MOTIVATIONAL NEEDS OF

SECONDARY BUSINESS AND COMPUTER SCIENCE STUDENTS

by

SUSANNA CRADDOCK

(Under the direction of ELAINE ADAMS)

ABSTRACT

This study examined the motivational needs of Business and Computer Science secondary students. The survey instrument used was created by Turner (1996). The questionnaire measured motivational needs (e.g., need for achievement, need for affiliation, and need for power) from McClelland's (1987) theory of motivation.

A convenience sample of 933 secondary students resulted in 472 respondents with 470 completed web-based questionnaires. A series of one-way ANOVAs was run to determine the influence of independent variables (e.g., gender, race/ethnicity, grade level, and FBLA affiliation) on the three motivational needs (need for achievement, need for affiliation, and need for power).

Results indicated that Business and Computer Science students had a stronger (i.e., the lower the mean score the stronger the need) mean score for need for affiliation (M=9.04) than need for achievement (M=11.06) or need for power (M=11.75). No statistical significance was found in this study based on motivational need for affiliation. Statistically significant differences on motivational need for power were revealed for the independent variables of gender (p=.000), grade level (p=.000) and FBLA membership (p=.000).

Statistical significance was found in the independent variables of race/ethnicity (p=.011) and FBLA membership (p=.017) based on motivational need for achievement. The independent variable, FBLA membership, showed statistical significance in two dependent variables, need for achievement (p=.017) and need for power (p=.000).

INDEX WORDS: Motivation, Business education, Business and Computer Science education, Gender, Race/Ethnicity, Grade level, Future Business Leaders of America, FBLA, Need for achievement, Need for affiliation, Need for power

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DEDICATION

This dissertation is dedicated to my amazing family who without their support and guidance I would not have been able to accomplish this incredible achievement. Every one of my seven brothers and sisters provided at least one of the following necessary resources along my journey: encouragement, shelter, food, advice, a shoulder, an ear, patience, financial support, and love. I love you all and I really appreciate what you have done for me throughout this process. You will never really know how much each one of you has inspired me. Thank you from the bottom of my heart Cindy, Cliff, Dan, Christina, Chris, Melissa, and Amy!

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CHAPTER I

INTRODUCTION

In 2006, the Carl D. Perkins Career and Technical Education Act was reaffirmed. This act allowed for Career and Technical Education (CTE) programs to continue to exist in public schools in order to "[expose] students to high skill, high wage occupations and non-traditional fields" (Carl D. Perkins Career and Technical Education Act, 2006, p. 43). This legislation requires more emphasis be placed on postsecondary education. The Carl D. Perkins Career and Technical Education Act (2006) legislation places accountability on the secondary public school CTE teachers to appropriately prepare students to join the workforce or pursue postsecondary education. Kesten and Lambrecht (2010) indicated that career preparation is essential because of an impending decrease in the labor force at the same time an increased skill level is needed. The No Child Left Behind Act of 2001 (2002) requires academic assessments, high school graduation, and technical proficiency on state approved assessments (Carl D. Perkins Career and Technical Education Act, 2006). With the increased rigor required by Carl D. Perkins Career and Technical Education Act (2006) in career and technical education courses and the emphasis for students to attend postsecondary education, teachers face a greater challenge to motivate students to succeed.

Bennett, Kottasz, and Nocciolino (2007) found that some first-year undergraduate students lacked the proper motivation to succeed in their first business course in college. The participants indicated they were ill informed about what to expect in college (Bennett et al., 2007). One example of poor preparation was students registering for classes simply because their friends signed up for the same course (Bennett et al., 2007). Research such as that one

conducted by Bennett et al. provided a basis from which to explore motivation in secondary schools and its impact on student's future success. Secondary CTE teachers may benefit from the knowledge gained by motivational research to appropriately prepare students for future careers or postsecondary education to meet the requirements posed by the Carl D. Perkins Career and Technical Education Act (2006) and No Child Left Behind Act of 2001 (2002) legislation.

Identifying how secondary students self-motivate as an area of interest encouraged an exploratory look into the theory of human motivation (Deci, 1995). McClelland (1987) defined motivation in terms of a need for affiliation (nAff), need for achievement (nAch), and need for power (nPower). Individuals with a high need for affiliation desire social interaction, teamwork, conformity, and wish to avoid conflict; whereas, those who possess a high need for achievement tend to focus on grades, competition, and goals. In contrast, individuals with a high need for power take greater risks than those with a high need for achievement, are more aggressive, and seek leadership positions (Langan-Fox & Grant, 2007; McClelland, 1987).

People are not all motivated in the same manner. Cultural diversity explains some of these differences (Schermerhorn, Hunt, & Osborn, 2005). According to McClelland (1987), gender differences equate to different motivational needs. Johnson (2008) found little effect on academic engagement as it related to gender, race/ethnicity, and grade level. She stated that differences could be attributed to a lack of diversity within the small sample or terms of the student engagement measured. Filak and Pritchard (2007) found that students who felt they had autonomy support from the adviser of their extracurricular student organization had more self-determined motivation to participate in the student organization. Leondari and Gonida (2007) found no differences in the use of self-handicapping strategies based on grade level, socioeconomic status, or gender but did find significant differences based on task goals, a

component of achievement goals (i.e., task, performance-avoidance, and performance-approach), based on grade level. Exploring gender, race/ethnicity, grade level, and FBLA affiliation as it relates to motivational needs may explain how to better motivate secondary Business and Computer Science (BCS) students.

Since girls have done better on academic indicators than boys (Crosnoe, Riegle-Crumb, Field, Frank, & Muller, 2008) it would imply that girls are more motivated than boys to achieve. Martin (2003) found that girls scored significantly higher than boys when it came to valuing school, focusing on learning, planning, study management, and persistence. According to the U.S. Bureau of Labor Statistics (2009), in a 10-year span beginning in 2008, the female workforce is expected to grow by 9.0%, while the male labor force is only expected to increase by 7.5%. Males were higher in self-sabotage than girls and demonstrated a fear of failure in Martin's (2003) study. Since the job outlook will be more competitive for males, self-sabotage could interfere with the ability to self motivate and find a job.

Using the questionnaire created by Turner (1996), Turner and Rutter (1998) studied students from different CTE programs. Turner (1996) found no significant difference on the need for achievement between males and females in Agriculture education classes, but significant differences were found on need for power and need for affiliation based on gender. Females had a higher need for power and need for affiliation than males. Rutter (1998) found no significant difference between males and females enrolled in Family and Consumer Sciences education courses with respect to need for achievement, need for affiliation, or need for power.

Analyzing motivational needs of various racial/ethnic groups is noteworthy due to the economic outlook for jobs from 2008 to 2018. According to the U.S. Bureau of Labor Statistics (2009), by 2018 Hispanics, Blacks, Asians, and racial groups other than white will increase.

Mau and Kopischke (2001) found that minorities had a higher rate of underemployment than non-minorities. They used four indicators to define underemployment: no college degree required, working part-time jobs, working several jobs, and a poor job outlook (Mau & Kopischke, 2001). Therefore, exploring how various racial/ethnic groups need to be motivated is important to facilitate success for these groups. A couple of studies (Rutter, 1998; Turner, 1996) found differences in how individuals of various racial/ethnic backgrounds were motivated. Stahl (1986) found no significant difference equating to race/ethnic background with respect to need for affiliation, need for achievement, and need for power of adults being trained for managerial positions from various career areas in a longitudinal study. In Turner's (1996) study, Black students in Agriculture education showed a higher need for achievement and need for power than Whites. Whites showed a higher need for affiliation in Turner's (1996) study. In Rutter's (1998) analysis, Black students in Family and Consumer Sciences courses showed a high need for achievement and need for power, but displayed no significant difference with respect to the need for affiliation. According to Fouad and Byars-Winston (2005), race/ethnicity did not influence career choices or decision-making, but did have a bearing on their perception of available career options.

The amount of literature available on motivational needs of secondary students who participate in a career and technical education course by grade level was scarce. In Turner's (1996) study ninth graders in Agriculture education had a lower need for power than students in grades tenth, eleventh, or twelfth. Rutter (1998) found no significant difference in the motivational needs of Family and Consumer Sciences secondary students by grade level. van der Werf, Opdenakker, and Kuyper (2008) found that achievement motivation saw a decline over time from the first year of secondary school.

According to Alfeld, Hansen, Aragon, and Stone (2006), students who participate in extracurricular activities have a tendency to be more successful in high school. Public school demographics and extra/cocurricular activities play a role in the success of a school system (Kesten & Lambrecht, 2010). The Carl D. Perkins Career and Technical Education Act (2006) legislation provides funds for career and technical education teachers to offer Career and Technical Student Organizations (CTSOs) as cocurricular programs which serve to challenge and motivate students to learn leadership skills and explore career pathways (Alfeld et al., 2006; Scott & Sarkees-Wircenski, 2008). One CTSO is Future Business Leaders of America (FBLA). Participating in career and technical education courses in secondary schools and their corresponding Career Technical Student Organizations (CTSOs), had mixed results with respect to motivational needs. Turner (1996) found that students in Agriculture education courses who were members of FFA (Future Farmers of America) had a higher need for affiliation, need for achievement, and need for power than non-members. Whereas, Rutter (1998) found that Future Homemakers of America/Home Economics Related Occupations (FHA/HERO) (changed to Family, Career and Community Leaders of America (FCCLA, 1999)) members enrolled in Family and Consumer Sciences classes had significant differences in the need for power and need for affiliation. There was no significant difference in the need for achievement found for members of FHA/HERO (Rutter, 1998).

According to Georgia's CTE report (Career Technical Agriculture Education annual report for 2009) (Georgia Department of Education, 2009), the largest group of ninth through twelfth grade students were enrolled in Business and Computer Science courses, more than any other CTE program. Therefore, it is important to know how Business and Computer Science students from various racial/ethnic backgrounds, genders, grade levels, and FBLA affiliation

differ with respect to motivational needs in anticipation of the 2008-2018 needs identified by the U.S. Bureau of Labor Statistics (2009). In order for Business and Computer Science teachers to prepare their diverse students for the future workforce, they need to know how best to motivate their students. Teachers can cultivate a student's need for affiliation through group work, fuel their need for achievement by infusing participation in competitive events, and support their need for power through involving them in leadership roles by using McClelland's (1987) theory of human motivation. However, without knowing what motivates the students, these techniques will not be as effective. Additionally, in order to properly prepare students for postsecondary education, it is essential to understand what motivates the students to achieve. According to Riggs and Gholar (2009), students need to be supported, encouraged, acknowledged, and expected to achieve high standards. Literature was available on how to motivate students but limited on what self-motivators students possessed.

