unemployment of a parent, to purchase required books and supplies, the need for the student to finance his

entire education personally, defer the cost of school until securing a "real job and income," and to purchase of a computer. None of the members indicated any purposes other than actual educational costs.

Open-Ended Discussion

The following topics were raised by the participants as issues about financial literacy education: "wants" versus "needs", financial literacy as lifelong learning, family as a key influencer of level of financial literacy and debt, the role of financial health in overall physical/emotional health, and borrowing as a tool to complete one's education.

"Wants" versus "needs". During a discussion of "wants" versus "needs," the group had various comments. One student noted that "our generation can't tell the difference between wants and needs." Another stated that "the word 'need' is generalized," explaining further that students often confuse a want with a need. Finally, a member of the focus group made the comment that students could discern between the two if the question was asked "does your 'want' help you meet your values?" When the subject of cell phones arose, not all agreed that a cell phone/smart phone should be categorized as a necessity. Some countered, though, that families are making the decision to discontinue a home telephone and, therefore, cell phones are, in her opinion, a necessity. Laptops were agreed upon as a necessity for students without discussion, since much research, contact with instructors, and work is done for school on a computer and laptops are portable for use within the classroom or other study areas. Travel became a topic of discussion, with all agreeing it is not a need but many students do travel, even if it does not fit within their financial means. One student expressed that she has not joined fellow friends on spring

break trips because she could not afford it, nor was she willing to spend the money she had saved for school to do so but money did not deter many of her friends from going anyway.

Financial literacy as life-long learning. In open-ended discussion, all of the participants agreed that financial literacy education should be taught at the high school level at a minimum, with some expressing opinions that financial literacy education should be taught from a very early age in school and continue, changing topics by relevance and age-appropriateness, as the student progresses through school. As one participant noted, "Don't do it when people don't care." Some topics that were noted as being especially important during the high school years included: budgeting, saving, and understanding deductions from the paycheck.

Requiring mandatory financial literacy courses in college also was a topic on which all agreed. The consensus was that it should be done at the freshman level, before students have the opportunity to make unwise financial decisions. After discussion, however, most felt that college was actually too late for this education and it should start much earlier as stated earlier during a discussion of when this topic should be taught.

Some major topics that the group felt should be mandatory in financial literacy education were budgeting, saving, understanding taxes and other payroll deductions, and understanding tax savings plans. One student stated that these topics are important before anyone enters the workforce and tries to manage finances in the real world.

When the subject of method of delivery for financial literacy was mentioned, all members unanimously indicated that it should not be an online delivery. They felt that this type of education needs to be in person so that questions and complicated concepts could be answered more completely. It should be a semester long course, ideally. Workshops are

somewhat acceptable but would not include the breadth of information that could be learned over a semester. Providing real life simulations and "calculators" would be helpful when learning this subject so that scenarios could be explored. The group also agreed that companies who concentrate on financial literacy could be utilized in some instances as could peer-educators, such as economics majors.

Family as a key influencer. Several members of the group expressed that it needs to be a combination of parental and school support to educate students about financial literacy noting that parents need to model what the students are taught. One member indicated that "parents are hugely important" when it comes to learning about finances. One participant, a first-generation college student from a single-parent household with a mother who works two jobs, stated that, while she agreed, "parents are a huge influence but if they don't know, there needs to be alternatives." Her comment followed her expression of the fact that her mother is not financially literate and the student would have not had this education had it not been done within the schools. She followed up with the concept that there should be a course for parents who are not financially literate so that they would have the ability to teach their own children.

Financial health and physical/emotional health. An idea that was posed was the concept to make financial literacy education a part of the standard "health class" curriculum. The student who mentioned this stated that he thought that "financial health" was as important as "physical health" and that, just like health classes change and evolve based on the age of the student, the financial literacy component of the health class could also change as the student moves through the grade levels. This would also, then, make it a

requirement to provide the students the base financial knowledge to build upon in the future.

Borrowing as a tool to complete education. As mentioned earlier, over 85% of the focus group indicated that he or she has borrowed to support their educations. It became apparent that the students would borrow what they needed in order to graduate, and not to supplement a lifestyle. Changing majors, transferring, majoring in a program that exceeds four years due to credit requirements, or taking fewer credits by choice were noted as reasons students do not necessarily graduate in four years, thus requiring some students to carry additional debt. Only one student self-identified as not being a "traditional" aged undergraduate student and, though it was taking him longer to graduate than the prescribed degree required and he had not yet incurred any student debt, indicated that he would, if necessary, to graduate.

Summary

The initial analysis of factors that may affect the level of financial literacy for college students noted only two significant factors: long term versus short term financial literacy education in high school and first-generation student status. After further review, however, it was determined that interactions between the variables can identify predictors for financial literacy level and therefore is more effective than evaluating a student on a single factor. Students who have parents who attended some college and have a high credit card balance have lower financial literacy than those students who have a lower credit card balance and, of those students with a lower credit card balance, students whose parents earn $40,000.00 or more per year are more financially literate than those whose parents earn less than $40,000.00 per year. Ultimately, the level of student debt is not determined by financial literacy. Level of student debt, both

anticipated student loan debt and ownership of credit cards, is predicated on the interaction of first-generation status, parent income, and student major.

Focus groups can provide insight into student opinions regarding why students have debt, when, how, and from whom financial literacy education should be taught as well as understanding student perceptions of "wants" versus "needs." In studies such as this, however, self-selection into the focus group may have been a limitation on the information gathered during the focus group session, since these students had strong opinions on debt and have self-reported that they are keeping credit card and student loan debt within the confines of use only for education.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Review of Study

Financial literacy education is as critical a component to a person's life-long learning as any other state or federally mandated subject matter taught in schools. By providing people with the tools to understand, manage, and control their financial decisions, the implications can be significant. As noted by Lusardi et al. (2010), this education should occur prior to making financial decisions. If not, the ramifications could become an issue affecting someone for many years. Students need to know that "they are responsible for their futures and the happiness of these futures can vary dramatically based upon their actions" (Mandell & Klein, 2007). The accrual of student debt is an example of a decision that can impact the student for up to 30 years after leaving school, depending on the type and amount of student debt incurred. Poor credit card use can also have long term consequences, ranging from excessive outstanding balances with high interest rates to potentially causing an adverse credit history.

