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The financial literacy of university students: A comparison of graduating seniors' financial literacy and debt level

Vandeen M. McKenzie
University of South Florida

The Financial Literacy of University Students:

a Comparison of Graduating Seniors' Financial Literacy and Debt Level

by

Vandeen M. Mckenzie

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Major Professor: James Eison, Ph.D.
Robert Sullins, Ed.D
Jeffrey Kromrey, Ph.D
Dominic Puglisi, Ph.D

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Dedication

This is dedicated to my family.

Thank you!

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ABSTRACT

The level of university students' financial literacy has been discussed in Congress, opinion pieces in the media and the increasing level of student debt has been used to suggest their financial illiteracy. This study investigated the financial literacy of graduating university seniors by comparing their financial literacy level with their debt level. The difference in financial literacy levels of business majors, minors and non-business majors was assessed. The relationship between graduating university seniors' financial literacy level and their credit card and student loan debt was also reviewed. Gender, employment status, ethnicity, family income and college major were similarly examined to see if they were predictors of financial literacy levels and debt levels.

Although financial literacy is frequently discussed in the national arena there is no clear definition of financial literacy; this ambiguity has led to multiple definitions. In this study, financial literacy was defined as "an individual's ability to obtain, understand, and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences" (Mason & Wilson, 2000).

The Jump$tart questionnaire (Mandell, 2004) was used to calculate participants' financial literacy level. The study found that the majority of the students had a high level of financial literacy with an average financial literacy score of 72.56% and with students majoring in business performing significantly better than non-business students.

The use of debt level as an indicator of financial literacy level was found to be incorrect. No relationship was identified between financial literacy level and credit card debt or student loan debt. The study also found that demographic factors could not be used to predict financial literacy level and debt level.

It was found that the majority of participants learned about managing money either on their own or at home from family members. More than half of the participants expressed an interest in taking a personal finance class but less than 20% were aware that this course was offered at their university. More effective methods are recommended to ensure that students become more aware such courses being offered on campus.

Chapter 1

Introduction

As the federal government spending has surpassed its income over the years, a similar trend can be seen in the general population. A review of the federal government's spending over the past 25 years shows a steady increase in overspending (Bureau of Economic Analysis, 2006). In 1992 the deficit reached the then all-time high of $296.7 billion. After the record high of 1992, there was a decrease in spending until the nation had a surplus in 1998 of $90.6 billion; this was the first surplus in nineteen years. The nation enjoyed four years where its spending did not exceed its income but since 2002 the United States has been experiencing record deficits. Along with overspending, the federal government saving rate has also been decreasing as is evidenced in a review of the savings and investment tables. Unfortunately, the trend of overspending and low saving transcends the nation. A further review of the income and product accounts table along with the savings and investment tables shows that the overspending and low saving rate is not only at the federal level, it is also seen in local government and on the personal levels.

The overspending and reduced saving trend that has transcended the nation can be explained by Bronfenbrenner's (1977) ecological systems theory. Bronfenbrenner postulated that everyone in society is affected by changes within society. Individuals do not develop in isolation, they are affected by the interactions they have within their

surroundings. These interactions are not limited to their immediate surrounding such as their local community, local school, place of worship such as a church, synagogue or mosque, peers and culture but they are also affected by national, international and global changes. As the fiscal behavior of the federal government has changed, so has the fiscal behavior of local government and the populace changed. Similar fiscal changes can also be seen in the general population. Between 1990 and 2005, personal credit card debt has increased from $250 billion to $800 billion (Draut, et al, 2005), while personal savings has dropped from $299 billion to $34 billion (Bureau of Economic Analysis, 2006).

The gradual reduction in the personal savings level over the past fifteen years along with rapidly rising debt level shows a shift in society's financial habits. This societal adjustment has become a major cause of concern that has caught the attention of banking companies, government agencies, grass-root consumer and community interest groups (Braunstein & Welch, 2002) as well as Congress. Congressional concern gave rise to the financial literacy component of the No Child Left Behind Act of 2001 that requires the K-12 system to provide financial literacy education to students. The inclusion of the financial literacy component in the No Child Left Behind Act of 2001 shows that Congress has concern for the financial literacy of the nation by trying to affect the financial literacy level of students in the K-12 system. Ironically however, the financial literacy component of the Act was unfunded, thereby limiting its potential impact. While the Higher Education Act of 1965 that has been reauthorized seven times since its inception, none of the iterations had a similar edict. Although the Higher Education Act of 1965 did not include financial literacy directives in 2003, Congress

created and funded the Financial Literacy and Education Commission. The commission was given the mandate of developing and overseeing the implementation of a national financial literacy strategy.

Although "financial literacy" has no official definition, it has been described in four recent studies. Mason and Wilson (2000) defined financial literacy as an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences. Vitt and Anderson (2001) defined financial literacy as the ability to read, analyze, manage, and communicate about the personal financial conditions affecting material well-being. It includes the ability to discern financial choices, discuss money and financial issues without discomfort, plan for the future and respond competently to life events affecting everyday financial decisions, including events in the general economy. Thaden and Rookey (2005) defined financial literacy as the understanding of financial facts, concepts, principles and technological tools that are fundamental to making sound financial decisions while Fox, Bartholomae, and Lee (2005) defined financial literacy as one's understanding and knowledge of financial concepts. For the present study, Mason and Wilson's (2000) definition of financial literacy as an individual's "ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences," will be used. The Mason and Wilson (2000) definition of financial literacy that will be used in this study does not imply that an individual needs to be an expert in financial concepts, terminology, or technology but the individual has to be able to obtain, understand and evaluate financial information.

The rising personal debt level and lower personal saving rates has been commonly used as evidence of financial illiteracy in the majority of the opinion pieces that have appeared in newspapers and magazines regarding financial literacy (Kinzie, 2007; MacDonald, 2000; Young Americans Center for Financial Education, 2007). Since financial literacy relates to an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences (Mason & Wilson, 2000), it is improper to assume that poor financial decisions automatically imply poor financial literacy. Poor financial literacy or financial illiteracy relates to an individuals' lack of knowledge to make or evaluate financial decisions and their inability to obtain the necessary information to assist in the financial decision making process. Mason and Wilson (2000) assert that a financially literate person can make poor financial decisions, because poor decisions can be made with a clear understanding of the consequences.

Although there is a lack of a specific definition for financial literacy the importance being placed on financial literacy has not been hampered. The importance of financial literacy is evidenced in:

a) Acts being passed by the federal government that established a commission that focuses on financial literacy.

b) National foundations such as National Endowment for Financial Education (NEFE), National Council of Economic Education (NCEE), Jump$tart Coalition and 360 Degrees of Financial Literacy that focus specifically on financial literacy.

c) State government establishing councils to study financial literacy.

d) Local commissions, foundations and associations within each state that focus on improving the financial literacy level of the populations they serve.

These associations, coalitions, commissions, councils and foundations have been established with the primary focus of promoting financial literacy within the nation. Since a single organization is not able to impact the entire country each organization identifies a specific segment of the population and focus on impacting their financial literacy level.

Recent university graduates make up one segment of the population that especially need to understand the impact of their financial decisions. University students have the responsibility of paying for their education, which often is accomplished predominantly through grants, income from part time job, loans, both private and federal, personal savings, parental contributions and scholarships. Students who receive financial aid to assist in paying for their university education are on average offered only 49% of the cost of their education in a combination of federal, state and institutional grant aid (National Center for Educational Statistics, 2006). The remainder of the cost is covered by student loans, consumer loans and credit cards. Along with paying for their education, university students are commonly inundated with tempting credit card offers at nominal introductory rates that unfortunately balloon if balances are not paid in full (Kara, Kaynak, & Kucukemiroglu, 1994; Hayhoe, Leach, Turner, Bruin, & Lawrence, 2000).

Upon entering the workforce university graduates are also expected to make sound decisions regarding retirement planning.

Billions of dollars have been spent by the federal government in grants and student loan interest payment to educate the population, but students leaving university seem ill prepared to manage their limited finances (Baum & O'Malley, 2003; Thaden & Rookey, 2004). After billions of taxpayers dollars have been spent by the federal government on higher education the taxpaying public has expectations of what the recipients of post secondary education should be able to do and what skills they should possess (Immerwahr & Foleno, 2000). The public expects higher education to be a value added experience for its graduates so they can lead successful lives. A financially literate graduate will be able to make financial decisions and be cognizant of the advantages and risks involved.

The importance of university students becoming knowledgeable about personal finance is increasingly being recognized by universities. An informal survey of public universities in the state of Florida regarding personal finance courses had a 60% response rate (McKenzie, 2007) and revealed that 80% of the institutions offered a personal finance course. At most universities the course was offered for credit to all majors. There was one institution that did not allow finance majors to take this course for credit. The personal finance course was typically offered by each university between one to three times per academic year with 40 to 300 seats available. The institution with the lowest number of available seats per semester offered the course the least amount of times per year. The two institutions with the highest seat offering normally have two to three

sections of the course each semester that are always full. On average the semester enrollment ranged from 70 to 100 percent. The offering of the personal finance course suggests that higher education within the state of Florida recognizes the importance of all of its students becoming knowledgeable about their personal finances.

During the 12 year span of 1987 to 1998 three scholarly studies looking at different aspects of the financial literacy of university students were published. In 1987, Danes and Hira studied the money management knowledge of 323 university students at Iowa State University. Although no clear definition was given for money management knowledge, the authors seemingly tested students' knowledge of:

a) Applying for and receiving a credit card, insurance, and a personal loan

b) Ways of correcting errors relating to their credit card, insurance, and personal loan.

They were also tested on the importance of financial record keeping and general financial management. The authors found that university students were knowledgeable about financial record keeping and basic personal loan information but they had a low level of knowledge regarding overall money management, credit cards and insurance. Danes and Hira (1987) stated that more research was needed on the financial knowledge of college students.

Volpe, Chen and Pavlicko (1996) researched the personal investment literacy of 454 university students at Youngstown State University in Ohio. While personal investment literacy was not formally defined by the authors, they apparently tested students' knowledge of investments topics such as risk, diversification, tax planning,

mutual fund performance and global investing. They found that university students had low personal investment knowledge but business majors were more knowledgeable than non-business majors. Two years later, Chen and Volpe (1998) analyzed the personal financial literacy of 924 university students from fourteen university campuses in six states. Personal financial literacy was still not formally operationalized but based on the subscales of the survey used, students were tested on their knowledge of:

a) Savings and borrowing

b) Insurance

c) Investments

d) General financial knowledge.

The authors reported that participants had a low level of personal financial literacy. Although all students had low levels of financial literacy it was observed that business majors performed significantly better on the test than other majors.

Since 2000 increased interest and research has examined the financial literacy of university students with over sixteen scholarly studies relating to the financial literacy of university students reported in the literature (e.g., Anthens, 2004; Braunstein & Welch, 2002; Godfrey, 2006; Hayhoe, 2002; Murphy, 2005; Vitt & Anderson, 2001). These studies have continued to report that university students generally have low levels of financial literacy with business majors showing higher levels of financial literacy. Past research has identified a difference in the financial literacy level of students majoring in business and non-business fields (e.g., Chen & Volpe, 1998; Murphy, 2005; Volpe, Chen, & Pavlicko, 1996). Although past research has shown that there is a difference in

the financial literacy levels of students majoring in business compared to non-business fields, there has however been no research that has analyzed if a minor in business has an impact on a student's financial literacy score.

Further, incongruence between what university students believe they should know and what they actually know was noted (Godfrey, 2006; Norvilitis, Merwin, Osberg, Roehling, Young, & Kamas, 2006; Thaden, & Rookey, 2005). For example, university students believe it is important to know their credit card balance and interest rate but when tested it was found that while they were aware of their credit card balance they were typically unaware of the interest rate or how long it would take them to pay off their balances (Godfrey, 2006; Norvilitis, et al, 2006). Thaden and Rookey (2005) stated that further research is needed to determine whether financial literacy scores predict differences in tangible outcomes like credit card debt and student loan debt (p. 8).

Problem

Research investigating financial literacy of college and university students has been plagued with numerous problems. First there has been a lack of a clear definition for financial literacy. While this had led most congressional reports, newspaper articles and opinion pieces to view financial literacy as the ability to make good financial decisions, the three most frequently cited studies (i.e., Chen & Volpe, 1998; Danes & Hira 1987; Volpe, Chen, Pavlicko, 1996) have not defined or described the specific elements of financial literacy being assessed. The lack of a clear definition makes evaluating the findings of previous studies difficult; it also limits comparisons between

recent and previous studies. In the present study the Mason and Wilson (2000) definition of financial literacy as an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences, will be used. This definition will provide structure and limits to the concept of financial literacy in this study.

Volpe, Chen, and Pavlicko (1996), Chen and Volpe (1998) and Murphy (2005) found that business majors scored higher on financial literacy surveys than non-business majors. Although different surveys were used in these three studies, the results were consistent across investigations. It is unclear from these findings the level of business coursework required to influence financial literacy scores. While these previous studies differentiated between business majors and non-business majors, students who took classes within the College of Business and were classified as business minors were not specifically identified. The proposed study, further aims to clarify whether having a minor in business increases university students' financial literacy scores. Therefore, the first research question of the proposed study will be:

1. What differences exist in the financial literacy levels between university seniors who graduate with a major in business, a minor in business or a major in a non-business field?

Research conducted by Nellie Mae (2000, 2002, 2005) and Take Charge America Institute (2007) shows that university seniors are graduating with high student loan and consumer debt levels. These studies have found that university seniors view their debt levels as excessive and burdensome. The previous studies identified that there is a problem and stated that higher education institutions need to provide more financial

education courses to increase the students' financial literacy level. The studies however, did not compare the students' financial literacy level with their debt level. The proposed investigation will compare university seniors' financial literacy levels and their credit card and student loan debt levels to identify any relationship that may exist between their debt level and financial literacy level. Therefore, the second research of the proposed study will be:

2. What is the relationship between graduating university seniors' financial literacy level and their a) credit card debt level and b) student loan debt level?

Demographic factors have been identified in past research that has resulted in a difference in financial literacy levels. Gender, employment status, ethnicity, family income, and college major have been some of the factors shown to be related to students' financial literacy level (Chen, Volpe, & Pavlicko, 1996; Danes & Hira, 1987; Markovich & DeVaney, 1997; Murphy, 2005 and Thaden & Rookey, 2004). These factors have been identified as affecting financial literacy levels but only one factor has been studied in past research. Chen and Volpe (2002) studied the gender differences in the financial literacy levels of college students. They found that males had statistically higher financial literacy scores than females. The identification of factors that affect financial literacy in past research and the limited research that has studied these factors specifically has therefore led to the third and fourth questions in the proposed study:

3. To what degree does gender, employment status, ethnicity, family income and college major predict financial literacy levels of graduating university seniors?
4. To what degree does gender, employment status, ethnicity, family income and college major predict the debt levels of graduating university seniors?

Conceptual Framework

The federal government in 2003 created the Financial Literacy and Education Commission through the enactment of the Financial Literacy and Education Act. The Commission was given the task of improving the financial literacy and education of persons within the United States. Though unfunded, the creation of the Financial Literacy Commission shows that the federal government is concerned about the nation's financial literacy level. The State of Florida has also shown concern for the level of its residents' financial literacy. In 2006 the Florida legislature created the Financial Literacy Council. The Financial Literacy Council was given the task of studying the financial problems that affect consumers and provide recommendations to assist in the development of financial literacy programs and resources that will empower individuals to manage their finances to reduce debt, increase savings, and avoid bankruptcy. Both the federal and state government has recognized the importance of financial literacy, but the only way for the population to become financially literate is by gaining knowledge of financial concepts and becoming aware of where to seek help when they need additional information.

Hilgert and Hogarth (2003) found that financial knowledge is learned primarily from parents but Godfrey and Streeter (2002) compiled the following national personal debt statistics:

- There is $1.6 trillion in personal credit outstanding. This equals $15,978.44 in possible debt per household, not including mortgage debt.
- Americans hold $696 billion in unpaid revolving debt.
- Over 2 million U.S. households seek credit counseling every year.

- Student loans carry the highest delinquency rate of all loans.
- Personal bankruptcy filing reached a record high in 2001. Approximately 1.5 million were filed in 2001 which is an increase of 19 percent over 2000.