The Carl D. Perkins Career and Technical Education Act (2006) legislation requirement for CTE teachers to encourage students to seek high skill, high wage jobs and in non-traditional areas, drives teachers to seek ways to motivate students to be successful. Career and technical education plays a part in motivating students to succeed by assisting them with setting specific career goals, opening doors to pursue those goals, challenging them to succeed, and providing program offerings to explore different career choices (Pautler, 1990; Scott & Sarkees-Wircenski, 2008). Osgood, Francis, and Archer (2006) found that students expressed an interest in wanting to try a non-traditional career work placement to inform future career decisions. Students equated work placement experiences with future employment. However, students were more apt to pick gender-traditional placements even though they showed interest in non-traditional fields (Osgood et al., 2006). Encouraging and providing choices for females as well as providing

inspiration to seek jobs in non-traditional fields is part of career development (Greene & Stitt-Gohdes, 1997). Career development is one unique way that CTE teachers have found to motivate students to achieve.

In order to help students make good decisions about career choices, available options must be presented. The career development facet of the Business and Computer Science curriculum (Georgia Performance Standards, 2010; Stitt-Gohdes, 2002) provides such exposure. Motivating and teaching students about career development including non-traditional fields, making positive choices, exploring possibilities for the future, learning how to efficiently use technology, and employ critical thinking skills for effective business management decision-making are a few of the components of the Business and Computer Science curriculum (Georgia Performance Standards, 2010; Stitt-Gohdes, 2002). Georgia Performance Standards (2010) indicated the following:

> The Business and Computer Science program consists of three components: classroom/laboratory experiences, work-based learning opportunities that relate directly to classroom instruction, and the Career Technical Student Organization, Future Business Leaders of America, which provides cocurricular activities that build teamwork and leadership skills (Business and Computer Science section, para. 1).

Program offerings unique to Business and Computer Science include Fundamentals of Web Design, Advanced Web Design, Beginning Programming, Intermediate Programming, Computer Applications I and II, and Legal Environment of Business to name a few (Georgia Performance Standards, 2010). These program offerings attract a distinctive blend of individuals eager to plunge into technology, business, and computer science courses as well as participate in work-based learning opportunities (Georgia Performance Standards, 2010; Stitt-Gohdes, 2002).

The components of the Business and Computer Science education program foster an environment rich in options to guide students toward making good career and postsecondary decisions. Therefore, providing career exploration/development options is one way that Business and Computer Science teachers can prepare students for the workforce and postsecondary education. But what about motivating students to participate in the program offerings? Teachers have the tools to offer career development to students, but they need to know how the largest CTE group of students in the state of Georgia, Business and Computer Science, needs to be motivated in order to efficiently implement the program. The purpose of this study was to explore the motivational needs of secondary BCS students.

Purpose Statement and Research Questions

This descriptive survey study used McClelland's (1987) theory of human motivation to examine the influence of independent variables—gender, racial/ethnic background, grade level, and Future Business Leaders of America (FBLA) membership—on the need for achievement (nAch), need for affiliation (nAff) and need for power (nPower) in secondary Business and Computer Science (BCS) education students. The study answered the following questions:

1. What is the perceived motivational need for achievement, need for affiliation, and need for power of students enrolled in secondary Business and Computer Science programs?
2. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on gender?

3. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on racial/ethnic background?
4. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on grade level?
5. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on FBLA membership?

Theoretical Framework

Motivational theories can fit into one of three categories: reinforcement, process, or content (Schermerhorn et al., 2005; Stahl, 1986). Reinforcement theories focus on extrinsic motivation, which is based on external controls like rewards or punishments (Deci, 1995; Schermerhorn et al., 2005). Process and content theories are grounded in intrinsic motivation, stimulus that comes from within such as personal satisfaction (Deci, 1995; Schermerhorn et al., 2005). Another way to categorize motivational theories is by type: psychoanalytical, behaviorist, humanistic, or a combination of these types. Freud (1987) was considered a psychoanalyst, while Hull (Hull, 1943, 1952; Hull, Felsinger, Gladstone, & Yamaguchi, 1947), Pavlov (1927/2003), Skinner (1978), and Thorndike (1911) were considered behaviorists; Maslow (1954) was considered a humanist. Deci and Ryan (2008a, 2008b), Herzberg (1965, 1974), McClelland (1987), and Vroom (1964/1995), developed theories that do not easily fit into the aforementioned categories. However, these theories are connected with McClelland's (1987) theory on motivation.

Several psychologists (Freud, 1987; Hull, 1943, 1952; Pavlov, 1927/2003; Skinner, 1978; Thorndike, 1911) influenced McClelland's (1987) work in motivation. McClelland (1987) references Freud's (1987) psychosexual stages and dream analysis as a basis for his motivational theory. He speculated that, like Freud (1987), motivation was driven by an underlying source, perhaps in the subconscious mind. Additionally, the behaviorist theorists (Hull, 1943, 1952; Pavlov, 1927/2003; Skinner, 1978; Thorndike, 1911) provided fuel for McClelland (1987) to research the field of motivation further and refute such notions as " . . . people's behavior was wholly determined by the pleasure principle or reward and punishment" (McClelland, 1987, p. 103). McClelland (1987) suggested that motivational needs changed over time and were not based solely on an outcome or situation. He indicated that maturity levels and gender differences affected motivation.

McClelland's (1987) human motivation theory encompasses motivational factors that are important to this study. McClelland (1987) explained that people are motivated by the need for achievement, affiliation, and power. His theory explained a relationship between these three needs. The human motivation theory has been used in a variety of studies conducted by McClelland (1961), some of which included observing need for achievement measures of students from other countries. One study involved high school students from the U.S. and Australia along with first-year college students from the U.S. (general and catholic college), Lebanon, India, Japan, Germany, and Brazil. The participants assessed traditional children's stories from different countries to determine if common themes of need for achievement existed within the stories and if the results influenced the country's rate of economic development (McClelland, 1961). Inconsistencies abounded in this research study, causing McClelland (1961) to question the validity of being able to predict economic growth from need for

achievement levels. Another study assessed whether boys with a high need for achievement traditionally chose business professions (McClelland, 1961). The study involved adolescent boys from Brazil, India, Germany, and Japan. It was found that boys with a high need for achievement had a proclivity for choosing business occupations in Japan and, in a previous study, the United States. However, boys from Brazil, India, and Germany with a high need for achievement did not traditionally choose business careers (McClelland, 1961).

Previous studies (Rutter, 1998; Turner, 1996) employed McClelland's theory of motivation. The studies examined secondary students and their need for achievement, affiliation, and power. This study is replicating these two previous studies examining the same three constructs with a different population.

According to McClelland (1987), individuals may gain insight to explain their own behavior by understanding the three needs as they relate directly to personal attributes (e.g., gender, race/ethnicity, grade level, and FBLA membership status). McClelland (1987) also contends that an individual should take into account personal reasons or incentives for completing a task. With this knowledge and knowledge of which of the three needs is dominant, an individual can make an informed decision to modify his/her own behavior. Subsequently, practitioners may help others' predict performance by understanding how the three needs work together. Skinner (1978) indicated people armed with the knowledge of what motivates them to behave in a certain way will make them accountable for their actions. Therefore, teachers can use the results of this study to arm students with sources of motivation.

Importance of Study

This study explored the perceived motivational need for achievement, affiliation, and power of students enrolled in secondary Business and Computer Science (BCS) programs. Additionally, the study sought to discover if differences existed between genders with respect to need for achievement, affiliation, and power. This study investigated further if differences existed with respect to race/ethnicity and a need for achievement, affiliation, and power. Grade level differences with respect to need for achievement, need for affiliation, and need for power were also examined. Finally, possible differences between members versus nonmembers of Future Business Leaders of America were examined based on need for achievement, affiliation, and power.

Results of this study could inspire teachers to modify motivational strategies employed within Business and Computer Science (BCS) courses. Information may provide educators with a better understanding of how students from various racial/ethnic backgrounds, gender, grade levels, and Future Business Leaders of America (FBLA) affiliation can be inspired to succeed be it through a need for achievement, need for affiliation, or need for power. The results of this study may encourage current practices of motivating BCS students to be re-evaluated in order to accommodate students' needs.

Additionally, results of this study add to a limited amount of literature available on sources of motivation for secondary Business and Computer Science education students. A vast amount of literature is available on how to motivate high school students in various fields. This study contributes to the existing knowledge base, provides insight into how BCS students need to be motivated, and determines whether existing literature pertains to BCS students. Additionally, there is limited literature available on the independent variables of this study (e.g., gender,

race/ethnicity, grade level, or FBLA membership) based on motivation and secondary Business and Computer Science students. The results of this study should be made available to teachers, counselors, program specialists, and various other career and technical education leaders because the study focused on ascertaining the motivational basis for which Business and Computer Science students were inspired to act. Additionally, the results of this study may provide practitioners insight to design and offer opportunities to motivate students to be successful in school, work, and life.

Georgia Business and Computer Science teachers, high school counselors, career and technical education leaders, the Executive Director of FBLA, and program specialists at Georgia's Department of Education may benefit from results of this study to affect change in how programs are offered, designed, and taught at the secondary school level. Specific program initiatives can be focused toward BCS students' motivational needs. Tapping into whether a sample of BCS students divided by gender, race/ethnicity, grade level, and FBLA membership have a greater need for achievement, need for affiliation, or need for power to be motivated, may aid in the planning of programs, incentives, recruitment ideas, and curriculum designs. To meet an ever-increasing demand for a skilled workforce in Georgia, demands on teachers are increasing to ensure students are prepared for high-skill, high-wage, and high-demand occupations to guarantee self-sufficiency in today's global economy (Georgia Department of Education, 2009; U.S. Bureau of Labor Statistics, 2009). Therefore, if teachers are more informed on motivational needs of secondary Business and Computer Science students, they will be more prepared to equip students with the skills needed to meet the demands of high-skill and high-wage jobs in non-traditional fields.

Summary

In summary, CTE teachers are faced with the challenge to prepare students for the workforce and postsecondary education. Students need to be motivated to succeed (Riggs & Gholar, 2009). The motivational needs of Business and Computer Science students, the largest ninth through twelfth grade CTE program in the state of Georgia, have not been studied. McClelland's (1987) theory of human motivation is comprised of the motivational factors (i.e., need for achievement, affiliation, and power) important to this study. This descriptive study examined what motivates students enrolled in a secondary Business and Computer Science program based on gender, race/ethnicity, grade level, and FBLA membership status and need for achievement, affiliation, and power.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this review of literature was to provide insight into motivational theory including student motivation. The review of literature chapter is divided into seven sections: motivational theory, motivational theory for study, historical evolution of student motivational needs, motivational research in education, impact of the study's independent variables on student motivation, history of Business and Computer Science education, and summary.