This study analyzed those factors that may influence a student's level of financial literacy and student debt, including credit card debt, by conducting a survey with junior and senior-level, undergraduate students, and a follow-up focus group with a smaller set of self-identified participants from the survey group. Ideally, all students would be subjected to mandatory financial education in primary and secondary schools, such as suggested by Wilhelm and Chao (2005). However, by learning more about the effect that variables, such as prior financial literacy education, gender, ethnicity, parental income, and educational background of parents, may have on the outcome of a student's financial literacy and student debt, it is then possible to create more targeted and effective financial literacy programs. The extensive analysis of data that was

performed in this study moved beyond a simple comparative analysis, but progressed toward the discovery of the effect that interactions of more than one variable may have on the level of financial literacy and student debt. Developing programs designed for those groups of students most likely to be deficient in financial skills or at risk for excessive debt, if mandatory education for all is not possible, would be a fiscally responsible approach that would also meet the intended goals of a financial literacy program.

In addition to the quantitative findings in this study, an important feature in this research was the addition of a qualitative component, in the form of a focus group. These students, again, all senior-level undergraduates, shared interesting, first-hand insight into the financial habits of college students and their views on student debt. An unintended consequence of this focus group evolved as the students shared their thoughts on financial literacy education and their own personal experiences with guidance in the home regarding finances. The product of this discussion may have resulted in one of the most significant recommendations from the outcomes of this study and will be shared in the Implications of the Findings section of this chapter.

Summary and Discussion of Findings

Research Question 1

Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education in high school and those who did not?

All survey respondents indicated that they had some type of financial literacy education in high school. In order to analyze further, the responses regarding the type of financial literacy education the student experienced was grouped into either a “long term” or “short term” financial literacy education category. Long term included semester long courses in a financially-centered topic, and short term included courses where only a portion of the course was dedicated to

financial literacy. For purposes of analysis of this study, inferences were made by the researcher regarding which responses represented long and short term financial literacy courses. It was the students in the short term in this study category who scored statistically significantly higher on the financial literacy survey than their counterparts in the long term category ($p = .051$).

While it may seem counterintuitive, a higher level of financial literacy from a short term program is consistent with some research, such as Walstad et al. (2010), who discovered that short term financial literacy education, such as a DVD series, was effective when measured in a post-study survey of participants; however, the researchers also acknowledge that they did not measure the long-term outcomes of the retention of this education. In this current study, it is difficult to know the exact content of the long term programs and if there was a component that specifically addresses financial literacy lessons, whereas the short term programs were specifically designed for financial literacy education. For example, an entire course in economics may not have any financial literacy component and concentrate exclusively on economic theory. Finally, it is unknown if the coursework in the longer term programs allow for an opportunity for exercises to practice what was taught. This consideration was made by Avard et al. (2005) during their study of financial literacy with freshman students. Short term, targeted financial literacy programming, they found, may be more practical and outcomes based, thus allowing students the opportunity for interactive programming rather than lecture. The importance, it seems, is that financial literacy education has less to do with the length of time of the program and more about the content. Short term programs, in circumstances where entire courses are not possible due to resources, can provide an effective resource for students.

During the focus group session, students were asked if they ever had a financial literacy course in high school. Curiously, even though the outcome of the survey in which they all

previously participated indicated that every student participating in the survey had some type of financial literacy education in high school, only two focus group participants confirmed having had any high school financial literacy education. This may have been due to the manner in which the questions were asked on the survey, since the question and responses on the survey regarding high school financial literacy were stated more broadly:

> Which of the following classes did you have in high school: an entire course in personal money management or personal finance; a portion of a course where at least a week was focused on personal money management or personal finance; an entire course in economics; a portion of a course where at least a week was focused on economics; and/or a course in which we played a stock market game.

None of the responses to the questions specifically used the words "financial literacy."

Research Question 2

Is there a statistically significant difference in the level of financial literacy between those students who received financial literacy education or a related course in college and those who did not?

Similar to the research question regarding financial literacy education in high school, 100% of the respondents indicated that they had some type of financial literacy education or related course in college. As a result, based on the responses given to this question, students were categorized as those who had received an entire course in personal money management or personal finance, and those who had experienced a portion of a course where at least a week was focused on personal money management or personal finance. It was determined that there was no statistical significance between the financial literacy level of these two groups (p = .343). The group who had a short term, high school financial literacy program actually had a mean final

literacy score that was higher than either group in the college financial literacy education category (short term high school program M =19.42, SD = 3.524), direct personal money management in college (M = 18., SD = *4.479*), and indirect personal money management score (M = 18.28, SD = 4.163).

The research by Schuchardt et al. (2009) concluded that the timing of when financial literacy education is presented, either in high school or college, needs additional research. While the most effective time for financial literacy education was not a research question in this current study, the results did not provide the data to answer that question, given that all of the study participants received both high school and college financial literacy education. In order to make comparisons or to report conclusively that college financial literacy education or high school financial literacy education is more effective, some of the participants would need to have indicated financial literacy education in only high school or college, not both.

When the focus group students were asked if they ever had a financial literacy course in college, only one indicated having had a college financial literacy experience. This response was not consistent to the survey results that indicated all survey participants, which included the focus group students, did have some financial literacy education. This will be discussed further in the Suggestions for Further Research section of this chapter.

Research Question 3

Is there a statistically significant difference in the level of financial literacy based on gender, ethnicity, first-generation student status, major, or family income?

Gender

This research found that there was no statistically significant difference in the level of financial literacy based on gender (p = .133). This is not consistent with some research (Murphy, 2005; McKenzie, 2009; Fonseca et al., 2012) that identified gender to be a factor in level of financial literacy, with males being identified as more financially literate than their female counterparts. Research also suggests, however, that gender alone may not determine level of financial literacy. Many studies have looked at other intervening factors such as ethnicity, major, and parental involvement (Chen & Volpe, 1998; Chinen & Endo, 2012; Fonseca et al., 2012; Jorgensen & Salva, 2010; Seyedian & Yi, 2011), determining that interaction between other variables and gender are a better predictor of financial literacy. Murphy (2005) goes as far as to state that other independent variables may have more of an effect on the level of financial literacy than gender alone. Motivation as a factor, for example, was explored by Mandell and Klein (2007) as a factor when studying the level of financial literacy between males and females and, while the male participants did show a higher level of financial literacy, the researchers believe it was not the single factor of gender, but motivation to be financially literate, that was more of a determinant.

Fonseca et al. (2012) theorized that the role a male may more traditionally play within a household, i.e., making financial decisions for a family, contributes to the gap in level of financial literacy between the genders; however, when studying females who primarily make the financial decisions for a household, the researchers found that this disparity still exists. In this current study of college students, household financial decisions would likely not be a factor, since the majority of the college student participants, male or female, would not have yet had the life experience of the subjects in the Fonseca et al. (2012) study. Chen and Volpe (2002) also

conclude that gender is statistically significant; however, these researchers failed to demonstrate any reasons why women were possibly less knowledgeable. That would be an important component of this conclusion.