This shows that many families are having financial difficulties and are seemingly unable to manage their finances. If parents are not financially literate and they are the primary teachers of financial knowledge it is understandable that students are not financially literate. With the federal and state government recognizing the importance of financial literacy and the primary learning source seemingly unable to impart financial knowledge it is important that the cycle of financial illiteracy be broken. Parents are unable to break the cycle and unfortunately the K-12 system has been unable to break the cycle either (Mandell, 2004; National Council on Economic Education, 2007). This leaves the responsibility of breaking the cycle of financial illiteracy on higher education.

Gaff and Ratcliff (1996) stated that higher education is in the knowledge generation business. Higher education is in the business of generating knowledge either through research by its scholars or the teaching done by its scholars to the students that are enrolled at the institution. Although there are different higher education philosophies, the common end result of all is the "attainment of knowledge by the student so that they can develop the intellect to seek new knowledge to do their jobs effectively and preserve the values of our culture" (Ratcliff, 1996). Financial illiteracy affects the economy which impacts the stability of the nation. Higher education with its focus on knowledge

generation has a responsibility for improving its graduate's financial knowledge which would lead to greater financial literacy.

Purpose of the Study

This study will assess the financial literacy of graduating seniors to identify the impact, if any, that higher education has had on their levels of financial literacy. Nettles (1995) held that the most effective ways of influencing the direction of American public policy is to produce evidence that a crisis exists, and then rally public interest and support in addressing the matter. Through this study I aim to inform, enlighten and heighten campus awareness of the level of financial preparedness of recent university graduates from a large, state research intensive university. In short, I hope to generate both compelling research evidence and pose clear questions that will stimulate further research in the field.

Research Questions

1. What differences exist in the financial literacy levels between university seniors who graduate with a major in business, a minor in business or a major in a non-business field?
2. What is the relationship between graduating university seniors' financial literacy level and their a) credit card debt level and b) student loan debt level?

3. To what degree does gender, employment status, ethnicity, family income and college major predict financial literacy levels of graduating university seniors?
4. To what degree does gender, employment status, ethnicity, family income and college major predict the debt level of graduating university seniors?

Significance of the Study

Previous studies have found that there were differences in the financial literacy levels of business majors but none of the past research has investigated whether students who minored in business performed any differently from students majoring in other fields (Chen & Volpe, 1998; Danes & Hira, 1987; Volpe, Chen & Povlicko, 1996). Previous research has identified the following factors associated with students having low financial literacy a) gender, b) employment status, c) ethnicity, d) family income and e) college major (e.g., Chen, Volpe, & Pavlicko, 1996; Danes & Hira, 1987; Markovich & DeVaney, 1997; Murphy, 2005 and Thaden & Rookey, 2004). This study aims to clarify the factors that impact financial literacy levels so future researchers and practitioners can use the information to identify and assist students at differing financial literacy levels. With the increased interest in the financial literacy level of university students this study will add to the body of knowledge and lead to continued research on the university student population by providing a reference point for future researchers.

Definition of Terms

In this study the students' financial aid will be used to determine socio-economic level. At the large, state research intensive university located in the Southeastern United States, over 70% of the student population receives financial aid (S. Runion, personal communication, August 9, 2007). There are three basic types of federal financial aid that are offered to students and the students' eligibility is based on their family income. A student receives financial aid based on the governments' calculation of the family's ability to pay for the students' education. A high income student can only receive unsubsidized Stafford loans that start accruing interest immediately after the loan is disbursed to the student. A middle income student can receive a combination of subsidized and unsubsidized Stafford loans as is shown in Table 1 or only subsidized Stafford loan but they are not eligible to receive any federal grant. A low income student must receive the Pell Grant and any combination of Stafford loan. With the high number of students receiving financial aid, the use of this governmental predefined assessment of family income level limits bias and reduces the need for students to include their perception of their family's socio-economic status.

Table 1

The Relationship between Federal Financial Aid and a Students' Socio-Economic Status

Socio- Economic Status	Pell Grant	Subsidized Stafford Loan	Unsubsidized Stafford Loan
Low	**X**	**X**	**X**
Middle		**X**	**X**
High			**X**

1. *Business Major:* In the context of this study a student who has completed 30 or more credits.
2. *Business Minor:* In the context of this study a student who has completed 18 or more, but less than 30 business credits.
3. *Financial Literacy:* An individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences (Mason & Wilson, 2000).
4. *High Income:* Students receiving financial aid in the form of unsubsidized Stafford loans only.
5. *High Level of Financial Literacy:* Earning a score of 70% or more on the Jump$tart questionnaire. A score of 70% translates to a C in most schools, and a C is viewed as a passing grade. For this questionnaire Mandell (2004) uses the nationally accepted value of 70% to represent a high level of financial literacy.

6. *Jump$tart Coalition:* A national coalition of organizations dedicated to improving the financial literacy of kindergarten through university-age youth by providing advocacy, research, standards and educational resources. The Coalition developed the national standards in personal finance with benchmarks for the K-12 classroom.
7. *Jump$tart Questionnaire*: Developed in 1997 to evaluate high school seniors' knowledge of personal finance to determine if the students had met the national standards for personal finance. The competency and proficiency level expected of the high school seniors based on the national standards developed by the Coalition align with the standards developed by the National Standards for Family and Consumer Sciences Education in 1998 (Klemme, 2002). The questionnaire has four subscales, income, money management, saving and investing, and spending and credit. Respondents are expected to earn a passing grade to be viewed as having a high level of financially literacy. A passing grade in high school is a 'C' which translates to a percentage value of 70.
8. *Low Income*: Student who is the recipient of the Pell grant.
9. *Low Level of Financial Literacy:* Earning a score of 50% or less on the Jump$tart questionnaire. A score of 50% or less translates to an 'F' in most schools, and an 'F' is viewed as a unsatisfactory grade. For this questionnaire Mandell (2004) uses the nationally accepted value of 50% or less to represent a low level of financial literacy.

10. *Middle Income*: Must not be a recipient of the Pell grant but must receive subsidized Stafford loans.
11. *Senior*: Undergraduate students who have completed 105 or more credit hours and have completed and submitted a graduation application.

Limitations and Delimitations

The questionnaire was administered online. The link to the web based questionnaire will be sent via email students that have been identified as seniors who have completed at least 105 credit hours by the Office of the Registrar at a large, state research intensive university.

This study was being conducted at one university which is located in southeastern United States. Recommendations made based on the survey results along with trends or patterns identified in the results of the study must be properly understood as being limited to the institution where the research was conducted. This limits the generalizability of the results.

After careful evaluation which is discussed further in Chapter 2 the Jump$tart questionnaire was chosen to be used for this study. The Jump$tart questionnaire only assesses the knowledge aspect of definition of financial literacy. The Jump$tart questionnaire does not allow for the evaluation of the participants awareness of the consequences associated with making specific financial decisions. The limitation of the questionnaire limits the generalizability of the results

Organization of Chapter 2

In the next chapter efforts to enhance financial literacy at the national level will be reviewed. After conducting extensive research online via Business, Consumer Sciences, Education and Government databases using the search terms "financial literacy", "financial management", "financial planning", "economic education", "economic literacy", "money management", "credit", "credit card knowledge" and "debt management" it was found that research relevant to the proposed study was limited. Contact was made with William Becker, Ph.D, the editor for the *Journal of Economic Education* who expressed that limited research has been conducted and published on the financial literacy of college students. The available research though limited, will be reviewed in Chapter 2.

The conceptualization of financial literacy will be discussed along with the evidence of financial illiteracy across the nation. The three major works regarding the financial literacy of university students will be detailed. The financial literacy of high school students will also be reviewed, to understand the financial literacy level of incoming university students. Unfortunately few studies have been conducted on the financial literacy of university students, however their debt level which is used as an indicator of financial illiteracy has been studied and will be reviewed and summarized in chapter two.

Chapter 2

Literature Review

As the financial landscape changes and the populations' economic safety net erode, employees have to be financially savvy to be able to wisely manage their finances to reduce financial insecurities (Center for Responsible Lending & Demos, 2005). Workers are now responsible for managing their retirement accounts, the future availability of social services are unsure and health insurance benefits are no longer guaranteed with employment (Center for Responsible Lending & Demos, 2005; Braunstein &Welch, 2002; Chen &Volpe, 1998). With these social and societal changes, the financial arena gets harder to navigate. It is imperative that everyone, including university students, know how to manage their finances. After four years of post secondary education, upon entering the working environment, graduates are expected to make decisions regarding their financial future. These trends and issues demonstrate the importance of being a financially literate university graduate.

Mandell (2004) in his study of graduating high school seniors found that high school seniors typically are not financially literate, their overall average score and the average score of each subscale was less than 70%. Mandell (2004) further pointed out that high school seniors' financial literacy level had declined over time. High school seniors' graduate high school and enter university having the same financial literacy level they had upon graduation. If these students are not introduced to financial literacy

education while in university, they will ultimately become financially illiterate college graduates. This puts the onus on higher education to break the cycle of financial illiteracy.

Higher education is viewed by the public as an environment that prepares students to be fully functioning and productive members of society. The public expects university graduates to develop maturity, organizational skills, self-direction, self-discipline, critical thinking skills, problem solving skills and the ability to manage on their own (Immerwahr, 2000). These expectations transcend a student's academic life and incorporate their personal and financial lives. As a nation, if we do not prepare our most educated members to fully participate in society then the nation becomes a part of the problem.

The federal government, recognizing that there was a financial literacy problem based on the mounting evidence of bankruptcies, high levels of revolving debt and low saving rates created the Financial Literacy and Education Commission. The Commission was a mandate of the Financial Literacy and Education Act, which is Title V of the Fair and Accurate Credit Transaction Act of 2003. The Commission was charged with developing and overseeing the implementation of a national financial literacy strategy.

Review of the National Strategy

Anticipating that there was a problem with the national financial literacy level, in 2003 the federal government enacted the Financial Literacy and Education Act. The Financial Literacy and Education Act created the Financial Literacy and Education

Commission with the Department of Treasury assigned the task of being the chair of the Commission. The Commission was given the responsibility of improving the financial literacy and education of persons within the United States. The Commission was responsible for the financial literacy and education of persons of all ages within the United States, including university students'. The Commission was given 18 months to develop and coordinate the federal effort to implement the all-encompassing national strategy.

In April 2006 the commission published the national strategy which was ten months after the designated timeframe allowed by the Financial Literacy and Education Act. While the strategy identifies strategic areas needed to improve financial literacy nationally, it sets no clear goals or objectives for what it seeks to achieve nor performance measures for assessing progress. The strategy also addresses the types of resources that are available from different sectors including federal, state, community and private organizations. Anyone in the process of developing a financial literacy program could indirectly use the national strategy to identify the group that is in the greatest need of financial literacy education. Based on the focus of the Commission's pilot campaign that is focused on young adults', specifically university students, it could be interpreted that university students' are in the greatest need of financial literacy education. The Commission has decided to focus its pilot campaign on young adults because a credit survey conducted by the Financial Markets and Community Investment office found that younger consumers had significantly less knowledge of credit reporting issues thus, the

Commission decided to focus its pilot campaign on university students (U.S. General Accounting Office, 2006).

One of the limitations of the national strategy that is also seen in studies on financial literacy is the lack of an explicit and consensual definition. While the financial areas that the Commission was charged with focusing on are clearly stated in the Act, without a clear definition of financial literacy, the true impact of the Commission's work can not be readily assessed. Another limitation of the national strategy is the manner in which financial literacy programs offered by governmental organizations were evaluated for overlap. U.S. General Accounting Office (2006) stated that the Commission had the federal agencies evaluate their programs and they reported that their programs did not overlap. This lack of transparency affects the legitimacy of results from the evaluation since the Commission is comprised of the federal financial agencies that made the decision to evaluate their own programs (U.S. General Accounting Office, 2006).

The Financial Literacy and Education Act was clear in the designated role of the Commission. The Commission was required to develop a national strategy and coordinate the national implementation. Based on the strategy that was presented ten months after it was required, the Commission has not met its goal. The Commission has summarized the present financial state of the population and programs that are being offered by different entities to assist in curtailing the problem. The Commission had not specified a specific strategy that will be implemented, a population that is most in need of financial literacy training, nor has a timeline been developed for implementing a strategy. Indirectly the Commission has stated that university students' are most in need since the

pilot campaign will be directed towards that population. Clear goals by which to evaluate the strategy are also lacking.

Review of the State of Florida Initiative

During the 2006 legislative year the State of Florida enacted the Florida Financial Literacy Council in HB 825. The Council is an adjunct to the department of financial services. HB 825 enacted the Council which will cease to exist on December 31, 2011 with the purpose of

> Studying the financial problems that affect consumers, particularly small businesses, young people, working adults, and seniors that arise from a lack of basic knowledge of financial issues and to provide recommendations to the Department of Financial Services which will assist the department in developing financial literacy programs and resources and providing a single state resource for financial literacy for the general public in order to empower individuals and businesses to manage their financial matters in order to reduce debt, increase savings, and avoid bankruptcy (p. 2).

The Council has been given the responsibility of identifying the financial problems affecting the entire population of the state although the legislature has identified the population they believe to be most at risk. Unlike the Financial Literacy and Education Commission, the Council has been told to focus on small business, young people, working adults and seniors. This seems like a daunting task since they only have five years within which to accomplish this task. The State of Florida appropriated $50,000 in nonrecurring funds to the Council. Although the state initiative has been funded, though the funding is limited, the funding has a stipulation that limits the

Council's ability to use the funds. The Council can use the funds only if they receive grant funds or contributions equal to or greater than the appropriated funds.

Conceptualization of Financial Literacy

Literacy

To fully understand and appreciate the concept of financial literacy a full understanding of the meaning of the word "literacy" is necessary. Literacy as defined by the Oxford English Dictionary is "the quality or state of being literate; knowledge of letters; condition in respect to education especially the ability to read and write." The Merriam-Webster definition of literacy is "the quality or state of being literate." Both the Oxford English Dictionary and Merriam-Webster defined literacy as "the quality or state of being literate," but what does it mean to be literate? Oxford English Dictionary defined literate as "acquainted with letters or literature; educated, instructed, learned; of or pertaining to letters, literary men or literature; a liberally educated or learned person; one who can read and write." Merriam-Webster defines literate as "educated, cultured; able to read and write; versed in literature or creative writing; lucid, polished; having knowledge or competence."

The preponderance of the emphasis on language in definitions is understandable given the origins of the word literacy. The word literacy was derived in 1886 from the word literate. Literate is the current evolution of the 1432 word literat which was derived from the Latin word litterae which means letters or literature. It is now being recognized that literacy is not limited to language. Knowledge of a particular subject or a particular

type of knowledge and having knowledge or competence as defined by Cambridge Dictionaries Online and Merriam-Webster respectively and the state of being educated, instructed or learned as defined by Oxford English Dictionary recognizes the evolution in the use of the word literate.

Financial Literacy

A review of synonyms in Roget's New Millennium Thesaurus (2006) for the words "literate, knowledge and competence" reveals that "proficiency, resourcefulness and skilled" create a theme for synonyms. A person proficient in a skill area is able to understand and evaluate issues pertaining to the skill area while being aware of the potential consequences. A resourceful person is aware of when they lack the necessary knowledge to make informed decision and they have the forethought to obtain the information to ensure that the best possible decision is made.

Mason and Wilson (2000) defined financial literacy as "an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequence." This shows that being proficient, skilled and knowledgeable in financial manners and being able to make decisions with an understanding of their consequences shows your level of financial literacy. Being financially literate is not limited to persons who are proficient and knowledgeable. The resourceful person who is aware of their limitation in certain financial matters but is able to find the appropriate sources to gain the necessary knowledge to be able to make an informed decision is also financially literate. Mason and Wilson (2000) made it clear that

being financially literate does not guarantee that a person will make sound financial decisions, once a person is aware of the consequences of their financial decisions and choices they are financially literate even if the consequence will be negative.

Evidence of National Financial Illiteracy

Hilgert and Hogarth (2003) and Mandell (2004) found that most students' learned their financial practices and habits from their parents or through personal experience. Mandell (2004) identified this trend in his national study conducted in 1997, 2000, 2002 and 2004 on a total of 10,353 high school students. Hilgert and Hogarth (2003) in their analysis of the national survey of 1004 consumers across the contiguous United States also found that people primarily learned their financial practices and habits from their family or through personal experience. Mandell (2004) showed that students' are learning financial practices from their parents, and the parents have learned their financial practices from their parents (Hilgert & Hogarth, 2003). This implies that parents need to be financially literate to be able to teach their children positive financial behavior and habits.

