Financial knowledge levels and savings behaviors of Bermudian high school seniors at CedarBridge Academy

by

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ABSTRACT

The purpose of this study was to determine the relationship between financial knowledge and financial behaviors of high school seniors at CedarBridge Academy in Devonshire Bermuda. This study will also be used to determine if there is a need for a personal finance course at CedarBridge Academy. Seventy-five high school seniors were given a thirty question survey pertaining to financial topics and savings issues. This thesis is a detailed analysis of the research findings and literature relating to the study topic of financial knowledge and savings behaviors of teenagers. The theoretical foundation for this study is based on research from the Jumpstart Coalition for Personal Financial Literacy's findings in the 2004 financial survey to high school seniors in the United States. Participants scored well on questions pertaining to spending money and poorly on questions pertaining to savings and investments. A non-directional independent samples t-test was conducted and found that students who felt confident in their ability to manage their own finances scored higher on the financial knowledge section of the survey than students who were not confident in their ability to manage their own finances. The researcher suggests continuing to explore the relationship between financial knowledge and financial behaviors as these areas are only beginning to be explored.

CHAPTER ONE: INTRODUCTION

Introduction and Theoretical Foundation for Study

American high school students are earning a failing grade when it comes to personal financial literacy (Mandell, 2001). Teenagers are lacking in the basic knowledge and skills important in personal finance such as savings, investing, credit and debt management (Tennyson & Nyguen, 2001). The JumpStart Coalition for Personal Financial Literacy, with Lewis Mandell as the head researcher, surveyed over 4,000 high school seniors in 2004 (Jumpstart Coalition for Personal Financial Literacy, 2005). When asked what would earn the highest return over 18 years, only 23% of the participants were able to identify the correct answer as stocks. Seventy-three percent thought the highest growth would occur in a savings account (Mandell, 2001). In a society where our young people know so little about personal finance, it is no surprise that uneducated teenagers evolve into adults with major credit card debt and over-spending problems.

Previous studies have specifically been administered to determine financial literacy levels of teenagers as well as adults (Jumpstart Coalition for Personal Financial Literacy, 2005). Few studies to my knowledge have been completed to determine if an individual's financial literacy is related to the individual's financial behaviors. Lewis Mandell, head researcher for the Jumpstart Coalition for Personal Financial Literacy suggests, "Perhaps we have focused too much of our time and resources on measuring financial literacy, *per se* rather than measuring other, more important, output variables, such as savings, spending and credit behavior" (2005). This conclusion was reached in part because students who described themselves as "very thrifty" scored lower on the financial literacy survey than students who described themselves as “somewhat” thrifty or less. “Very thrifty” was defined as “saving money whenever I can.”

The finding of students who described themselves as “very thrifty” scoring lower in financial knowledge than students who described themselves as “somewhat thrifty” shows knowledge and behaviors regarding financial practices may not be positively related. In other words, some teenagers may have higher financial literacy levels but do not choose to employ that knowledge, whereas some teenagers may have a low level of financial literacy, but choose to act in a resource conscious manner for some reason. Therefore, how important is a financial literacy score?

On the contrary, thriftiness is important because “Consumers who are “thrifty” or savings-oriented are less likely to experience financial failure than consumers who are not thrifty or are consumption-oriented (Mandell, 2005).” Thriftiness differs from financial literacy because it is a behavior and not a knowledge level.

The fact that the behavior of saving is not positively related to higher financial literacy levels of teenagers can be discouraging to individuals advocating for personal financial education in high schools and the workplace. However, it is very important to note that financial education affects teenagers’ propensity to save without necessarily improving their financial literacy level (Mandell, 2005). Mandell defines “propensity to save” as a behavior that leads to the accumulation of savings rather than debt, and thus is a desirable financial behavior. Ultimately, if financial education is affecting teenagers’ behaviors more than their knowledge levels, then the goal of the financial education program has been accomplished.

Problem and Purpose of the Study

The financial knowledge and savings behaviors of Bermudian teenagers at CedarBridge Academy should be established to determine if there is a need for personal finance education at this school. The purpose of this study was to determine if the financial literacy level of high school seniors at CedarBridge Academy in Bermuda is related to their saving behaviors.

Significance of the Study

The financial knowledge level and savings behaviors of high school seniors at CedarBridge Academy have never been established. It is important to test the financial knowledge level and savings behaviors of high school seniors at CedarBridge Academy and use the results to determine if financial education is needed.

The Jumpstart Coalition for Personal Financial Literacy is the group that sponsored and tested the financial literacy level of students in the United States. The organization seeks to improve the personal financial literacy of young adults (Jumpstart Coalition for Personal Financial Literacy, 2005). In a global society, it is important to establish the financial knowledge and savings behaviors of teenagers in multiple countries to gain a diverse perspective on the issue.

By determining the financial knowledge level and savings behaviors of high school seniors at CedarBridge Academy, the administration will have evidence to make a decision regarding the implementation of a personal finance course at the school that would specifically deal with issues such saving and spending. This information will also be enlightening to parents of CedarBridge Academy students and students enrolled at the school. The results of this study will guide the teachers who may be teaching personal finance in understanding students' previous knowledge about personal finance.

Objectives of the Study

The objectives of this quantitative study were:

1. To determine the financial knowledge level of high school seniors at CedarBridge Academy in Bermuda.
2. To determine the savings behaviors of high school seniors at CedarBridge Academy in Bermuda.
3. To determine the relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy in Bermuda.
4. To determine if confidence levels in managing one's own money are related to savings behaviors of high school seniors at CedarBridge Academy.
5. To determine if there is any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda.

Research Questions

1. What is the financial knowledge level of high school seniors at CedarBridge Academy?
2. What are the savings behaviors of high school seniors at CedarBridge Academy?
3. Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?
4. Is there a relationship between confidence levels in managing one's own money and savings behaviors of high school seniors at CedarBridge Academy?

5. Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?

Hypothesis

The researcher hypothesizes that there will be a difference in financial behaviors between students who feel confident in managing their own finances and students who do not feel confident in managing their own finances.

Definition of Terms

Personal finance- having to do with areas such as saving, spending, credit, debt, investing, mortgages, insurance, budgeting, and retirement.

Financial knowledge- how much an individual knows about saving, credit, debt, investing, spending, budgeting, and retirement.

High school senior- a high school student in the 12^{th} grade.

Saving- a behavior having to do with acquiring wealth and accumulating monetary resources for future goals.

Assumptions and Limitations

Assumptions

- Survey participants answered the survey honestly.
- The administration at CedarBridge Academy allowed their students to participate in the survey.
- The parts of the survey taken from the Jumpstart Coalition for Personal Financial Literacy's survey to high school seniors were reliable and valid.

Limitations

- Some parents of students in their senior year at CedarBridge Academy in Bermuda did not allow their students to participate in the study.
- Some students were absent on the day the survey was administered. Therefore, the data set may not be fully representative of the population of students studied.
- The results of this study may be applicable to CedarBridge Academy alone.
- Advisory groups were selected for the study using convenience sampling.
- Only those students in advisory groups where permission was given participated.

Thesis Organization

This thesis is divided into five chapters. The Chapters are as follows:

Chapter One: Introduction

Chapter Two: Review of Literature

Chapter Three: Methodology

Chapter Four: Results

Chapter Five: Discussion and Conclusions

Summary

A quantitative research study was proposed to test the financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy in Bermuda. More emphasis was placed on savings behaviors than financial knowledge levels because of Mandell's suggestion in the literature that more emphasis be placed on measuring other, more important variables such as saving and spending (2005). Objectives of this study are to determine the financial knowledge level and savings behaviors of high school seniors at CedarBridge Academy in Bermuda and to determine if there is a relationship between the two variables. Results of this study will be used by the administration of CedarBridge Academy to help determine whether or not to offer a personal finance course.

CHAPTER 2: LITERATURE REVIEW

Introduction and Purpose of Chapter

The purpose of this chapter is to review literature related to financial knowledge and financial behaviors of teenagers and adults. Topics to be reviewed include teenagers' financial literacy, teenagers' financial behaviors, the need for personal finance education at the secondary school level, effects of mandating personal finance education, parental involvement and their views toward their child's personal finance education, and incorporating personal finance into a family and consumer sciences curriculum. The chapter concludes with a Bermuda culture section and a chapter summary.

Unfortunately, a small amount of data is available about financial topics that are specific to Bermuda, the location of this research study. This is due in part to the population of the country being only 60,000 people (Bermuda Government Department of Statistics, 2004). Additionally, the one college on the island, Bermuda College, is a two year college and is not a research institution. Most scientific research conducted in Bermuda is conducted by individuals enrolled in university programs outside of Bermuda, therefore making it rare. However, the researcher is of the opinion that research conducted in the United States can be applied to situations in Bermuda. This issue will be further explained in the Bermuda Culture section of this chapter.

Teenagers' Financial Literacy

Are teenagers today financially literate? Results from the fourth biennial Jumpstart Coalition for Personal Financial Literacy survey (Jumpstart Coalition for Personal Financial Literacy, 2005) suggest they are not. The survey administered in 2004 consisted of more than 4,000 high school students in 215 high schools across 33 states.

Results measured 12th grade students' knowledge level of personal finance topics such as income, money management, saving and spending. The average score of students who participated in the survey was 52.3%. While this score is not even at the passing level, it is up two percentage points from the 2002 survey results. Unfortunately, the average score is still down from 57.3% in 1997. Students scored higher on questions about income and spending than they did about money management and saving. Additionally, students who were required to take money management courses in high school scored four percentage points higher than students who attended schools where it was required for only some students (Jumpstart Coalition for Personal Financial Literacy, 2005). These data show there is a relationship between money management courses in high school and an increased financial knowledge level of high school seniors.

Other statistics from a nation-wide survey conducted by North Dakota State University (NDSU) Extension Service also point toward low financial literacy in teenagers (2006). Over half of the teenagers thought earnings from a savings account would not be taxed (NDSU Extension Service, 2006). The same survey also reported that 63% of teenagers thought they would not have any responsibility to repay fraudulent charges on their credit card if it were lost or stolen (NDSU Extension Service, 2006).

Teenagers' Financial Behaviors

Unfortunately, with teenagers' low levels of financial literacy come irresponsible financial behaviors. Fifty-six percent of teenagers consider themselves "spenders" rather than "savers" (NDSU Extension Service, 2006). Additionally, 28% of students with a credit card do not repay the entire balance every month (NDSU Extension Service, 2006).

A phone survey conducted by Merrill Lynch to 515 teenagers between the ages of 12 and 17 found that if teenagers are saving money, it is most often for college or a car (2000). This survey also found that two-thirds of teenagers believe the best way to save money is in a checking or savings account (Merrill Lynch, 2000). Teenagers who had a regular job were more likely to have a checking or savings account (Merrill Lynch, 2000). Additionally, it was discovered that teenagers who have been in classes that discussed savings and investing were more likely than those who had not been in the class to seek savings and investing advice, and more likely to own stocks or mutual funds (Merrill Lynch, 2000).