As demonstrated by the CHAID analysis for level of financial literacy in this study (Figure 2), when interacting with the variables of ethnicity, college major, parent income, first-generation college student status, high school or college financial literacy education, gender was still not identified as having statistical significance in level of financial literacy. Donohue (2011) indicates that more gender-based financial literacy research needs to be conducted.

Ethnicity

While the mean scores on level of financial literacy based on ethnicity ranged from M = 18.375, SD = 3.815 (Black/African-American) to M = 16.000, SD = 4.472 (Asian-American), there was no statistically significant difference found between ethnicities in this study (p = .794). Further analysis, grouping non-Caucasian students together and then comparing Caucasian students (n = 230) to non-Caucasian students (n = 24), also showed no statistically significant difference in the level of financial literacy between these two groups (p = .361).

The finding that there was no difference in level of financial literacy between ethnic groups that was found in this study of college juniors and seniors is contrary to findings in a study conducted by Murphy (2005), where race/ethnicity was determined to have an effect on level of financial literacy. Murphy also cited a study by Joo, et al., (2003) that also concluded that ethnicity was a factor in level of financial literacy. Both of these studies were conducted in specific types of institutions, however, with Murphy investigating students who were attending a primarily Black university (PBU), and Joo et al. (2003) researching students at a primarily Caucasian university. Unlike these two studies, the demographics of the institution of this current

study is more diversified, with 17% minority and 74.5% Caucasian students (not taking into account international students).

Eitel and Martin (2009) identified Caucasian students as having a higher level of financial literacy than non-Caucasian students, though this study also indicated that age was a factor when coupled with race, with scores being higher as the age increased. While Eitel and Martin's (2009) findings did consider interactions with other variables, the study still concluded that there were different financial literacy levels between the ethnic groups. In contrast, in this current study of college juniors and seniors, the CHAID analysis did not identify ethnicity, even with interaction of the other study variables, as being a statistically significant predictor of student financial literacy level.

First-Generation Status

First-generation students, defined as students whose parents have not attended college, were found to have a significantly lower level of financial literacy (M = 16.859, SD = 4.467) than those students who were not first-generation students, whose parents had attended some college or who were college graduates (M = 18.376, SD = 4.017, p = .01).

The CHAID analysis for level of financial literacy (see Figure 2) resulted in an interesting distinction that the traditional definition of "first-generation," widely-regarded as students of parents who had not attended college at all, may need to be reconsidered. The analysis identified students of parents who attended some college, but were not college graduates, in the same level of financial literacy as those who were first-generation. This result implies that parents who attend some college but did not graduate may have the same impact on financial literacy level as those whose parents did not attend at all. The level of significance in the level of financial literacy between those students whose parents were college graduates and

those whose parents attended some college or did not attend college had a p-value = .002, with students whose parents graduated from college demonstrating the higher level of financial literacy. Parental influence may be an extenuating factor that is difficult to measure directly but may need to be studied more empirically to assess this effect, which will be discussed later in this chapter in the Recommendations for Further Research section.

Though first-generation students were identified as having an overall lower level of financial literacy than not first-generation students. CHAID analysis regarding the level of anticipated student debt did not result in any significant difference between first-generation and not first-generation students, regardless of how first-generation was defined (see figure 2). A study by Lee and Mueller (2014) found that first-generation students do rely more heavily on debt to finance their educations; however, this was not a finding in this analysis.

An interaction that did identify a distinction between first-generation and not first-generation was with respect to having credit cards. While there was no significance in credit card ownership based on first-generation status only, the CHAID analysis indicated that first-generation students who have parents with incomes of $40,000.00 or more, or who report that they do not know their parents' income, overall, are more statistically likely to have at least one credit card (p = .001) than students who were not first-generation students (see Figure 4). This finding, too, may be in contradiction to Lee and Mueller (2014) who state that first-generation students are "more likely to scrutinize the decision to incur debt" (p. 716); however, since this current study did not assess the decision-making process that students underwent prior to deciding to own a credit card, a comparison cannot be made. The higher likelihood of credit card ownership by first-generation students finding is consistent with the findings in the study by Eitel

(2007), who determined that first-generation, female students do not tend to be concerned about debt in the present because it will somehow resolve itself in the future.

Major

The level of financial literacy between majors was not found to be statistically significant with this group of junior and senior level students (p = .243) in the ANOVA. Even after regrouping the majors to be consistent with those majors offered at the institution where these students attend, there was still no statistical significance found between the majors (p = .342). This was also the case when reviewing a one to one comparison of each major against the another, rather than only between majors; although there was one comparison with a relatively high level of significance, namely arts majors compared to business majors (p = .0572). The least significance was between arts and nursing majors (p = 1.000), humanities and "other" majors (p = 1.000), and nursing and science majors (p = 1.000). Further analysis, however, did reveal a finding demonstrating that intervening factors have an effect and result in significant differences between majors. This will be discussed further within this section in the discussion of the CHAID analysis. The lack of significance solely between different majors is not consistent with findings of other studies (Chen & Volpe, 1998; Chinen & Endo, 2012; McKenzie, 2009; Mandell, 2004; Seyedian & Yi, 2011) that found business majors to be more financially literate than students in other majors. Specifically, Chinen and Endo (2012), found that college major, rather than the gender, was a significant factor in financial literacy level, specifically for students in business-related majors or majors with more of an emphasis on numbers, than those in majors that were less likely to have an emphasis on numbers. Business majors in a study conducted by

Mandell (2004) were also identified as having a higher level of financial literacy than students in other majors.

A significant difference between majors, when combined with other variables, was found in the CHAID analysis for financial literacy (see Figure 2). When analyzing financial literacy levels between first-generation and not first-generation students, business students who were not first-generation had a significantly higher level of financial literacy than those who were arts, humanities, nursing, science, or "other" majors (p = .001). Interestingly, first-generation students who were business, arts, or nursing majors, showed a significantly lower level of financial literacy than first-generation students who were humanities, science, or "other" majors (p = .025). The findings by Chinen and Endo (2012) and Mandell (2004), previously described, which identified business majors with higher levels of financial literacy than other majors, was not supported by the ANOVA nor the CHAID findings in this current study, further supporting the contention that it is more than a single factor in isolation that dictates the level of financial literacy.