The first section of this chapter provides detailed descriptions of motivational theories and theorists who have studied facets of motivation over time such as intrinsic and extrinsic motivation. The second section provides insight into the theory being used while conducting this study. Section 3 provides an historical perspective of how these constructs were used in other studies in conjunction with motivation. Section 4 presents studies on motivation conducted within the education domain including studies using the three constructs measured in this study: need for achievement, need for affiliation, and need for power. Section 5 identifies what other researchers discovered regarding student motivation in relation to the independent variables in this study. Section 6 illustrates a history of Business and Computer Science education as a part of career and technical education. The final section provides a summary of the review of literature chapter.

Motivational Theory

The study of human motivation began with the study of human behavior. Behavior-driven motivational theories such as Hull's (1943, 1952) drive theory, Pavlov's (1927/2003)

conditioned response theory, Skinner's (1963) operant conditioning theory, and Thorndike's (1911) law of effect grew in popularity from the early 1900s to the 1970s (Ames & Ames, 1984; Weiner, 1972, 1990). These theories found that stimuli initiated a response without regard to drive or desire, the response became the desire or drive which instigated the behavior (Weiner, 1972, 1980). Work was conducted on animals and could only be translated slightly toward human behavior. It did not take into account a human's ability to reason and choose. Over the past 100 years, mechanistic analysis of motivation gave way to a more cognitive approach, moving away from observing behaviors and moving toward observing how people think (Bolles, 1974; Weiner, 1972, 1980). Psychoanalysis, Freud's (1987) research, focused on how thought processes directly influenced an individual to act (Weiner, 1980). Humanist theorist such as Maslow (1948, 1954) studied humans and how needs satiated or deprived influenced behavior.

More recent theories, also important, focused on motivational research. Examples of such theories were provided by Deci and Ryan (2008a, 2008b), Herzberg (1965, 1974), McClelland (1987), and Vroom (1964/1995). They focused their attentions on how humans are motivated taking into account values, motives, interests, self, situation, and environment. These theorists (Deci & Ryan, 2008a, 2008b; Herzberg, 1965, 1974; McClelland, 1987; Vroom, 1964/1995) discovered that thought processes, stimuli and drives, needs, and state of mind (satiated or deprived) work together in order to inspire a person to act. A person may have a physiological need to satisfy (e.g., hunger or thirst) but not possess the drive or be in the right state of mind to satiate that need. If a present need does not constitute a desire to satiate, other factors become prevalent. If a person has an affiliative need, the right opportunity must be presented to provide a comfortable, safe, socially-pleasing environment in which to act or more

importantly interact with others and, therefore, fulfill that need. Theorists Deci and Ryan (2008a, 2008b), Herzberg (1965, 1974), McClelland (1987), and Vroom (1964/1995) held firm that personality, character, and motivation were in some way linked.

Motivation is what drives an individual to act, whether intrinsically or extrinsically (Deci, 1995). Individuals make decisions based on what motivates them. Intrinsic motivation comes from within like personal satisfaction, while extrinsic motivation is based on external controls like rewards or punishments. Theories involving motivation either focus on reinforcement, process, or content motivational factors (Schermerhorn et al., 2005; Stahl, 1986). Reinforcement used by behaviorists is extrinsic in nature, while process used by psychoanalysts and content used by humanists are more intrinsic (Schermerhorn et al., 2005; Stahl, 1986). Personality and character are formed by how one reacts to past experiences in life. Personality, character, and the importance of an incentive to behave in a particular manner motivates an individual to act (Kiel, 1999; Maslow, 1954).

McClelland's (1987) theory of motivation was largely influenced by Freud's, Hull's, Maslow's, and Thorndike's research. Other theorists like Herzberg (1965, 1974) and Vroom (1964/1995) provided a foundation for motivational theory within the world of work which is pertinent to Business and Computer Science students, and the research work of Deci and Ryan (2008a, 2008b) is valuable to the field of education.

Behaviorist Theories

According to Phillips and Soltis (1998), behaviorism developed while observing animal behaviors, instincts, and how they navigated through life. Behaviorism also focused on pre-determined life stages, reinforcement and how it inspired people to act (Freud, 1987; Skinner, 1978). Freud (1987) and Skinner (1978) indicated that individuals did not possess autonomy

with respect to behavior; they required mitigating factors such as a reward to encourage positive behaviors or a chance to avoid negative consequences. Behaviorism theories focus on extrinsic motivation behavior reinforced by positive or negative stimuli. Behaviorists such as Pavlov (1927/2003), Thorndike (1911), Skinner (1978), and Hull (Hull, 1943, 1952; Hull, Felsinger, Gladstone, & Yamaguchi, 1947) concentrated on consequences for resulting behaviors (Schermerhorn et al., 2005). According to Skinner (1978), behaviorists are focused not only on "the metaphysical nature of mind stuff" (p. 72) but also on how an organism acts in and upon its environment as well as introspective thought. Behaviorists indicate that modifying a person's rewards or punishments influences their behavior (Deci, 1995). Skinner (1978) stated the generalizability of a study depended on observable behaviors and reinforcement within one's environment. Hull (Hull, 1943; Weiner, 1980) stated that stimulus initiated responses in organisms only if a need was not already satisfied.

Pavlov's conditioned response theory. Pavlov (1927/2003) conducted experiments with dogs to elicit conditioned responses observing how and where in the brain these responses originated. His research focused on providing stimuli that would elicit physical responses in dogs such as salivation. Initially Pavlov's (Phillips & Soltis, 1998) research was based on studying digestion processes in dogs and found he was changing their behavior patterns. Pavlov (1927/2003) found motivation using rewards and punishments resulted in varying responses in the cerebral cortex of the brain.

Thorndike's law of effect theory. Thorndike's (1911) law of effect theory developed as a result of many experiments conducted on monkeys, fish, cats, dogs, and chicks. Darwin's (1871) theory of evolution, which focused on the physical structure of organisms, spurred Thorndike to explore the mind of an organism. Thorndike discovered that a bond was created

between a situation and a response (Nevin, 1999). He stated that given the same situation an animal was more likely to respond in the same manner resulting in satisfaction. The probability of delivering the same response would increase over time given the same situation. The greater the satisfaction for stamping in the pleasure or discomfort for stamping out an incorrect method served to strengthen or weaken the bond (Thorndike, 1911). The strength of a stimulus-response bond can be demonstrated by an organism's resistance to change (Nevin, 1999).

Thorndike (1911) found that humans could learn from experimental situations as well as reason through these situations establishing future research opportunities for behaviorists to explore mental capabilities in the early 1900s. Thorndike (1914) conducted research with adult students on memorizing vocabulary words and whether repetition or recall after a period of rest was more effective. Additionally, he conducted a study with fourth grade male students adding columns of numbers and determining whether practice helped speed and accuracy (Donovan & Thorndike, 1913). The focus of Thorndike's (1914; Donovan & Thorndike, 1913) educational research was repetition of activities, learning, speed, and accuracy.

Skinner's operant conditioning theory. Skinner's (1963, 1978) operant conditioning research focused on voluntary behavior maintained by either positive or negative outcomes. Skinner (1963, 1978) preferred reinforcement to Thorndike's (1911) term reward. He initially worked with rats providing opportunities for learned behaviors to occur and then removed stimuli and observed extinction of behavior. Skinner (1963, 1978) continued his work with human subjects furthering the importance of reinforcement to prompt behavior.

Skinner (1978) eventually termed his work operant conditioning stating that behavior was reinforced by stimulus response. His formula for reinforcement equaled a function of stimulus and "any condition affecting reflex strength" (Skinner, 1978, p. 117). However, McClelland

(1987) refuted this claim by indicating another force might be at work, perhaps another area of the brain that sensed pleasure. According to Skinner's (1978) theory, negative reinforcement should extinguish behavior but McClelland proved him incorrect.

Hull's drive theory. Hull (Hull, 1943, 1952; Hull et al., 1947) found that habit strength (e.g., strength of a person's habit) along with drive resulted in behavior, which he termed *reaction potential*. He conducted quantifiable research on behavior, which was controversial in the early 1940s. Hull (Hull et al., 1947) worked to cultivate a quantifiable measurement for specific reaction potentials (e.g., conditioned secretions were quantified by the amount of saliva produced). He found there was no *single* method to quantify behavioral results, instead there were many. Hull et al. (1947) discovered that behavior lies within an organism and since no two are the same, reaction potential results vary by organism. He discovered there was a possibility that reaction potentials are related in some way, perhaps monotonically (Hull et al., 1947).

According to Weiner (1980), Hull took the work of Pavlov (1927/2003) and Skinner (1963, 1978) a step further. Behaviorists found stimuli inspired a response but not if the need was already satiated. Hull indicated that a need must be unsatisfied in order to instigate action (Hull, 1943; Weiner, 1980). Hull stated that organisms are linked to their environment in that when a primary need is present (e.g., hunger) an organism will act upon its environment to satisfy the need (Hull, 1943). Hull (1952) found that when an organism valued the stimulus there was potential for action.

Psychoanalytical Theory

Psychoanalysis can be defined as a way of identifying motives and treating mental illness (Freud, 1987). Psychoanalysts delved into the psyche to determine motivators of behavior, which is the crux of Freud's work. Freud (1987), along with other theorists, worked with human

patients to treat afflictions of the mind. He began with hypnosis but later adopted other forms of psychoanalysis like analyzing dreams to help his patients find his/her way back to a healthy mindset. Psychoanalysis hinged upon encouraging people to look within themselves even to the unconscious mind to determine why they behave the way they do and to modify their behavior (Deci, 1995).

Freud's (1987) research is commonly connected with personality development. Freud stated that people were motivated by three basic needs: sex, aggression, and anxiety (McClelland, 1987). He found when these needs were met a well-balanced human emerged. However, deficiencies in meeting the three basic needs inspired motives according to Freud (1987). He stated that when any combination of the three basic needs (e.g., sex, aggression, and anxiety) was not met, humans were motivated to act. Freud (1987) also indicated personality is formed by how an individual advances through the psychosexual stages of development. Freud's (1987) research on dream analyses, thought processes, and drive was highly influential in McClelland's (1987) work on motivation.

Humanist Theory

Humanistic theorists focus on intrinsic motivation and what encourages people to act; physiological and psychological need satiation is at its core. Humanistic theory came out of the psychoanalytical theory of motivation (Deci, 1995). According to Deci (1995), both humanism and psychoanalysis hold that individuals must have awareness of their motives, have a root foundation of motivation and emotion, and use experiences to build theory. Humanists state that individuals have autonomy to make decisions freely (Deci, 1975; Skinner, 1978). As Maslow (1954) indicated in his self-actualization philosophy, people make good or bad decisions in order to satisfy needs; and they must grow spiritually in the process.