Teenagers in today's marketplace have a tremendous amount of spending power (Pippidis, 2004). Over 10 billion dollars were spent by teenagers on food and snacks for themselves in 2000 (Pippidis, 2004). Author Michael Wood is the Vice President of Teenage Research Unlimited, an organization which has tracked teenager consumer behavior and attitudes for over twenty years (Wood, 2001). A survey conducted by this organization on teenage spending behaviors was administered to over 2,000 respondents, ages 12 to 19 years old (Wood, 2001). In sum, teenagers in 2002 spent 155 billion dollars which is up from 153 billion dollars in 1998 (Wood, 2001). On average, teenagers spent $84 per week in 2000 (Wood, 2001). Where is this large amount of money teenagers are spending coming from? Teenagers get the majority of their money from adults, whether it is through allowance or gifts (Wood, 2001).

Need for Personal Finance Education

Recent trends of shifting retirement responsibility from institutions such as employers or the government to individuals themselves demand the need for educated consumers (Hogarth, 2002). Other trends requiring attention include teenagers having no positive financial role models and immigrants who need to learn about the United States' financial market (Hogarth, 2003). Hogarth also explains why she feels financial education is important when she states, "Informed consumers provide the checks and balances that keep unscrupulous sellers out of the market (2003)."

Individuals of today's society show an enormous need for personal financial education (Hira, 2002). Four in ten Americans admit they are living beyond their means due to their misuse of credit (United States Department of the Treasury Office of Financial Education, 1992). Unfortunately, this shows that consumers are not acting in a financially responsible manner. The need for financial education is for individuals of all socioeconomic status levels, ages, and races. Family financial failure has great consequences at the individual, family and community levels (Hira, 2002). Furthermore, evidence exists showing an association between family violence, marital distress, stressful situations and financial problems (Hira, 2002). Financial education will not solve these perennial problems; however, it does have the possibility of reducing the severity of some of these issues.

Many consumers themselves feel they are in need of financial education as well. Evidence can be seen through responses in surveys, such as the National Association of Securities Dealers (NASD) investor literacy survey (2003), indicating an expressed need for personal finance education. Individuals' poor money management practices point toward the possibility they are also in need of personal finance education. Ninety-seven percent of respondents to the NASD investor literacy survey responded it was very important to increase their investment knowledge (2003). The same survey also reported that almost half of the respondents said that a negative market experience could have been avoided had they known more about investing at the time. A survey conducted by Fleet Boston (2003) found that only 27% of respondents felt very well informed about managing household finances. When researchers are finding that less than half of their research participants have retirement accounts, but 80% have a credit card, it is clear that consumers are in need of a financial education (Hilgert & Hogarth, 2002).

A research study by Castellani and DeVaney (2001) examined individuals' attitudes toward using credit to borrow money for living expenses when income is cut. Over 4,000 households were surveyed for the study. It was found that 44% of the household heads thought it was "all right" to borrow money to cover living expenses when income was cut. Additionally, people younger than 25 who had incomes under $20,000 and had serious financial problems were the most likely to use credit to cover living expenses. The authors felt it was difficult to reach younger, low-income households through educational programs. The study implies the need for personal finance education for high school students, especially those high school students who enter the work force immediately following graduation or who do not graduate from high school at all. They concluded by suggesting, "If high school students learn about budgeting and using credit, the knowledge and skills gained while they are students may be more likely to continue as they enter college and the work force" (Castellani & DeVaney, 2001).

Other research studies point toward the need for personal financial education as well (Hira, 2002; Hogarth, 2003; Lown, n.d.). One such study evaluated a workplace personal financial education seminar upon its completion (Kim, Bagwell & Garman, 1998). Survey results showed overall participant satisfaction with the seminar. Furthermore, participants planned to take action to change their current financial behaviors and they indicated they wanted future financial education. The results of this study support the need and desire of those participants for financial education. Because this survey was administered immediately following the seminar completion, it is not known whether or not participants' actual financial behaviors changed.

Perhaps the most important reason for educating consumers about money matters is because financial balance leads to personal harmony (Lown, n.d.). Qualitative researcher Jean Lown from Utah State University interviewed fifteen women ranging from age 24 to 63 to identify their healthy financial behaviors. The most common healthy financial behaviors participants mentioned were paying credit card balances in full each month and having money automatically deducted from their paychecks and put into savings or some investment vehicle. Being free of debt provided them with a sense of pleasure (Lown, n.d.). Lastly, Lown found that women who had their finances under control could focus more on what was important to them in life such as their families.

Effects of mandating personal finance education

Former Federal Reserve Chairman Alan Greenspan stated that learning the basics of personal finance at a young age can help avoid poor financial decisions later in life (Ezarik, 2001). Currently there are no mandates for personal finance courses at CedarBridge Academy in Devonshire, Bermuda. In the United States, only four states require a personal finance course before graduation (Aspen Publishers Inc., 2003). This statistic is alarming considering 50% of high school graduates directly enter the workforce as an alternative to college (Mandell, 2001). Thirty-one states include personal finance in their curriculum, which had dropped from 40 states in 2002 (Aspen Publishers Inc., 2003). Reasons for the stated decrease in including personal finance standards may be attributed to the recent focus given to reading and math in the No Child Left Behind Act. This leaves little time for elective subjects such as personal finance. Because of this fact, the United States Department of the Treasury is promoting the integration of financial education into reading and math lessons as a means of teaching personal finance topics (United States Department of the Treasury Office of Financial Education, 2002). In theory this sounds like an effective way of disseminating knowledge in the public schools in the United States. However, because of the importance of standardized testing results, it is unlikely that reading and math teachers will incorporate financial topics into their curriculum unless there are questions on standardized tests that relate specifically to financial topics. The United States Department of the Treasury Office for Financial Education (2002) would like this to happen, but if this does occur, it will be a slow change and will occur over time. Financial education in high schools should not be delayed. This is why I suggest incorporating personal finance education into the family and consumer sciences curriculum in high schools. I will discuss this at length later in the literature review.

CedarBridge Academy does not fall under the No Child Left Behind Act because it is a British territory. Therefore more flexibility is allowed for elective courses such as personal finance to be incorporated into the curriculum if recommended by the administration.

The literature related to mandating personal finance courses in high schools is somewhat contradictory. A study by Tennyson and Nguyen (2001) found there is no correlation between increased financial knowledge and a state mandate in personal financial education. This would lead one to believe that implementing a financial curriculum mandate would be ineffective in increasing financial knowledge. However, Bernheim, Garrett and Maki (1997) did find a correlation between financial curriculum mandates and higher savings rates. A major difference between the two studies is that Tennyson and Nguyen (2001) studied high school students and Bernheim, Garrett, and Maki (1997) studied adults who were between the ages of 30 and 49. Another inconsistency in the studies is that Tennyson and Nguyen (2001) studied knowledge levels and Bernheim, Garrett, and Maki (1997) studied behaviors. Comparative results suggest the effects of a personal finance curriculum in high school may have more long-term effects.

Tennyson and Nguyen's study (2001) was conducted to assess the financial literacy level of students in twelfth grade in the United States. The test consisted of 31 multiple choice questions about decisions related to personal financial management, facts, and terminology (2001). The authors found that a general financial curriculum mandate in a state does not translate into higher student scores on a financial knowledge survey. They report that, "mandating personal finance education may be effective in increasing student knowledge, but only if the mandate requires significant exposure to personal finance concepts" (2001). Therefore, specific topics such as savings, spending, investing, and debt should be included in the curriculum if financial knowledge levels are to be increased. They also stated that the results may relate to how the mandate is implemented in each state. The study also found that teacher attitude towards the subject was directly related to student learning and that teacher attitudes were more negative in those states with mandates.

Bernheim, Garrett and Maki (1997) conducted a study to evaluate if financial curriculum mandates in the United States have any effect on the education and savings of individuals who had been exposed to mandates in high school. Their analysis was based on a cross-sectional household telephone survey administered in the fall of 1995. Over 2,000 participants between the ages of 30 and 49 completed the survey. Information gathered included household assets and liabilities, earnings of participant and spouse, employment status, ethnic group, and education as well as other subjects. Research participants were also asked to identify the state in which they attended high school. Results are based on comparisons across states and over time. States which did not adopt a mandate were used as a benchmark. At the time of the study, 29 states required students to receive consumer education. Fourteen states specifically required student instruction in the area of personal finance. The first mandate was issued by Nevada in 1957 and most other states had adopted mandates by the 1970s (Bernheim, Garrett & Maki, 1997). This study's conclusions were that mandates significantly raised both the exposure to financial education as well as asset accumulation once exposed students became adults. Net worth for participants exposed to a mandate was higher by approximately one year's earnings than for participants who had not been exposed to a mandate in high school. The effect of individuals who were exposed to a mandate having a higher net worth appear to have occurred gradually rather than immediately. The authors attribute the gradual rather than immediate change to probable implementation lags in mandates (Bernheim, Garrett & Maki, 1997).

Parental involvement

Parents also feel there is a need for personal finance education for their children. However, some parents feel uneasy about teaching their children about money (Visa, 2004). Implementing personal finance courses in schools would ease the burden of some parents by transferring responsibility to a more consistent and potentially more knowledgeable source. The annual back-to-school survey from Visa (2004)found that 56% of parents believe high school graduates are totally unprepared to manage their personal finances responsibly. Parents and teachers should collaborate to ensure their children receive an adequate financial education, preparing them for future financial responsibilities.

Teenagers are not gaining financial knowledge at home (Mosser, 2005). However, even though teenagers may not be learning the knowledge and skills needed to succeed financially in their home, the home is still a teenager's primary source for learning about money (Jumpstart Coalition for Personal Financial Literacy, 2005). The 2004 Jumpstart Coalition for Personal Financial Literacy survey reported parental involvement played a major role in the financial education of 58.3% of the research participants. Almost 20% said they learn money management skills at school and 17.6% from experience. It is important for parents to teach their children about money matters. However, more important than talking with young people about money is for parents to act as financial role models. A common parental method used for teaching children about personal finance is a weekly or monthly allowance. Surprisingly though, students who received a regular allowance scored worse on the Jumpstart Survey than students who did not receive an allowance (Mandell, 2001). Rippel and Smith (2003) found that reinforcing values linking money to work can be important for teenagers.

Personal Finance as part of a Family and Consumer Sciences Curriculum

Historically, there has been no obvious subject area or teacher that should be teaching personal finance courses (Morton, 2005). This leads to some confusion about personal finance courses in high schools because it does not have a universally recognized home in the curriculum. In some schools, personal finance is included in the business department. In other schools, it may be part of an economics curriculum. The researcher suggests incorporating personal finance courses into the family and consumer sciences curriculum of high schools in Bermuda and the United States. Doing so would align squarely with the American National Standards for Family and Consumer Sciences Education. Content standard 2.6 in the Consumer and Family Resources comprehensive standard is, "Demonstrate management of financial resources to meet the goals of individuals and families across the life span" (National Standards for Family and Consumer Sciences Education, 2006). Personal finance should be taught by family and consumer sciences educators from a comprehensive perspective including topics such as resource management, investing for goals, and the psychological effects of financial issues on the family and individual.