Interested groups such as financial institutions, credit counseling agencies and policymakers are concerned that consumers lack a working knowledge of financial concepts and do not have the tools they need to make decisions most advantageous to their economic well being (Braunstein & Welch, 2002; Hopley 2003). In a speech given by Roger W. Ferguson, Jr. Vice Chairman of the Federal Reserve, before the National Council on Economic Education (2002), he stated that changes in our financial system

including the increasing complexity and diversity of product offerings have created consumer demand for improved education. With educators and students living in this diverse and complex economic environment (Klemme, 2002) the need for increased financial education is necessary. Stephen Brobeck (2002) Executive Director of Consumer Federation of America stated in testimony before the Committee on Banking, Housing, and Urban Affairs of the United States Senate, that the recent changes in the financial services marketplace have increased the financial vulnerability of households. The financial literacy crisis that is looming in the United States (Anthes, 2004) is counterproductive to the financial direction of the economy that places more responsibility on individuals to manage their own finances. With a more diverse and complex economic environment and the projected crisis that is looming, more training is required for the population to be able to effectively navigate the system.

"We live in the largest capitalist nation in the world and our children graduate from high school without a clue about finances" (Godfrey & Streeter, 2002; Godfrey, 2006). The expectation of a capitalist society is that the population will be increasing their wealth. The unfortunate reality is that the population is increasing their debt.

Three Major Financial Literacy Studies of University Students

There have been three major scholarly studies on the financial literacy of university students', each looking at a different aspect of financial literacy. The first study was conducted by Danes and Hira in 1987 to examine the money management knowledge of university students. Volpe, Chen and Pavlicko (1996) next researched the

personal investment literacy of university students. Two years later in 1998 Chen and Volpe analyzed the personal financial literacy of university students. These three ground breaking studies will be reviewed in detail.

Money Management Knowledge of University Students

Danes and Hira (1987) studied the money management knowledge of university students by surveying 716 students at Iowa State University a total of 323 (45.11%) responded to the survey questions. The survey consisted of 51 questions that were divided into the five sub-scales of credit cards, insurance, personal loans, record keeping and overall financial management (p. 4). The credit card subscale consisted of eight questions, the insurance subscale consisted of six questions, the personal loan subscale consisted of thirteen questions, the record keeping subscale consisted of six questions and the overall financial knowledge subscale consisted of eighteen questions. Psychometric data about the survey instrument was not reported. The demographics of the sample were representative of the university population from which the respondents were drawn. Danes and Hira (1987) used the percentage of correct responses to define the students' knowledge level,

a) students' who scored 80 – 99 percent were described as having a high level of knowledge,
b) students' who scored 60 – 79 percent were described as having a medium level of knowledge,
c) students' who scored 40 – 59 percent were described as having a low level of knowledge,

d) students' who scored 20 – 39 percent were described as having a very low level of knowledge.

Danes and Hira (1987) found that students were knowledgeable regarding the general use of credit cards as a form of identification and the additional costs associated with late payments. Respondents' knowledge level decreased when interest charges and problems that might arise in using credit cards were addressed. Students were aware of the importance of medical insurance but their knowledge level regarding disability income insurance, life insurance, the provisions of auto collision insurance and the rate of return on cash value life insurance were low to very low (p. 8). Questions relating to basic knowledge regarding personal loans showed a high knowledge level but specific questions on balloon payments, credit life insurance and cost comparisons showed a lower level of knowledge. Students showed medium to high levels of knowledge regarding the importance of record keeping.

On the basic questions of each subcategory the respondents showed some knowledge but showed evidence of lower knowledge level on more specific questions relating to the subcategories e.g., the students knew the importance of knowing the total amount to be paid on a personal loan and the number of payments required but few students knew the importance of the prime interest rate on determining the interest rate of a personal loan. The researchers identified incongruence between what the students said they should know and what they actually knew. Eighty-seven percent of the respondents stated that it was important to know the Annual Percentage Rate (APR) when applying for a loan, but only 38% knew the APR on their charge accounts. Also identified was a

difference in the money management knowledge level of university seniors and freshmen. The authors found that university seniors had greater knowledge than university freshmen. Although university students showed that they were knowledgeable on some of the subscales when their overall financial knowledge was assessed, the researcher found that their knowledge level was low.

Personal Investment Literacy of University Students

Volpe, Chen and Pavlicko (1996) researched the personal investment knowledge of 454 university students at Youngstown State University in Ohio as it relates to gender, academic discipline and experience. Their study focused exclusively on the investment subcategory of financial literacy. Unfortunately, the researchers used the ten item "What's Your Investing IQ" questionnaire from the Money Forecast issue of the 1993 Money magazine along with some additional demographic questions. Each of the ten items tested a separate subscale of investment. The use of an instrument with few items limits a researcher's ability to derive significant conclusions. Participants had to score a 70 or higher on the survey to be viewed as knowledgeable.

Results showed that illiteracy is spread across a broad range of topics on personal investment (p. 88). Results revealed that the personal investment knowledge of the university students was inadequate with participants having an average score of 44. Male participants performed better than the females with a chi-squared result of 5.31 at a 0.05 significance level. As the researchers expected, business majors had a higher level of personal investment knowledge than non-business majors. It must be noted however, that

that 70% of the participants were business majors. The researchers went further and compared the results of finance and accounting majors with those of marketing and management majors. They found that finance and accounting majors had a higher level of personal investment knowledge. The researchers found that students who had prior experience investing in stocks, bonds or mutual funds showed no difference in their personal investment knowledge than students without prior experience.

The researchers stated that inadequate knowledge of personal investment cuts across the entire student body with women and non-business majors earning the lowest scores (p. 92). Though the authors did not cite the limited number of non-business participants (N = 30%) as a limitation to their study, a more balanced academic sample along with a more detailed survey is needed to produce rich and representative findings about the personal investment knowledge of today's university students.

Personal Financial Literacy among University Students

In 1998 Chen and Volpe investigated the personal financial literacy of 924 university students from fourteen college campuses in six different states. The colleges ranged from small two-year institutions to large four-year institutions both public and private. The researcher had three goals,

a) to provide evidence of personal financial literacy among university students,

b) to examine why some university students are relatively more knowledgeable than others, and to

c) to examine how a student's knowledge influences his/her opinions and decisions on personal financial issues.

Although no explicit definition was given for financial literacy, the 52 item Survey of Personal Financial Literacy created by the authors consisted of thirty-six questions that tested the participant's literacy level on,

a) savings,

b) borrowing,

c) insurance,

d) investments,

e) general financial knowledge.

Eight questions gathered information on the participant's opinions and decisions and eight questions gathered demographic data. A percentage score of 80 or above showed a high level of financial literacy, a score from 60% to 79% showed medium level of financial literacy and a score below 60% showed a low level of financial literacy. No psychometric data was reported for this instrument so the validity or reliability of the instrument could not be determined.

Chen and Volpe (1998) found that university students' knowledge of personal finance was inadequate with a mean score of 52.87%. They attributed this to the lack of a sound personal finance education in the university curricula. Business majors performed significantly better and showed a higher level of personal financial literacy than non-business majors. Although the overall results indicated that the students had a relatively low level of financial literacy, Chen and Volpe (1998) pointed out that class rank had an

impact on participants' performance. Graduate students performed significantly better than undergraduates and juniors and seniors performed significantly better than freshmen and sophomore. They also found that male participants performed significantly better than females. The researchers warned that the challenging issue of financial illiteracy needs to be addressed because when an individual cannot manage their finances it becomes a problem for society.

Comparison

The two earliest studies by Danes and Hira (1987) and Volpe, Chen and Pavlicko (1996) examined students' money management knowledge and personal investment literacy. Money management and personal investments are two subcomponents of the larger construct of financial literacy. Only Chen and Volpe (1998) looked specifically on the financial literacy of university students. Unfortunately, similar to the Financial Literacy and Education Act, Chen and Volpe (1998) did not provide a definition for financial literacy. Although financial literacy was not defined in their study, they outlined that their survey instrument would evaluate,

a) savings and borrowing,

b) insurance,

c) investments,

d) general financial knowledge.

Volpe, Chen and Pavlicko (1996) and Chen and Volpe (1998) both identified that business majors perform better on financial literacy surveys than non-business majors.

The reason that business majors perform better on financial literacy surveys has not been tested but it has been surmised that business majors have been exposed to more financial issues and they are more interested in reading and learning financial related material (Volpe, Chen & Pavlicko, 1996; Chen and Volpe, 1998).

Chen and Volpe (1998) stated that without adequate knowledge students are more likely to make mistakes in the real world (p. 122). The present trend of a negative saving rate, increased bankruptcy filings and skyrocketing revolving debt rate shows the mistakes that are being made by the general population. The behavior and trends seen in the general population can not be directly attributed to the university population. Although the university population is a microcosm of the general population there is one major difference between the university population and the general population. The university population consists of people at similar education level.

Although Volpe, Chen and Pavlicko, (1996) results align with the other studies on financial literacy, the questionnaire used had one item for each sub category being tested. Danes and Hira (1988) and Chen and Volpe (1998) used surveys that consisted of over 50 questions with multiple questions being used to test a particular sub category.

Debt Level of University Students

Danes and Hira (1988), Volpe, Chen & Pavlicko (1996), and Chen and Volpe (1998) found that university students lack knowledge regarding money management, investment and personal finance. After graduating from university where they have been prepared to be productive citizens, these students are expected to manage their finances

effectively to be able to meet their living expenses, service debts incurred while in university, manage their retirement planning, save towards the purchase of a home, the education of their children and unexpected financial emergencies. Without some knowledge or the knowledge of where to seek the information recent university graduates will be making financial decisions without the necessary information to make informed decision.

University students' typically face two major debt issues upon graduation, student loan debt and credit card debt. New York Senator Schumer pointed out in his 2004 press release that New York university students' are carrying $1.9 billion in credit card debt. He reiterated the findings of the Nellie Mae study (2000) by stating that on average students start university with one or no credit cards and graduate with four or more, and one third of the graduating students are carrying balances between $3,000 to $7,000 and they are having difficulty servicing their debts. Credit card debt alone is not a problem but along with student loan debts, students' are experiencing excessive financial burden. The traditional student loan repayment term spans ten years but this can be extended through consolidation. A July 2006 article written by Anya Sostek in the Pittsburgh Post brought to light the fact that students were opting for longer student loan repayment terms to ease the repayment burden. She identified that some students were opting for 25 and 30 year repayment options. Extending the student loan repayment period does ease the initial financial burden of loan repayment but the extended period significantly increases the total amount of interest the student pays over the life of the loan.

The lack of university students' financial literacy has also become a concern for financial aid administrators. In a 2002 statement before Congress, Senator Sarbanes reiterated his increasing concern with the lack of financial literacy, especially credit card usage among university students. He noted that it should come as no surprise that many students build up significant credit card debt without fully comprehending the consequences. All of the speakers agreed that the lack of financial knowledge among university students often leads to a large debt burden that can further complicate the student's future financial situation (NASFAA, 2002). During the testimony, Senator Akaka stated that financial literacy among all Americans not just university students needs improvement.

During the 1990's, lenders greatly eased the financial constraints by significantly expanding credit available to consumers and by marketing credit aggressively (Brobeck, 2002). It is not uncommon for university students, even those lacking a job or other source of income, to obtain a credit card (Braunstein & Welch, 2002). These students' have no way of repaying this easily attained debt immediately and sometimes graduate with significant consumer debt. In a 2001 study by the U.S. General Accounting Office, more than 33 percent of surveyed students indicated that they had a credit card before they entered university, and another 46 percent had acquired a card in their freshman year of university. In the same study evidence was also provided that the younger population is having difficulty managing debt. The nine year span between 1991 and 1999 the bankruptcy filings for debtors under the age of twenty-five had increased by 51 percent.

Financial Literacy of High School Students

National standards have been developed for the teaching of consumer education under which personal finance falls. Although these standards have been developed, the Jump$tart survey suggests that students' are leaving high schools without adequate basic personal finance skills (Mandell, 1998). Although students whose parents were considered as having a high income performed better on the questionnaire, overall the results showed that the students had inadequate knowledge of basic personal finance. With the increased availability of credit and the increasing levels of predatory lending, the potential to make uninformed financial decisions are increased.

The Jump$tart survey developed by Mandell has been administered to over 10,000 high school seniors. With a score of 70% viewed as evidence of financial literacy, the results over the years has shown that the students have a low level of financial literacy. The score of 70% was used because of its national acceptance as being the minimum percentage grade required for a student to receive a passing grade. In 1997 the average score was 57.3%, in 2000 the average score was 51.9%, in 2002 the average score was 50.2% and in 2004 the average score was 52.3% (Mandell, 2004).

In an address in 2004 to teachers and school administrators in Madison Wisconsin, Deputy Assistant Treasury Secretary for Financial Education Dan Iannicola, Jr. stated that our students need to be taught the basics of saving, budgeting and managing credit in order to make informed decisions on how to pay for university, finance a home or start a small business. He also reiterated that a solid financial

education is vital for our young people if they are to share in America's great opportunities.

Evaluation of Financial Literacy Surveys

The federal government was the first entity to develop a survey that captures the trends in financial behavior and knowledge of households. The Survey of Financial Characteristics of Consumers was the initial survey was administered by the government in 1962 (Federal Reserve Board). The survey was enhanced and renamed the Survey of Changes in Family Finances and administered in 1963. These two surveys are the direct precursors of the Survey of Consumer Finances that is presently being used by the federal government. The Survey of Consumer Finances was first administered in 1983 and had been administered triennially since. The federal government tracks national trends in financial knowledge and behavior by using this in-depth survey that requires true or false and yes or no responses. The survey consists of 286 question of which 42 are demographic questions.

Danes and Hira (1987) developed a 51 item survey that was administered to students at Iowa State University. The reliability of the questionnaire was .76 which is the Cronbach's alpha as calculated by "Reliability" procedure in SPSSX (p.5). An independent assessment was done by three faculty members of the Department of Family Environment at Iowa State University with expertise in financial management to ensure the validity of the instrument (p.5). The survey had five subscales, credit card knowledge, insurance knowledge, personal loans knowledge, record keeping knowledge and overall

financial management knowledge (p.5). Each subscale had between eight and thirteen questions. This survey was used to assess the financial management knowledge of 323 students at one university in the Midwestern United States. Limited psychometric data is available for this survey and there has been no independent assessment of the instrument.

In their 1996 research Volpe, Chen and Pavlicko used the "What's your Investing IQ?" questionnaire that was printed in the special 1993 Money Forecast issue of *Money* magazine. The questionnaire consisted of ten items with the magazine claiming that each item tested a separate subscale. The limited number of items and one item per subscale limits the researcher's ability to make inferences or significant conclusions from the results.

The Jump$tart Coalition of Personal Financial Literacy conducted its first survey of high school seniors using the 1997 Jump$tart Questionnaire developed by Mandell. The questionnaire was reviewed by members of the coalition which is comprised of personal finance experts and personal finance educators. The questionnaire is a 52 item survey. Part one constitutes the "test", it contains 31 multiple choice mini-case items that assess a respondent's financial literacy. The subscales that are accessed to test a participant's financial literacy are income, money management, saving and investing, and spending and credit. Part two consists of demographic and financial behavior questions. The questionnaire has been administered to over 10,000 high school students nationally during it bi-annual administration over the past ten years. Independent research (Lucey, 2005) has since determined a moderately high level of internal consistency for the overall survey. The questionnaire has also been used by other researchers (Thaden & Rookey,

2008) and has been used by the Federal Reserve as a model for a financial literacy survey (Hilgert & Hogarth, 2003).

Thaden and Rookey in 2004 used the Financial Literacy Project Survey that was patterned after the Jump$tart survey. The second part of the survey was a replication of the evaluation portion of the Jump$tart survey. The first part of the survey collected demographic and personal financial habit information that was modified from the original used in the Jump$tart survey to reflect the university population. They separated one of the Jump$tart survey demographic questions and added subsections to two. They also added five additional questions to the demographic and personal financial habit section. The test was administered to 1,231 students at Washington State University.

Chen and Volpe (1998) designed the Survey of Personal Financial Literacy for use in their research. The survey consisted on 52 questions. Thirty-six multiple choice questions tested the student's knowledge of personal finance using four subscales, savings and borrowing, insurance, investments and general knowledge. There were eight questions on the participant's opinions and decisions and eight questions gathered demographic information. A pilot test was used to refine the test. The validity and clarity was evaluated by two personal finance experts and the quality and consistency was assessed using Cronbach's alpha. A review of the test shows that each subscale contained "story type" items. The use of "story type" items requires the participants to use analytical skills to answer the questions. Limited psychometric data is available for this survey and there has been no independent assessment of the instrument.