Maslow (1948, 1954) surmised that people progressed through stages to achieve basic need gratification. The stages included physiological, safety, love/belonging, esteem, and self-actualization needs. He stated that character was formed by satisfying stages in the needs hierarchy which, in turn, determined a person's motivation.

Maslow's (1954) theory on need gratification, commonly referred to as Maslow's hierarchy of needs, developed over time. He studied several phenomena that shaped his theory of motivation. Maslow (1948) discovered that behavior was influenced by many factors including past, present, and future events that occurred in an organism's life. He held that animals and humans could be classified if they progressed through stages of need gratification on a continuum or as has been illustrated on a pyramid. Maslow (1948, 1954) hypothesized that a healthy individual developed over time by satiating basic needs such as food, security, friendship, and self-esteem to realize the ultimate need of self-actualization. When lower-level needs are met, motivation is no longer provided. An interest in an activity must exist in order to be motivated to act, otherwise boredom and lack of motivation abound (Maslow, 1948).

Stages of Maslow's (1954) hierarchy of needs are: physiological, safety, love/belonging, esteem, and self-actualization. Maslow (1948) discovered that character formation and need satisfaction are linked. This link can be observed by seeing one's needs being satisfied and resulting reactions to situations. Deprivation of basic physiological needs manifests in lack of energy, lethargy, and fatigue from lack of sleep. Basic physiological needs such as air, water, food, and sex must be met in order to move to the next level which is safety. In order to satisfy the safety need, security of environment, body, income, health, and other resources must be met. A secure person is confident, courageous, content, and less fearful of environment. In contrast, if the safety need is not satiated, feelings of fear, dread and apprehensiveness appear. The next

three levels encompass what Maslow (1954) refers to as emotional needs. These needs like a sense of belonging, love, self-esteem, and respect manifest into being affectionate, displaying self-confidence, and showing signs of feeling secure in one's own skin. One who is creative, independent, self-assured, respected by peers, and secure has achieved self-actualization. Self-actualization is the final stage in Maslow's (1954) hierarchy of needs. Maslow indicated that his process of need satisfaction encouraged the development of a healthy, well-balanced individual.

Additional Theories of Motivation

Other theorists (Deci and Ryan, 2008a, 2008b; Herzberg, 1965, 1974; McClelland, 1987; Vroom, 1964/1995) studied self-motivation. Vroom (1964/1995) focused his research on outcomes not needs. Herzberg (1974) studied job satisfaction based on two different factors he called motivation and hygiene. Deci and Ryan (2008a, 2008b) studied self determination as a theory of motivation. Finally, McClelland (1987) studied people's motives for doing what they do using three acquired needs: need for achievement, affiliation, and power.

Vroom's expectancy theory. Vroom's (1964/1995) expectancy theory has been associated with process theories but has not been categorized under psychoanalysis; therefore, his theory is included with other theories on motivation. Vroom's (1964/1995) expectancy theory focuses on choices people make, their satisfaction, and effectiveness within their work roles. He studied the input and outcome processes which individuals experienced in a work environment to determine which motivators would modify behavior. Vroom's (1964/1995) expectancy theory consisted of three components: expectancy, valence, and instrumentality. Expectancy can be described as *the harder I work the more I will achieve*, where valence emphasizes the importance of the outcome (e.g., making more money might be a prime motivator). Valence focuses on the meaning of the outcome to the individual receiving or

achieving it. Vroom (1964/1995) considers it positively valent if an individual wants to achieve the outcome and negatively valent if they do not. Therefore, the salary amount is not as important as the relationship between the salary and what that amount represents to the individual (Vroom, 1964/1995). Vroom stated that "wages are found to be the most frequent source of dissatisfaction but the least frequent source of satisfaction" (Vroom, 1964/1995, p. 175). Instrumentality centers around a person's faith that rewards will come for a job well done (Vroom, 1964/1995).

Herzberg's two-factor theory. Herzberg (1965, 1974) found job satisfaction (motivation) stemmed from advancement opportunities, recognition, or responsibility, while job dissatisfaction (hygiene) originated from issues with salary, benefits, and working conditions. Herzberg's theory has been referred to as the two-factor theory or the motivation-hygiene theory (Schermerhorn et al., 2005).

Herzberg (1965, 1974) discovered people were affected in different ways at work. Job satisfaction motivators pertained specifically to work performed in the job, not working conditions. He found an individual was inspired to do a better job when recognized for his/her hard work. Additionally, recognition for achieving a goal or milestone also promoted job satisfaction. Herzberg (1965, 1974) discovered when a person felt the work itself was challenging and worthwhile, the employee was more content with the job. Growth and advancement opportunities provided further incentive to perform well on the job because the individual assumed he/she would be considered for promotion. Herzberg (1965, 1974) found an absence of these motivating factors led to job dissatisfaction.

Herzberg's (1965, 1974) second factor, hygiene, focused specifically on factors that encouraged job dissatisfaction. These factors had to do with working environment as opposed to

job content. How well or how poorly an employee is treated is one factor that determines job satisfaction or dissatisfaction respectively. These factors do not denote happiness; they simply prevent a person from being satisfied with his/her job (Herzberg, 1965). According to Herzberg (1965, 1974), an employee must feel fairness abounds in a workplace by enforcement and management of company policies. Likewise, administrative practices set a tone in the workplace that encourages or discourages job satisfaction; consistency is important (Schermerhorn et al., 2005). Employees feel dissatisfied if they have a supervisor who does not work well with them. Similarly, interpersonal relationships in the workplace can be a source of angst as can work and working conditions. Herzberg (1974) found that if an employee is not heard or a physical issue with one's workspace is not fixed, satisfaction will wane as days pass and problems are not resolved. An employee's status within a company is important to that person; so, when it is underappreciated or devalued, it causes disappointment for the employee. Similarly, security within a company is important; so when an employee's job security is threatened, feelings of discontent about a future with the firm proliferate. Finally, salary can cause employee dissatisfaction. Herzberg (1974) found salary to be both a motivation and hygiene factor, depending on the nature of monetary compensation involved. If an employee is underpaid or passed over for a raise, then job dissatisfaction occurs. However, an employee who is handsomely compensated and, therefore, motivated, theoretically is satisfied with the job.

Deci and Ryan's self-determination theory. Self-determination theory concentrates on personality development, psychological happiness and health, ambition, actions, thought processes, how culture and motivation relate, affects of society on motivation, and zest for life (2008b). Self-determination theory was developed by Deci and Ryan (2008a) as a broad theory to provide meaning to people across domains and cultures. According to Deci and Ryan

(2008a), several studies have shown autonomy encourages psychological well-being in Western and Eastern cultures. Deci and Ryan (2008a, 2008b; Deci, 1995) developed self-determination theory (SDT) which was a blending of intrinsic motivation and extrinsic motivation in the 1970s. However, the theory really took shape in the 1980s and notable research using self-determination theory has been conducted over the past ten years. According to Deci and Ryan (2008a), intrinsic motivation was inspired by interest and personal satisfaction for behaving in a particular manner or completing a chosen task. External motivation was encouraged by external physical rewards or to avoid retribution. Self-determination theory focused on type or quality of motivation rather than quantity. The types of motivation Deci and Ryan (2008a, 2008b) identified as important for their theory were autonomous motivation, controlled motivation, and amotivation.

Autonomous motivation is comprised of intrinsic motivation and well-internalized extrinsic motivation (Deci & Ryan, 2008a). Basically, autonomous motivation moves people to act on their own free will in order to make choices for themselves. Controlled motivation encompasses external and introjected regulation (Deci & Ryan, 2008a) while amotivation describes a lack of inspiration and purpose (Deci & Ryan, 2008b). According to Deci and Ryan (2008a), an introjected regulation is one that is seemingly forced on an individual, the idea is not embraced or internalized but the person acts upon it because a perceived demand to comply within the controlled motivation situation exists. Controlled motivation is present when an individual feels pressure to perform where external forces have required specific results from expected behaviors.

Deci and Ryan (2008a) determined an individual internalizes extrinsic motivators (external regulations) in three ways: introjection, identification, or integration. Introjection is the least effective method of internalization as it entails an individual hearing an order to act but not embracing the idea as his/her own. Individuals simply follow the order because they feel as though they have no control over the situation. If a teacher requires students to put their book bags on the counter when they enter the room and a student feels as if this is a demand that he/she has no control over, in an introjected state the individual will comply under duress. Identification is more autonomous than introjection; an individual does not feel controlled by the demand. Identification requires an individual to identify with the regulation and accept it as his/her own. Using the same example of the teacher and the book bag above, an identified individual will comply because the task is done every day and the student sees some meaning for the required practice. Integration is the most autonomous form of internalization. It happens when an individual integrates identification into his/her being freely and autonomously like an intrinsic motivator.

Using the same example of the teacher and the book bag, a fully integrated individual will automatically put the book bag on the counter when they walk in the room without being told. The idea becomes his/her own fully integrated. For an idea to journey from being an extrinsic to an intrinsic motivator it must be fully integrated by the individual, thus creating autonomy within the individual. Deci and Ryan (2008a) described autonomy as having a choice in a matter and independence as acting unaccompanied, not depending on anyone else.

Deci and Ryan (2008b) stated that needs were learned; but need for autonomy, competence, and relatedness were pervasive throughout cultures. These psychological needs were the three constructs on which the self-determination theory was founded. The theory does not focus on strength of needs being met but on level at which needs are satiated.

McClelland's human motivation theory. McClelland (1987) held firm to a belief that environment influenced an individual's drive. McClelland (1987) derived three constructs on which to base his theory: need for achievement, need for affiliation, and need for power. McClelland adopted Murray's (1938) Thematic Apperception Test (TAT) to measure motivational needs. An individual would view a series of pictures and write stories about each picture using guided questions, sometimes in a specific "motive arousal" (McClelland, 1987) state and sometimes in a relaxed state. McClelland (1987) indicated that a motive arousal state occurred when an individual was motivated by some type of need (e.g., power, affiliation, or achievement). Results were tallied and inferences drawn by answers provided against McClelland's three constructs. He asserted several factors like incentives, a person's interest, or values influenced a person's decision to act, and affected results of the test.

McClelland (1987) derived his three constructs from various other theoretical frameworks like Freud's (1987) dream analysis, Hull's (1943, 1952) drive theory, Murray's (1938) list of 20 needs, and Maslow's (1954) hierarchy. He developed his theory with a basis in psychoanalysis, behaviorism, and humanism. He stated these theoretical areas had much to offer in the area of motivation, but it was incomplete. Therefore, he set out to create his own theory of motivation with intrinsic and extrinsic components. McClelland (1987) found human motivation was a combination of person and situation, unlike Freud (1987) and Hull (1943, 1952) who suggested the two were mutually exclusive (McClelland, 1987). Motivation, according to

McClelland (1987), comprised a variety of factors including but not limited to a need for achievement, need for affiliation, and need for power. McClelland (1987) presents the need for achievement, affiliation, and power in terms of motives (i.e., achievement motive, affiliative motive, and power motive).