Research has shown that well-informed financially educated consumers are able to make wiser decisions for their families (Hilgert & Hogarth, 2003). They have also come to the conclusion that financially secure families are better able to contribute to a healthy community, therefore, helping to contribute to economic development. Financial education helps to strengthen the family and community, which is the core of the mission of family and consumer sciences. Hogarth (2003) recommends family and consumer sciences professionals develop contacts with social-service organizations, housing organizations, faith-based organizations and community groups to help bridge the gap between the need for programs and the key audiences. The gap also needs to be bridged between personal finance programs and high school students.

Courses in the FCS arena must constantly evolve to meet the needs of our clients who are individuals, families, and communities. At this point in time, evidence shows that there is a great need for teaching teenagers about personal finance topics. Family and consumer sciences has been an evolutionary field. The evolving nature of the profession can be seen through the inclusion of a 40% male population in some FCS courses in what used to be seen as a traditionally female area (Blassingame, 1999). The reality of the family is changing and with it, family and consumer sciences changes.

Another reason for including personal finance education in family and consumer sciences courses is because FCS educators deal with sensitive human issues on a daily basis. The emphasis in personal financial education in economics and business is based on numbers and facts. It is important to keep in mind that individuals struggling financially pay a steep price that comes in the form of stress and possible humiliation, thus impacting the family (United States Department of the Treasury, 2002). Family financial management can be viewed through different lenses, many of which relate to family and consumer sciences.

One human issue that could be discussed in a personal finance course is how males and females differ financially. For example, women are more likely than men to be in charge of their family's finances (Hira, 2006). Also, women believe investing is stressful and time-consuming, while men describe investing as being exciting (Hira, 2006). Family and consumer sciences educators teaching personal finances courses could take issues such as gender into consideration when teaching about financial issues. Topics such as this would have the potential to lead to lively classroom discussions and an enhanced learning environment.

Family and consumer sciences teacher education programs around the nation are on a steady decline (American Vocational Association, 2000). This decline in programs leads to an FCS teacher shortage. In 1984, there were 284 FCS teacher education programs reported nationwide. By 1995, only 171 of the same programs existed, indicating a 40% decrease during that time period (American Vocational Association, 2000). A poll administered to State Administrators of Family and Consumer Sciences programs by the American Association of Family and Consumer Sciences (AAFCS), showed that 74% of respondents "strongly agree" there is a national crisis in the supply of family and consumer sciences educators (American Vocational Association, 2000).

Family and consumer sciences professionals should take responsibility for financial education in the schools. Morton (2005) stated, "Although everyone endorses it [personal finance], few educators [general educators] take responsibility for making personal finance education a priority, and efforts thus are diffused." Family and consumer sciences educators graduating from some universities such as Iowa State University are required to take personal finance courses and would not require additional training. American and Bermudian school administrators and policymakers should take advantage of FCS educators who may be willing and able to teach personal finance as part of their curriculum.

Bermuda Culture

The sub-tropical Bermuda Islands are located approximately 500 miles east of the South Carolina coastline and were discovered in the 16th century by Spanish sailor Juan de Bermudez (Bermuda Government Department of Statistics, 2004). The 21 square mile country consists of approximately 138 islands, while seven islands comprise the mainland (Facts and Figures, 2004). Sixty-one percent of the island's population is black and 39% of the population are categorized as white and "other" (Facts and Figures, 2004).

Of the island's 62,000 inhabitants, 70% are Bermudian and 30% are from other countries (Facts and Figures, 2004). The high rate of foreigners living in Bermuda can be attributed to the international business sector of the Bermudian economy (Facts and Figures, 2004). Over 75% of international business operations located in Bermuda are owned by Americans (Forbes, 2006).

Bermuda's close connection with the United States dates back to 1609 when the islands were colonized by English Admiral, Sir George Somers (Forbes, 2006). Bermuda remained a part of the British Empire after the Revolutionary War (Forbes, 2006). However, Bermuda has closer ties with the United States than it does with England because of its close proximity to the United States (Forbes, 2006). Eighty-two percent of the islands' tourists come from America (Forbes, 2006). Additionally, more than 70% of the islands' imports come from the United States (Forbes, 2006). Many Bermudians either attended college in the United States or have family, friends or colleagues who attended in the U.S. (Forbes, 2006). It is also common for Bermudians to do a vast amount of shopping in the United States to avoid the high prices of goods in Bermuda (Forbes, 2006).

Summary

The purpose of this chapter was to review the literature related to personal financial topics. The chapter began by reviewing teenagers' financial behaviors and teenagers' financial literacy levels. Studies suggest that high school students are lacking in basic financial knowledge and skills, particularly in the areas of saving and investing (Jumpstart Coalition for Personal Financial Literacy, 2005; North Dakota Extension Service, 2006). There is also a need for financial education for teenagers and adults (Hira, 2002; Hogarth, 2003). Financial education is needed because many consumers feel uninformed about money matters (Fleet Boston, 2003) and because learning the basics of personal finance at a young age can help avoid financial failure later in life (Ezarik, 2001).

When it comes to mandating personal finance courses in high schools a study by Tennyson and Nguyen (2001) found there is no correlation between increased financial knowledge and a state mandate in personal financial education. However, a study by Gernheim, Garrett, and Maki (1997) found that those individuals who were exposed to personal finance mandates in high school had higher savings rates as adults.

This chapter also discussed parental involvement in teenagers' financial educations. Teenagers learn the majority of what they know about money from the home (Jumpstart Coalition for Personal Financial Literacy, 2005). However, the annual back to school survey from Visa found that some parents feel uneasy about teaching their children about money. Furthermore, the Visa survey found that 56% of parents believe high school graduates are totally unprepared to manage their personal finances responsibly (2004).

Incorporating personal finance courses into the family and consumer sciences curriculum was also included in this literature view. Personal finance ties into family and consumer sciences (FCS) because financially educated consumers are able to make wiser decisions for their families (Hilgert & Hogart, 2003). Incorporating personal finance into the FCS curriculum in high schools would also align squarely with the National Standards for Family and Consumer Sciences Education (2006).

The location in which this study was conducted was at CedarBridge Academy in Devonshire, Bermuda. Therefore, the literature review concluded with a short synopsis summarizing the Bermuda culture.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this chapter is to describe the specific methodology that was used to conduct this quantitative study. Seventy-five high school seniors at CedarBridge Academy in Bermuda were given a 30 question three-part survey. The survey collected data to analyze financial knowledge, financial behaviors, and demographics of study participants. This chapter includes the purpose of the study, research questions, and the five steps of collecting quantitative data that were completed.

Purpose and Research Questions

The purpose of this study is to determine if the financial knowledge level of high school seniors at CedarBridge Academy in Bermuda is related to their financial behaviors. Results will be important in determining if there is a need for a personal finance course at CedarBridge Academy. Research questions include:

1. What is the financial knowledge level of high school seniors at CedarBridge Academy?
2. What are the savings behaviors of high school seniors at CedarBridge Academy?
3. Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?
4. Is there a relationship between confidence levels in managing one's own money and savings behaviors of high school seniors at CedarBridge Academy?
5. Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?

Hypothesis

I hypothesize that there is a difference in financial behaviors between students who feel confident in managing their own finances and students who do not feel confident in managing their own finances.

Methods and Procedures

A quantitative study using a survey instrument was conducted at CedarBridge Academy in Bermuda. The study researched the financial knowledge levels as well as financial behaviors of high school seniors. The survey included three sections. Part A of the survey included 12 questions about financial topics. Part B surveyed the demographics of study participants, and part C surveyed participants' financial behaviors using a Likert scale. Following Crewsell's (2004) suggestions, five steps of collecting quantitative data were followed.

1. Select participants for the study-- The population studied was high school seniors at CedarBridge Academy in Bermuda. There were 147 senior students enrolled at the school in the 2005/06 school year. The survey was administered to 75 high school seniors at CedarBridge Academy. Surveys were administered to entire advisory groups during the advisory period. Advisory groups and advisory periods are equivalent to traditional homeroom classes. The researcher asked all of the high school senior advisory teachers if they would be willing to have their advisory group participate in the study. Eight out of 15 advisory teachers responded and gave their advisees the opportunity to participate in the study making the overall response rate 51%. Students are assigned to advisory classes according to their last name. Therefore, it is the opinion

of the researcher that advisory groups are fully representative of the population of students to be studied.

2. Obtain permissions-- The first permission obtained was from the principal of CedarBridge Academy, Mrs. Kalmar Richards. She gave written permission on April 6, 2006 to conduct this study at CedarBridge Academy. She stated in her letter, “Students who participate in the survey will do so only with the consent of their parents.” Permission from the principal to conduct research at CedarBridge Academy may be viewed in Appendix B. The next permission obtained was from Iowa State University’s Institutional Review Board. A description of the proposed study as well as the informed consent document was submitted to the board to review and approve. This research study has been assigned the identification number of 06-204. The study was approved for a one year time period from April 11, 2006 to April 10, 2007. Permission from Iowa State University’s Institutional Review Board may be viewed in Appendix C. Because individuals under the age of eighteen are considered a sensitive population, the risk level of this study was minimal, as opposed to no risk (Creswell, 2005, p. 152). Study participants under the age of 18 were required to gain their parent or guardian’s signature on the informed consent document before survey participation. The informed consent document explains the purpose of the study, requirements for participating in the study, and that there were no foreseeable risks due to study participation. Furthermore, it was explained that study participation was voluntary and the participant may refuse to participate or leave the study at any time. The informed consent document may be viewed in Appendix D.

3. Decide what type of data to collect-- The quantitative data collected were an assessment of CedarBridge Academy high school seniors' financial knowledge as well as their financial behaviors. Parts of this study were modeled after the Jumpstart Coalition for Personal Financial Knowledge's nationwide study of high school seniors' financial knowledge. The Jumpstart Coalition surveyed high school seniors in the United States about their knowledge of financial topics. After that survey had been conducted and the data analyzed, Lewis Mandell, head researcher for the Jumpstart Coalition stated, "Perhaps we have focused too much of our time and resources on measuring financial literacy, *per se* rather than measuring other, more important, output variables, such as savings, spending and credit behavior" (2005). His opinion about measuring savings behaviors was interpreted by the researcher as a suggestion and it was decided to collect data on both financial knowledge and financial behaviors rather than one or the other. Demographic questions were also asked of the survey participants. The demographic questions that were selected to be included on the survey were chosen so when the data were analyzed, an accurate financial portrait of the sample could be portrayed. Most demographic questions related to the survey participants' finances. The remaining demographic questions were asked about education, future plans, and basic descriptive items such as gender.