In 2005, Murphy developed and used a ten item survey to assess the financial literacy of students at Florida A&M University. The author developed the survey based on the content of the financial literacy module covered in a specific management course at Florida A&M University. The topics covered in the financial literacy module are income taxes, credit cosigning, short-term savings, investing for retirement, social security, future university costs and home ownership. The limited number of items limits the inference that can be made from the results received and the author advised future researchers to use surveys with multiple items to measure subscales.

Avard, Manton, English and Walker in their 2005 study used the Personal Finance Questionnaire that was developed by four College of Business professors at Texas A&M University-Commerce. The Personal Finance Questionnaire consisted of a twenty item multiple choice questionnaire that evaluates participants' basic knowledge of financial issues and three demographic questions. A review of the questionnaire showed that most of the questions were focused on a participant's knowledge of financial terms. The test had one situational question. The test was administered to 407 participants who were all enrolled in the 2003 freshman English class at Texas A&M University-Commerce.

In conclusion, for the proposed study, the 2004 Jump$tart Questionnaire will be enhanced and used. The test portion of the questionnaire will remain in its original format but the demographic section will be enhanced to reflect the university student population. The instrument has been used five times by the Jump$tart Coalition to assess the financial literacy level of graduating high school seniors. The survey has been

administered to over 10,000 high school seniors since it was developed. Other surveys have been patterned off the Jump$tart survey and have been administered to over 2,000 participants. The multiple times the Jump$tart survey has been used along with the number of number of items and the subcategories makes the survey the best choice for testing the financial literacy of university students.

Conclusion

Ferguson (2002) noted that financial literacy can keep people from making uninformed decisions but it cannot keep them from making bad decisions. In no way are these articles saying that improving a person's financial literacy will be the panacea for the downward spiral of the personal financial knowledge and competence of the public. People will have the tools needed to be able to make informed decisions but the uncontrollable factor of human nature plays a part in a person's decision-making process.

University students have become the target of the credit card marketers and with the limited focus being put on personal finance by universities (Danes & Hira, 1987), it is understandable why students end up in severe financial crises (Braunstein & Welch, 2002) without being aware of how it happened. Chen and Volpe (1998) best surmised the issue in stating that findings suggest that university student's knowledge on personal finance is inadequate.

Chapter 3

Method

Purpose of the Study

This study examined the financial literacy of university students. Whereas a longitudinal study to identify changes and factors that influence a student's financial literacy that occurs between their freshman to senior year is not feasible at present, a carefully conducted study of university seniors' was able to identify trends and factors associated with university seniors financial literacy levels. Based on prior research, this study was designed to investigate the following questions:

1. What differences exist in the financial literacy levels between university seniors who graduate with a major in business, a minor in business or a major in a non-business field?
2. What is the relationship between graduating university seniors' financial literacy level and their a) credit card debt level and b) student loan debt level?
3. To what degree does gender, employment status, ethnicity, family income and college major predict financial literacy levels of graduating university seniors?
4. To what degree does gender, employment status, ethnicity, family income and college major predict the debt level of graduating university seniors?

Participants for Study

The participants were seniors who were enrolled at a large, public, state, research intensive university located in the Southeastern United States, had attempted at least 105 credit hours and had applied for graduation during the summer term of the 2007-2008 academic year. University policy stipulated that students must complete the minimum of 120 credit hours to be eligible to graduate with a bachelor's degree. The university allowed students to apply for graduation two semesters prior to their expected graduation date. Limiting the participants to students who had completed 105 credit hours and had applied for graduation ensured that the participants in the study were graduating seniors.

The undergraduate student body consisted of 59.3% females and 40.7% males with an ethnic composition of 11.5% African American, 0.5% American Indian, 5.6% Asian, 69.8% Caucasian, 10.1% Hispanic, and 2.5% Non-Resident Alien based on 2003-2004 information which was the most recent published data available (2003-2004 Fact Book). The undergraduate graduating class on the main campus consisted of 1357 students. Graduating students were enrolled in their final semester and at the end of the semester met the minimum requirement of 120 credit hours to earn an undergraduate degree. Although the selected university had several branch campuses, the participants were recruited and selected from the main campus. Doing so allowed for a greater possibility that students had a similar undergraduate experience. For example, they had similar courses from which to choose and were able to be involved in similar on-campus non-academic activities.

Instrument

The Jump$tart Questionnaire of Financial Literacy was administered to participants using the Tailored Design Method (Dillman, 2000). The Jump$tart Questionnaire was chosen for the following reasons,

a) the number of times it had been administered nationally

b) the availability of psychometric information

c) its alignment with the National Standards for Family and Consumer Sciences Education.

d) the alignment of the instrument with the Mason and Wilson (2000) definition of financial literacy.

The following additional information about the Jump$tart Questionnaire elaborates on this information. Permission for use of the questionnaire was received from the creator of the Jump$tart Questionnaire. It was originally developed in 1997 by Lewis Mandell, Ph.D. an economics professor at the State University of New York (SUNY), Buffalo, to test the financial literacy of high school seniors for the Washington D.C. based nonprofit organization Jump$tart Coalition of Personal Financial Literacy (Mandell, 2004). The coalition is an umbrella organization for corporations, government agencies, foundations and others dedicated to improving financial literacy throughout the United States (Breitbard & Reynolds, 2003). Each time the survey was administered nationally by the Jump$tart Coalition (i.e., in 1997, 2000, 2002, 2004 and 2006) it was administered to over 1100 participants nationwide. Other researchers have patterned their instruments after the Jump$tart Questionnaire (Thaden & Rookey, 2004).

The 2004 Jump$tart Questionnaire (see Appendix A) is a two part questionnaire. In the original questionnaire the first part consisted of thirty-one mini-case questions relating to personal finance with multiple choice responses. The number of correct responses to the mini-case questions determines a respondent's financial literacy level. Example of the mini-case questions are:

1 Rebecca has a good job on the production line of a factory in her home town. During the past year or two, the state in which Rebecca 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 Rebecca's job?

2 Jim just found a job with a take-home pay of $1,500 per month. He must pay $750 for rent and $125 for groceries each month. He also spends $100 per month on transportation. If he budgets $50 each month for clothing, $75 for restaurants and $50 for everything else, how long will it take him to accumulate savings of $700?

The second part gathered demographic and social information such as gender, ethnicity, grade level, family income and educational level, employment history and information on financial behavior. The content of the instrument was developed and used to test the competency of high school seniors in consumer education and financial management. The competency and proficiency level expected of the high school seniors align with the standards developed by the National Standards for Family and Consumer Sciences Education in 1998 (Klemme, 2002). Although university seniors and high school seniors are not a comparative group, the Jump$tart Questionnaire which is one of the most widely used financial literacy surveys, will be used. The survey has psychometric data available and it has been used in the past by another researcher to evaluate the financial literacy of college students (Thaden & Rookey, 2004).

For this study the demographic questions were modified to reflect the university student population and questions that were not pertinent to the study were eliminated. Additional questions were added to the demographic section to allow for the differentiation of business majors, minors and non-business majors, income levels and debt levels. For this study the demographic portion of the survey was first and the evaluation portion was second. Couper, Traugott and Lamias (2001) and Dillman (2000) pointed out the importance of web-based survey design. Dillman (2000) advised that demographic information which is viewed as non-threatening should be first on a survey. This will improve the participants' comfort level and increase the probability that they will complete the survey (Dillman, 2000).

The Jump$tart questionnaire has four subscales which test a respondent's knowledge of income, money management, savings and investments, and spending and credit.

Jump$tart Questionnaire Income Subscale. This subscale is comprised of seven questions that test a respondent's ability to identify sources of income, analyze how career choice, education, skills, and economic conditions affect income and how taxes, government transfer payments and employee benefits relate to disposable income (Jump$tart Coalition of Personal Finance, 2002). The income subscale is evaluated using items 23, 27, 32, 34, 35, 37, and 42 (Jump$tart Coalition of Personal Finance, 2002).

Jump$tart Questionnaire Money Management Subscale. The questionnaire has five questions that assess a respondent's ability to identify the opportunity cost of financial decisions, how limited personal financial resources affect the choices people make and the importance of taking responsibility for personal financial decisions. It also tests their ability to plan for earning, spending, saving, and investing. It also tests their knowledge of money management tools available at financial institutions, the effect of inflation on spending and investing decisions, and how insurance and other risk-management strategies protect against financial loss (Jump$tart Coalition of Personal Finance, 2002). The money management subscale is evaluated using items 21, 26, 40, 48, and 51 (Jump$tart Coalition of Personal Finance, 2002).

Jump$tart Questionnaire Saving and Investing Subscale. This subscale has eight questions. It tests the respondent's knowledge of the reason for and the relationship between saving and investing, how to buy and sell investment, and the risk, return and liquidity of investment alternatives. The respondent's knowledge of the different factors that affect the rate of return of investments, sources of investment information, and how investors are protected is also tested (Jump$tart Coalition of Personal Finance, 2002). The saving and investing subscale is evaluated using items 22, 25, 28, 33, 36, 45, 46, and 47 (Jump$tart Coalition of Personal Finance, 2002).

Jump$tart Questionnaire Spending and Credit Subscale. This subscale has 11 questions which is the largest number of questions for all of the subscales. It tests the respondent's

ability to compare the benefits and costs of spending decisions, evaluate information about products and services, and their knowledge of the rights and responsibilities of buyers and sellers under consumer protection laws. It tests their ability to analyze the benefits and costs of consumer credit, to compare the advantages and disadvantages of different payment method and to compare the sources of consumer credit. It tests their knowledge of factors that affect creditworthiness and the purpose of credit records and ways to avoid or correct credit problems (Jump$tart Coalition of Personal Finance, 2002). The spending and credit subscale is evaluated using items 24, 29, 30, 31, 38, 39, 41, 43, 44, 49, and 50 (Jump$tart Coalition of Personal Finance, 2002).

Evaluation of the Jump$tart Questionnaire

The Jump$tart questionnaire was evaluated by Thomas Lucey, an independent researcher, in 2005 using the results of the 1997 and 2000 questionnaire results. The 1997 questionnaire was administered to 1,532 high school seniors nationwide while the 2000 questionnaire was administered to 723 high school seniors nationwide. Lucey (2005) evaluated the consistency, validity, and social bias of the questionnaire.

Consistency

Using Kuder-Richardson 20 (KR20) to evaluate the internal consistency, Lucey (2005) reported that the entire Jump$tart questionnaire had moderately high internal consistency with ($\alpha = 0.78$). Table 2 shows that the internal consistency of the subscales ranged from low to moderate levels the highest consistency level being the spending and

credit subscale with (α = .59). The low levels of internal consistency of the subscales were attributed to the overlapping financial tenets and the limited number of items for some subscales.

Table 2

Consistency of the Jump$tart Questionnaire

Subscales	α
Income	0.58
Money Management	0.23
Savings and Investment	0.43
Spending and Credit	0.59
Overall Survey	0.78

Note: From "Assessing the Reliability and Validity of the Jump$tart Survey of Financial Literacy," by T. A. Lucey, 2005, *Journal of Family and Economic Issues, 26*, p. 287. Copyright 2005 by Springer Science & Business, Inc. Reprinted with permission of the author.

Lucey (2005) calculated the test-retest reliability. He identified that eight of the 31 items showed a significant difference in the responses. Due to the low level of consistency of the sub scales as is shown in Table 2 only the overall score will be used and evaluated in this study.

Table 3 shows that the income subscale had the highest number of items with responses that were statistically different. The author pointed out that achievement data

was not collected and the participants were randomly chosen from high schools across the country.

Table 3

Number of Statistically Different Responses in Test-Retest Reliability Evaluation of Jump$tart Questionnaire

Subscales	Number
Income	4
Money Management	1
Savings and Investments	2
Spending and Credit	1

Note: From "Assessing the Reliability and Validity of the Jump$tart Survey of Financial Literacy," by T. A. Lucey, 2005, *Journal of Family and Economic Issues, 26*, p. 288. Copyright 2005 by Springer Science & Business, Inc. Adapted with permission of the author.

Validity

Lucey (2005) evaluated the validity by reviewing literature related to the development of the survey, prior financial literacy measures, related research, and communication with the Jump$tart Coalition. He identified that the questionnaire has face and content validity. In the development of the questionnaire it was reviewed by financial professionals and educational leaders to ensure that the questionnaire aligned with the Coalition's curriculum guidelines, which are the most widely recognized and accepted financial education standards (Mandell, 2004). The test portion of the

questionnaire is comprised of 31 questions although the Coalition has 49 benchmarks for high school students. This limits the validity of the subscales but after accounting for overlapping financial areas the difference in number of questions compared to the number of benchmarks does not affect the overall validity of the questionnaires test for financial literacy (Lacey, 2005). In this study the subscales will not be used to assess the participants due to the low level of consistency that was computed for each individual subscale.

Social Bias

Lucey (2005) had 27 social studies teachers evaluate the Jump$tart questionnaire for social bias. He wanted the teachers to evaluate whether they believe the questionnaire would be interpreted similarly by,

a) students of different races or ethnicities,

b) students of different family income,

c) students of different family wealth,

d) students of different living circumstances (e.g. living at home, living on own)

Lucey (2005) identified some social bias in 15 items. Lucey (2005) determined that students of different ethnicities, family income and home environment would interpret the 15 questions differently. With one representing a low agreement with common item interpretation and four representing a high agreement with common item

interpretation, 15 items were below μ = 3. An example of questions that were identified as having social bias is:

1. 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?

2. 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?

Lucey (2005) pointed out that some of the least agreed upon items related to tax rates, business tax effects, college savings, growth investments, government protection, emergency funds, and inflation. This difference was attributed to the greater familiarity upper socio-economic students would have with the content. Any trends associated with a socio-economic group will be identified.

Data Collection

The appropriate IRB approval was received and the Research Request form was completed and submitted to the Office of the Registrar at a large Research I University located in the Southeastern United States along with a copy of the IRB approval form. The Research Request form requested the email addresses of all students who had completed at least 105 credit hours at the main campus and had applied for graduation during the summer semester of the 2007-2008 academic year. The email address of 1357 graduating college seniors was received from the Office of the Registrar. Te collection of data was conducted over a six week period with emails being sent to all 1357 email addresses received. Participants received four emails from the researcher. They received

an initial email with the link to the questionnaire (see Appendix B), two reminder emails (see Appendix C & D) also containing the link to the questionnaire and the final email thanking everyone for participating in the survey (see Appendix E). It has been demonstrated that reminder emails increase the probability that a participant will complete a questionnaire (Kaplowitz, Hadlock & Levine, 2004).

Email distribution lists were created using the email addresses received from the Office of the Registrar. To reduce the probability that the email security and firewall software used by the student's Internet Service Provider will view the emails as 'junk mail', and stop it from being delivered to the student's inbox, multiple distribution lists were created containing no more than 50 email addresses. All emails were blind copied to the email addresses in the distribution lists.

The initial email (see Appendix B) was sent to university seniors with a link to the survey informing them that if they wish to participate in the study they may complete the survey. Two weeks later, the first reminder email (see Appendix C) was sent thanking everyone for their assistance and reminding the participants that had not completed the survey to respond. The second reminder email (see Appendix D) was sent two weeks after the first reminder email was sent. The two reminder notices contained the link to the questionnaire to increase the probability of the participants completing the questionnaire (Schaefer & Dillman, 1998). A general thank you email (see Appendix E) was sent two weeks after the last reminder email to acknowledge the assistance of all the participants.

The instrument was administered online using the Survey Monkey online questionnaire website. The questionnaire and responses were hosted on Survey Monkey's

secure server. After the six weeks of data collection had expired, access to the questionnaire was removed. The responses were uploaded from survey monkey to SAS statistical software for analysis.

The minimum number of participants required for this study was 156. Research question one required 52 participants for each of its three groups to have an 80% probability of identifying a medium effect size (Stevens, 1999). The results from the participants were used for all the research questions. Since research questions two, three and four required fewer participants, the participants' requirement for research question one was used to determine the number of participants required for the proposed study. A total of 227 (16.73%) graduating university students participated in the study.

Data Management

The data that was uploaded from the online survey software was analyzed using SAS statistical software. The results of questionnaires that were at least 90% complete were included in this study. All questionnaires with less than 90% of the test section completed were eliminated from the study. Forty-one of the participants were eliminated from the study because they had completed less than 90% of the questionnaire. One hundred and eighty six (n=186, 13.71%) graduating university students responses were used in this study. Eighty-four (45.16%) males and one hundred and two (54.84%) females participated in the study which is comparable to the undergraduate student population of 40.7% males and 59.3% females.