According to McClelland (1961, 1987), the achievement motive focuses on a desire to do something more efficiently, doing less to achieve more. People with a high need for achievement do not engage in activities in which there is no chance of improvement such as tasks either too easy or too difficult. Likewise, if a task only offers monetary gains, high-need achievers do not participate because it presents no challenge. McClelland (1987) discovered those individuals who possess a high need for achievement seek positive feedback for personal satisfaction. These students have a higher proclivity toward taking moderate risks or risks for which they are personally responsible. They have a tendency to target activities where success is achievable. They will work hard to attain the highest grade possible but external rewards are not their singular motivation. These high achievers are intrinsically motivated, so external rewards are only a secondary motivation. He also found that people with a high need for achievement motive sought out better standards of living. Previous studies suggested parents inspired a high need for achievement in their children by requiring a high level of performance, most likely because parents were from reform groups who suggested their way of doing things was far superior to common ways (McClelland, 1987). According to McClelland (1987), parents play an instrumental role in developing a high need for achievement from a child's early age by establishing standards on basic tasks like eating or eliminating. McClelland (1987) indicated conscious values requiring cognitive development are formed much later in life in contrast to

motivational needs which are formed in infancy or childhood. Therefore, age and maturity affect decision making but not sources of motivation. McClelland (1987) indicated that maturity level determined the level of need for achievement, affiliation, and power motives.

Individuals who are motivated by power (e.g., need for power) are extrinsically motivated while those motivated to achieve (e.g., need for achievement) are intrinsically motivated. A person with a high need for power seeks prestige and thrives on establishing a reputation of taking charge (McClelland, 1987). Individuals with a high need for power take extreme risks especially if a high potential for competition exists. This high need for power encourages competition and assertiveness. McClelland (1987) stated that individuals with a high need for power were more apt to recall "feelings of physical or psychological strength" (p. 596). Competitive and very aggressive activities have the propensity to get out of hand, putting a person with high need for power in a precarious position to try to fit society's expectations. Need for power differs between men and women (McClelland, 1987). Power motive lends itself to more competitive, aggressive behavior in men to the point of pressuring conventional women into submission regardless of task. Socioeconomic status affects the power motive. An individual with a lower socioeconomic status has been shown to display a more aggressive behavior and is more apt to get angry than an individual from a middle socioeconomic class, in the same need for power level (McClelland, 1987). McClelland (1987) indicated maturity level also plays a role in the need for power motive.

McClelland (1987) relied heavily on Freud's (1987) psychosexual stages to formulate his theory especially with respect to the need for power motive. Using Freud's (1987) psychosexual stages, those in the oral stage (Stage I) were more submissive, following a leader, while those in the self control stage (Stage II) were more apt to hold their anger inside. An individual in the

assertive stage (Stage III) had a tendency to be more dominant and express his/her anger openly in assertive and competitive activities. However, in the stage of mutuality (Stage IV) an individual had a proclivity toward being more open with very close friends, sharing confidences, and seeking positions of leadership in charitable organizations.

Power motive sources are lesser known, but McClelland (1987) indicated the way children are treated by parents, as in achievement motive, makes a difference in how a motive manifests in an individual in adulthood. According to McClelland (1987), activity inhibition is the ability to control one's behavior. McClelland (1987) found if a man has a low activity inhibition but a high need for power, he feels a desire to control others. These same men have a proclivity to be liars, heavy drinkers, and socially irresponsible individuals. However, men with a high need for power and high inhibition have a propensity to use their power to help others, are hard workers, and are less self-indulgent.

According to McClelland (1987), less is known about need for affiliation, than about need for achievement and need for power. He stated that an affiliative motive points to a "goal state of being with another" (McClelland, 1987, p. 597). McClelland (1987) questioned whether the need to be with another stemmed from Freud's (1987) sexual need or a need to relate to another human being. He found two facets of the affiliative motive existed. The first, need for affiliation, stemmed from a need to be with people, fear of being alone or rejected. They fear others will not like them and that they will unintentionally repel people. The second, intimacy motive, involved a sharing with others, creating warm interpersonal relationships. They tended to be affectionate, caring individuals, who enjoyed the company of others but did not fear being alone. McClelland (1987) stated the affiliative motive was essential to mental and physical well

being. Several studies, according to McClelland (1987), have shown a high need for affiliation or intimacy motive promotes a healthy immune system. As with the power motive, little is known about societal or familial foundations of the affiliative motive.

Motivational Theory for Study

McClelland (1987) explained that people are motivated by an intrinsic motivational need for affiliation, need for achievement, and need for power. This study used McClelland's (1987) human motivation theory since it was the most widely cited (e.g., Dorfman & Howell, 1997; Pang & Schultheiss, 2005; Schmidt & Frieze, 1997) motivational theory and identified the constructs that this study wanted to test (e.g., need for achievement, affiliation, and power). McClelland's (1987) human motivation theory explains a relationship between these three needs. Studies (McClelland, 1961) were conducted with individuals from several countries (e.g., Germany, India, and Bulgaria). These measured need for affiliation and need for power as it related to economic development. Additionally, McClelland (1961, 1987) conducted studies within the business and educational fields using his theory of motivation. Practitioners may help others predict performance by understanding how the three needs work together. Individuals may be able to explain behavior by understanding the three needs. According to McClelland (1987), power and achievement motivation training affects the way teachers think and act. He indicated that this knowledge can inspire teachers to encourage outcomes that are more socially acceptable like better performance in school. Practitioners may be able to use information garnered from this research in a classroom setting to inspire students in specific ways based on results of this study. These reasons represent why this study was conducted and why McClelland's (1987) theory of motivation was chosen.

Historical Evolution of Student Motivational Needs

Since the study of student motivation is still developing, the evolution of motivation is introduced with a transition into student motivational needs. Many changes have taken place in the area of motivation over the past 100 years. Beginning with the research of Pavlov (1927/2003), Freud (1987) and Skinner (1963, 1978), the topic of motivation emerged through the study of behaviors, what inspires an organism to move. According to Weiner (1972), the study of motivation began in the 1930s with drive and field theories, then in the 1950s achievement theory appeared and finally cognitive theories started popping up in the 1960s. Deprivation, reinforcement, instinct, drives, arousal states, basic needs, dynamics of behavior, and the importance of actions were topics introduced and examined (Ames & Ames, 1984; Weiner, 1990).

According to Weiner (1990), during the 20-year period from 1940 to 1960 motivational studies of concern to educators included "praise and reproof, success and failure, knowledge of results (feedback), cooperation and competitions, and reward and punishment" (p. 617). The focus went from mechanistic analysis to cognitive analysis. Thought processes with respect to motivation became important during the 1960s, as did the continuation of achievement motivation. The terms achievement motivation and motivational research are tantamount (Weiner, 1990). Other less significant areas of study such as affiliative behavior and cognitive balance were also studied during this research.

In the 1980s, achievement needs, anxiety about failing, and control issues continued to be explored along with a few new issues: self-efficacy, underlying attributes of success and failure, and an individual's maintaining a strong belief in his/her abilities (Weiner, 1990). The 1990s continued with the same topics from the 1980s with more emphasis on achievement motivation.

Goal theory was introduced which "embraces the linked concepts of ego-involvement, competitive reward structure, social comparison as the indicator of success and ability attributions" (Weiner, 1990, p. 620). As far as classrooms are concerned, cognitive approaches to motivation such as underlying attributes, self-efficacy and perceived control, feelings of helplessness, and future aspirations still need to be explored.

Discussions prior to the 1960s regarding motivation in education were merely speculation from research conducted on animal behavior, not based on research experiments with humans. McClelland (1961), in *The Achieving Society*, stated that a limited amount of research had been conducted on student motivation. Deci (1975) concurred by noting there was limited *experimental evidence* in the field of education with respect to effects of intrinsic or extrinsic motivation as of 1975.

With respect to education and student motivation, Bruner (1962) stated rewards should be stopped in education because they serve to destroy a child's natural inclination to learn, their sense of discovery, their intrinsic motivation (Bruner, 1962; Deci, 1975). Dependency on rewards like gold stars or grades precludes a child from learning for the sheer joy of it. Intrinsic motivation cannot be fostered in an environment of external rewards and punishments (Deci, 1975, 1995). Deci (1975) stated extrinsic reward systems have some merit depending on intended results. He detailed a token reward program that focuses on rewarding desired behaviors for reinforcement. Students would earn chips or tokens to be exchanged for physical rewards such as candy or something else preferred by children. The token reward system works best for disorderly or disturbed children. The naturally intrinsically motivated, curious child has a tendency to get bored with this type of system because activities that result in tokens appear to be busy work, not meaningful activities. If the intended goal of instituting the token reward

program is to settle disruptive students, then it should be put into action. However, if the intention is to settle, challenge, or reward bright, otherwise-engaged students, then Deci (1975) recommends token reward programs not be implemented as they will backfire and students will become disinterested. According to Deci (1975), extrinsic rewards, not including token reward programs, should not be eliminated because they have some value in eliciting positive behaviors. Intrinsic and extrinsic motivation along with a student's goals, values, and interests comprises their motivational needs (Deci, 1975, 1995; McClelland, 1987).

Over the past 70 years, motivational research has grown and changed from a mechanistic to a cognitive approach to what we have today, which is a combination of the two. Researchers are looking at motivation in terms of thought processes, behaviors, needs, values, interests, and environment (McClelland, 1987; Weiner, 1984, 1990). Since no student motivation theory currently exists, Weiner (1984) suggested a researcher create such a theory and in so doing would have to step outside of the realm of current motivational theories. The motivational research done by McClelland (1987) and Deci and Ryan (2008a, 2008b) within the field of education could serve as a basis for establishing a new theory of student motivation (Weiner, 1984). Ball (1984) indicated that many motivational concepts such as achievement motivation. locus of control, attribution, and reinforcement theory have been explored over the years paving the way for a theory specifically centered on students and student achievement.