4. Locate, modify, or develop instrument-- The survey instrument used to conduct this study was a collaboration of resources. There were 30 questions in the three part survey. Section A consisted of 12 questions to test participants' financial knowledge level. Ten financial knowledge questions were taken from the Jumpstart Coalition for Personal Financial Literacy 2004 survey to high school seniors. The Jumpstart Coalition

survey was chosen because it was created for high school seniors, making it an appropriate match for the participants of this study. The Jumpstart survey was administered to over 4,000 survey participants in 2004 and was found to be reliable in measuring financial knowledge (Jumpstart Coalition for Personal Financial Literacy, 2005). An additional two questions (questions 11 and 12 on the survey) were written for the survey to pertain to Bermudian financial culture. To view the questions in their entirety, please see Appendix A, survey instrument. These two questions were written in collaboration with the researcher and Terrance Richards of Fidelity Investments in Bermuda. Terrence Richards was consulted to assure the questions on the survey appropriately pertained to Bermuda. Section B of the survey consisted of 10 demographic questions and Section C consisted of seven questions to score a participant's financial behavior level on a Likert scale. The questions in section C were written by the researcher. The final question in section C asked study participants if they thought it would be a good idea to offer a personal finance course at CedarBridge Academy and was not a factor in determining participants' financial behavior score. After the survey was written, a pilot test was given to three high school seniors at CedarBridge Academy. The high school seniors who participated in the pilot test were unable to participate in the actual research study. The pilot test was given during the advisory period with the researcher as the survey administrator. The purpose of the pilot was to determine if any questions were unclear and needed to be re-written and to determine if the 30 minute advisory period was adequate time for the survey to be completed. It was determined that 30 minutes was adequate time for the survey to be administered. All three students finished the survey with at least five minutes left in the advisory period. No changes needed to be made to the survey because of questions being unclear. This finding was not surprising because the financial knowledge section of the survey had already been administered to over 4,000 high school seniors and tested for reliability (Jumpstart Coalition for Personal Financial Literacy, 2005). The only issue that was found to pose some difficulty was the students wanting and trying to ask leading questions of the researcher if they did not know the answer to a particular question in the financial knowledge section. When this occurred, the researcher guided the students by instructing them to re-read the question slowly and to take their best educated guess. No questions were asked by the pilot participants regarding the financial behaviors or demographics sections of the survey. For further details of specific survey topics, see Table 3.1, Survey Instrument Topics.

Table 3.1 Survey Instrument Topics

Section	Question Number	Topic
A. Financial Knowledge	1	safest place to store money
	2	automated teller machine fees
	3	credit card finance charge
	4	emergency savings
	5	retirement income
	6	loan finance charge
	7	spending associations
	8	returns on investments
	9	time value of money
	10	borrowing money
	11	budgeting
	12	investment level of risk
B. Demographics	13	gender
	14	plans after high school
	15	credit card use
	16	automated teller machine use
	17	employment history
	18	bank accounts
	19	ownership of stocks, mutual funds
	20	confidence in managing money
	21	where they learn about money

	22	allowance
C. Financial Behaviors	23	thriftiness
	24	cash vs. credit
	25	compulsive shopping
	26	comparison shopping
	27	overspending guilt
	28	saving regularly
	29	priority of payments
Extra question	30	Should CBA offer a personal finance course?

Section A of the survey relates to the first research question which is, "What is the financial knowledge level of high school seniors at CedarBridge Academy?" The data taken from this section of the survey were used to answer that research question. There are a total of 12 questions in section A. If the participant answered the question correctly they scored a "1." If they chose the incorrect response, they received 0 points. For the final financial knowledge score of a participant, correct scores were summated. Survey participants could score anywhere from a 1 to a 12. These topics and questions were taken from the 2004 Jumpstart Coalition for Personal Financial Literacy survey. The specific questions were chosen because they cover a wide range of topics relating to financial knowledge such as time value of money, budgeting, and loans. Any questions about United States tax issues were not included in this survey because they would not be appropriate for the Bermudian study participants.

The second research question, "What are the savings behaviors of high school seniors at CedarBridge Academy?" was answered by the data in section C, financial behaviors. It was decided to survey participants about specific behaviors that fall within the realm of savings, spending and credit because of Mandell's suggestion in the literature that important variables such as these be measured (2005). The specific topics in this section all related to savings, spending and credit, and were relevant to teenagers. The seven questions in the financial behaviors section of the survey were scored on a five point Likert scale. The responses “strongly agree” and “strongly disagree” were scored as either a one or a five, depending on whether the behavior question asked of the participant was seen as being a positive or negative financial behavior. Other possible responses were “agree,” “undecided,” and “disagree.” The lowest possible score a participant could obtain in financial behaviors was a 7 and the highest possible score was 35.

The third research question is, “Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?” Data collected from section A, financial knowledge and section B, financial behaviors were used to answer the third research question. Further explanation of the statistical test and analysis can be found in chapter four.

The fourth research question, “Is there a relationship between confidence levels in managing one’s own money and savings behaviors of high school seniors at CedarBridge Academy?” is answered by using the data from section C, financial behaviors and question 20 from section B, demographics. Question 20 asks, “How sure do you feel about your ability to manage your own finances?” The answer is found using an independent samples t-test. Further explanation of this can be found in chapter four.

The fifth research question, “Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?” is answered by the last question on the survey which asks participants if they think it would be a good idea for CedarBridge Academy to offer a course on personal finance. Survey participants could respond strongly agree, agree, not sure, disagree, or strongly disagree.

Demographic questions asked of study participants were used to describe the sample. A complete description of the survey sample is found in chapter four.

Table 3.2 shows a list of independent and dependent variables.

Table 3.2 List of Variables

Variables	
Dependent variables	financial knowledge score financial behaviors score
Independent variables	gender employment history credit card use debit card use bank account ownership ownership of stocks and mutual funds confidence in managing own finances where participants learn about money allowance status

5. Collect the data-- The survey instrument was administered to high school senior students during their advisory period. Students were surveyed using a paper copy of the survey instrument and circled their chosen responses on the instrument. The advisory period is 30 minutes long and is the equivalent of a homeroom class. The surveys were administered during the month of May, 2006. Advisory teachers were responsible for administering the survey as well as handing out and collecting informed consent documents. Advisory teachers were given specific instructions of how to administer the survey to ensure consistency among survey conditions. Survey administration instructions for advisory teachers can be found in Appendix E. Teachers who

administered the survey were responsible for collecting the surveys and informed consent documents and returning them to the researcher.

Data Analysis

After the data collection process was complete the researcher compiled the scores manually into SPSS. SPSS was used to analyze the data using descriptive and inferential statistics. Means and modes were compared and used to describe the sample and conduct statistical tests. Both a correlation test and an independent samples t-test were conducted. The Pearson correlation test was used to determine if there was a relationship between financial knowledge and financial behaviors of high school seniors at CedarBridge Academy. A non-directional independent samples t-test was conducted to determine if there was a difference between financial behaviors of students who feel unsure about managing their own finances and students who feel sure about managing their own finances. These statistics are discussed in detail in chapter four.

Summary

This chapter, Methodology, outlines the specific procedures that were used to conduct this quantitative research study. The purpose of the study was to determine if the financial knowledge level of high school seniors at CedarBridge Academy in Bermuda is related to their financial behaviors. Results will also be used to determine if there is a need for a personal finance course at CedarBridge Academy.

Participants selected for the study were 75 high school seniors from CedarBridge Academy in Bermuda. Permissions were obtained from the principal of CedarBridge Academy, Iowa State University's Institutional Review Board, and parents of study participants under the age of 18. The researcher collected quantitative data about high school seniors' financial knowledge, financial behaviors, and demographics using a three part survey which included 30 questions. The survey used was a collaboration of resources which included questions from the Jumpstart Coalition for Personal Financial Literacy's 2004 financial survey to high school seniors and questions written by the researcher. Data analysis involved comparison of means and modes, a correlation test, and an independent samples t-test. The Pearson correlation test was used to determine if there was a relationship between financial knowledge and financial behaviors of high school seniors at CedarBridge Academy. A non-directional independent samples t-test was conducted to determine if there was a difference between financial behaviors of students who feel unsure about managing their own finances and students who feel sure about managing their own finances.

CHAPTER 4: RESULTS

Introduction

The purpose of this chapter is to analyze and discuss the results of a survey to test the financial knowledge and financial behaviors of high school seniors at CedarBridge Academy in Bermuda. This chapter begins by reviewing the objectives and research questions. Later in the chapter the research questions and the hypothesis will be analyzed and discussed.

The objectives of this quantitative study were:

1. To determine the financial knowledge level of high school seniors at CedarBridge Academy in Bermuda.
2. To determine the savings behaviors of high school seniors at CedarBridge Academy in Bermuda.
3. To determine the relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy in Bermuda.
4. To determine if confidence levels in managing one's own money are related to savings behaviors of high school seniors at CedarBridge Academy.
5. To determine if there is any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda.

Research Questions

1. What is the financial knowledge level of high school seniors at CedarBridge Academy?
2. What are the savings behaviors of high school seniors at CedarBridge Academy?

3. Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?
4. Is there a relationship between confidence levels in managing one's own money and savings behaviors of high school seniors at CedarBridge Academy?
5. Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?

Hypothesis

I hypothesize that there will be a difference in financial behaviors between students who feel confident in managing their own finances and students who do not feel confident in managing their own finances.

Description of the Sample

The population of high school seniors at CedarBridge Academy was 147 students at the time of the study in May of 2006. Eight advisory groups totaling seventy-five students were surveyed for this quantitative study. Advisory groups who participated in the survey were volunteered by their advisory teacher. Therefore, the sample consists of 51% of the population. Study participants were surveyed during their advisory period. Of those surveyed, 27 were male (36%) and 48 were female (64%). It was not a surprise to find females outweighed the males in survey participation because there are more females than males in the senior class at CedarBridge Academy. This is partly because more males than females drop out of high school at CedarBridge Academy.

Of those students surveyed, 11 (14.7%) plan to enter the workforce immediately after high school graduation. Twenty-seven (36%) plan to attend Bermuda College (a two year institution), 19 (25.3%) plan to attend a 4-year college or university abroad after high school, and 7 (9.3%) have other plans for training or education. The remaining 11 (14.7%) didn't know what their plans after high school were at the time the survey was completed.

Survey participants were also asked about their credit card use. Of those surveyed, 32 (47.2%) use a credit card while 43 (57.3%) do not use a credit card. When asked where they learn about managing money, 42 (56%) said they learn about managing money at home from their family. The second highest response at 15 (20%) was that they learned from managing their own funds. Thirteen participants (17.3%) responded they learned about money at school in class, 3 (4.0%) from magazines, books, TV, Internet and the radio, and 2 (2.7%) from talking with their friends.

Of those students surveyed, a majority of 47 (62.7%) receive no regular allowance. Fifteen (20%) receive a regular allowance upon the completion of chores. The remaining 13 (17.3%) receive a regular allowance and do not have to complete chores for their allowance. Demographics of the study sample are found in table 4.1.