Family Income

There was no statistically significant difference in financial literacy scores found between students based on parents' annual incomes (p = .321). Even grouping incomes further into those earnings less than or equal to $39,999.00, greater than $39,999.00, and "do not know," did not result in any significant differences in mean scores (p = .116). Parent income also did not reflect any significant difference on the level of student debt (p = .463); however, it did have a statistical significance in the difference of credit card ownership. Students with parental incomes of $40,000.00 or more or "do not know," had a significantly higher likelihood of owning a credit card than those with parental incomes of less than or equal to $39,999.00 ($p$ = .003).

There is not a large body of research that specifically analyzes parent income with respect to financial literacy level of their children; as a result, most research was surrounding parental influence on financial literacy level, in which family income could feasibly be included. Parental involvement is paramount to strong financial literacy levels and has been found to be a stronger influence on level of financial literacy than any formal education on the subject (Shim et al, 2009). In a study by McKenzie (2009), most study participants indicated that they learned whatever financial literacy knowledge they held, from their families. In addition, parent attitude and debt was found to be correlated to level of financial literacy (Heckman & Grable, 2011).

Members of the focus group in this current study described their parental involvement with financial literacy as well. One student noted that, while she was not overtly aware of any direct lessons on financial literacy from her parents, she was cognizant of what she felt were wise financial decisions based on watching her family's financial decisions and their ability to "live within their means." She opted out of spring break trips and was frugal during the academic year, knowing that her income from her job was, essentially, her only living expense money. She realized without having to be told, that her family's situation was such that her education was a privilege and a large expense. She stated that she took summer courses to be sure that she would graduate within four years, recognizing the expense an additional year of college would add.

A second student reiterated the concept that she had the responsibility for her own education and worked multiple jobs to supplement her financial aid. She stated that her mother worked two jobs and did not have the financial means to help her. Watching her mother work long hours gave her incentive to graduate and become more financially stable, with a career rather than a job, though she recognized that her major of choice would likely not be as

financially lucrative as other careers she may have chosen. She chose it for a passion she felt for the field and, regardless of the annual salary, it would give her financial stability.

The only non-traditionally aged student in the group, indicated that he was financially reliant on a life-insurance policy that he inherited from the death of his parents. His grandparents helped raise him and he was deeply influenced by his grandfather's entrepreneurial acumen. While he stated that his grandparents had the financial means to assist him with school, he would not ask that they do so, even going so far as to take a semester off of school recently because his car needed repairs. He chose to pay for the car repairs rather than tuition. He has not borrowed any student loans to attend college, electing to use his parents' life insurance proceeds to pay instead. He stated that his family paid for things as they could afford them, and that is how he handles his finances as well.

When discussing what they have learned about any higher level finances from family, the student who indicated that her mother worked two jobs, noted that she did not learn anything from her mother about finances, mainly because she felt that her mother had a very low level of financial literacy herself. Yet another student, on the other hand, had already started investment funds while in high school. This was at the direction of his parents, who wanted him to learn to invest early on. He seemed well-versed in college savings plans as well as investments.

Research Question 4

Is there a statistically significant difference in the level of financial literacy of students who own and use credit cards and those who do not?

There was not shown to be any difference in the level of financial literacy between those students who own credit cards (M = 19.922, SD = 4.143) and those who do not (M = 18.007, SD = 4.232, p = .87). Even though, as described by Scott (2010), there appears to be a relationship

between level of financial literacy and the ownership of credit cards, this was not found to be true in this current study, where student financial literacy levels were consistent regardless of credit card ownership. Lalonde and Schmidt (2011) disagree, finding that credit card ownership is a predictor of financial literacy level.

Further analysis compared credit card ownership based on the variables of gender, ethnicity, first-generation status, major, and family income using a CHAID analysis and chi-square tests. The results showed that there was a significant difference in ownership of credit cards based on parental income, with those students whose parents' incomes of $40,000.00 or more being more likely to own credit cards (p = .008). The CHAID analysis went further to conclude that students with a parental incomes of $40,000.00 more had an even greater likelihood of owning credit cards if the student was a first-generation college student (p = .001) and that, of the first-generation college students, those in humanities, nursing, or science majors were statically significantly more likely to own credit cards (p = .013).

Though this study did not contain enough data to conclude if students who are more likely to own credit cards are at financial risk based on current borrowing levels, it is important to continue to be concerned with the concept that students with access to credit cards are "susceptible to accumulating debt" (Leclerc, 2012, p. 155). The CHAID analysis also allows for predictability for ownership of credit cards, which has important implications to be discussed later in this chapter.

Research Question 5

Is there a statistically significant difference in the estimated level of student debt for those students who demonstrate a high level of financial literacy and those who demonstrate a low level of financial literacy?

No significant difference in level of anticipated student loan debt was found for those students with a high versus a low financial literacy level (p = .851); however, a significant difference in anticipated loan debt did result when reviewing student debt against long or short term high school financial literacy programs, with students having identified as participating in short term financial literacy programs having higher anticipated student loan debt levels (p = .056).

Further analysis compared student loan debt based on the variables of gender, ethnicity, first-generation status, major, and family income, using the CHAID analysis and Chi-square tests. The results of this review did identify that there was a significant difference in the level of student borrowing based on a cluster of college majors. The CHAID analysis showed that it was not based on one individual major; rather, this analysis grouped college majors into those that are more or less likely to anticipate higher student loan debt. It was found that students in arts, nursing, and science have a statistically significantly higher anticipated student debt (p = .001) than students majoring in business, humanities, or "other" majors. Taking the CHAID analysis one step further, students who were in the category for higher anticipated student debt were even more likely to have a higher level of anticipated student loan debt if their parents had an income of $39,999.00 or less ($p$ = .018); thus, showing that the interaction of major and parental income has a greater influence on level of student debt than either factor alone.

Research Questions 4a and 5a

Focus group questions: For what purposes are students using credit cards? Beyond direct payment to school, what are other reasons students are borrowing student loans?

Since only one of the focus group participants indicated having at least one credit card, most of the discussion with the student focus group was regarding their opinions for the reasons

why students other than themselves use credit cards and/or borrow education loans. All of the participants agreed that emergency purchases should be the only purpose for a student to use a credit card. The main reason that they felt students use credit cards is to purchase what they would consider a "want," rather than a "need." They felt that this distinction was not obvious to many of their college student peers with whom they interact. Purchases such as non-educational trips were considered to be a "want" but buying laptops and owning cell phones were generally agreed upon as "needs." The student who did have a credit card, student D, stated that it is only used in cases of an emergency, for example books and supplies, and no balance was carried on the credit card. This is the same student who did not attend school for a period of time due to the need for car repairs. He did not feel this was an appropriate use of a credit card.