Motivational Research in Education

There are numerous research studies (Chirkov & Ryan, 2001; Knoop, 1994; Leondari & Gonida, 2007; Lester, 1990, Melikian, 1958; Rutter, 1998; Schmidt & Frieze, 1997; Sheldon & Krieger, 2007; Turner, 1996; Vansteenkiste, Simons, Soenens, & Lens, 2004) on the topic of motivation in the education field. Noted motivational research uses Maslow's (1954), Herzberg's

(1965, 1974), McClelland's (1987), and Deci and Ryan's (2008a, 2008b) theories. Educational research using McClelland's (1987) theory on motivation is quite vast. Research studies either focus on one of McClelland's (1987) three constructs (e.g., Melikian, 1958) or all three (e.g., Schmidt & Frieze, 1997) and participants are usually college students. However, Turner (1996) and Rutter (1998) studied high school students and explored all three of McClelland's constructs.

Research in the education domain using Deci and Ryan's (2008a, 2008b) self-determination theory across cultures is ongoing. Chirkov and Ryan (2001) discovered teacher autonomy support in Russia and the United States influenced secondary students, students internalized motivation for school work, were happier at school, and simply felt good about themselves. Chirkov and Ryan's (2001) study included parents providing autonomy support to their children and found children from both cultural groups to be more well-adjusted, motivated individuals than those families where autonomy was not supported.

There are limited studies in the educational domain that research student motivation using Herzberg's (1965, 1974) theory. Knoop (1994) conducted a study of 386 employees in the field of education (e.g., teachers, counselors, and administrators) exploring various intrinsic and extrinsic motivators in an educational workplace. He found in most areas (i.e., achievement, recognition for achievement, work itself, responsibility, advancement, growth, company policy and administration, supervision, interpersonal relations, working conditions, and security) motivators examined concurred with Herzberg's (1974) two factors while in others (i.e., job status, satisfaction with work, and salary) they either differed with which category (e.g., motivation or hygiene) to fit into or challenged Herzberg's research with a whole new dimension to study in the future, one that related to people. Knoop (1994) indicated that in the new factor, satisfaction with the work itself, as an intrinsic work values motivator, and pay, as an extrinsic

work values motivator, would be included. Knoop (1994) found job status was the only variable examined that did not fully support Herzberg's (1965, 1974) theory. Job status is a hygiene factor according to Herzberg (1965, 1974), but Knoop (1994) discovered it to be an intrinsic work-outcome value in his study. His "results suggest[ed] two work dimensions, two job dimensions, and one people dimension" (Knoop, 1994, p. 689). Knoop (1994) labeled the two work dimensions (work values factors) intrinsic work-related values and intrinsic work-outcome values. His two job dimensions (job satisfaction factors) were called extrinsic job-outcome and extrinsic job-related while the people factor he titled extrinsic people-related. Additionally, Knoop's (1994) results indicated an educational workplace did not differ greatly from a business setting. However, Knoop (1994) commented that the affluent nature of the participants involved in the study might have tied salary and social status together skewing the interpretation of the job status dimension. This might account for the difference in the job status dimension being interpreted as a job satisfaction factor in Knoop's study versus a job dissatisfaction factor in Herzberg's (1974).

Leondari and Gonida (2007) conducted a study with 702 upper elementary and high school students. The study explored self-handicapping strategies, personal achievement goals (i.e., task, performance-approach, and performance-avoidance), social goals, and future consequences. This study was designed to explore student motivation with regards to mathematics education. Leondari and Gonida (2007) looked at grade point average (GPA) in mathematics along with demographic information. They gathered information on grade level, age, gender, school, and the parents' educational level which was used to determine socioeconomic status (SES). The participants consisted of 368 boys and 334 girls. The study was conducted in Greece at five different public high schools in urban areas. There were 255

upper elementary school students (sixth grade, aged 11-12 years), 249 junior high school students (second grade in Greece, tenth grade in the U.S., aged 13-14 years), and 198 senior high school students (fourth grade in Greece, twelfth grade in the U.S., aged 15-16 years). The questionnaire was based on the mathematics education domain and used a Likert-type rating scale. Univariate ANOVAs revealed no significant differences in self-handicapping based on grade level. However, Leondari and Gonida (2007) indicated that a significant difference was found based on task goals. High school students were less oriented to task goals than elementary school students. Tukey's Honestly Significant Difference (HSD) revealed that students in elementary school were significantly different from junior and senior high school students. Additionally, tenth graders differed significantly from high school twelfth graders. No significant differences were found in SES among three grade levels based on parents' educational level or gender. The results of the study indicate that the use of self-handicapping techniques in relation to academics can lead to lasting academic failure or low achievement, despair, lack of motivation to learn, and a decreased ability to succeed. The study also recommended that teachers and parents should encourage students to explore various options for personal evaluation that do not include academic achievement as a measure of personal worth.

Maslow's (1954) hierarchy of needs provided a research foundation for many decades. One such research study pertaining to the field of education was conducted by Lester (1990) on a group of undergraduates to determine if a relationship existed between Maslow's (1954) basic needs and neuroticism measures as well as locus of control beliefs. He administered a survey anonymously to 166 undergraduate students on Maslow's hierarchy of needs. The survey consisted of ten items per need (5) totaling 50 survey questions. Additionally, he had 66

complete the Eysenchk Personality Inventory, and 88 complete a locus of control scale. The Eysenchk Personality Inventory measured neuroticism and extraversion, while the locus of control scale "provides separate measures of a belief in control by powerful others, by chance, and by oneself" (Lester, 1990, p. 84). Results of the study indicated a relationship existed between Maslow's (1954) basic needs to measures of neuroticism and an internal locus of control belief.

Melikian (1958) conducted a study which involved 84 Arabic-speaking students at the American University of Beirut. He studied achievement motivation contrasting the results of Edwards' (1954) Personal Preference Schedule and McClelland's (1987) Thematic Apperception Test (TAT) for measuring achievement motivation. Two psychology classes participated in the study. The participant pool consisted of 60 males and 24 females, all of whom were from various countries such as Lebanon, Jordan, Syria, Iraq, and Bahrain. The method consisted of administering Edward's Personal Preference Schedule in a questionnaire format to all participants. A week later, McClelland's (1987) Thematic Apperception Test (TAT) was administered. Four pictures were shown to participants along with four standard questions that students were asked to answer in relation to pictures provided. The results showed no significant relationship between the 69 participants who completed both assessments.

Turner (1996) conducted a descriptive survey study of the motivational needs of high school Agriculture education students using McClelland's need for achievement, affiliation, and power constructs. Turner (1996) examined what influences membership in FFA (Future Farmers of America), gender, geographical location, ethnic background, and scholastic standing had on the student's need for achievement, affiliation, and power. Cluster sampling was used to randomly select the 1,952 participants for the study. The 22 high school programs selected to

participate in the survey were randomly chosen. The participants completed a paper-based questionnaire created by Turner (1996). The questionnaire consisted of 15 questions using a 5-point Likert-type scale. Results of the study indicated that Agriculture education students' need for achievement was higher than their need for affiliation and their need for affiliation was higher than their need for power. Turner (1996) found that FFA members had a higher need for achievement, affiliation, and power than non-members. Turner (1996) found that female Agriculture education students had a higher need for affiliation than males, while males had a higher need for power than females. He found no difference in the need for achievement based on gender. Turner (1996) discovered that students living on a farm had a higher need for power than those not living on a farm. There were no significant differences found in need for achievement and need for affiliation in students living on a farm versus those not living on a farm. He further delineated geographic location to look at urban versus rural settings. Those students living in a rural setting had a higher need for power than those students living in an urban setting. There were no significant differences found in need for achievement and need for affiliation in students living in a rural setting versus those living in an urban setting. Turner's (1996) classifications within the ethnic background category were African-American, others, and Caucasian. He found that African-American students had a higher need for achievement than the others or Caucasian students. Turner (1996) found that the Caucasian Agriculture students had a higher need for achievement than the others. He also stated that the Caucasian Agriculture students in his study had a higher need for affiliation than the African-American Agriculture students and the others Agriculture students. However, the African-American students had a higher need for affiliation than the others. Turner (1996) also indicated that the African-American Agriculture students had a higher need for power than the others or Caucasian

students. Additionally, the Caucasian students had a higher need for power than the others Agriculture students. Turner (1996) found that the tenth, eleventh, and twelfth grade students had a higher need for power than the ninth graders. He found no significant difference in the need for achievement or need for affiliation based on scholastic standing.

Rutter (1998) studied high school students in Family and Consumer Sciences courses. Her study was centered on all three of McClelland's constructs to ascertain which construct(s) motivated the students. Rutter (1998) examined what influences gender, race/ethnicity, grade level, and FHA/HERO (Future Homemakers of America/Home Economics Related Occupations) membership had on the student's need for achievement, affiliation, and power. Cluster sampling was used to randomly select the 1,030 participants for the study. The 12 high school programs selected to participate in the survey were randomly chosen, two schools from each of six regions. The participants completed a paper-based questionnaire created by Turner (1996). The questionnaire consisted of 15 questions using a 5-point Likert-type scale. Results of the study indicated that Family and Consumer Sciences education students' need for achievement was higher than their need for affiliation or need for power. Rutter (1998) found no significant differences in the three constructs based on gender. Significant differences in the need for achievement and need for power were found with respect to race/ethnicity. More specifically, African American students had a higher need for achievement and power than other race/ethnicities in the study based on Tukey's HSD post hoc test. Rutter (1998) found no significant differences in the three constructs based on grade level. The results based on FHA/HERO membership showed significant differences in need for affiliation and need for power.

Schmidt and Frieze (1997) conducted a study with 142 college students enrolled in an introduction to psychology class at the University of Pittsburgh. They examined whether motive incentives facilitated a relationship between motive level and product involvement using McClelland's (1987) three constructs (need for achievement, need for affiliation, and need for power) as the independent variables. Motive incentives served as the mediator and those incentives were only goals if the individual desired the incentive. The dependent variable in the study was the participant's involvement in the incentive option. Schmidt and Frieze (1997) stated that a high need for power in college students manifested in such representations as a need for recognition by writing to school newspapers or having their name on their dorm room door. They also have a tendency to buy prestige products that draw attention to themselves like televisions, stereos, or computers. Adults with a high need for power have an affinity to purchase fancy cars, boats, and big houses. Schmidt & Frieze (1997) defined need for affiliation in terms of a person's desire for close, warm relationships with others; they pride themselves on establishing these relationships as well as maintaining them. They also show emotion over being separated from a loved one. These individuals with a high need for affiliation seek to avoid conflict and competition. They grasp the concept of social networks easily, are sympathetic, and are accommodating toward others. However, when a person uses an interpersonal relationship for personal gain then they are most likely high in need for power. During the study, motive levels were assessed by asking participants to complete the Mehrabian and Ksionzky (1974) affiliative tendency scale and the objective power and achievement scale. The Product/Motive Incentive Scale was then completed. It was used to evaluate products by asking the participants to consider three different shopping scenarios. The results indicated that the power motive incentives encouraged the desire for expensive material possessions (i.e., expensive car and

clothing) and the affiliation motive incentives encouraged the involvement for greeting cards but not gifts. In regards to the achievement motive, the scientific calculator and computer manual did not meet the criteria to mediate a relationship.