Table 4.1 Demographics of study sample (N=75)

	Frequency	Percent
Gender		
Male	27	36.0
Female	48	64.0
Plans after High School		
Enter the workforce	11	14.7
Attend Bermuda college	27	36.0
Attend 4-year college/university abroad	19	25.3
Other plans for training or education	7	9.3
Don't know	11	14.7
Credit Card Use		
Uses a credit card	32	42.7
Doesn't use a credit card	43	57.3

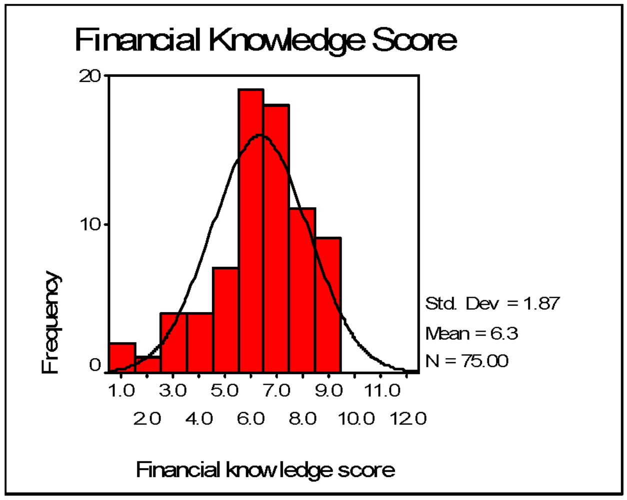
Where student learns about money		
At home from my family	42	56.0
At school in class	13	17.3
From talking with my friends	2	2.7
From magazines, books, TV, Internet, radio	3	4.0
From experience managing my own funds	15	20.0
Allowance		
No regular allowance	47	62.7
Regular allowance/completed chores	15	20.0
Regular allowance/no chores	13	17.3

Research Question Analysis/Hypothesis Testing

The first research question was, "What is the financial knowledge level of high school seniors at CedarBridge Academy?" Students surveyed were asked to respond to 12 questions to test their financial knowledge level. Refer to Appendix A for a complete list of survey questions and responses. The 12 questions asked pertained to savings and spending topics such as budgeting, investments, and credit cards. Ten financial knowledge questions were taken from the Jumpstart Coalition for Personal Financial Literacy 2004 survey to high school seniors. An additional two questions were written for the survey to pertain to Bermudian financial culture. These two questions were written in cooperation with Terrance Richards of Fidelity Investments in Bermuda.

The maximum score on the financial knowledge section of the survey was 12 and the lowest possible score was 0. Survey participants' scores ranged from one to nine. When the scores were converted to percentages, the mean financial knowledge score was 52.89% with a mean raw score of 6.35 and standard deviation of 1.87. Figure 4.1 displays a graphical representation of financial knowledge scores of the sample surveyed.

Figure 4.1



Of the 12 questions asked, the sample as a whole scored the highest on questions 1, 2 and 7, and scored the lowest on questions 8, 10, and 12. Please see Appendix A: Survey Instrument to view the survey and participants' responses to survey questions. Topics of the questions students scored well on included the safest place to store money, ATM fees, and methods of spending. Two of the questions participants scored the lowest on were about stocks and borrowing money. These questions will be further explained in the following paragraphs. Table 4.2 shows the topic of the twelve questions asked on the financial knowledge section of the survey as well as the percentage of the sample that chose the correct response.

Table 4.2 Financial Knowledge Questions and Percent Scored Correct

Section	Question #	Topic	% of sample that chose correct response
A. Financial Knowledge	1	safest place to store money	86.7
	2	automated teller machine fees	84.0
	3	credit card finance charge	45.3
	4	emergency savings	33.3
	5	retirement income	69.3
	6	loan finance charge	38.7
	7	methods of spending	81.3
	8	returns on investments	20.0
	9	time value of money	45.3
	10	borrowing money	29.3
	11	budgeting	70.7
	12	investment level of risk	30.7

Question one asked, "Kavin has saved $9,000 for his college expenses by working part-time. He plans to start college next year and needs all of the money he saved. Which of the following is the safest place for his college money? Sixty-five individuals (86.7%) chose the correct response "a bank savings account." The second question students scored well on (question two) had to do with automated teller machine cards. Sixty-three participants (84.0%) were able to identify the false statement about ATMs which was "you can get cash anywhere in the world with no fee." Students also scored well when asked, "Which of the following is NOT typically associated with spending?" (question seven). The correct response, certificate of deposit, was chosen by 61 (81.3%) individuals in the sample. Other responses that could have been chosen were credit card, cash, and debit card.

Study participants' lowest scores were in response to question eight, "Which of the following tends to have the highest growth over periods of time as long as 18 years?" Only 15 individuals (20.0%) were able to identify the correct answer as being stocks.

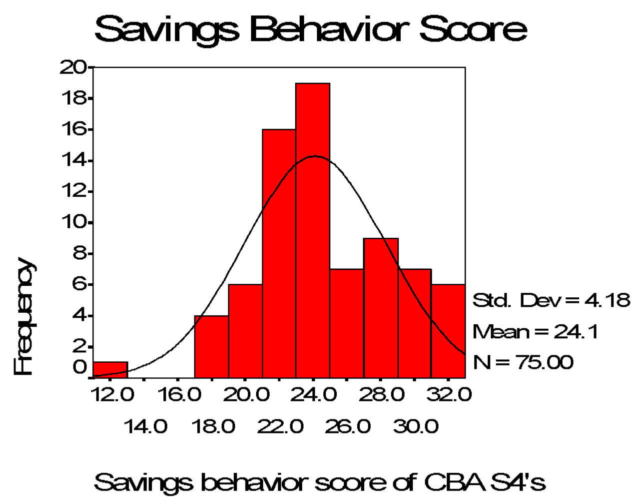
Other responses to the question included savings bonds, a savings account, and a checking account. Participants also scored poorly when asked (question 10), "Under which of the following circumstances would it be financially beneficial to borrow money to buy something now and repay it with future income?" Only twenty-two (29.3%) participants chose the correct response which was "when you need to buy a car to get to a much better paying job." Other possible responses included, when the interest on the loan is greater than the interest you get on your savings, when some clothes you like go on sale, and when you really need a two-week vacation. Another question with a low correct response percentage was question 12 and also pertained to stocks. The question asked, "Which of the following investments is the riskiest?" The correct answer which was chosen by 23 individuals (30.7%) was "BELCO stock traded on the Bermuda Stock Exchange." Incorrect responses were Capital G time deposit, U.S. Treasury note, and Japan small cap mutual fund.

In regard to the first research question, "What is the financial knowledge level of high school seniors at CedarBridge Academy?" it was found that survey participants were only able to obtain a mean financial knowledge score of 52.89%. Participants scored higher on questions about spending than they did on questions pertaining to investment topics such as stocks.

The second research question was, "What are the savings behaviors of high school seniors at CedarBridge Academy?" Seven questions scored on a five point Likert scale were used to determine an answer to this question. These questions were written by the researcher with the help of Terrence Richards. The seven questions asked were about thriftiness, cash versus credit spending, compulsive shopping, comparison shopping, overspending, saving regularly, and participant's view about priority of payments. For a complete list of questions see Appendix A, Survey Instrument.

The lowest possible savings behavior score was seven and the highest possible score was 35. Participants could score anywhere from a "1" to a "5" and scores were summated to equal the savings behavior score of the survey participants. To see the point values assigned to responses, please see section C in Appendix A, Survey Instrument. The range of scores was 22 with the low score being 11 and the high score 33. The mean score for financial behaviors was 24.1 which is 68.86%. Figure 4.2 displays the financial behavior scores of the sample surveyed.

Figure 4.2



When survey participants were asked if they put money away in a savings account regularly, 20 (26.7%) individuals strongly agreed and 27 (36%) agreed. Four (5.3%) individuals strongly disagreed and 13 (17.3%) disagreed. The remaining 11 individuals (14.7%) responded that they were not sure. However, only four (5.3%) of the survey participants described themselves as being "thrifty" and saving money whenever they got the chance (question 23). Sixteen (21.3%) agreed they would call themselves thrifty, 28

(37.3%) disagreed, 14 (18.5%) strongly disagreed and 13 (17.3%) participants were not sure.

Students were also surveyed about their spending habits. Question number 25 asked if they would classify themselves as a compulsive shopper. Eight (10.7%) participants strongly agreed and 17 (22.7%) agreed they were compulsive shoppers. Twenty-six (34.7%) disagreed and seven (9.3%) strongly disagreed that they were compulsive shoppers. The remaining 17 (22.7%) were not sure how they saw themselves. Another question (26) pertaining to spending asked students if they practiced comparison shopping to find or buy the best deals. Twenty (26.7%) students strongly agreed and 29 (38.7%) agreed. Thirteen (17.3%) disagreed, three (4.0%) strongly disagreed and ten (13.3%) were not sure if they practiced comparison shopping. To see the remaining questions and responses in the financial behaviors section of the survey, refer to Appendix A.

The third research question asks, "Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?" To test this hypothesis the researcher conducted a correlation statistical test. From the results, the researcher is unable to make any conclusions about the relationship between financial knowledge level scores and savings behavior scores on the survey. The Pearson correlation coefficient is .102. This correlation coefficient of .102 yields a coefficient of determination of .01. In this case, only .01 of the variation in the savings behaviors scores might be considered as being associated with the variation in financial knowledge scores.

The fourth research question was, “Is there a relationship between confidence levels in managing one’s own money and savings behaviors of high school seniors at CedarBridge Academy?” Alternatively, was there a difference in savings behaviors between students who felt “sure” of their ability to manage their own finances, and students who felt “unsure” about their ability to manage their own finances? “Sure” and “unsure” are defined as levels of confidence. “Sure” is defined as high confidence in managing one’s money and “unsure” is defined as low confidence in managing one’s money.

The exact question on the survey (question 20) was, “How sure do you feel about your ability to manage your own finances?” Survey responses included: A) Not sure at all- I wish I knew a lot more about money management, B) Not too sure- I wish I knew more about money management, C) Somewhat sure- I understand most of what I’ll need to know, and D) Very sure- I understand money management very well. If a study participant responded either A or B they were placed in the “unsure” group. If their response was C or D they were placed in the “sure” group for the statistical test.