All but one of the participants indicted borrowing a student loan to attend college. The main purpose for borrowing the loan was tuition and educationally-related expenses. Parents' inability to pay for school was cited as a reason for needing to borrow to attend. None of the participants stated that they borrowed what they would consider excessively in order to supplement a lifestyle choice, which is why they believe some students tend to over borrow beyond the direct costs of school. They contend that students do not often save for college or even work while in college to help defray these educational costs.

Implications of the Findings

This study confirms the widely-held belief that more intentional and effective financial literacy education should be provided to students in order to increase the level of financial literacy and, ultimately, curb unnecessary student debt. It also demonstrates that single variables in isolation are not likely to be an effective or definitive predictor of financial literacy for an individual and therefore would not be strong indicators to forecast student debt levels. Further,

CHAID analyses did not reveal that the level of financial literacy was a factor affecting either anticipated student loan debt or the ownership of credit cards. Other variables in combination with one another were stronger indicators of student debt; specifically parent income, first-generation status of the student, and major of study. Though financial literacy education is essential to virtually everyone, but did not distinguish itself as an intervening variable to level of student debt, by utilizing the interaction effect of the variables within this study, predictive determination may be made to identify those individuals most in need of financial literacy education, those who may borrow at a higher rate than others for education, and people more likely to own credit cards.

As mentioned in Chapter 2, some may argue that public education in the kindergarten through 12th grades cannot financially afford to provide financial literacy education (Fisher, 2010). Utilizing information such as that provided in the CHAID analysis for factors leading to level of financial literacy (Figure 2) will allow for better targeting of those dollars that are available to help those who are at most risk. As demonstrated, children with parents who have never attended college, or attended but never completed college, are more likely, based on these study results, to have a lower level of financial literacy. School districts with a high population of parents in this category should strongly consider using state or federal funding aimed toward low income or first-generation students, to assist these children. Post-secondary schools, who have the added concern of student loan defaults due to students over-borrowing education loans and incurring excessive credit card debt, may consider having programs for students raised in families with a lower income level, which was revealed in the CHAID analyses in Figures 2 and 3; perhaps including financial literacy education in other programs that are designed for first-generation or low income students. While the federally mandatory entrance counseling for

student loan borrowers may assist in helping students understand more about their rights and responsibilities with regard to their student loans, it does not provide the in-depth financial literacy education a student needs to understand finances in general.

Financial literacy education should not be thought of as exclusively the responsibility of the kindergarten through 12th grade (K-12) institutions, nor should it be considered only a function of post-secondary education. Through the focus group discussion, a significant theme emerged regarding financial literacy education that the researcher believes to be an extremely valuable outcome of this study. It became quite clear as the discussion progressed, that financial literacy education should be considered a life-long education that needs to be developmentally appropriate. This agrees with theoretical perspectives found in developmental theory. Englehart, et al., 1956) describe the cognitive domains of Bloom's Taxonomy. The cognitive domains of knowledge, comprehension, application, analysis, synthesis, and evaluation clearly confirm the benefit and rationale of continuous learning, which can be applied to financial literacy. To truly learn financial literacy and incorporate it into behavior, one must grasp concepts and create building blocks which continue to reinforce at each level. Applying Bloom's Taxonomy to a traditional K-12 school system, one model of financial literacy education would be to incorporate financial literacy into the health and physical education curriculum. These courses are already based on the appropriateness of the material and activities for level of development of the student. One can argue that financial health should be considered as important to an individual's overall health as is his physical or emotional well-being. In a study by Kenel (2010), he writes:

> Among the people reporting high debt stress in the AP (Associated Press, 1998, as cited by Kenel) poll, 27 percent had ulcers or digestive-tract problems, compared with eight

> percent of those with low levels of debt stress, and 29 percent who suffered severe anxiety, compared with four percent of those with low debt stress. (p. 121)

By including financial literacy into this type of curriculum, it could result in a well-rounded person and could potentially mitigate future health issues that may result due to financial stressors.

Institutions of higher education must be concerned about the level of financial literacy and debt for its students. As described in Chapter 2, the implications for a school if the student loan default rate exceeds the statutory maximum of 25% of students in default, can be devastating financially, with ramifications that range from suspension to loss of Federal Title IV financial aid funding eligibility. Wise borrowing decisions by students who have the knowledge to only borrow necessary funding can result in students being better able to repay the loans after leaving school which, ultimately, helps control the default rate. Schools could consider implementing programs for borrowers who identify as "at risk" for lack of financial literacy by compiling data about their own borrowers and applying a CHAID analysis to determine if an intervention should be offered to certain students. While all borrowers could benefit from financial literacy education and debt management strategies beyond the mandated Stafford loan entrance counseling, diminished administrative capacity within offices may dictate this more stream-lined and targeted approach.

In addition to the threat of loss of federal aid, in times when state funding for education is decreased, higher education relies more heavily on alumni donations (Meers & Rosen, 2012). Graduates who are borrowing at an excessive rate may not be able to be viable donors during fundraising campaigns by the schools. This could, in turn, have a negative impact on the donations. From this perspective, institutions should consider the implementation of effective

financial literacy and debt management programs as an investment in the future of their schools. As Meers and Rosen (2012) point out, "the mere act of taking out a student loan decreases the probability that an alumnus contributes to the university" (p. 25).

Recommendations for Further Research

During this study, and while analyzing the subsequent data, certain aspects in the research about financial literacy and student debt appear to be lacking in the research or could be reviewed in a manner in which it would provide additional important information from which to draw conclusions on this topic. The following outlines recommendations for future research and study:

1. This study, in part, compared whether financial literacy education while in high school and/or college has an effect on the students' level of financial knowledge, anticipated student loan debt, and credit card use. This study included very broad topics under the guise of financial literacy education. The survey questions utilized in this study were not permitted to be altered in any way. Survey questions, however, could and should be added to gather more specific information regarding the length, content, and method of delivery of financial literacy programs a student may have received. This would allow the researcher to have more information to be able to determine which type of programs result in the highest level of financial literacy for students and not assume that any two or more generic interpretations of financial literacy education are equal.
2. This study should include the students' estimated length of time to complete their bachelor's degrees. It would be a key factor when determining if students are over-borrowing or simply borrowing the amount needed to finish their degrees.