Of the 186 participants that were used seven (7) students did not fully complete the questionnaire although they completed more than 90% of the questionnaire. The questions that were not completed were viewed as incorrect in the calculation of the financial literacy scores. For the test section of the Jump$tart Questionnaire the nominal value of 1 was assigned to the correct answers and the nominal value of 0 was assigned to the incorrect answers. The answers in the demographic section of the questionnaire were assigned nominal values.

The rating scale developed my Mandell (2004) to determine financial literacy using the scores earned on the Jump$tart survey was used in this study to determine financial literacy levels.

- Scores of 70% or greater were viewed as a high level of financial literacy
- Scores between 50% and 70% were views as a average level of financial literacy
- Scores of 50% or less were viewed as a low level of financial literacy

Univariate and Bivariate Analysis

The ethnicity of the participants was presented and similarities and differences to the university's population were noted. The Kuder-Richardson 20 (KR20) was calculated and reported for the overall questionnaire. The mean, standard deviation, skewness, and kurtosis were presented and used to evaluate the financial literacy level of graduating seniors. Differences in the means as it relate to education major, income level and gender were also evaluated.

Multivariate Analysis

Research Question 1. An analysis of variance (ANOVA) was conducted. The financial literacy level of university seniors was evaluated using the moderating factors of business minor, business major and non-business major. A medium effect size of Cohen's f = 0.25 or greater was used to determine if any of the interactions between the groups were statistically significant. The Type 1 error rate was $\alpha = .05$.

The dependent variable was the financial literacy level of university seniors. The independent variable was the moderating factors of business major, business minor and non-business major. The minimum number of participants required to have 80% probability of identifying a medium effect size for this study was 52 participants per group which totals 156 (Stevens, 1999).

Research Question 2. A correlation was conducted. Two relationships were evaluated:

1. The relationship between financial literacy level and student credit card debt.
2. The relationship between financial literacy level and student loan debt.

The r-value was reviewed and a p value of 0.05 or less was used to determine statistically significance. The dependent variable was the financial literacy level of university seniors. The independent variable was the credit card and student loan debt level.

Research Question 3. A multiple regression was conducted. The relationship between financial literacy levels and the predictor variables of gender, employment status, ethnicity, family income and college major was evaluated. The predictor variables were coded in the order listed from X_1 to X_5. A medium effect size of Cohen's $f^2 = 0.15$ or greater was used to determine if any of the effect the factors had on financial literacy levels were statistically significant. Outliers were identified and noted using Cook's D and the studentized residual value.

The independent variables were gender, employment status, ethnicity, family income and college major. The dependent variable was the financial literacy level. The minimum number of participants required to compute the multiple regression was 109, ($N >= 104 + m$, where m = number of independent variables) (Tabachnick & Fidell, 2000).

Research Question 4. A multiple regression was conducted. The relationship between debt levels and the predictor variables of gender, employment status, ethnicity, family income and college major was evaluated. The predictor variables were coded in the order listed from X_1 to X_5. A medium effect size of Cohen's $f^2 = 0.15$ or greater was used to determine if any of the effect the factors had on financial literacy levels were statistically significant. Outliers were identified and noted using Cook's D and the studentized residual value.

The independent variables were gender, employment status, ethnicity, family income and college major. The dependent variable was the debt literacy level. The

minimum number of participants required to compute the multiple regression was 109, (N >= 104 + m, where m = number of independent variables) (Tabachnick & Fidell, 2000).

Chapter 4

Results

Limited study has been completed on the financial literacy of university students. The purpose of this study was to assess the financial literacy of graduating seniors to add to the body of research that has been done on the financial literacy of university students. Based on prior research, this study was designed to investigate the following questions:

1. What differences exist in the financial literacy levels between university seniors who graduate with a major in business, a minor in business or a major in a non-business field?
2. What is the relationship between graduating university seniors' financial literacy level and their a) credit card debt level and b) student loan debt level?
3. To what degree does gender, employment status, ethnicity, family income and college major predict financial literacy levels of graduating university seniors?
4. To what degree does gender, employment status, ethnicity, family income and college major predict the debt level of graduating university seniors?

Univariate and Bivariate Analysis

A total of 227 graduating university students participated in the study. Forty-one of those participants were eliminated from the study because they had completed less than 90% of the questionnaire. One hundred and eighty six (n=186) graduating university students responses were used in this study. Of the 186 participants that were used, seven (7) students did not fully complete the questionnaire although they completed more than 90% of the questionnaire. Eighty-four (45.16%) males and 102 (54.84%) females participated in the study.

College Participation

Of the eight colleges of the university that grant undergraduate degrees and as is shown in Table 4, College of Education, and Visual and Performing Arts had no participation. The College of Arts and Sciences which is the largest undergraduate college had the highest number of students participating with 114 graduating seniors participating. Although the College of Arts and Sciences had the highest number of student participation this number represented only 14.4% of the students graduating from the college. Table IV illustrates that Undergraduate Studies and Honors College both with small numbers of graduating seniors had the highest percentage of students participating in the study 28.6% and 23.1% respectively.

The College of Arts and Sciences and the College of Business together accounted for 88.2% of the participants. The participants from the College of Arts and Sciences were the majority of the respondents with 114 participants representing 61.3% of the sample as illustrated in Table 4. The College of Business with 50 participating

graduating seniors represented 26.9% of the sample and the School of Nursing participants represented 5.9%. Undergraduate Studies, Honors College and the College of Engineering had the lowest levels of overall participation in the sample with 6 (3.2%), 3 (1.6%) and 2 (1.1%) respectively. Students graduating with majors in multiple colleges were able to identify only one college.

Table 4

Participation by College

College	Number of Graduating Students	Number of Participants	Questionnaire Return Rate	Overall Participation Level
Arts and Sciences	792	114	14.4%	61.3%
Business	304	50	16.4%	26.9%
Education	31	0	0.0%	0.0%
Engineering	90	2	2.2%	1.1%
Honors	13	3	23.1%	1.6%
Nursing	62	11	17.7%	5.9%
Undergraduate Studies	21	6	28.6%	3.2%
Visual and Performing Arts	44	0	0.0%	0.0%

Students were only able to identify one graduating college

Ethnicity

The ethnic distribution of the sample is representative of the institution. As is shown in Table 5, 136 Caucasian students participated in the study which represents 73.1% of the sample, while 28 (15.1%) African American student's participated. Hispanic American, Asian American and Native American participation was 14 (7.5%), 3 (1.6%) and 5 (2.7%) respectively.

Table 5

Ethnicity of the Participants

Ethnicity	Number of Participants	Percentage	Institution Percentage
White or Caucasian	136	73.1%	69.8%
Black or African American	28	15.1%	11.5%
Hispanic American	14	7.5%	10.1%
Asian American	3	1.6%	5.6%
Native American	5	2.7%	0.5%
Other	0	0.0%	2.5%

n = 186

Business Major/Minor

Table 6 shows 60 participants (32%) identified themselves as being business majors, 31 participants (17%) were business minors and 95 participants (51%) were non-business students. Although Table 4 and 6 seem to show discrepant information relating to the number of participants that are business majors it should be noted that the questionnaire did not allow students with multiple majors to indentify all of the colleges from which they were graduating.

Table 6

Business Major, Minor and Non-Business Distribution

	Number of Participants	Percentage
Business Major	60	32%
Business Minor	31	17%
Non-Business	95	51%

n = 186

Average Credit Card Balance

Seventy-five (75) participants, which represents 40% indicated that they did not keep a credit card balance, 17 participants preferred not to answer and two were unsure of their average credit card balance. A total of 92 participants answered the question and indicated that they kept a balance on their credit card. Table 7 presents the breakdown of the participants' average credit card balance. Thirty-nine participants (21%) kept their

credit card balance below $1,000. The majority of the participants (61%) either kept no balance on their credit card or kept their balance below $1,000.

Table 7

Average Credit Card Balance

Average Credit Card Balance	Number of Participants	Percentage
Less than $1,000	39	21%
$1,000 - $2,500	17	9%
$2,500 - $5,000	16	9%
$5,000 - $7,500	6	3%
More than $7,500	14	8%
Did not keep a balance	75	40%
Prefer not to answer	17	9%
Does not know the balance	2	1%

n = 186

Student Loan Debt

Eighty-one (81) participants indicated that they have never borrowed and 12 participants preferred not to answer the question. Half of the participants (n=93) answered the question and indicated that they have borrowed student loans. Table 8 shows the participants' student loan balances. The result from the study shows that 25%

of the participants have student loan balances that exceed $20,000 with 11% having balances greater than $25,000.

Table 8

Student Loan Balance

Student Loan Balance	Number of Participants	Percentage
Less than $5,000	15	8%
$5,000 - $10,000	10	5%
$10,000 - $15,000	6	3%
$15,000 - $20,000	15	8%
$20,000 - $25,000	26	14%
More than $25,000	21	11%
Never borrowed	81	44%
Prefer not to answer	12	7%

n = 186

Financial Literacy Score

The internal consistency of the questionnaire was evaluated using Kuder-Richardson 20 (KR20), the questionnaire had moderately high internal consistency with ($\alpha = 0.78$).

The financial literacy scores ranged from 13% to 100%. The distribution had a mean score of 72.56 and a median of 75.50. The mean score of this study was higher than the participants' mean scores of the three primary financial literacy studies conducted

eariler. Chen and Volpe (1998) participants had a mean financial literacy score of 52.87%. Although Danes and Hira (1987) did not specify the mean financial literacy score of their participants, the mean score fell between 40% – 59%. The participants of the Volpe, Chen and Pavlicko (1996) study had a mean financial literacy score of 44%.

As is outlined in Table 9 the distribution was significantly negatively skewed (skew = -1.47) which indicates that the majority of the financial literacy scores were on the high end, and it was leptokurtic (k = 3.89) which indicated that the majority of the financial literacy scores were close to the mean score.

Table 9

Financial Literacy Score Distribution

	Mean	Standard Deviation	Skewness	Kurtosis
Financial Literacy Score	72.56	14.12	-1.47	3.89

n = 186

There were four outliers on the low end of scores and these scores are two standard deviations from the mean. There are three extremes also at the low end of the scoring range and these scores are at least three standard deviations from the mean. The outliers and extremes were on the low end of the scoring scale and were considered during the multivariate analysis.

Multivariate Analysis

Research Question 1

1. What differences exist in the financial literacy levels between university seniors who graduate with a major in business, a minor in business or a major in a non-business field?

An Analysis of Variance (ANOVA) was conducted to identify what if any difference existed in the financial literacy levels of university senior who graduate with a major in business, a minor in business or a major in a non-business field. The distribution of the financial literacy scores were examined separately for business majors, business minors and non-business majors.

A summary including the mean, standard deviation, skewness and kurtosis values is provided in Table 10. The distribution of each group was negatively skewed, business majors (skew = -1.699), business minors (skew = -0.819) and non-business (skew = -1.082). Both the business major group and the non-business group had outliers on the low end with the business major group having extremes on the low end. The business minor group had neither extremes nor outliers. The business major distribution was notably leptokurtic (k = 4.088), which indicates that the majority of the financial literacy scores are close to the mean (73.267). The kurtosis of business minor (k = -0.668) and non-business major (k = 0.652) is close enough to zero for the distribution to be viewed as normal.

Table 10

Distribution of Business Major, Minor and Non-Business Major

	N	Mean	Standard Deviation	Skewness	Kurtosis
Business Major	60	73.267	18.208	-1.699	4.088
Business Minor	31	77.226	10.500	-0.819	-0.668
Non-Business Major	95	70.600	11.745	-1.082	0.652

n = 186

Due to the differing sample size a Welch's variance-weighted Analysis of Variance (ANOVA) was used to evaluate the financial literacy level of university seniors using the moderating factors of business minor, business major and non-business major. To provide a standardized measure of effect size, Cohen's f [f= (√(k-1) F/n)] was calculated to be 0.171. This can be interpreted to mean that the group means typically deviate from the grand mean by about 0.2 standard deviations. An effect size of (f = 0.171) is viewed as small using the rough guidelines of (0.1 small, 0.25 medium, 0.4 large).

A summary table of the ANOVA is provided in Table 11. The obtained F (2,183) = 2.73, p = 0.068, was judged to be not statistically significant using the predetermined Type I error rate of $\alpha = 0.05$. This result suggests that the mean financial literacy score for business majors, minors and non-business majors do not differ significantly. This

would indicate that a major in business does not have a significant impact on financial literacy scores.

Table 11

ANOVA results for Business Major, Minor and Non-Business Majors

	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1068.773	534.886	2.73	0.068
Error	183	35833.953	195.814		
Corrected Total	185	36903.726			

n = 186 ; Type I error $\alpha = 0.05$

The three extremes and four outliers were removed from the sample and the distribution was reviewed and the ANOVA was recalculated. The distribution of the adjusted financial literacy scores were examined separately for business majors, business minors and non-business majors.

A summary including the mean, standard deviation, skewness and kurtosis values is provided in Table 12. The business major group had a distribution that was almost normal (skew = -0.075) because the skewness value was close to zero. The business minor and the non-business groups were negatively skewed (skew = -0.819) and (skew = -0.847) respectively. The financial literacy scores were normally distributed around the mean because the Kurtosis value for all groups was close enough to zero, as is illustrated in Table 12.

Table 12

Distribution of Business Major, Minor and Non-Business Major after Adjusting for Outliers and Extreme Values

	N	Mean	Standard Deviation	Skewness	Kurtosis
Business Major	57	76.439	12.019	-0.075	-0.821
Business Minor	31	77.226	10.500	-0.819	-0.668
Non-Business Major	91	71.989	9.887	-0.847	0.132

A summary table of the recalculated ANOVA is provided in Table 13. The obtained $F(2,176) = 4.41$, $p = 0.014$, was judged to be statistically significant using the predetermined Type I error rate of $\alpha = 0.05$. This result suggests that at least two of the groups differ significantly. To determine which two groups differ from each other by a statistically significant amount, a Tukey test of all pairwise comparisons was conducted.

Table 13

ANOVA results for Business Major, Minor and Non-Business Majors Financial Literacy Scores after Adjusting for Outliers and Extreme Values

	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1012.037	506.019	4.41	0.014
Error	176	20194.443	114.741		
Corrected Total	178	21206.480			

n = 179; Type I error rate $\alpha = 0.05$

Table 14 presents the results of the Tukey pairwise comparison of the mean differences for the business majors, minors and non-business majors after eliminating the outliers and extreme values. The results indicate that the business majors group differs significantly from the non-business majors group. This result is similar to the findings of Volpe, Chen, and Pavlicko (1996), Chen and Volpe (1998) and Murphy (2005) who found that business majors scored significantly higher on financial literacy surveys than non-business majors. The business minors and majors did not differ significantly nor did the business minors and non-business majors.

Table 14

Tukey Pairwise Comparison of Business Majors, Minors and Non-Business Majors

Business Major Comparison	Mean Difference	Simultaneous 95% Confidence Limits		
Minors – Majors	0.787	-4.863	6.438	
Minors – None	5.237	-0.029	10.502	
Majors – None	4.450	0.173	8.727	***

*** Indicates comparisons significant at the 0.05 level

Research Question 2

2 What is the relationship between graduating university seniors' financial literacy level and their a) credit card debt level and b) student loan debt level?

Pearson's correlation was conducted to evaluate two relationships:

1. The relationship between financial literacy level and student credit card debt.
2. The relationship between financial literacy level and student loan debt.

The result of the Pearson's correlation on the relationship between financial literacy levels and credit card debt was ($r = 0.0579$, $p = 0.4575$). The relationship between financial literacy levels and student loan debt was ($r = -0.0314$, $p = 0.6812$). To determine if these results were statistically significant, a p value of 0.05 or less was required. Both relationships had p values greater than 0.05 as is displayed in Table 15.

Based on the results it was found that financial literacy levels have no statistically significant relationship with credit card debt or student loan debt. A Pearson's correlation analysis was conducted on the revised financial literacy scores after the extremes and outliers were eliminated. There was no significant change to the results, so the extreme and outlying scores were used in the calculation.

Table 15

Correlation of Financial Literacy Level to Credit Card & Student Loan Debt

	R	p
Financial Literacy Level & Credit Card Debt	0.0579	0.4575
Financial Literacy Level & Student Loan Debt	-0.0314	0.6812

n = 186

Question 3 and 4

3. To what degree does gender, employment status, ethnicity, family income and college major predict financial literacy levels of graduating university seniors?
4. To what degree does gender, employment status, ethnicity, family income and college major predict the debt level of graduating university seniors?