Sheldon and Krieger (2007) conducted a study of law students in two different law schools within the same state over a three-year period. Due to the stressful nature of law school, research has shown that law students' emotional stress is greater than that of medical students and approaches that of psychiatric populations in some cases (Sheldon & Krieger, 2007). In this study, researchers found all law student participants' basic need satisfaction declined as well as their happiness. However, students who were provided with more autonomy support from faculty members had higher grade point averages after three years, showed a smaller decline in basic needs/happiness, and were more apt to receive a passing score on the bar exam than students who did not receive autonomy support. Autonomy support, as defined by Sheldon and Krieger (2007), is encouragement for self-initiated behavior.

Vansteenkiste et al. (2004) conducted a study where intrinsic and extrinsic goals were framed for a group of tenth, eleventh, and twelfth grade students through an autonomy supportive and a controlled communication style. The group where autonomy was supported was communicated with openly and provided choices while the group given the controlled communication style was given stern instructions with no discussion. All participants were in a physical education class learning a new Asian sport. A 4 x 2 factorial design was used where two factors were manipulated: goal framing and social context. Future goals were established for three of the four groups while the fourth group had no future goal set. Results of the study showed the supported group achieved better performance and learning than the controlled

communication group. Also, those in an autonomy supportive group who received intrinsic goal framing were more inclined to become lifelong exercisers.

Motivational research in education covers a wide range of topics such as educator job satisfaction, achievement motivation, instructional delivery methods, intrinsic and extrinsic motivation, and basic need satisfaction (Chirkov & Ryan, 2001; Knoop, 1994; Melikian, 1958; Sheldon & Krieger, 2007; Vansteenkiste et al., 2004). Motivation is a complex issue with many facets that need to be explored in more depth within the field of education (Weiner, 1980, 1990).

Impact of Independent Variables on Student Motivation

The independent variables in this study are gender, race/ethnicity, grade level, and FBLA membership status. Motivational research studies have been conducted in the field of education with respect to gender (Johnson, 2008; Martin, 2003; Pang and Schultheiss, 2005; Rutter, 1998; Turner, 1996; van der Werf, Opdenakker, & Kuyper, 2008), race/ethnicity (Fouad & Byars-Winston, 2005; Johnson, 2008; Pang and Schultheiss, 2005; Rutter, 1998; Stahl, 1986; Turner, 1996), and grade level (Cantwell & Andrews, 2002; Johnson, 2008; Leondari & Gonida, 2007; Rutter, 1998; Turner, 1996; van der Werf et al., 2008). No motivational research was found on the variable FBLA membership, but research studies have been conducted on participation in extracurricular activities (Cervelló, Moreno, Villodre, & Iglesias, 2006; Filak & Pritchard, 2007; Rutter, 1998; Turner, 1996). Therefore, motivational research on participation in cocurricular activities including other career technical student organizations (CTSOs) and extracurricular activities have been included.

Gender

According to Martin (2003) and van der Werf et al. (2008), girls and boys do not differ in how their motivational levels increase throughout secondary school. However, both Martin

(2003) and van der Werf et al. (2008) indicate that girls start demonstrating a higher motivational level than boys beginning in the seventh grade. Turner (1996) found no significant difference on the need for achievement between males and females in Agriculture education classes but significant differences were found on need for power and need for affiliation based on gender. Females had a higher need for power and need for affiliation than males. Rutter (1998) found no significant difference between males and females enrolled in Family and Consumer Sciences education courses with respect to need for achievement, need for affiliation, or need for power. The results of Rutter's (1998) study may have been affected by unequal sample sizes, 82% of participants were female. Johnson (2008) found little effect on academic engagement as it related to gender. However, unequal and small sample sizes may have impacted the failure to find differences (Johnson, 2008; Rutter, 1998).

Pang and Schultheiss (2005) studied college students' need for achievement, affiliation, and power by administering a questionnaire along with a Picture Story Exercise. The results of the study found that females had a higher need for affiliation than males. Pang and Schultheiss (2005) speculated that because women are provided with more opportunities to be social and develop their affiliative motive that this fact may have influenced their need for affiliation scores. There was a negative correlation between need for power and need for affiliation in women but the opposite was found for men.

Race/Ethnicity

There are studies (Fouad & Byars-Winston, 2005; Pang & Schultheiss, 2005; Stahl, 1986) that found no difference in how individuals of various racial/ethnic backgrounds are motivated and other studies (Johnson, 2008; Rutter, 1998; Turner, 1996) that did find differences. Stahl (1986) found no significant difference equating to race/ethnic background

with respect to their need for achievement, affiliation, and power of adults being trained for managerial positions from various career areas in a longitudinal study. In Turner's (1996) study, Black students in Agriculture education showed a higher need for achievement and need for power than Whites. However, White students showed a higher need for affiliation than Black students. In Rutter's (1998) analysis, Black students in Family and Consumer Sciences courses showed a high need for achievement and need for power, but displayed no significant difference with respect to the need for affiliation. According to Fouad and Byars-Winston (2005), race/ethnicity did not influence career choices or decision-making, but did have a bearing on their perception of available career options. Fouad and Byars-Winston (2005) suggested that motivation was affected by career outlook. Pang and Schultheiss (2005) "found that Asian Americans scored significantly higher in *n* Affiliation than Whites and that African Americans scored higher than both Asian Americans and Whites on *n* Achievement" (p. 291). Johnson's (2008) research found little effect on academic engagement as it related to race/ethnicity. However, unequal and small sample sizes may have impacted the failure to find differences (Johnson, 2008).

Grade Level

There are studies that resulted in significant results (Cantwell & Andrews, 2002; Turner, 1996; van der Werf et al., 2008) and other studies that resulted in non-significant results (Johnson, 2008; Leondari & Gonida, 2007; Rutter, 1998) based on grade level. Turner's (1996) study found that ninth graders in Agriculture education had a lower need for power than students in grades tenth, eleventh, or twelfth. van der Werf et al. (2008) found that achievement motivation saw approximately one-half a standard deviation decline per year from the first year of secondary school. This held true for both boys and girls in the longitudinal study, even

though the girls began at a higher motivational level than the boys (van der Werf et al., 2008). Little effect on academic engagement as it related to grade level was noted by Johnson (2008). However, unequal and small samples sizes may have impacted the failure to find differences (Johnson, 2008).

Leondari and Gonida (2007) found no differences in the use of self-handicapping strategies based on grade level. However, significant differences were found based on task goals based on grade level. In upper elementary school students self-handicapping revealed a positive correlation with performance-approach goals, performance-avoidance goals and pleasing significant others but showed a negative correlation with achievement in mathematics. Junior high school students revealed a positive correlation between self-handicapping and performance-avoidance goals and the goal of pleasing significant others but revealed a negative correlation to task goals and achievement in mathematics. Self-handicapping in senior high school students displayed a negative correlation to task goals. No significant negative correlations were found between achievement in mathematics and performance-avoidance goals based on elementary and junior high school students. Rutter (1998) found no significant difference in the motivational needs of Family and Consumer Sciences secondary students by grade level.

According to Cantwell and Andrews (2002), students who were motivated by achievement (i.e., set achievement goals) in Years 7 and 9 were more likely to enjoy group work. Likewise, students with a high need for affiliation had an affinity for working in groups. Cantwell and Andrews (2002) found in their study of secondary students in Years 7, 9, and 11 that as students matured their need for affiliation increased (i.e., in Years 9 and 11). The students with a low need for affiliation preferred to work individually. This relationship was more prevalent in Year 7 students (Cantwell & Andrews, 2002).

Participation in Cocurricular and Extracurricular Activities

Studies (Turner, 1996; Rutter, 1998) found significance with respect to participation in Career Technical Student Organizations (CTSOs) and McClelland's constructs. Additionally, studies (Cervelló et al., 2006; Filak & Pritchard, 2007) on extracurricular activities exhibited a link to motivation. Turner (1996) found that students in Agriculture education courses who were members of FFA had a higher need for affiliation, need for achievement, and need for power than non-members. Whereas, Rutter (1998) found that FHA/HERO members enrolled in Family and Consumer Sciences classes had significant differences in the need for power and need for affiliation but no significant difference in the need for achievement than non-members. Finally, the more a secondary student participates in a CTSO the greater their motivation to succeed academically (Alfeld, Hansen, Aragon, & Stone, 2006).

Cervelló et al. (2006) conducted a survey research study with 1,103 secondary school students in a physical education class. There were 792 athletes and 311 non-athletes. The study explored goal orientations, motivational climate, and dispositional flow in students who participated in extracurricular physical activities. Flow indicated that a person was completely involved or immersed in an activity and had a variety of positive experiences. The results of the study suggested that goal orientation and dispositional flow may persuade an individual to participate in extracurricular physical activity. Athletes and non-athletes showed differences in their perception of competence and dispositional flow. Findings on the dispositional flow between athletes and non-athletes indicated that a motivational difference existed. Participation variations and enjoyment in the sport or physical activity contributed to the perception of

learning climates. The results indicated that although other variables (i.e., perception of performance climate, perception of learning climate, enjoyment in the sport, and participation variations) might have influenced a student's motivation to participate in sports, a student's motivation did affect their decision to participate.

The study conducted by Filak and Pritchard (2007) used Deci and Ryan's (2008a, 2008b) self-determination theory to determine if student members of the Public Relations Student Society of America (PRSSA) extracurricular student organization were motivated by the level of autonomy support received from their advisers. The results revealed that students who felt they had autonomy support from their advisers possessed more self-determined motivation to participate in the student organization. The self-determined motivation fostered need satisfaction in the students which in turn reflected positively on the adviser and the organization. According to Filak and Pritchard (2007), self-determined motivation inspired the students to participate in the PRSSA organization because they saw their participation and the organization as beneficial. They enjoyed participating in the organization and were more likely to encourage others to join.

History of Business and Computer Science Education

Business education was traditionally known as the program that prepared high school students for future careers in business (Stitt-Gohdes, 2002). However, over the past 100 years or so, this distinction has changed to include programs at the postsecondary level (Stitt-Gohdes, 2002). Additionally, course offerings have evolved over time to include more technology-based programs. In which grade level courses could be offered changed as well. Keyboarding can be offered to third graders and computer applications can be offered in the middle grades (Stitt-

Gohdes, 2002). Courses offered at the high school level have changed significantly over time. Not only is accounting offered but management, desktop publishing, and web page design have been added to the business education curriculum (Stitt-Gohdes, 2002).