3. The outcome of the focus group revealed the importance of parental involvement in a student's understanding of financial matters. A future study should include a question to assess non-quantitative measures of parental influence on level of financial literacy. This would enable the researcher to determine more than only the impact, if any, of parental income and education on a student's level of financial literacy.
4. Further research should include a more extensive review of the parental level of financial literacy and should not rely only on the education level of the parent to make the assumption of parental level of financial literacy. Research should be conducted to determine if the parental level of financial literacy, regardless of education level of the parent, has an effect on the level of financial literacy of their children.
5. All but one of the focus group participants indicated that he or she did not have any prior financial literacy education, which was inconsistent with the study findings that indicated all students had financial literacy education in high school and/or college. This may be due, in part, because the researcher imputed certain survey responses as representing financial literacy education and the students did not recognize that they may have had some financial literacy education within other related courses. Future research should include survey questions that more clearly inquire if a student has received financial literacy education in high school and college.

Conclusions

This study about the level of financial literacy and the effect on college student debt has further explored the expanding research about the important topic of financial literacy and debt. This study was able to confirm previous research that has been conducted regarding one significant factor that affect the level of financial literacy, first-generation student status, but it did not confirm other studies' findings that indicate gender, ethnicity, parental income, and major are factors that directly influence level of financial literacy. This study did, however, find that the effect of two or more of these factors in conjunction with one another, does make an impact on financial literacy and the importance of identifying these interactions in order to make informed decisions based on predictive analysis.

Student debt, both education loans and credit cards, was also explored as it pertains to level of financial literacy. In the instance of anticipated student loan debt, major was initially determined to be a statistically insignificant variable when compared with student debt; however, further analysis revealed that categorizing art, nursing, and science majors into a single group and business, humanities, and "other" majors into a second group did result in statistically significant differences in the anticipated level of student debt. The results indicated that the art, nursing, and science major category displayed higher levels of anticipated student loan debt than their peers in business, humanities, and "other" majors. Further, within the art, nursing, and science majors, those whose parents had an income of $39,999.00 or less displayed significantly higher level of anticipated student loan debt than those students in that same majors' category with a parental income level of $40,000.00 or more.

Parental income level was found to be a factor in student ownership of credit cards, with students who have parental incomes of $40,000.00 or more, were more likely to own credit cards

than students who have families with incomes of $39,000.00 or less. Students who are not first-generation students and have parental incomes of $40,000.00 or more are more likely than not first-generation students to have credit cards, and, of the first-generation group, those in a category of majors that includes humanities, nursing, and science being more likely to have credit cards than those in a category that includes art, business, or "other" majors.

When comparing the financial literacy level of students who reported having had a short term or long term high school experience that included a financial literacy education component, short term programs were found to be more effective than longer term programs. Additional research into the contents and delivery method of these programs needs to be completed in order to identify the reason for this difference. This study did not have the data to examine this question. College financial literacy education was studied as well. Students were identified as having taken college courses with a financial component that either directly or indirectly dealt with financial literacy. There was no significant difference in level of financial literacy between the group with direct financial literacy education and the group with indirect financial literacy education. Level of financial literacy was not identified as a factor predicting anticipated student loan debt or credit card ownership.

Finally, the interaction effect of multiple variables and their effect on level of financial literacy, anticipated student loan debt, and credit card ownership is an important factor when developing effective financial literacy education programs. The CHAID tree analysis in this study is an example of a method that any institution could utilize with their own student population to identify students who may be at risk for increased debt or in greater need for financial literacy education.

Like many learned behaviors, becoming financially literate does not occur due to a single instance or should not simply be taught at one particular point in time in one's life. It requires education, knowledge, experience, and practice. Providing this education at a time when people are in the midst of making major financial decisions, like high school or college, is like teaching algebra prior to learning addition. True financial literacy is the result of building from the types of basic financial knowledge that can be taught to young children, such as earning an allowance or saving for a bicycle, to more complex topics, such as applying for a credit card or borrowing for college. Further, it is important to learn ways in which debt and savings affect major purchases, such as a home. Finally, the understanding that financial decisions made during one's life may potentially change future quality of life, including health. All of this knowledge and the decisions that are made by individuals can have an effect on our entire society and, as such, financial literacy education should be part of our society's priority for life-long learning.

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Appendix A

Request and Permission to Use Jump$tart Coalition® for Personal Financial Literacy Survey Tool

On 1/22/2013 5:04 PM, David Casserly (dcasserly@afsamail.org) wrote:

That will be fine. I've attached a document to guide you in its use and how to credit us. Please let me know if you have questions.

Thanks.

David

From: Patricia McCarthy [mailto:mccarthy@iup.edu]
Sent: Tuesday, January 22, 2013 4:28 PM
To: info@jumpstart.org
Subject: General Questions/Comments

This inquiry was sent by **Patricia McCarthy** using the Jump$tart feedback form.

Name: Patricia McCarthy

Organization: Indiana University of Pennsylvania

Phone: 724-422-2704

Email: mccarthy@iup.edu

Regarding: General Questions/Comments

Comments:

I would like to have the contact information for the person(s) to whom I could request consideration for permission to administer the JumpStart survey as part of my doctoral dissertation. Thank you in advance for the information.

You can use this link to reply: mccarthy@iup.edu

Appendix B

Jump$tart Coalition® for Personal Financial Literacy User Guide

Thanks for your interest in Jump$tart's 2008 Survey of Personal Financial Literacy Among High School/College Students.

To use the survey questions, please download the survey document from our website and excerpt the question(s) that you need, removing the answer indications and other response data. High School. College. (Sorry, due to limited resources, we're not able to provide you with print copies or an online program.)

You may use some or all of the questions in any order, but we ask you not to alter the questions or answers in any way.

You may not sell the questions or use them for financial profit in any way.

Please don't use Jump$tart's logo, unless you have express written permission to do so.

Please attribute the questions to the Jump$tart Coalition® for Personal Financial Literacy in print or online.

Appendix C

Survey Tool

Jump$tart Coalition® for Personal Financial Literacy Among College Students

1) Inflation can cause difficulty in many ways. Which group would have the greatest problem during periods of high inflation that last several years?

   a) Older, working couples saving for retirement.
   b) Older people living on fixed retirement income.
   c) Young couples with no children who both work.
   d) Young working couples with children.

2) Which of the following is true about sales taxes?

   a) The national sales tax percentage rate is 6%.
   b) The federal government will deduct it from your paycheck.
   c) You don't have to pay the tax if your income is very low.
   d) It makes things more expensive for you to buy.

3) Rebecca has saved $12,000 for her college expenses by working part-time. Her plan is to start college next year and she needs all of the money she saved. Which of the following is the safest place for her college money?

   a) Locked in her closet at home.
   b) Stocks.
   c) Corporate bonds.
   d) A bank savings account.

4) Which of the following types of investment would best protect the purchasing power of a family's savings in the event of a sudden increase in inflation?

   a) A 10-year bond issued by a corporation.
   b) A certificate of deposit at a bank.
   c) A twenty-five year corporate bond.
   d) A house financed with a fixed-rate mortgage.

5) Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

   a) When you need to buy a car to get a much better paying job.
   b) When you really need a week vacation.
   c) When some clothes you like go on sale.
   d) When the interest on the loan is greater than the interest you get on your savings.

6) Which of the following statements best describes your right to check your credit history for accuracy?

   a) Your credit record can be checked once a year for free.
   b) You cannot see your credit record.
   c) All credit records are the property of the U.S. Government and access is only available to the FBI and Lenders.
   d) You can only check your record for free if you are turned down for credit based on a credit report.

7) Your take home pay from your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?

   a) Social security and Medicare contributions.
   b) Federal income tax, property tax, and Medicare and Social Security contributions.
   c) Federal income tax, social security and Medicare contributions.
   d) Federal income tax, sales tax, and social security contribution.

8) Retirement income paid by a company is called:

   a) 401(k).
   b) Pension.
   c) Rents and profits.
   d) Social Security.

9) Many people put aside money to take care of unexpected expenses. If Juan and Elva have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?

   a) Invested in a down payment on the house.
   b) Checking account.
   c) Stocks.
   d) Savings account.

10) David just found a job with a take-home pay of $2,000 per month. He must pay $900 for rent and $150 for groceries each month. He also spends $250 per month on transportation. If he budgets $100 each month for clothing, $200 for restaurants and $250 for everything else, how long will it take him to accumulate savings of $600?

    a) 3 months.
    b) 4 months.
    c) 1 month.
    d) 2 months.

11) Sara and Joshua just had a baby. They received money as baby gifts and want to put it away for the baby's education. Which of the following tends to have the highest growth over periods of time as long as 18 years?

a) A checking account.
b) Stocks.
c) A U.S. Govt. savings bond.
d) A savings account.

12) Barbara has just applied for a credit card. She is an 18-year-old high school graduate with few valuable possessions and no credit history. If Barbara is granted a credit card, which of the following is the most likely way the credit card company will reduce ITS risk?

a) It will make Barbara's parents pledge their home to repay Karen's credit card debt.
b) It will require Barbara to have both parents co-sign for the card.
c) It will charge Barbara twice the finance charge rate it charges older cardholders.
d) It will start Barbara out with a small line of credit to see how she handles the account.

13) Chelsea worked her way through college earning $15,000 per year. After graduation, her first job pays $30,000. The total dollar amount Chelsea will have to pay in Federal Income taxes in her new job will:

a) Double, at least, from when she was in college.
b) Go up a little from when she was in college.
c) Stay the same as when she was in college.
d) Be lower than when she was in college.

14) Which of the following best describes the primary sources of income for most people age 20-35?

a) Dividends and interest.
b) Salaries, wages, tips.
c) Profits from business.
d) Rents.

15) If you are behind on your debt payments and go to a responsible credit counseling service such as the Consumer Credit Counseling Services, what help can they give you?

a) They can cancel and cut up all of your credit cards without your permission.
b) They can get the federal government to apply your income taxes to pay off your debts.
c) They can work with those who loaned you money to set up a payment schedule that you can meet.
d) They can force those who loaned you money to forgive all your debts.

16) Rob and Mary are the same age. At 25 Mary began saving$2,000a year while Rob saved nothing. At age 50, Rob realized that he needed money for retirement and started saving

$4,000 per year while Mary kept saving her $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?

a) They would each have the same amount because they put away exactly the same.
b) Rob, because he saved more each year.
c) Mary, because she has put away more money.
d) Mary, because her money has grown for a longer time at compound interest.

17) Many young people receive health insurance benefits through their parents. Which of the following statements is true about health insurance coverage?
a) You are covered by your parents' insurance until you marry, regardless of your age.
b) If your parents become unemployed, your insurance coverage may stop, regardless of your age.
c) Young people don't need health insurance because they are so healthy.
d) You continue to be covered by your parents' insurance as long as you live at home, regardless of your age.

18) Don and Bill work together in the finance department of the same company and earn the same pay. Bill spends his free time taking work-related classes to improve his computer skills; while Don spends his free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?

a) Don will make more because he is more social.
b) Don will make more because Bill is likely to be laid off.
c) Bill will make more money because he is more valuable to his company.
d) Don and Bill will continue to make the same money.

19) If your credit card is stolen and the thief runs up a total debt of $1,000, but you notify the issuer of the card as soon as you discover it is missing, what is the maximum amount that you can be forced to pay according to Federal law?

a) $500
b) $1000
c) Nothing.
d) $50

20) Which of the following statements is NOT correct about most ATM (Automated Teller Machine) cards?

a) You can generally get cash 24 hours-a-day.
b) You can generally obtain information concerning your bank balance at an ATM machine.
c) You can get cash anywhere in the world with no fee.
d) You must have a bank account to have an ATM card
.

21) Matt has a good job on the production line of a factory in his home town. During the past year or two, the state in which Matt lives has been raising taxes on its businesses to the point

where they are much higher than in neighboring states. What effect is this likely to have on Matt's job?

a) Higher business taxes will cause more businesses to move into Matt's state, raising wages.
b) Higher business taxes can't have any effect on Matt's job.
c) Mark's company may consider moving to a lower-tax state, threatening Matt's job.
d) He is likely to get a large raise to offset the effects of higher taxes.

22) If you have caused an accident, which type of automobile insurance would cover damage to your own car?

a) Comprehensive.
b) Liability.
c) Term.
d) Collision.

23) Scott and Eric are young men. Each has a good credit history. They work at the same company and make approximately the same salary. Scott has borrowed $6,000 to take a foreign vacation. Eric has borrowed $6,000 to buy a car. Who is likely to pay the lowest finance charge?

a) Eric will pay less because the car is collateral for the loan.
b) They will both pay the same because the rate is set by law.
c) Scott will pay less because people who travel overseas are better risks.
d) They will both pay the same because they have almost identical financial backgrounds.

24) If you went to college and earned a four-year degree, how much more money could you expect to earn than if you only had a high school diploma?

a) About 10 times as much.
b) No more; I would make about the same either way.
c) A little more; about 20% more.
d) A lot more; about 70% more.

25) Many savings programs are protected by the Federal government against loss. Which of the following is not?

a) A U.S. Savings Bond.
b) A certificate of deposit at the bank.
c) A bond issued by one of the 50 States.
d) A U.S. Treasury Bond.

26) If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?
a) An elderly retired man, with a wife who is also retired.

b) A young married man without children.
c) A young single woman with two young children.
d) A young single woman without children.

27) Which of the following instruments is NOT typically associated with spending?

a) Debit card.
b) Certificate of deposit.
c) Cash.
d) Credit card.