A multiple regression analysis was performed for questions 3 and 4 to evaluate the relationship of the predictor variables of gender, employment status, ethnicity, family income and college major on financial literacy scores and debt level. Before a statistically computation was run, employment status was reordered and assigned values ranging from zero to five. The value assigned are listed below.

0 - I have never been formally employed outside the home.
1 - I work full time in the summers and part time during the school year
2 - I work full time in the summers and don't work during the school year.
3 - I work part time in the summers and part time during the school year.
4 - I work part time in the summers and don't work during the school year.
5 - I work full time for the entire year.

The family income value used in this study was based on the type of financial aid the student indicated they had received and is more clearly explained by Table 1. The ethnic groups were separated into individual variables. For each ethnic group a nominal value of one was used to identify the participants in that group and zeros were used to identify all other ethnic groups. The Asian American ethnic group was used as the reference group in the computation of the multiple regressions. College majors, minors and non-majors were also similarly separated into individual variables. The non-business group was used as the reference group for the calculation of the multiple regressions.

A correlation analysis was performed prior to the multiple regressions to examine the relationships between the predictor variables to determine if any of the predictors should be eliminated. The relationships are summarized in Table 16. The majority of the relationships between the predictor variables were negative.

Table 16

Analysis of relationships between predictor variables

	Gender	Employ. History	Caucasian	African American	Hispanic	Native American	Asian American	Family Income	Business Major	Business Minor	Non Business
Gender	1.000	0.089	-0.258	0.140	0.095	0.151	0.116	-0.016	0.025	0.058	-0.067
		0.230	0.0004	0.056	0.197	0.04	0.114	0.829	0.731	0.432	0.364
Employ.	0.089	1.000	0.084	-0.106	-0.112	0.174	0.016	-0.078	0.064	-0.096	0.012
History	0.230		0.257	0.153	0.130	0.018	0.829	0.290	0.389	0.194	0.871
Caucasian	-0.258	0.084	1.000	-0.694	-0.461	-0.274	-0.211	0.27	-0.230	0.141	0.110
	0.0004	0.257		<.0001	<.0001	0.0002	0.004	0.0002	0.002	0.055	0.135
African	0.143	-0.106	-0.694	1.000	-0.120	-0.07	-0.054	-0.078	0.031	-0.108	0.051
American	0.056	0.153	<.0001		0.103	0.343	0.465	0.290	0.673	0.144	0.489
Hispanic	0.095	-0.112	-0.461	-0.120	1.000	-0.047	-0.037	-0.080	0.326	-0.128	-0.21
	0.197	0.130	<.0001	0.103		0.520	0.621	0.280	<.0001	0.083	0.004
Native	0.151	0.174	-0.274	-0.07	-0.047	1.000	-0.021	-0.081	0.028	-0.074	0.03
American	0.04	0.018	0.0002	0.343	0.520		0.773	0.272	0.709	0.313	0.688
Asian	0.116	0.016	-0.211	-0.054	-0.037	-0.021	1.000	-0.080	0.003	0.172	-0.131
American	0.114	0.829	0.004	0.465	0.621	0.773		0.272	0.968	0.019	0.075
Family	-0.016	-0.078	0.27	-0.078	-0.080	-0.081	-0.080	1.000	-0.002	0.01	-0.006
Income	0.829	0.290	0.0002	0.290	0.280	0.272	0.272		0.983	0.892	0.935

(table continues)

Table 16 (Continued)

	Gender	Employ. History	Caucasian	African American	Hispanic	Native American	Asian American	Family Income	Business Major	Business Minor	Non Business
Business Major	0.025 0.731	0.064 0.389	-0.230 0.002	0.031 0.673	0.326 <.0001	0.028 0.709	0.003 0.968	-0.002 0.983	1.000	-0.309 <.0001	-0.705 <.0001
Business Minor	0.058 0.432	-0.096 0.194	0.141 0.055	-0.108 0.144	-0.128 0.083	-0.074 0.313	0.172 0.019	0.01 0.892	-0.309 <.0001	1.000	-0.457 <.0001
Non Business	-0.067 0.364	0.012 0.871	0.110 0.135	0.051 0.489	-0.21 0.004	0.03 0.688	-0.131 0.075	-0.006 0.935	-0.705 <.0001	-0.457 <.0001	1.000

n = 186

There were three results that had a studentized residual value larger than -3.0. and four that fell between the range or -2.0 to -3.0. There was one value that had a studentized residual value of 2.226. These results all had Cook's D of less than 1, so they will not have an effect on the regression equation (Pedhazur, 1982).

Question 3

A multiple regression was conducted to evaluate the relationship between financial literacy levels and the predictor variables of gender, employment status, ethnicity, family income and college major. The obtained R^2 value was 0.37, which suggests that about 37% of the variance in the participants financial literacy score was accountable by the set of predictor variables. The adjusted R^2 value was 0.33 which indicated some shrinkage. Cohen's (1992) effect size [$f^2 = R^2 / (1 – R^2)$] was calculated and resulted in a value of 0.58 which was interpreted as a large effect size using the rough guidelines (0.02 small, 0.15 medium, 0.35 large).

The prediction equation that was derived from this analysis was:

Financial Literacy Level ^= 78.77 – 4.75 × Gender + 0.89 × Employment History – 3.94 × Caucasians – 12.3 × African American – 31.59 × Hispanics – 17.89 × Native American – 2.55 × Family Income + 7.44 × Business Major + 5.02 × Business Minor.

The data presented in Table 17 indicated that three of the predictor variables are statistically significant. The data presented in Table 17 showed gender, Hispanic and business major being the three predictor variables that had a statistically significant impact on the prediction of financial literacy level.

Table 17

Standardized Regression Coefficient

Predictor	t value	p value
Gender	-2.63	<0.0001
Employment History	1.51	0.1325
Caucasian	-0.57	0.5720
African American	-1.71	0.0893
Hispanic	-4.16	<0.0001
Native American	-2.07	0.0396
Family Income	-1.36	0.1759
Business Major	3.67	0.0003
Business Minor	2.02	0.0447

n = 186

With one ethnic group having been identified as being a significant predictor of financial literacy level, an R^2 change test was conducted to identify the effect that ethnicity has on financial literacy scores. After eliminating all ethnic groups a revised R^2 was calculated. The revised R^2 was 0.12 which suggests that 12% of the variance in the participants financial literacy score was accountable by the set of predictors excluding ethnicity. The R^2 change test resulted in $F(4,176) = 17.461$ with a p value less than 0.05. This suggests that ethnicity is a statistically significant predictor of financial literacy score.

Question 4

A multiple regression was conducted to evaluate the relationship between debt levels and the predictor variables of gender, employment status, ethnicity, family income and college major. The obtained R^2 value was 0.10, which suggests that about 10% of the variance in the participants' debt levels was accountable by the set of predictors. The adjusted R^2 value was 0.06 which indicated some shrinkage. Cohen's (1992) effect size [$f^2 = R^2 / (1 – R^2)$] was calculated and resulted in a value of 0.12 which was interpreted as a small effect size using the rough guidelines (0.02 small, 0.15 medium, 0.35 large).

The prediction equation that was derived from this analysis was:

Debt Level ^= 16077 + 1373.89 × Gender + 1601.00 × Employment History – 10946 × Caucasians – 6759.71 × African American – 16122 × Hispanics – 8714.05 × Native American – 1140.94 × Family Income + 3436.80 × Business Major + 1970.62 × Business Minor.

As is seen in Table 18 the Hispanic ethnic group ($t(174) = -1.99$, $p = 0.0047$) was the only variable that was a statistically significant predictor of debt level.

Table 18

Standardized Regression Coefficient

Predictor	t value	p value
Gender	0.71	0.4764
Employment History	2.55	0.1927
Caucasian	-1.48	0.1416
African American	-0.88	0.3798
Hispanic	-1.99	0.0047
Native American	-0.95	0.3447
Family Income	-0.57	0.5688
Business Major	1.59	0.1133
Business Minor	0.74	0.4576

n = 186

With one ethnic group having been identified as the only significant predictor of debt level, an R^2 change test was conducted to identify the effect that ethnicity has on debt level. After eliminating all ethnic groups a revised R^2 was calculated. The revised R^2 was 0.07 which suggests that 7% of the variance in the participants debt level was accountable by the set of predictors excluding ethnicity. The R^2 change test resulted in F (4,176) = 1.467 the p value is greater than 0.05. This suggests that ethnicity is not a statistically significant predictor of debt level.

Additional Findings

Ethnicity

There was a difference in the financial literacy of the participants based on their ethnicity. As is represented in Table 19, the Caucasians and Asian Americans performed best with financial literacy scores of 76.08 and 77.23 respectively. The Hispanic Americans had the lowest average financial literacy score of 50.85. African Americans and Native Americans had average financial literacy scores of 67.25 and 64.80 respectively.

Table 19

Mean Financial Literacy Score Distribution by Ethnicity

Ethnicity	N	Mean	Standard Deviation
White or Caucasian	136	76.08	10.93
Black or African American	28	67.25	10.99
Hispanic American	14	50.85	22.97
Asian American	3	77.23	5.02
Native American	5	64.80	17.53

n = 186

An ANOVA was calculated to further evaluate financial literacy scores using ethnicity as the moderating factor. A summary table of the ANOVA is provided in Table 20. The obtained F (4,181) = 15.53, p = <.0001, was judged to be statistically significant using the predetermined Type I error rate of $\alpha = 0.05$. This result suggested that there was a significant difference in the financial literacy scores of the participants based on their ethnicity.

Table 20

ANOVA results for Ethnicity Comparison of Financial Literacy Scores

	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	9429.871	2357.463	15.53	<.0001
Error	181	27473.874	151.789		
Corrected Total	185	36903.726			

n = 186; Type I error rate $\alpha = 0.05$

Table 21 presents the Tukey pairwise comparison of the mean differences for the ethnic groups. The results indicated that there were four ethnic group comparisons that differed significantly from each other. The Hispanic American group with an average financial literacy score of 50.85, which was the lowest mean financial literacy score of all the ethnic groups, differed significantly from the scores of the Caucasians, African Americans and Asian Americans. The Caucasian financial literacy scores also differed from the scores of the African Americans.

Table 21

Tukey Pairwise Comparison of Ethnicity

Ethnicity Comparison	Mean Difference	Simultaneous 95% Confidence Limits		
Caucasian – African American	8.831	1.786	15.876	***
Caucasian – Hispanic American	25.224	15.695	34.752	***
Caucasian – Asian American	-0.919	-20.734	18.896	
Caucasian – Native American	11.281	-4.178	26.740	
African American – Hispanic American	16.393	5.281	27.5.5	***
African American – Asian American	-9.750	-30.373	10.863	
African American – Native American	2.450	-14.032	18.932	
Hispanic American – Asian America	-26.143	-47.741	-4.545	***
Hispanic American – Native American	-13.943	-31.629	3.744	
Asian American – Native American	12.200	-12.592	36.992	

*** Indicates comparisons significant at the 0.05 level

Gender

An evaluation of the mean financial literacy scores for males and females indicated that males had a higher financial literacy score with a mean score of 76.18% compared to females with a mean score of 69.59%. An ANOVA was calculated to further evaluate financial literacy scores using gender as the moderating factor. A summary table of the ANOVA is provided in Table 22. The obtained $F(1,185) = 10.55$, $p = 0.0014$, was judged to be statistically significant using the predetermined Type I error rate of $\alpha = 0.05$.

This result suggested that the financial literacy scores of male graduating seniors differ significantly from females.

Table 22

ANOVA results for Male and Female Financial Literacy Scores

	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2000.698	2000.698	10.55	0.0014
Error	184	34903.027	189.690		
Corrected Total	185	36903.726			

n = 186 ; Type I error rate $\alpha = 0.05$

Money Management Knowledge

With all the interest in recent times relating to financial literacy in the media due to the current economic downturn it is understandable that 97 participants (52.15%) indicated that they would take the personal finance course if it were offered at their institution. Interestingly the university offers a personal finance course every fall and spring semester that is open to all undergraduate students, but 161 participants (86.56%) did not know if the university offered a personal finance course.

The majority of participants (n=102, 54.84%) also indicated that their primary method of learning money management was from their own experience, while the second highest method (n=76, 40.86%) was learning at home from their families. This finding was in-line with the findings of Thaden and Rookey, (2004), who found that the majority of their participants either learned about money management from their own experience

or from their families. With the participants learning their money management skills primarily on their own or from family members, they indicated that they had not learned one of the basic money management skills of monthly budgeting. Fifty-seven percent (57%) of the participants indicated that they did not prepare a monthly budget.

Summary

The initial results of study showed that there was no difference between business majors, minors and non-business majors in their performance on the financial literacy questionnaire. After adjusting for outliers and extreme values, it was found that participants with a major in business perform better on financial literacy surveys than non-business majors. A regression equation was developed that could attribute to 26% of the variance in a financial literacy score. In chapter 5 the implications of the findings will be discussed and recommendations will be given.

Chapter 5

Findings, Recommendations and Implications

This study focused on the financial literacy of graduating university seniors by assessing differences in the financial literacy level of business majors, minors and non-business majors. The relationships between financial literacy levels and credit card and student loan debt were also evaluated. Gender, employment status, ethnicity, family income and college major were also factors that were explored to determine if they were predictors of student financial literacy and debt levels.

Findings

This study of financial literacy among graduating university seniors was conducted in one large urban public Research Intensive University in the Southeastern United States. The findings of this study could possibly be used to compare results from other large urban public Research Intensive Universities that enroll a similar type of student body. The three previously conducted major financial literacy research studies were conducted at Iowa State University (Danes & Hira, 1987), Youngstown State University in Ohio (Volpe, Chen & Pavlicko, 1996), and four unnamed universities in the Midwest (Chen & Volpe, 1998). These studies were all conducted at universities in

Midwestern states with smaller student populations. Murphy (2005) conducted a financial literacy study at a university in the Southeastern United States but her institution was a small historically black university. The findings of this study can thus assist future researchers examining the financial literacy of college seniors at large urban Research I universities.

The financial literacy level rating scale reported by Mandell (2004) was used to determine the financial literacy levels of the graduating university seniors. Mandell indicated that:

- Scores of 70% or greater were viewed as a high level of financial literacy
- Scores between 50% and 70% were viewed as an average level of financial literacy
- Scores of 50% or less were viewed as a low level of financial literacy

The descriptive data indicated that the average financial literacy score of university seniors participating in this investigation was 72.56. Based on the above noted financial literacy levels, this group has a high level of financial literacy. This finding is not consistent with the results of any previous research. The previous research showed financial literacy scores below 60%, which were viewed as low levels of financial literacy. Danes and Hira (1987) did not report the specific mean financial literacy score of their participants, they reported only that the mean score fell between 40% – 59%. The participants in the Volpe, Chen and Pavlicko (1996) study had a mean financial literacy score of 44%, and Chen and Volpe's (1998) participants had a mean financial literacy score of 52.87%. Although there was no clear indication for the cause of why the average

financial literacy score of participants in this study was so much higher than that of previous research, it should be noted that the earlier research was conducted 10 – 20 years ago. Also, this questionnaire was administered on-line and participants voluntarily completed the questionnaire. It is possible that the least financially literate students invited to participate in the study did not complete the questionnaire. Another reason for the higher average financial literacy score of participants in this study could have been that they had an above average level of interest in the area and thus had above average knowledge about financial matters.

Although the financial literacy level identified in this study indicate that university seniors at this Research Intensive University in the Southeastern United States have a high financial literacy level, it should also be noted that within the university there was no participation by students from some colleges (i.e. education, and visual and performing art) and other colleges had limited participation (i.e. engineering, honors and nursing). The limited participation of some colleges along with the higher percentage of participation by students in the Colleges of Business, and Arts and Sciences might have inflated the average financial literacy score thus affecting the generalizability of the results.

Research Question 1

1. What differences exist in the financial literacy levels between university seniors who graduate with a major in business, a minor in business or a major in a non-business field?

Two analyses were conducted to answer this question. The first analysis, which had four outliers and three extreme values on the low end of scores, indicated that there was no difference in the financial literacy levels of university seniors that graduated with a major in business, a minor in business or a major in a non-business field. The outliers were two standard deviations away from the mean score and the extreme scores were three standard deviations away from the mean. These outliers and extreme values lowered the average score which sometimes limits the ability to identify differences. Because of anonymity in the completion of the survey, it could not be determined if the outliers and extreme values were real values.