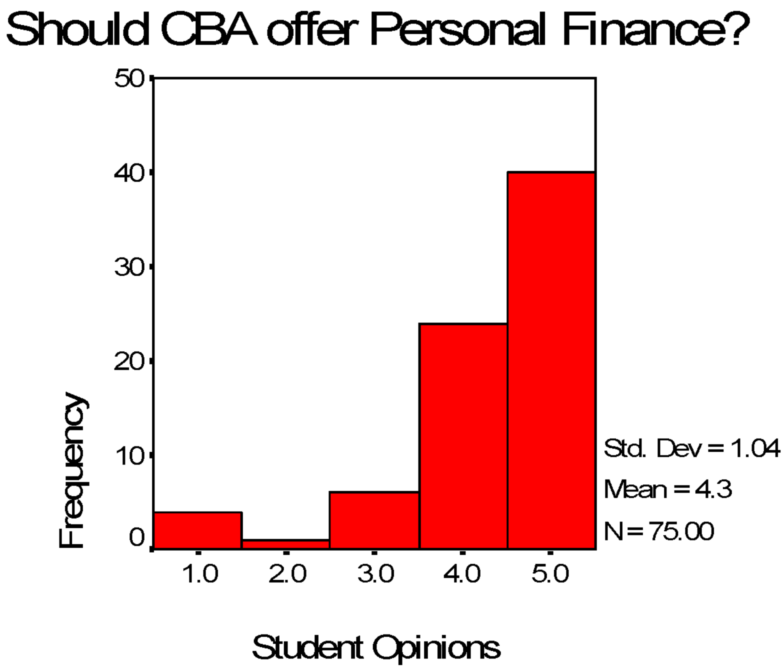
The researcher’s hypothesis was that there would be a difference in financial behaviors between students who feel confident in managing their own finances and students who do not feel confident in managing their own finances. The null hypothesis is the population mean of unsure students minus the population mean of sure students will be equal to zero. The alternative hypothesis is the population mean of unsure students minus the population mean of sure students will not be equal to zero. Sure and unsure are referred to as student’s perceived confidence ability at managing their own finances.

Based on a non-directional independent samples t-test at alpha=.05, the researcher rejected the null hypothesis that the population means are equal, $t(73) = -2.726$, $p=.008$. Therefore, the researcher concluded that there is a significant difference between financial behaviors of students who feel unsure about managing their own finances (Mean=22.66, SD=4.06) and students who feel sure about managing their own finances (Mean=25.21, SD=3.97). The 95% confidence interval of the difference ranged from -4.42 to -.69.

The researcher chose to test the savings behavior score rather than the financial knowledge level score against confidence levels because of the recommendation made by Lewis Mandell, head researcher for the Jumpstart Coalition for Personal Financial Literacy. Mandell stated, "Perhaps we have focused too much of our time and resources on measuring financial literacy, *per se* rather than measuring other, more important, output variables, such as savings, spending and credit behavior" (2005).

The fifth research question asked, "Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?" Survey participants were asked if they thought it would be a good idea for CedarBridge Academy to offer a course on personal finance. An overwhelming majority of 64 (85.3%) students agreed or strongly agreed that CedarBridge Academy should in fact offer a course on personal finance. Only five (6.9%) students disagreed or strongly disagreed to the same question. The remaining six (8%) individuals were not sure if CedarBridge should offer a personal finance course. Figure 4.3 shows the results of this question.

Figure 4.3



5.0 = Strongly Agree
4.0 = Agree
3.0 = Not sure
2.0 = Disagree
1.0 = Strongly Disagree

Summary

A quantitative study which included surveying high school seniors at CedarBridge Academy in Bermuda about their financial knowledge and savings behaviors levels was conducted in May of 2006. At the time the study was being conducted there were 147 high school seniors enrolled at CedarBridge Academy. The study sample consisted of 75 students or 51% of enrolled high school seniors and included more female participants than male participants. Survey participants' mean financial knowledge level score was 52.89%. Survey participant's mean savings behavior score was 68.86%.

When a Pearson correlation statistical test was conducted to determine if there was a relationship between financial knowledge levels and financial savings behavior scores the researcher found no significant relationship. An independent samples t-test found that students who felt confident in their ability to manage their own money scored in a more financially responsible manner than students who were not confident in their ability to manage their own finances.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Introduction

High school seniors at CedarBridge Academy in Bermuda were surveyed about their financial knowledge and savings behaviors for a quantitative research study. This study is significant because the results of the data analysis procedures will be used by the administration of CedarBridge Academy to determine if there is a need for offering a personal finance course at the school. Most of the emphasis of this study was placed on savings behaviors due to Lewis Mandell's suggestion that more emphasis be placed on more important [than financial knowledge] behaviors such as savings, spending and credit (2005). Research questions for this study included:

1. What is the financial knowledge level of high school seniors at CedarBridge Academy?
2. What are the savings behaviors of high school seniors at CedarBridge Academy?
3. Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?
4. Is there a relationship between confidence levels in managing one's own money and savings behaviors of high school seniors at CedarBridge Academy?
5. Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?

Assumptions and Limitations

The assumptions and limitations of this study were as follows:

Assumptions

- Survey participants answered the survey honestly.

- The administration at CedarBridge Academy allowed their students to participate in the survey.
- The parts of the survey taken from the Jumpstart Coalition for Personal Financial Literacy's survey to high school seniors were reliable and valid.

Limitations

- Some parents of students in their senior year at CedarBridge Academy in Bermuda did not allow their students to participate in the study and some students chose not to participate in the study.
- Some students were absent on the day the survey was administered. Therefore, the data set may not be fully representative of the population of students studied.
- The results of this study may be applicable only to CedarBridge Academy.
- Advisory groups were selected for the study using convenience sampling.
- Only those students in advisory groups where permission was given participated.
- No behavior observations of study participants took place or record keeping artifacts were used in the study. Scores are self-reported.

Discussion

The first research question asked, "What is the financial knowledge level of high school seniors at CedarBridge Academy?" The mean score of study participants on the financial knowledge section of the survey was 52.89% with a mean raw score of 6.35 (out of 12) and standard deviation of 1.87. The financial knowledge section of the survey included 12 questions that asked about financial topics such as investing, credit and budgeting. According to the standard grading scale used at CedarBridge Academy (90% and above = A, 80% to 89% = B, 70% to 79% = C, 60% to 69% = D, 59% and below = F) this percent would indicate a failing grade in financial knowledge levels of high school seniors at CedarBridge Academy. These results are in sync with findings from other research studies that show teenagers are lacking in basic financial skills and knowledge (Tennyson & Nyguen, 2001) and have low financial literacy levels (Jumpstart Coalition for Personal Financial Literacy, 2005).

Of the 12 questions on the financial knowledge section of the survey, the participants scored the highest on the questions about storing money safely, ATM fees, and methods of spending (questions one, two, and seven). Table 5.1 ranks the questions on the financial knowledge section of the survey from highest percentage correct to lowest percentage correct. To view the survey questions in their entirety, see Appendix A, Survey Instrument.

Table 5.1 Financial knowledge questions ranked*

Question #	Topic	% of sample that chose correct response
1	safest place to store money	86.7
2	automated teller machine fees	84.0
7	spending associations	81.3
11	budgeting	70.7
5	retirement income	69.3
3	credit card finance charge	45.3
9	time value of money	45.3
6	loan finance charge	38.7
4	emergency savings	33.3
11	investment level risk	30.7
10	borrowing money	29.3
8	return on investments	20.0

*Questions are in order from highest percent scored correctly to lowest percent correct.

Students scored well when they were asked where the safest place to store money was (question one). Sixty-five students (86.7%) knew the safest place to store money was in a bank savings account as opposed to in stocks, bonds, or locked in a closet at home. It may be that students who chose the correct response were confident that "bank savings account" was the correct response. However, some students may have chosen this answer by process of elimination because they were unfamiliar with the term "stocks" and "bonds" and felt that "locked in a closet at home" was unrealistic.

The second question (question two) students scored well on had to do with automated teller machine (ATM) cards. Sixty-three (84%) participants were able to identify the false statement, "You can get cash anywhere in the world with no fee." Many Bermudians travel abroad at least once a year to shop and visit relatives. Therefore, it was not surprising to know that many study participants knew that they could not withdraw cash anywhere in the world with no fee because of their frequent travel abroad and ATM use abroad.

Students also scored well (n=61, 81.3%) on question seven which was, "Which of the following is NOT typically associated with spending?" It is inferred by the researcher that when the students read the question and response set they recognized the terms "credit card" "cash" and "debit card" and did not recognize "certificate of deposit" which they were inclined to choose. If a personal finance course were to be offered at CedarBridge Academy, the researcher would recommend teaching about savings terms as well as spending terms.

Study participants scored poorly on questions about stocks. Their lowest score was in response to question eight, "Which of the following tends to have the highest growth over periods of time as long as 18 years?" Only 15 (20%) participants were able to identify the correct answer as being stocks. High school seniors in the United States scored slightly higher (23%) on the exact same question on the Jumpstart financial literacy survey (Mandell, 2001). Teenagers' knowledge relating to the time value of money and stocks is alarmingly low in both the United States and Bermuda.

Another similarity between high school seniors in the United States and Bermuda is where they learn about money. According to the Jumpstart Coalition for Personal Financial Literacy's survey to high school seniors, 58.3% of American high school seniors said they learn about money at home from their parents compared to 56% of Bermudian high school seniors (2004). In both the American and Bermudian culture, high school seniors are learning most of what they know about money at home. The next place students in both Bermuda and the United States were most likely to learn about money was at school in class (Jumpstart Coalition for Personal Financial Literacy, 2004). These responses pose a significant problem because the majority of parents do not feel comfortable teaching their children about money, and only 31 U.S. states require courses on personal finance (Aspen Publishers Inc., 2003; Visa, 2003). Because many parents feel uneasy teaching their children about money and few schools offer personal finance courses, it is not surprising that American and Bermudian high school seniors score so poorly when it comes to financial literacy.

This study found the majority of high school seniors at CedarBridge Academy do save money on a regular basis. If they are saving for long-term goals their investments would earn a higher rate of return if invested in stocks, even through low-risk mutual funds, rather than in a low-interest savings account. Even worse, some students who believe they are "saving" money may be just setting it aside in a jar on their dresser in the "piggy bank" fashion. While any savings habits are to be commended, wiser investment decisions would reap a larger sum of money in the long run. Information about the time value of money and investment vehicles would be valuable information for any young person striving to reach savings goals.

Participants also scored poorly when asked when it would be financially beneficial to borrow money to buy something now and repay it with future income. It is assumed that most high-school seniors have not yet been in situations where they need to borrow money in the form of a loan from a bank or financial institution. Therefore, it is neither alarming nor surprising that participants scored poorly when asked about this topic.

"What are the financial behaviors of high school seniors at CedarBridge Academy?" was the second research question of this study. This research study focused on savings and spending behaviors. When survey participants were asked if they put money away in a savings account regularly, 47 (62%) individuals responded that they strongly agreed or agreed. As mentioned earlier, while the majority of students surveyed were saving money on a regular basis, it is doubtful that their money is in any vehicle other than a regular savings or checking account. In this study, the researcher did not specifically ask what vehicle was being utilized for saving money. However, two-thirds of teenagers believe the best way to save money is in a savings or checking account (Merrill Lynch, 2000). Interestingly enough, only 20 (26.4%) participants strongly agreed or agreed that they would describe themselves as "thrifty" meaning saving money whenever they got the chance. Perhaps high school seniors were not fond of the word "thrifty," felt it carried a negative connotation, and did not want to classify themselves as such. Or, it could be that of the 47 (62.0%) individuals saving money on a regular basis, only 20 (26.4%) of them truly save money whenever possible, which would be more than "regularly."

On a positive note, the survey found that the majority of students (n=49, 65.4%) practice comparison shopping (question 26). Prices of goods and services in Bermuda are typically double what they would cost in the United States. Because prices can be very expensive, it is good to know that the majority of the respondents shop around for the best deal to save money. For some families in Bermuda, comparison shopping may be a financial necessity.