28) Which of the following credit card users is likely to pay the GREATEST dollar amount in finance charges per year, if they all charge the same amount per year on their cards?

a) Jessica, who pays at least the minimum amount each month and more, when she has the money.
b) Vera, who generally pays off her credit card if full but, occasionally, will pay the minimum when she is short of cash.
c) Megan, who always pays off her credit card bill in full shortly after she receives it.
d) Erin, who only pays the minimum amount each month.

29) Which of the following statements is true?

a) Banks and other lenders share the credit history of their borrowers with each other and are likely to know of any loan payments that you have missed.
b) People have so many loans it is very unlikely that one bank will know your history with another bank.
c) Your bad loan payment record with one bank will not be considered if you apply to another bank for a loan.
d) If you missed a payment more than 2 years ago, it cannot be considered in a loan decision.

30) Dan must borrow $12,000 to complete his college education. Which of the following would NOT be likely to reduce the finance charge rate?

a) If he went to a state college rather than a private college.
b) If his parents cosigned the loan.
c) If his parents took out an additional mortgage on their house for the loan.
d) If the loan was insured by the Federal Government.

31) If you had a savings account at a bank, which of the following would be correct concerning the interest that you would earn on this account?

a) Earnings from savings account interest may not be taxed.

b) Income tax may be charged on the interest if your income is high enough.
c) Sales tax may be charged on the interest that you earn.
d) You cannot earn interest until you pass your 18th birthday.

32) Which of the following classes did you have in high school? (Check ALL that apply)

a) An entire course in personal money management or personal finance.
b) A portion of a course where at least a week was focused on personal money management or personal finance.
c) An entire course in economics.
d) A portion of a course where at least a week was focused on economics.
e) A course in which we played a stock market game.

33) Which of the following classes have you had in college? (Check ALL that apply)

a) A semester-length course in personal money management or personal finance.
b) Coverage of money management or personal finance (including part of freshman orientation).
c) Economics.
d) Finance
e) Accounting

34) Which of the following best describes your major or area of interest in college?

a) Arts
b) Business or economics
c) Engineering
d) Humanities
e) Nursing
f) Science
g) Social Science
h) Other

35) What is your best estimate of your parents' total income last year? Consider annual income from all sources before taxes.

a) Less than $20,000.
b) $20,000 to $39,999.
c) $40,000 to $79,999.
d) $80,000 or more.
e) Don't know.

36) What is your gender?

a) Male

b) Female

37) What is the highest level of schooling your father or mother completed?

a) Neither completed high school.
b) Completed high school.
c) Some college.
d) College graduate or more than college.
e) Don't know.

38) How do you describe yourself?

a) White or Caucasian.
b) Black or African-American.
c) Hispanic American.
d) Asian American
e) American Indian, Alaska Native, or Native Hawaiian.
f) Other.

39) How many credit cards do you use, including store credit cards?
a) None.
b) 1.
c) 2.
d) 3.
e) 4.
f) 5 or more.

40) What is the outstanding balance on all of your credit cards?
a) Under $1,000
b) $1,000 to $2,499
c) $2,500 to $4,999
d) $5,000 to $9,999
e) More than $10,000

41) When you finish your undergraduate education, how much do you expect to owe on student loans?
a) Nothing.
b) Less than $5,000
c) $5,000 to $9,999
d) $10,000 to $19,999
e) $20,000 to $29,999
f) $30,000 to $49,999
g) $50,000 or more

Appendix D

Informed Consent

Dear Student,

You are invited to participate in a research study that examines the effectiveness of financial literacy education on subsequent debt. This survey should take no more than 10 to 15 minutes of your time. This is part of my doctoral research as a student at Indiana University of Pennsylvania.

The purpose of this study is to measure the effectiveness of financial literacy instruction on the retention of financial knowledge and if financial literacy education affects student debt.

The responses to the questionnaire will be confidential and no personally identifying information about individual students will be noted within the study. The results of the survey will appear in the data analysis tool without any identifying factors of the respondents. Students who participate in the focus group will also retain anonymity in the final study.

Please note that your participation is purely voluntary. You may opt out of this research at any time without any penalty or question.

If you have any questions, please contact the investigator and/or faculty sponsor at the following email addresses:

Patricia C. McCarthy
Doctoral Student
Indiana University of Pennsylvania
Department of Professional Studies in Education
mccarthy@iup.edu
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David Piper, D.Ed.
Professor
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Department of Industrial and Labor Relations
dpiper@iup.edu
Keith Hall
Indiana, PA 15705

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (phone number 724-357-7730).

Appendix E

Informed Consent for Focus Group

Today's College Student: Measuring the Effectiveness of Financial Literacy Education and the Effect on Subsequent Student Debt

You are invited to participate in a research study that examines the effectiveness of financial literacy education on subsequent debt. This portion of the study is a focus group and is part of my doctoral research as a student at Indiana University of Pennsylvania.

The purpose of this study is to measure the effectiveness of financial literacy instruction on the retention of financial knowledge and if financial literacy education affects student debt.

The responses to the questions during the focus group will be kept confidential within the body of the dissertation and students who participate in the focus group will also retain in the final study.

Please note that your participation is purely voluntary. You may opt out of this research at any time without any penalty or question.

If you have any questions, please contact the investigator and/or faculty sponsor at the following email addresses:

Patricia C. McCarthy, Principal Investigator (mccarthy@iup.edu)
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Stouffer Hall
Indiana, PA 15705

David Piper, D.Ed., Faculty Sponsor (dpiper@iup.edu)
Professor
Indiana University of Pennsylvania
Department of Industrial and Labor Relations
Keith Hall
Indiana, PA 15705

Student Consent: I understand that my participation is part of a dissertation study and I consent to volunteer for this study. I understand that my responses will be anonymous in the final study and that I can opt out of the study at any time.

_____ _____

Signature Date

_____

Printed Name

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (phone number 724-357-7730).

Appendix F

Focus Group Questionnaire

Have you ever had a financial literacy course?

____Yes (____High school) (_____College) or

____No

Do you have a credit card?

____ No

____ Yes if yes, how many? _____

What is the estimated total balance $_____

If yes, please complete the block below:

For what purposes do you use your credit card? (indicate if you consider it a "want" or a "need")

Purpose	Want or Need?

Do you have (or will you have) student loans to attend school?

_____No

_____Yes

If yes, please complete the block below listing any reasons, ***not including tuition, fees, room or board***, that you borrowed a student loan. Please indicate if you consider that reason a "want" or a "need":

For what reason did you borrow a student loan?	Want or Need?