The three extreme scores and four outliers were removed from the sample, the distribution was reviewed, and the ANOVA was recalculated to determine if any difference would be subsequently identified. The distribution of the adjusted financial literacy scores was examined separately for business majors, business minors and non-business majors.

The second analysis was conducted after the outliers and extreme values were removed. A statistically significant difference in the financial literacy scores of university seniors with majors in business and those majoring in a non-business field was now apparent. This finding was consistent with the findings of Volpe, Chen, and Pavlicko (1996), Chen and Volpe (1998) and Murphy (2005), who found that business majors scored significantly higher on financial literacy surveys than non-business majors.

Although the average financial literacy score in this study was not representative of previous studies, similarities still existed in the differences in the performance of

business majors and non-business majors on the financial literacy questionnaire. This consistent finding suggests that participants majoring in business are more financially literate than non-business majors. It should be noted that this does not suggest that business majors will necessarily make more financially sound decisions. Mason and Wilson (2000) define financial literacy as an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences. This result simply revealed that the participants who majored in business were more knowledgeable than non-business majors in how to obtain, understand and evaluate the relevant financial information with an awareness of the consequences of their decisions.

Research Question 2

2. What is the relationship between graduating university seniors' financial literacy level and their a) credit card debt level and b) student loan debt level?

The present study found that there was no relationship between either university seniors' financial literacy level and their credit card debt level, nor between their financial literacy level and their student loan debt level. Previous research conducted by Nellie Mae (2000, 2002, 2005) and Take Charge America Institute (2007) indicated that university seniors are graduating with high student loan and consumer debt levels and recommended that higher education institutions provide more financial education courses to increase the students' financial literacy level. Though high debt levels have been used

as evidence of financial illiteracy (Kinzie, 2007; MacDonald, 2000; Young Americans Center for Financial Education, 2007), this study revealed that university seniors' financial literacy level has no relationship to their credit card or student loan debt levels.

As contained in the Mason and Wilson (2000) definition, financial literacy is the individual's ability to obtain, understand and evaluate relevant financial information and be aware of the consequences. The Mason and Wilson (2000) definition does not imply that financially literate individuals always make sound financial decisions. It simply stated that the individual must be aware of the consequences of financial decisions. Of the graduating university seniors in this study who had student loans, 51% had student loans exceeding $20,000, which is above the national average of $15,000 (American Council on Education, 2003). The reason for the possibly excess borrowing by these students is unknown; it could be speculated that these students were simply poor and in need of the additional loan funds. This hunch, however, is suspect since the university at which this study was conducted was not eligible for federal Title III financial aid. A university that is eligible for Title III aid would have to meet the federal government's view of being a low income institution. The university would have to enroll a higher percentage of low income students compared to other institutions nationally that are offering similar degree programs. The income level of the participants of this study appears similar to the income level of students at other similar institutions nationally. Further research could attempt to identify more clearly the specific reasons for the borrowing pattern identified in this study.

Almost half (49%) of the graduating university seniors had credit card balances below $1,000. With the interest rate on student loans traditionally being lower than credit card interest rates, it is considered a better decision to use student loans rather than credit cards. This finding suggests that students were making a relatively sound financial decision regarding the type of debt they incurred. A fairly high percentage (15%) had credit card balances that exceeded $7,500. Although the majority of the graduating undergraduates showed a high level of fiscal responsibility, the 15% with credit card balances exceeding $7,500 may be in need of personal financial management training to assist in long term planning regarding reduction of the level of credit card debt.

Debt has been commonly assumed to be negative, but in fact, not all debt is bad debt. Based on the results of the study, the graduating seniors accessed more student loans than credit card debt. This could be attributed to the higher level of financial literacy that was identified. Student loan debt offers better incentives (i.e. better interest rates, has longer repayment grace periods and has deferments for hardship situations). These benefits are not available for credit card debt. Making the choice to acquire student loan debt rather than credit card debt is an astute decision.

Although the decision to use student loans over credit cards is a sound decision, the level of student loan debt reported in this study was viewed as high. Universities in the Southeastern United States are known to be lower in cost when compared to the national average (National Center for Educational Statistics, 2006). The university does not have an inordinately high percentage of low income students as suggested by the fact that the institution does not meet the federal requirements for Title III financial aid. This

level of student indebtedness is a cause for concern, since the majority of the students having borrowed student loans carry a loan balance that is above the national average while graduating from a university with lower costs than the national average and with their socio-economic status not being significantly different from other similar institutions.

Research Question 3

3. To what degree does gender, employment status, ethnicity, family income and college major predict financial literacy levels of graduating university seniors?

Gender, employment status, ethnicity, family income, and college major are some of the factors shown by other researchers to be related to students' financial literacy level (Chen, Volpe, & Pavlicko, 1996; Danes & Hira, 1987; Markovich & DeVaney, 1997; Murphy, 2005; Thaden & Rookey, 2004). This study indicated that gender, employment status, ethnicity, and college major were predictors of students' financial literacy levels, supporting the findings of previous research. Based on this study's findings, gender, employment status, ethnicity and college major can be used to predict financial literacy levels in graduating university students. Knowing that gender and ethnicity are predictors of financial literacy levels can aid in identifying persons who might benefit from personal finance assistance.

Gender has consistently been identified as a factor predicting financial literacy levels. Past studies by Chen, Volpe, & Pavlicko (1996), Danes & Hira (1987), Markovich

& DeVaney (1997), Murphy (2005) and Thaden & Rookey (2004) all found that male participants had higher financial literacy levels than females. This finding was reaffirmed by this study which also found that males had significantly higher financial literacy score than females. Males scored 76.18% compared to females with a mean financial literacy score of 69.59%. Chen and Volpe (2002) have attempted to study this gender phenomenon affecting financial literacy scores. They postulated that the statistically significant difference in the financial literacy score of males and females could be caused by the fact that males historically performed better in mathematical areas. This assumption seems to be the most probable explanation for the gender disparity. This factor needs to be studied further 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.

Employment status was previously identified as a predictor of financial literacy levels and was also confirmed in this study. With the majority of the participants indicating that they learned money management from their own experiences, it is understandable that employment status can be a predictor of financial literacy. Being employed increases one's opportunity to manage personal income, to make financial decisions, and to have the opportunity to learn from the experience. Learning from these experiences early in life could aid in developing one's financial literacy.

This study indicated that college major is also a predictor of financial literacy levels. Students majoring in business had a significantly higher financial literacy level than non-majors. Students majoring in business study basic financial concepts, are taught

how to research and gather financial information, learn to make a financially sound decisions, and they are taught to consider the consequences of the decision. Because of this, it is not surprising that college major can predict of financial literacy level. Another reason for the higher financial literacy level of business majors could be that persons who majored in business have always had a personal interest in money matters and possibly entered the university with a high level of financial literacy. Yet another possible reason that could have contributed to the higher financial literacy level of business majors might be that a higher percentage of males majored in business. In this study it was identified that males had higher financial literacy scores than females.

This suggests that additional steps might be taken to assist non-business majors in becoming more financially literate, such as offering financial literacy courses taught by College of Business faculty but publicized and offered to students across all majors. Innovative methods might be taken to offer financial literacy courses to non-business majors. The majority of the participants in this study stated they were unaware that a personal finance course was offered at their university. The student body has to be made aware of the availability of the course so they can make better informed decisions regarding the potential personal importance of participating in the course.

Ethnicity was another predictor of financial literacy levels. Chen, Volpe, & Pavlicko (1996), Danes & Hira (1987) and Thaden & Rookey (2004) all found differences in the participants' financial literacy levels based on ethnicity. They all reported that Caucasians had higher financial literacy levels than minority groups. This study similarly found that ethnicity can be used to predict financial literacy levels. Asian

Americans were the one minority group that had higher financial literacy scores than Caucasians. The majority of the participants indicated that they primarily learned money management from their own experience (54.84%) or at home from their families (40.86%). The difference that was identified in the financial literacy level of the Caucasians and Asian Americans compared to the other minority groups could be attributed to differing developmental experience. For example their parents may have allowed them to begin making financial decisions earlier in their lives or they may have been more frequently included in their family's financial decision making deliberations. If the family owned a business, the participants may have had an active role in the financial management of the business. Future researchers could investigate potential developmental differences among students from differing ethnic groups that might later contribute to differences in financial literacy.

The results of the study did not support family income as a predictor of financial literacy levels. Previous research has identified family income as a factor that impacts financial literacy levels. To ensure anonymity, participants self-reported their income levels which could have affected the validity of the result. Although family was not found to be a predictor of financial literacy level in this study, further research is needed to confirm that family income is not an influence on students' financial literacy levels.

Research Question 4

4. To what degree does gender, employment status, ethnicity, family income and college major predict the debt level of graduating university seniors?

Of the five factors of gender, employment status, ethnicity, family income and college major, that were examined to identify if any could predict the debt level of graduating university seniors, ethnicity was the sole factor identified as a predictor of debt level. Once an institution is aware that one or more ethnic groups have a tendency to have higher debt burdens, the institution should do all it can to reduce the possibility that their ethnic students are disadvantaged by their increased debt level. This could impact the strategies by which debt management instruction is offered by the institution. Since students have a tendency to listen to their peers, the institution may consider recruiting student tutors or trainers of different ethnicities and training them to teach debt management fundamentals to their peers. Then, the trained students can offer debt management workshops to other students either in small groups in their residence halls or to student organizations.

Gender, employment status and college major were predictors of financial literacy levels but were not found to be predictors of debt level. As suggested previously, all students can have high debt levels, both the financially literate and the financially illiterate. However, more financially literate students will better understand the financial concepts that led to their high debt level and know better the extent of the consequences associated with their personal debt level.

Being male or female did not predispose students to having a higher or lower debt level. There appears to be no gender disparity to debt because both males and females accumulate debt and have the responsibility of paying off their accumulated debt. This study indicated no gender specific debt management intervention is needed.

An argument could be made either that employed students or unemployed students acquire more debt. This study found that employment status was not a predictor of debt level. Both employed and unemployed students accumulated debt and there was not enough of a difference in the debt levels of male students and female students for it to be used as a predictor of debt level.

Although type of college major can be used to predict financial literacy levels, it could not be used to predict debt level. Regardless of their major, graduating seniors accumulated debt. There was no one specific major that got more or less indebted than another. It appears that graduating seniors from all majors borrow and get into debt equally.

This study also indicated that family income was not a predictor of debt levels. Students from low, middle and high income families accumulated debt. Students' family income did not predispose them to accumulate more or less debt than students from families in other income groupings. Students of all income level have varying types of debt; some may borrow student loans to attend college while others may have balances on their credit cards. It cannot be assumed that a student with a low family income will borrow more student loans because it is possible that the student may receive grants or scholarships.

It has been a mistake to equate student debt level with claims of widespread financial illiteracy. This mistake has been made by Congress as well as popular newspapers and magazines. Numerous opinion pieces that have been published in newspapers and magazines have equated high debt level with low levels of financial

literacy (Kinzie, 2007; MacDonald, 2000; Young Americans Center for Financial Education, 2007). Had Mason and Wilson's (2000) definition of financial literacy was used, this mistake might have been avoided. Mason and Wilson (2000) did not indicate that a financially literate person would always make sound financial decisions; their definition simply stated that the literate person would understand the consequences of their financial decision making. The findings of this study indicate that the factors that can be used to predict financial literacy levels can not be used to predict debt levels.

Conclusions

In this study the average financial literacy score was 72.56 which was higher than the mean scores reported in previous studies (Danes and Hira, 1987; Volpe, Chen and Pavlicko, 1996; Chen and Volpe; 1998). However, business majors again were found to have significantly higher financial literacy scores than non-business majors, which is consistent with prior research. While business minor students performed slightly higher than non-business majors, these differences in financial literacy scores were not significant.

Gender, employment status, ethnicity and college major were factors that could be used to predict financial literacy levels in this sample of graduating university students. These findings were consistent with the findings of previous research. Financial literacy levels, however, had no impact on either credit card debt or student loan debt. This study also indicated that gender, employment status, family income and college major were not predictors of graduating university students' debt levels. Although these demographic

factors could be used as predictors of the financial literacy levels of this sample of graduating university students, they did not predict student debt level.

The findings of this study clearly indicated that student debt level can not be used as evidence of financial literacy level. Although debt level has been suggested as being symptomatic of low levels of financial literacy, this study indicated that financial literacy level has no impact on credit card debt level or student loan debt level.

Implications

National

The use of debt level as evidence of financial illiteracy was found to be an incorrect assumption. This study found that financial literacy level was not related to credit card debt or student loan debt. Future use of high debt level as evidence of low levels of financial literacy by Congress, newspapers and magazines articles would be inaccurate and inappropriate. Many people similarly associate financial literacy with consistently making good financial decisions. A financially literate person can make either good or bad financial decisions. Once a person understands the financial decision that he/she has made and the likely consequences associated with his or her decision, that person is acting in a financially literate fashion.

There is continuous discussion in the popular press regarding financial literacy, especially the financial level of recent university graduates who have graduated with extensive student loan and credit card debt. Regrettably, relatively little prior research has been conducted on the financial literacy of university students. While national studies

have been completed on the financial literacy of high school and elementary school students, it is surprising that there has not been a nation study conducted assessing the financial literacy of university students. University students were identified as being the most financially at risk group in a national report (U.S. General Accounting Office, 2006). This assertion, however, was made without any supporting research evidence.

This study has revealed that financial literacy level and student debt level are unrelated constructs. The ambiguity of the meaning of "financial literacy" often leads individuals to develop their own personal interpretations; until a consensually agreed upon definition is developed, this error will continue. The national associations of financial planners and administrators should work to develop a single definition for financial literacy and ensure that this definition is used in the national arena so that the general public can more clearly understand the meaning of financial literacy.

Institution

It is imperative that universities take an active part in preparing their graduates to better obtain, understand and evaluate financial information. This study identified that students are interested in learning about personal finance with 52% indicating that they would be interested in taking a personal finance course if offered at their university; unfortunately, information regarding the availability of this course has previously not been disseminated effectively to the students. Eighty-seven percent (87%) of the participants in this study were not aware that just such a personal finance course was already being offered at their institution. Thus, the institution needs to find more creative

and more effective ways of making students aware of courses that may be of interest to them. The academic advisors in non-business colleges, for example, could be made aware of the personal finance course and the widespread interest students have in learning about personal finance. The institution could possibly send out emails to non-business students to inform them of the personal finance course. An online module could be offered for the students who prefer to enroll in online classes.

The institution could also consider revising the personal finance course so that it could meet one of the university's general education requirements. This would increase student awareness of the course since it could now meet a student's degree requirement.

It should be noted that the institution where this study was conducted has recently implemented a new requirement that incoming freshmen complete an online financial literacy module prior to their first day of attendance. This is an excellent first step but other measures have to be taken to ensure that degree seeking students who are currently enrolled have the same level of access and awareness of the online personal finance module.

Personal Finance Associations

One of the major problems identified in this study is the lack of a consensually agreed upon definition for financial literacy. Until financial literacy is officially operationalized, it will continue to be used to mean, imply and represent different things. In the absence of a clear and common definition, every researcher, writer and reporter will continue to employ his or her own interpretation to the term. The responsibility is on

the different financial literacy and financial planning associations to develop a clear definition of financial literacy that will give others a clear understanding of the concept. After a definition has been developed it will be easier to prepare and present information to improve students' financial literacy levels. A clear definition gives direction, focus and guidelines that are currently lacking.

Financial literacy programs could be developed to better incorporate critical thinking and decision making processes into their curricula. Having knowledge about financial issues is not enough; individuals need to be taught how to incorporate such knowledge into actual decision-making processes and to similarly better understand the consequences of the one's financial decision making.

Students

This study found that participants had a surprisingly high level of student loan debt well above the national average despite the fact their family incomes were not significantly lower than that of students at other similar institutions in the United States. Consequently these students will have to take personal responsibility for reducing their debt level. For example, one helpful step would be for students to more closely track their spending and to identify areas where personal cost saving measures could be implemented. Then, it would be wise for these students to develop and follow a monthly budget or spending plan.

It would also be helpful for students to take an active part in their academic advising sessions. Since the academic advisors are responsible for hundreds of students,

individual students must each ensure that they have the most effective and enriching advising experience. Students each need to go to advising sessions prepared with a listing of their specific questions, concerns and interest, and then allow the advisor to guide them based on what the student has brought to the session.

Implications for Future Research

Based upon the present study using the Jump$tart questionnaire, it would also seem helpful to suggest that a new financial literacy measure be developed to allow participants to more closely explore the values, beliefs, attitudes and critical thinking skills involved in making personal financial decisions. A large part of being financially literate are the critical thinking skills involved in the decision making process. An individuals values, beliefs and attitudes impact their decision making process.