In terms of gender, this study found that female seniors at CedarBridge Academy are more likely to save money on a regular basis than their male counterparts. Additionally, it was also the females who were more likely than the males to describe themselves as “thrifty.” Of all the savings behavior questions that were asked of the participants, the females scored higher in positive financial behaviors than the males on all except two questions. Male students were more likely to pay fixed expenses first and were less likely than female students to classify themselves as a “compulsive shopper.” However, male students were less likely than female students to practice comparison shopping.

These results imply that female and male seniors at CedarBridge Academy differ in their financial behaviors. Hira’s (2006) research regarding gender differences and finances also confirmed that males and females differ in financial behaviors. It is recommended that future research be done to further study the differences in male and female financial behaviors, their causes, and why they may exist. Why is it that females are saving more than males?

The negative financial behavior all study participants were most likely to have engaged in was spending money on impulse (n=45, 60.0%). The question did not specifically ask how many times this has occurred, but merely if this has occurred. If this were only a one time occurrence for study participants, it is nothing to be alarmed about. However, spending money on impulse and feeling guilty about it later may lead to more serious financial issues later in life if the behavior is practiced on a regular basis.

Respondents scored in the most financially responsible manner when it came to paying fixed expenses such as a cell phone bill or gas before spending their money elsewhere. Fifty-six (78.7%) participants agreed or strongly agreed that they pay fixed expenses first. Paying fixed expenses first is a good habit for teenagers to engage in because missed or late payments may be reflected in their credit report therefore, making it hard for them to receive a loan when the time is appropriate. Covering concepts such as these in a personal finance course would be an excellent way to reiterate to teenagers that the financial decisions they make as young adults will affect their financial well-being as an adult.

A Pearson correlation statistical test was conducted to determine the answer to the third research question, "Is there a relationship between financial knowledge levels and savings behaviors of high school seniors at CedarBridge Academy?" Results of the correlation statistical test indicated there is no significant relationship between financial knowledge levels and savings behaviors. Therefore, the researcher is unable to make any conclusions about the relationship between financial knowledge level scores and savings behavior scores on the survey. The researcher recommends further research be conducted to determine if the finding of no significant relationship between financial knowledge levels and savings behaviors is consistent among studies or if it is unique to this research study.

Research has show that even if students enrolled in a personal finance course do not have an immediate change in their financial behaviors while they are still in high school, those students who took finance courses in high school will be more likely to have a greater net worth than individuals who did not take any personal finance courses in high school (Bernheim, Garrett & Maki, 1997). Ultimately, responsible financial behaviors of teenagers and adults are the desired result of offering personal finance courses. Desired responsible financial behaviors include saving money on a regular basis, using a budget, using credit cards wisely, paying fixed expenses first, choosing appropriate investment vehicles, and practicing wise consumer patterns such as comparison shopping.

The fourth research question asked, "Is there a relationship between confidence levels in managing one's own money and savings behaviors of high school seniors at CedarBridge Academy?" The researcher was looking to find if there was a difference in savings behaviors between students who felt "sure" of their ability to manage their own finances, and students who felt "unsure" about their ability to manage their own finances? "Sure" and "unsure" are defined as levels of confidence. "Sure" is defined as high confidence in managing one's money and "unsure" is defined as low confidence in managing one's money. Based on a non-directional independent samples t-test at a=.05, the researcher concluded that there is a significant difference ($t(73) = -2.726$, $p=.008$) between savings behaviors of students who feel unsure about managing their own finances (Mean=22.66, SD=4.06) and students who feel sure about managing their own finances (Mean=25.21, SD=3.97).

Students who felt "sure" of their ability to manage their own finances, or students who had high confidence levels of managing their own money scored higher on the savings behaviors section of the survey. It is the hope of the researcher that for students enrolled in a personal finance course their confidence levels in managing their own money would increase as the students learn more about financial topics and progress through the course. As this study has shown, higher confidence levels in ability to manage one's own finances are related to behaving in a more financially responsible manner. This will be discussed more in the Recommendations for Future Research section of this chapter.

The researcher chose to test the savings behavior score rather than the financial knowledge level score against students' confidence in managing their own finances because of the researcher's belief that savings behaviors play a greater role in an individual's overall financial well-being than financial knowledge. An analogy used to make this clear is that of a smoker and a non-smoker. If the smoker is knowledgeable about the negative effects of smoking on his or her body but chooses to smoke anyway, the smoker is worse off than the non-smoker who is not knowledgeable about the negative effects of smoking. In the end, it is the behaviors not the knowledge level that is more important to their well-being.

The fifth research question was, "Is there any evidence to support the need for mandating or implementing a personal finance course at CedarBridge Academy in Bermuda?" Survey participants responded positively to the idea of a personal finance course being offered at the school. Sixty-four (85.0%) participants agreed or strongly agreed that CedarBridge Academy should offer a course on personal finance. Only five (6.9%) students disagreed or strongly disagreed when asked if they thought CedarBridge should offer a course on personal finance. It is encouraging to know such a large percentage of survey participants feel a personal finance course should be offered. While the survey did not specifically ask if they would sign up for such a course, offering the course may be the first step toward financial success for some students at the school. This positive correlation would lead me to recommend to the administration of CedarBridge Academy they implement a personal finance course at the school. I would also recommend offering a personal finance course because the mean financial literacy score was the equivalent to an F grade (52.89%), showing that high school seniors at CedarBridge Academy have low financial knowledge levels.

Recommendations for Future Research

Results of this study indicated a need for a personal finance course to be offered at CedarBridge Academy in Bermuda. The researcher would suggest implementing a personal finance course at CedarBridge Academy in the Family and Consumer Sciences department. One reason for this is because curriculum benchmarks regarding personal finance are already included in the National Standards for Family and Consumer Sciences Education (2006). Additionally, family and consumer sciences educators are trained to deal with sensitive human issues that may arise in a personal finance course as well as teach financial skills and knowledge.

Conducting pre-tests and post-tests with students enrolled in personal finance should be used to measure the learning that takes place over the duration of the course. The tests should cover financial knowledge and savings and spending behaviors. The future researcher should ask if taking a personal finance course increases financial knowledge and increases responsible savings behaviors. However, it may be assumed that the researcher should not expect a substantial increase in responsible savings behaviors over the time period the course is offered. (An increase in financial knowledge should be expected.) Courses at CedarBridge Academy are offered for one semester which is five months. Five months is a short time period to expect any, or significant changes in behaviors. It would be advisable to survey the same group of students enrolled in the personal finance course one to two years after course completion.

This study found that the majority of students are saving money on a regular basis. However, this study did not specifically ask the participants what vehicle they were using to save their money. The researcher would recommend a follow-up survey to determine this factor. The researcher predicts that the majority of students are using regular savings accounts for saving. If this were true, it would be beneficial to teach teenagers about different options such as stocks, mutual funds, bonds, and money market accounts. Then teenagers would have the necessary knowledge to choose the most appropriate savings vehicle for their investments.

It is advisable for future researchers to continue to test the relationship between financial knowledge and savings behaviors. This may be done through studying teenagers' knowledge levels and savings behaviors in countries other than Bermuda. Studying financial knowledge and savings behaviors of adults is also recommended.

The researcher chose to use participants from only one of the two public high schools in Bermuda. This decision was made because the second high school, The Berkley Institute was transitioning from their old school building to the new one. If this study were conducted again, it is suggested that both public high schools' seniors on the island be study participants.

Summary

The financial knowledge and behaviors of high school seniors at CedarBridge Academy in Bermuda were studied through a quantitative study. The researcher found the mean financial knowledge score to be 52.89%, a failing grade according to the grading system at CedarBridge Academy. These findings were in sync with other studies showing teenagers have low financial literacy levels (Tennyson & Nyguen, 2001; Jumpstart Coalition for Personal Financial Literacy, 2005). Both high school seniors in the United States and Bermuda scored alarmingly low on questions about stocks and the time value of money and both groups learn the majority of what they know about money at home from their parents

(Jumpstart Coalition for Personal Financial Literacy, 2005). It was found in this study that female students were more likely than male students to save money on a regular basis. However, females were also more likely to classify themselves as compulsive shoppers.

No significant relationship was found between financial knowledge levels and savings behaviors. When the study participants were asked if they thought CedarBridge Academy should offer a course about personal finance, 85% agreed or strongly agreed. The researcher would strongly recommend offering a personal finance course at CedarBridge Academy. Another recommendation from the researcher includes continuing to research the relationship between financial knowledge and savings behaviors of teenagers and adults and well as determining differences in financial behaviors between genders.

APPENDIX A. SURVEY INSTRUMENT

PERSONAL FINANCIAL SURVEY

Directions: Please circle the letter of your chosen response. Do not leave any questions unanswered. Only choose one response. This survey consists of 3 sections.

Section A

(Responses in red were scored as "correct" and worth 1 point. Responses in black were scored as "incorrect" and scored as a "0.")

1. Kavin has saved $9,000 for his college expenses by working part-time. He plans to start college next year and needs all of the money he saved. Which of the following is the safest place for his college money?
a) a bank savings account (86.7%)
b) corporate bonds (2.7%)
c) stocks (2.7%)
d) locked in his closet at home (8%)

2. 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 (4%)
b) you must have a bank account to have an ATM Card (5.3%)
c) you can get cash anywhere in the world with no fee (84%)
d) you can generally obtain information concerning your bank balance at an ATM machine (6.7%)

3. 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) Janae who only pays the minimum amount each month (45.3%)
b) LeeAnn who always pays off her credit card bill in full shortly after she receives it (20%)
c) Jennifer, who generally pays off her credit card in full but occasionally will pay the minimum when she is short of cash (14.7%)
d) Shelley, who pays at least the minimum amount each month and more when she has the money (20%)

4. Many people put aside money to take care of unexpected expenses. If Shanae and Keishun 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 (18.7%)
b) invested in a down payment on the house (33.3%)
c) stocks (38.7%)
d) checking account (9.3%)

5. Retirement income paid by a company is called:
a) individual retirement plan (17.3%)
b) pension (69.3%)
c) Social Security (9.3%)
d) rents & profits (4%)

6. Stephan and Gary 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 (10.7%)
b) they will both pay the same because they have almost identical financial background (26.7%)
c) Staphan will pay less because people who travel overseas are better risks (24%)
d) Gary will pay less because the car is collateral for the loan (38.7%)

7. Which of the following is NOT typically associated with spending?
a) credit card (8%)
b) cash (2.7%)
c) certificate of deposit (81.3%)
d) debit card (8%)

8. Lewellyn and Karen 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) savings bonds (44%)
b) stocks (20%)
c) a savings account (34.7%)
d) a checking account (1.3%)

9. Owen and Marie are the same age. At age 25 Owen began saving $2,000 a year while Marie saved nothing. At age 50, Marie realized that she needed money for retirement and started saving $4,000 per year while Owen kept saving his $2,000. Now they are both 75 years old. Who has the most money in his or her retirement account?
a) Maria, because she saved more each year (18.7%)
b) Owen, because he has put away more money (17.3%)
c) Owen, because his money has grown for a longer time at compound interest (45.3%)
d) They would each have the same amount because they put away exactly the same (18.7%)

10. 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 (41.3%)
b) when some clothes you like go on sale (16%)
c) when you really need a two-week vacation (13.3%)
d) when you need to buy a car to get a much better paying job (29.3%)

11. Kim set a goal to save $50,000 toward a down payment for a home. Which activity is most likely to help track and manage her income and expenses?
a) prepare and use a budget (70.5%)
b) pay her bills with credit instead of cash (7.7%)
c) get a second job (9.3%)
d) stop shopping every weekend (9.3%)

12. Which of the following investment is the riskiest?
a) Capital G time deposit (10.7%)
b) BELCO stock traded on the BSX (Bermuda Stock Exchange) (30.7%)
c) U.S. Treasury note (18.7%)
d) Japan small cap mutual fund (40%)

Section B

13. What is your gender?
a) Male (36.0%)
b) Female (64.0%)

14. What are your plans after high school?
a) Enter the workforce (14.7%)
b) Attend Bermuda College (36.0%)
c) Attend a 4-year college or university abroad (25.3%)
d) Other plans for training or education (9.3%)
e) Don’t know (14.7%)

15. Whose credit card do you use?
a) My own (28.0%)
b) My parents' (6.7%)
c) Both my own and my parents' (9.3%)
d) None, I don't use a credit card (56.0%)

16. How do you use your debit (or ATM) card?
a) For getting cash from an ATM and for buying things directly (45.3%)
b) For getting cash from an ATM only (22.7%)
c) I don't have a debit card (32.0%)

17. How would you describe your employment history?
a) I work full time in the summers and part time during the school year (40.0%)
b) I work full time in the summers and don't work during the school year (12.0%)
c) I work part time in the summers and part time during the school year (22.7%)
d) I work part time in the summers and don't work during the school year (16.0%)
e) I have never been formally employed outside the home (9.3%)

18. What kind of bank account do you have?
a) I don't have a bank account. (16.0%)
b) I have a savings account but no checking account. (53.7%)
c) I have a checking account but no savings account. (2.7%)
d) I have both a savings and a checking account. (24.0%)

19. Which of the following is true about your ownership of stocks and mutual funds (circle all that apply)?
a) I own no stocks or mutual funds (76.0%)
b) I own stocks in my own name (8.0%)
c) I own stocks in my parents' name (0.0%)
d) I own mutual funds in my own name (4.0%)
e) I own mutual funds in my parents' name (12.0%)

20. How sure do you feel about your ability to manage your own finances?
a) Not sure at all – I wish I knew a lot more about money management (13.3%)
b) Not too sure – I wish I knew more about money management (29.3%)
c) Somewhat sure – I understand most of what I'll need to know (46.7%)
d) Very sure – I understand money management very well (10.7%)

21. Where did you learn most about managing your money?
a) At home from my family (56%)
b) At school in class (17.3%)
c) From talking with my friends (2.7%)
d) From magazines, books, TV, Internet, and the radio (4.0%)
e) From experience in managing my own funds (20.0%)

22. How would you describe the allowance you received when growing up?
a) I did not receive a regular (weekly or monthly) allowance; I was given money only when I needed it (62.7%)
b) I received a regular allowance that depended on the completion of some household chores (20.0%)
c) I received a regular allowance and did not have to perform chores for it (17.3%)

Section C
(Point values assigned to responses are in the right hand column of the response set.)

23. I would describe myself as being "thrifty" and saving money whenever I get the chance.

a) Strongly Agree (5.3%)	(5 points)
b) Agree (21.3%)	(4)
c) Not sure (17.3%)	(3)
d) Disagree (37.3%)	(2)
e) Strongly Disagree (18.7%)	(1)

24. If I don't have cash to pay for something I want to buy, I don't buy it.

a) Strongly Agree (33.3%)	(5 points)
b) Agree (38.7%)	(4)
c) Not sure (12.0%)	(3)
d) Disagree (12.0%)	(2)
e) Strongly Disagree (4.0%)	(1)

25. I would describe myself as being a "compulsive shopper." (Meaning I buy items on impulse).

a) Strongly Agree (10.7%)	(1 point)
b) Agree (22.7%)	(2)
c) Not sure (22.7%)	(3)
d) Disagree (34.7%)	(4)
e) Strongly Disagree (9.3%)	(5)

26. When I need to buy something, I shop around to find or buy the best deal. (Also known as "comparison shopping.")
a) Strongly Agree (26.7%) (5 points)
b) Agree (38.7%) (4)
c) Not sure (13.3%) (3)
d) Disagree (17.3%) (2)
e) Strongly Disagree (4.0%) (1)

27. In the past, I have spent too much money and then felt guilty about it afterwards.
a) Strongly Agree (26.7%) (1 point)
b) Agree (33.3%) (2)
c) Not sure (10.7%) (3)
d) Disagree (21.3%) (4)
e) Strongly Disagree (8.0%) (5)

28. I routinely put money away in a savings account.
a) Strongly Agree (26.7%) (5 points)
b) Agree (36.0%) (4)
c) Not sure (14.7%) (3)
d) Disagree (17.3%) (2)
e) Strongly Disagree (5.3%) (1)

29. I pay fixed expenses first. (cell phone bills, bike payments, gas, loan, etc)
a) Strongly Agree (32.0%) (5 points)
b) Agree (46.7%) (4)
c) Not sure (8.0%) (3)
d) Disagree (10.7%) (2)
e) Strongly Disagree (2.7%) (1)

30. I think it would be a good idea for CedarBridge to offer a course on personal finance. (This would include topics such as saving, spending, credit cards and other topics having to do with personal finance.)
a) Strongly Agree (53.3%)
b) Agree (32.0%)
c) Not sure (8.0%)
d) Disagree (1.3%)
e) Strongly Disagree (5.3%)

APPENDIX B. PERMISSION TO CONDUCT RESEARCH AT CEDARBRIDGE ACADEMY

CEDARBRIDGE ACADEMY

1 CEDARBRIDGE LANE
DEVONSHIRE DV 02
BERMUDA

TEL: 441-296-5665
FAX: 441-296-5555

April 6, 2006

To Whom It May Concern:

RE: Danika Kieschnick

Danika Kieschnick is a member of the CedarBridge Academy Staff. I am aware that she is pursuing a Masters Degree with Iowa State University and that she plans to do a research project on financial literacy.

I am confirming that Danika has my permission to conduct a research study at CedarBridge Academy and that she has my permission to survey the S4 students regarding their financial knowledge and financial behaviors. All students who participate in the survey will do so only with the consent of their parents.

Should you require any additional information, I can be contacted at 441-296-7088 via telephone or at krichards@cedarbridgr.doe.bm via email.

Sincerely yours,

Kalmar Richards

Mrs. Kalmar Richards
Principal

KR/dkb

Quality Education for All

APPENDIX C. PERMISSION FROM ISU'S INSTITUTIONAL REVIEW BOARD

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Assurances
Vice Provost for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

DATE: April 12, 2006

TO: Danika Holmes

FROM: Institutional Review Board,
Office of Research Assurances

RE: IRB ID: 06-204

Approval Date: April 11, 2006 Date for Continuing Review: April 10, 2007

The Chair of the Institutional Review Board Chair of Iowa State University has reviewed and approved the protocol entitled: "Financial Knowledge Levels and Behaviors of Bermudian Senior School Students." The protocol has been assigned the following ID Number: 06-204. Please refer to this number in all correspondence regarding the protocol.

Your study has been approved for a period of one year from April 11, 2006 to April 10, 2007. The **continuing review date** for this study is no later than April 10, 2007. As a courtesy to you, you will receive a reminder of the approaching review date approximately one month prior to this date. A continuing review form must be submitted with sufficient time prior to this date for the IRB to review and approve continuation of the study. Failure to complete and submit the continuing review form will result in expiration of IRB approval on the continuing review date and the file will be administratively closed. A new application for IRB approval will be required to reactivate the study. In addition, all research related activities involving the participants must stop on the continuing review date, until approval can be re-established, except when necessary to eliminate immediate hazard to research participants.

Any **changes in the protocol or consent form** may not be implemented without prior IRB review and approval, using the "Continuing Review and/or Modification" form. Research investigators are expected to comply with the principles of the Belmont Report, and state and federal regulations regarding the involvement of humans in research. These documents are located on the Office of Research Assurances website or available by calling (515) 294-4566, www.compliance.iastate.edu.

You must promptly report any of the following to the IRB: (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.

Upon completion of the project, a Project Closure Form should be submitted to the Human Subjects Research Office to officially close the project.

CC: Professor Beverly Kruempel

APPENDIX D. INFORMED CONSENT DOCUMENT

Good Day S4 Student:

You have been selected to participate in a study due to your S4 year level status. The purpose of this study, led by Mrs. Kieschnick, is to determine the financial knowledge level and savings behaviors of S4 students at CedarBridge Academy. It is hoped that the information gained in this study will benefit CBA by helping to determine if there is a need to offer personal finance courses for future students.

If you agree to participate in this study, your participation will consist of taking one survey which will last approximately twenty-five minutes. You may skip any question that you do not wish to answer or that makes you feel uncomfortable. There are no foreseeable risks at this time from participating in this study.

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide not to participate in the study, it will not result in any penalty.

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, U.S. federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, you will be assigned a unique number code that will be used on your survey instead of your name. If the results are published, your identity will remain confidential. For further information about the study, you may contact Mrs. Kieschnick at dkieschnick@cedarbridge.doe.com.

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, and you have been given the time to read the letter and your questions have been significantly answered.

Subject's Name (printed) ____

______________________________ ________________________

(Subject's Signature) (Date)

Parent/Guardian Signature is required for participation in the study if the subject is under eighteen.

______________________________ ________________________

(Signature of Parent/Guardian or Legally Authorized Representative) (Date)

APPENDIX E. SURVEY ADMINISTRATION INSTRUCTIONS

(These instructions were given to advisory teachers who administered the survey during their advisory period.)

Dear Advisors:

Thank you for agreeing to administer the Financial Knowledge and Behaviors survey to your advisory group. You have been given enough surveys and permission letters for your group. Instructions are as follows:

1) Distribute the parent letters and instruct the students to return them to you in the next two days. Students who are 18 do not need to have a letter signed.
2) After the letters have been returned to you, you may administer the survey. You will need one full advisory period and it may be done on the day that is best for you and your advisory group.
3) When administering the survey, read the instructions on the survey out loud to the students. Please remind them to not leave any questions blank and that they may guess if they need to. Please do not help them with any questions. Tell them to re-read the question if they need help.
4) After the surveys have been administered, please put the parent letters and finished surveys in my mailbox in the staff room. I would like to have all finished surveys by June 1, 2006.

Again, thank you for your help. If you have any questions please ask me or you can email me at dkieschnick@cedarbridge.doe.bm. My room extension is #4111.

Danika Kieschnick

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