In future research of this type it is also recommended that the chosen questionnaire be administered in class settings to increase the probability of gaining a more representative student sample. Having a wider cross section of participants will allow researchers to make stronger recommendations. The questionnaire used in this voluntary study was completed online and it may have been completed by students who shared an atypical interest in the issue of financial literacy.

Further research might also be replicated in universities in different regions of the United States. This study was conducted at one university in the Southeastern United States. Having a greater representation of institutions would allow researchers to better generalize the results of the study. It would also allow the researcher to identify if there

are any regional differences in financial literacy levels. The similarities or difference in the financial literacy level of students enrolled in different types of institutions could also be studied.

The relationship between debt level and ethnicity should be explored further. Ethnicity is not a factor that can be changed but if there is a relationship between ethnicity and debt level it may be of interest to social scientists, and it could be helpful to the creation of debt management programs and interventions for college and university students. Although everyone has a right to make one's own decisions, if there is a significant difference in debt level based on ethnicity, possible sociological reasons for this difference might also be of interest.

Additional research should be conducted to assess the financial literacy level of students with individual majors. In this study, all non-business majors were combined. Future research could investigate the financial literacy levels of students in specific colleges, to determine if students in specific colleges have lower financial literacy levels than their student peers in other majors. The results of the future research could impact the manner in which personal finance courses are offered to students.

Qualitative research should also be conducted with students who have been previously identified as having significant debt level to understand their reasons, views and perceptions of the debt they have acquired. The decision making process and reasons for students acquiring high debt has not yet been studied. Understanding the decision making processes will aid in the development and dissemination of financial literacy and debt management programs.

Additional research should be conducted on the relationship between the ways students learn personal financial management and their financial literacy levels. In this study more than half of the participants learned personal financial management by their own experience and an additional 40% learned it from their families. The impact that the learning of personal financial management has on financial literacy levels would aid in developing best practices in the delivery of personal financial management courses.

Additional research in the area of financial literacy is greatly needed. There has been limited qualitative financial literacy research, and this too is needed to aid in the development of financial literacy programs that will address attitudes, behavior and critical thinking. As we continue to impart financial literacy information, allowances must be made for the individuals' values and beliefs which will affect how they make decisions.

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Appendices

Appendix A

2004 JUMP$TART QUESTIONNAIRE

1. What is your gender?
   a) Male
   b) Female

2. Including this semesters course work how many credits of Business classes have you completed?
   a) 30 or more credits
   b) 18 or greater but less than 30 credits
   c) 6 or greater but less than 18 credits
   d) I have taken only 1 business class
   d) None

3. Is your major in the College of Business?
   a) Yes
   b) No

4. What type of financial aid were you offered in the 2007-2008 academic year? (Check all that apply)
   a) Pell Grant
   b) Other grants
   c) Scholarships
   d) Subsidized Stafford Loans
   e) Unsubsidized Stafford Loans
   f) Did not apply for financial aid

5. How do you describe yourself?
   a) White or Caucasian
   b) Black or African-American
   c) Hispanic American
   d) Asian-American
   e) Native American or American Indian
   f) Other

6. From which College will you be receiving your degree?
   a) Architecture & Community Design
   b) Arts & Sciences
   c) Business
   d) Education
   e) Engineering
   f) FMHI

g) Honors
h) Marine Science
i) Nursing
j) Undergraduate Studies
k) Visual & Performing Arts

7. Whose credit card do you use?
a) My own
b) My parents'
c) Both my own and my parents'
d) None, I don't use a credit card

8. How many credit cards do you have?
a) 1
b) 2
c) 3
d) 4 or more
e) I don't own any credit cards

9. How do you normally make your credit card payment?
a) I make the minimum payment
b) I pay more than the minimum but not the entire balance
c) I pay the entire balance
b) I am not responsible for making my credit card payments

10. Where did you learn most about managing your money?
a) At home from my family
b) At school in class
c) From talking with my friends
d) From magazines, books, TV and the radio
e) From experience in managing my own funds
f) In my residence hall

11. Do you prepare a monthly budget?
a) Yes
b) No

12. If you prepare a monthly budget, do you stick to it?
a) Yes
b) No

13. How would you describe your employment history?
a) I work full time in the summers and part time during the school year.
b) I work full time in the summers and don't work during the school year.

c) I work part time in the summers and part time during the school year.
d) I work part time in the summers and don't work during the school year.
e) I work full time for the entire year.
f) I have never been formally employed outside the home.

14. Which of the following classes have you had in high school (check all that apply)?
a) An entire course in money management or personal finance.
b) A portion of a course where at least a week was focused on 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.

15. Does your university offer a Personal Finance Course?
a) Yes
b) No
c) I don't know

16. If they offered a Personal Finance Course would you take it?
a) Yes
b) No

17. Have you taken the Personal Finance Course?
a) Yes
b) No

18. What is your best estimate of your parents' total income last year (2006)? Consider annual income from all sources before taxes.
a) Equal to or less than $50,000
b) Equal to or greater than $50,000 but less than $75,000
c) Equal to or greater than $75,000 but less than $100,000
d) Equal to or greater than $100,000 but less than $125,000
e) Greater than $125,000
f) Don't know
g) Prefer not to respond

19. What is the average monthly balance that you keep on your credit card?
a) Equal to less than $1000
b) More than $1000 but less than $2500
c) Equal to or more than $2500 but less than $5000
d) Equal to or more than $5000 but less than $7500
e) More than $7500
f) I don't keep a balance

g) Don't know
h) Prefer not to respond

20. Using your best estimate what is your outstanding balance on your student loans?
a) $5000 or less
b) $10,000 or less but more than $5,000
c) $15,000 or less but more than $10,000
d) $20,000 or less but more than $15,000
e) $25,000 or less but more than $20,000
f) More than $25,000
g) I have not borrowed student loans
h) Prefer not to respond

21. If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?
a) A young single woman without children.
b) A young single woman with two young children.
c) A young married man without children.
d) An elderly retired man, with a wife who is also retired.

22. Kevin has saved $9,000 for his college expenses by working part-time. His 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) A bank savings account
b) Corporate bonds
c) Stocks
d) Locked in her closet at home

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

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

25. Jim just found a job with a take-home pay of $1,500 per month. He must pay $750 for rent and $125 for groceries each month. He also spends $100 per month on transportation. If he budgets $50 each month for clothing, $75 for restaurants and $50 for everything else, how long will it take him to accumulate savings of $700?
a) 2 months
b) 4 months
c) 6 months
d) 8 months

26. 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.

27. Andrew worked his way through college earning $15,000 per year. After graduation, his first job pays $30,000. The total dollar amount Andrew will have to pay in Federal Income taxes in his new job will:
a) Double, at least, from when he was in college.
b) Go up a little from when he was in college.
c) Stay the same as when he was in college.
d) Be lower than when he was in college.

28. Many savings programs are protected by the Federal government against loss. Which of the following is not?
a) A certificate of deposit at the bank
b) A U. S. Treasury Bond
c) A bond issued by one of the 50 States
d) A U. S. Savings Bond

29. 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) Paula, who only pays the minimum amount each month.
b) Ellen, who always pays off her credit card bill in full shortly after she receives it.
c) Barbara, who generally pays off her credit card in full but, occasionally, will pay the minimum when she is short of cash.

d) Nancy, who pays at least the minimum amount each month and more, when she has the money.

30. 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) none
b) $50
c) $1000
d) $500

31. Saul must borrow $10,000 to complete his college education. Which of the following would NOT be likely to reduce the finance charge rate?
a) If the loan was insured by the Federal Government.
b) If his parents cosigned the loan.
c) If he went to a state college rather than a private college.
d) If his parents took out an additional mortgage on their house for the loan.

32. If you went to college and earned a 4-year degree, how much more money could you expect to earn than if you only had a high school diploma?
a) No more; I would make about the same either way.
b) About 10 times as much.
c) A lot more; about 70% more.
d) A little more; about 20% more.

33. Many people put aside money to take care of unexpected expenses. If Susan and Joe 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) Savings account
b) Invested in a down payment on the house
c) Stocks
d) Checking account

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

35. Rebecca has a good job on the production line of a factory in her home town. During the past year or two, the state in which Rebecca 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 Rebecca's job?

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

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

37. Which of the following best describes the primary sources of income for most people age 20-35?
a) Salaries, wages, tips
b) Profits from business
c) Dividends and interest
d) Rents

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

39. Which of the following statements is true?
a) If you missed a payment more than 2 years ago, it cannot be considered in a loan decision.
b) People have so many loans it is very unlikely that one bank will know your history with another bank.
c) 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.
d) Your bad loan payment record with one bank will not be considered if you apply to another bank for a loan.

40. Retirement income paid by a company is called:
a) 401k
b) Pension
c) Social Security

d) Rents and profits

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

42. Carla and Sara work together in the finance department of the same company and earn the same pay. Carla spends her free time taking work-related classes to improve her computer skills; while Sara spends her free time socializing with friends and working out at a fitness center. After five years, what is likely to be true?
a) Carla and Sara will continue to make the same money.
b) Carla will make more money because she is more valuable to her company.
c) Sara will make more because Carla is likely to be laid off.
d) Sara will make more because she is more social.

43. Ed and Bob are young men. Each has a good credit history. They work at the same company and make approximately the same salary. Ed has borrowed $2,500 to take a foreign vacation. Bob has borrowed $2,500 to buy a car. Who is likely to pay the lowest finance charge?
a) They will both pay the same because the rate is set by law.
b) They will both pay the same because they have almost identical financial backgrounds.
c) Ed will pay less because people who travel overseas are better risks.
d) Bob will pay less because the car is collateral for the loan.

44. Which of the following instruments is NOT typically associated with spending?
a) Credit card
b) Cash
c) Certificate of deposit
d) Debit card

45. Hector and Maria 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 U.S. Govt. savings bond

b) Stocks
c) A savings account
d) A checking account

46. 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) You cannot earn interest until you pass your 18th birthday.
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) Earnings from savings account interest may not be taxed.

47. Ron and Molly are the same age. At age 25 Ron began saving $2,000 a year while Molly saved nothing. At age 50, Molly realized that she needed money for retirement and started saving $4,000 per year while Ron kept saving his $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?
a) Molly, because she saved more each year
b) Ron, because he has put away more money
c) Ron, because his money has grown for a longer time at compound interest
d) They would each have the same amount because they put away exactly the same

48. If you have caused an accident, which type of automobile insurance would cover damage to your own car?
a) Collision
b) Liability
c) Term
d) Comprehensive

49. Marie 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 Marie is granted a credit card, which of the following is the most likely way that the credit card company will reduce ITS risk?
a) It will start Marie out with a small line of credit to see how she handles the account.
b) It will charge Marie twice the finance charge rate it charges older cardholders.
c) It will require Marie to have both parents co-sign for the card.
d) It will make Marie's parents pledge their home to repay Karen's credit card debt.

50. 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 the interest on the loan is greater than the interest you get on your savings.

b) When some clothes you like go on sale.
c) When you really need a week vacation.
d) When you need to buy a car to get a much better paying job.

51. 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) Young people don't need health insurance because they are so healthy.
c) You continue to be covered by your parents' insurance as long as you live at home, regardless of your age.
d) If your parents become unemployed, your insurance coverage may stop, regardless of your age.

Appendix B

Initial Email to Students

Subject: Financial Literacy Survey and Informed Consent

Good Day,

My name is Vandeen McKenzie and I am doctoral student in the department of Adult, Career and Higher Education. I am pursuing a Doctorate of Education in Leadership Development with a College Leadership Emphasis.

You have been selected to participate in my study on The Financial Literacy of College Students: A comparison of university seniors financial literacy and financial behavior.

Attached is a copy of the informed consent form for you to review. By clicking on the link below you are indicating that you are freely giving your consent and you are agreeing to participate in this research.

If you have any questions about the research please contact the Principal Investigator Vandeen McKenzie at vmmckenz@mail.usf.edu or 813 240-2636.

http://www.surveymonkey.com/s.aspx?sm=I78ZNoPe8doRwUz8dbakbw_3d_3d

Thank you for participating in the financial literacy study.

Thank you,
Vandeen McKenzie
Principal Investigator

Appendix C

Follow-up Email 1

Subject: Reminder to complete Financial Literacy Questionnaire

Good Day,

I would like to thank you if you have completed the questionnaire already and if you have not I would like to remind you that it is still active and can be accessed via the link below. Please complete the questionnaire as soon as possible if you have not done so already.

http://www.surveymonkey.com/s.aspx?sm=I78ZNoPe8doRwUz8dbakbw_3d_3d

Thank you,
Vandeen McKenzie
Primary Investigator

Appendix D

Follow-up Email 2

Subject: Reminder to complete Financial Literacy Questionnaire

Good Day,

I would like to thank you if you have completed the questionnaire already and if you have not I would like to remind you that it is still active and can be accessed via the link below. Please complete the questionnaire as soon as possible if you have not done so already.

http://www.surveymonkey.com/s.aspx?sm=I78ZNoPe8doRwUz8dbakbw_3d_3d

Thank you,
Vandeen McKenzie
Primary Investigator

Appendix E

Thank you Email

Subject: Thank you for your participation

Good Day,

I would like to thank you for your participation in my study on the financial literacy of college students. Your response has been a valuable help in the study on financial literacy.

Thank you,
Vandeen McKenzie
Principal Investigator

Appendix F

Informed Consent to Participate in Research

Information to Consider Before Taking Part in this Research Study

Researchers at the University of South Florida (USF) study many topics. To do this, we need the help of people who agree to take part in a research study. This form tells you about this research study.

We are asking you to take part in a research study that is called:
The financial literacy of University students: A study comparison of graduating seniors' financial literacy and debt level.

The person who is in charge of this research study is Vandeen McKenzie**.**

The research will be done online using Survey Monkey.

Purpose of the study

The purpose of this study is to access the financial literacy of college seniors to identify the impact if any that higher education has had on their levels of financial literacy.

Study Procedures

If you take part in this study, you will be asked to complete the Jump$tart questionnaire. The email you received contains a link to the questionnaire. The questionnaire will take no longer than 30 minutes to complete.

Alternatives

You have the alternative to choose not to participate in this research study.

Benefits

We don't know if you will get any benefits by taking part in this study.

Risks or Discomfort

There are no known risks to those who take part in this study.

Compensation

We will not pay you for the time you volunteer while being in this study.

Confidentiality

We must keep your study records confidential. No identifying information will be collected by the questionnaire.

However, certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

- The research team, including the Principal Investigator, study coordinator, and all other research staff
- Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.) These include:
- the University of South Florida Institutional Review Board (IRB) and the staff that work for the IRB. Other individuals who work for USF that provide other kinds of oversight may also need to look at your records.
- the Florida Department of Health, people from the Food and Drug Administration (FDA), and people from the Department of Health and Human Services (DHHS).

We may publish what we learn from this study. If we do, we will not let anyone know your name. We will not publish anything else that would let people know who you are.

Voluntary Participation / Withdrawal

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study, to please the investigator or the research staff. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study. Your decision to participate will not affect your student status or course grade.

Questions, concerns, or complaints

If you have any questions, concerns or complaints about this study, call Vandeen McKenzie at (813) 240-2636.

If you have questions about your rights, general questions, complaints, or issues as a person taking part in this study, call the Division of Research Integrity and Compliance of the University of South Florida at (813) 974-9343.

If you experience an adverse event or unanticipated problem, call Vandeen McKenzie at (813) 240-2636.

Consent to Take Part in this Research Study

It is up to you to decide whether you want to take part in this study. If you want to take

part, please complete the online questionnaire via the link provided in this email.

About the Author

In August 2009 Vandeen McKenzie completed an Ed.D. in Educational Leadership with an emphasis in College Leadership. She has a M.A. in Counselor Education with an emphasis in Community Mental Health. Both degrees were earned at the University of South Florida (USF). She also has a B.A. in Computer and Management Studies.

She has eight years of experience in administering federal student financial aid. She has administered financial aid for TRIO programs, state scholarship programs, athletes and graduate students. After Hurricane Katrina she managed the processing of financial aid for displaced students and she was awarded a grant to assist the students displaced by the hurricane.

During her tenure at USF she started the Students In Free Enterprise (SIFE) team. Her main focus for the team was that they would provide financial literacy educational programs to students on campus through peer counseling and mentorship. The team continues its educational work and they have been recognized both regionally and nationally.