Business education began in the early 1600s with the introduction of business arithmetic (Stitt-Gohdes, 2002). Business arithmetic had a component called casting accounts which was a forerunner to accounting (Stitt-Gohdes, 2002). As societal needs grew, so did business education with school-to-work options and apprenticeships (Stitt-Gohdes, 2002). The first business education course taught in a public school was bookkeeping "in Boston in 1709, in New York City in 1731, and in Philadelphia in 1733" (as cited in Stitt-Gohdes, 2002, p. 1).

Business education continued to evolve with the addition of high school courses that met society's demands and business college programs that opened in the early 1800s (Stitt-Gohdes, 2002). Land-grant colleges due to the Morrill Act of 1862, the first shorthand course, and the first comprehensive high school were established in the mid to late 1800s (Stitt-Gohdes, 2002). The invention of the typewriter by Christopher Sholes and Gregg shorthand brought to the U.S. from Great Britain revolutionized business education course offerings (Stitt-Gohdes, 2002). Additionally, the civil war opened doors for women to obtain jobs in the workplace which traditionally were reserved only for men (Stitt-Gohdes, 2002). The early 1900s saw great changes in business education. In 1946 the first computer, the ENIAC, Electronic Numerical Integrator and Calculator, was invented (Stitt-Gohdes, 2002). This invention served to modernize and transform the business education field (Stitt-Gohdes, 2002).

Invention and integration continued in the early 1960s to present from electric typewriters to personal computers (Stitt-Gohdes, 2002). Business education is not mentioned specifically in most Federal legislation, but the impact of the legislation is demonstrated with the funding of

business education computer labs, middle grade programs, and career guidance opportunities (Stitt-Gohdes, 2002). The Vocational Education Act of 1963 was passed, which allowed for business education, residential vocational programs, work-study programs, career-based research, training, and demonstrations to be covered by federal funding (Scott and Sarkees-Wircenski, 2008).

Career and technical education curriculum has evolved over the years to provide not only career knowledge and abilities for those entering the workforce right after high school but also requires students to acquire academic knowledge to equip them with the knowledge, skills, and abilities to fit into the world of work and postsecondary education (Scott & Sarkees-Wircenski, 2008). Business education continues to be an integral part of career and technical education curriculum (Stitt-Gohdes, 2002).

Business education (Perkins Collaborative Resource Network, 2010) is the nationally recognized name for the career and technical education program the state of Georgia labels Business and Computer Science (Georgia Performance Standards, 2010). Since this study will be conducted in the state of Georgia, the program will be referred to as Business and Computer Science.

The Business and Computer Science program prepares students for the workforce, postsecondary education, and life (Kesten & Lambrecht, 2010). The three components (i.e., classroom/laboratory experiences, work-based learning, and Future Business Leaders of America) of the Business and Computer Science program are designed to aid in the delivery of business content and financial literacy (Georgia Performance Standards, 2010; Kesten & Lambrecht, 2010). It also prepares students for future endeavors. Students that participate in Business and Computer Science courses learn about business, general educational knowledge,

and technology. They are provided opportunities to participate in competitions and leadership roles through the cocurricular program, Future Business Leaders of America. However, not every student that enrolls in these courses takes advantage of every component of the Business and Computer Science program. This study may help to identify what drives students so that teachers can design programs, projects, and opportunities to facilitate success.

Summary

Several theorists have studied motivation over the past 100 years. Some of the topics researched were thought processes, behaviors, physiological and psychological needs. Motivation in the workplace was studied by Herzberg (1965, 1974) and Vroom (1964), whereas Deci and Ryan (2008a, 2008b) focused their research on self-motivation. Early theorists such as Freud (1987), Hull (1943, 1952; Hull, Felsinger, Gladstone, & Yamaguchi, 1947), Maslow (1948, 1954), Skinner (1963, 1978), and Thorndike (1898, 1911, 1914) provided the foundation for McClelland's (1987) work on motivation. Weiner (1990) stated that there were two different phases of motivation: mechanistic and cognitive. He indicated that motivation began with behaviors related to stimulus-response research conducted by behaviorist theorists, then progressed to thought processes, and finally culminated in a combination of behaviors, thoughts, values, interests, and an individual's interaction with the environment. People are motivated differently according to gender, cultural background, and environment (McClelland, 1987). This study explored specific sources of motivation for students from various backgrounds and experiences using McClelland's (1987) human motivation theory. McClelland's (1987) theory of human motivation is comprised of the three constructs explored in this study: need for achievement, affiliation, and power.

In addition to reviewing literature on various motivational theories this chapter described the evolution of motivation over the past 100 years, from the early research done by Pavlov (1927/2003) to the more recent research done by Deci and Ryan (2008a, 2008b). The research may influence the creation of a theory of student motivation (Ball, 1984; Weiner, 1984). The chapter continues with research in the field of education. There are numerous research studies (Chirkov & Ryan, 2001; Knoop, 1994; Leondari & Gonida, 2007; Lester, 1990, Melikian, 1958; Rutter, 1998; Schmidt & Frieze, 1997; Sheldon & Krieger, 2007; Turner, 1996; Vansteenkiste et al., 2004) on the topic of motivation in the education field. These studies are comprised of research done with students at the secondary and postsecondary level. The research studies used Maslow's (1954), Herzberg's (1965, 1974), McClelland's (1987), and Deci and Ryan's (2008a, 2008b) theories. The impact of the study's independent variables were explored by pointing out research studies that involved gender (Martin, 2003; Johnson, 2008; Rutter, 1998; Turner, 1996; van der Werf et al., 2008), race/ethnicity (Fouad & Byars-Winston, 2005; Johnson, 2008; Rutter, 1998; Stahl, 1986; Turner, 1996), grade level (Johnson, 2008; Leondari & Gonida, 2007; Rutter, 1998; Turner, 1996; van der Werf et al., 2008), and participation in cocurricular or extracurricular activities (Cervelló et al., 2006; Filak & Pritchard, 2007; Rutter, 1998; Turner, 1996).

The chapter concluded with the history of Business and Computer Science education. The field has changed over the past 100 years. Changes involving course offerings and in which grade level courses can be offered were noted, in addition to technological advancements that have changed the field of Business Education forever.

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CHAPTER III

METHOD

Motivation has been studied over the past 100 years in many different ways. Ball (1984) and Gordon Rouse (2001) indicated that factors such as ethnicity, socioeconomic status, age, and race influence a person's motivation. In addition, McClelland (1987) indicated that a person's level of maturity might also affect motivational level. Thus, exploring factors that influence motivation may provide insight into enhancing student learning.

Purpose Statement and Research Questions

The purpose of this descriptive survey study was to examine the motivational needs of secondary Business and Computer Science (BCS) education students using McClelland's (1987) theory of human motivation. Motivational needs were defined as the need for achievement, need for affiliation, and need for power in secondary Business and Computer Science education students. The study analyzed the independent variables of gender, racial/ethnic background, grade level, and Future Business Leaders of America (FBLA) membership to the dependent variables of need for achievement (nAch), need for affiliation (nAff) and need for power (nPower). The study answered the following questions:

1. What is the perceived motivational need for achievement, need for affiliation, and need for power of students enrolled in secondary Business and Computer Science programs?
2. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on gender?

3. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on racial/ethnic background?
4. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on grade level?
5. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on FBLA membership?

Design

This descriptive research study used an online questionnaire to gather data at one point in time with respect to secondary Business and Computer Science (BCS) students in a Georgia public school system. Survey data identified participants' need for achievement, need for affiliation, and need for power. Results were delineated by gender, racial/ethnic background, grade level, and involvement in FBLA. According to Gall, Gall and Borg (2007), "[a] survey is a method of data collection using questionnaires or interviews to collect data from a sample that has been selected to represent a population to which the findings of the data analysis can be generalized" (p. 230).

This study focused on learning what a particular group believed motivated them. Participants were secondary students enrolled in Business and Computer Science classes in a Georgia public school system during the Spring semester of the 2010-2011 school year. Data were collected from a convenience sample consisting of Business and Computer Science students within the Georgia public school system being studied. A convenience sample was

selected because the potential respondents were available and willing to participate (Creswell, 2008). Gall et al. (2007) stated that a convenience sample can provide expediency to a study because the sample is already assembled. Additionally, a convenience sample in a familiar surrounding with familiar personnel can ease conducting a research study (Creswell, 2008; Gall et al., 2007). According to the Georgia Department of Education, in 2009 there were 150,491 students in secondary BCS programs in the state of Georgia and 23,721 of these students were members of FBLA.

A descriptive research design examines a sample at a particular point in time to describe behaviors, opinions, or phenomena (Gall et al., 2007). The phenomena needs to be described before it can be fully explained or studied. Therefore, participants' behaviors or opinions garnered from the collected data served to describe the target sample's motivational needs.

This study employed a cross-sectional survey design where a questionnaire was administered to participants online. An existing survey instrument created by Turner (1996) was used. Although two previous studies using the same instrument (Rutter, 1998; Turner, 1996) used a paper-based format, this administration employed online-administration. Kantor (1991) indicated that score differences between paper-based and web-based administrations were due to the selection method of the participants, not the survey administration type. De Beuckelaer and Lievens (2009) found no indication that the mode of administration affected survey data collection.

There are advantages associated with using online questionnaires. An online-questionnaire format saves money and reduces paper consumption (Gall et al., 2007). It also saves time in collecting data by gathering it in real time, as opposed to waiting for completed questionnaires to arrive by mail. Hill (2001) indicated that survey administration can be costly if

purchased, duplicated, and distributed depending on the administration mode. The researcher modified an existing survey instrument created by Turner (1996), who examined motivational needs of secondary students enrolled in Agricultural education, which made the study financially feasible by eliminating the need to purchase an existing survey or expend time creating a new instrument.

SurveyMonkey (2010) was used to distribute the questionnaire on a specified day. SurveyMonkey (2010) is a web-based survey service that provides online software and tools to conduct survey research with results provided in a variety of formats, namely Excel, pdf, graph, and report form. The service offers a multitude of tools such as survey templates, data analysis options, invitation tools, real time results, and questionnaire customization preferences (Creswell, 2009; SurveyMonkey, 2010). Additionally, raw data results can be obtained and customized scores can be viewed. An advantage of using SurveyMonkey (2010) was the ability to export raw data to Excel and SPSS for further analysis.

To increase response rates in online as well as paper-based surveys, researchers suggest writing a cover letter to accompany the survey; email cover letters will suffice for online surveys (Hill, 2001; Solomon, 2001). Administration mode, such as supervised or unsupervised, must be determined. If the topic is of a sensitive nature, respondents may feel inhibited when answering questions if someone is hovering. According to Wood, Nosko, Desmarais, Ross, and Irvine (2006), if respondents are unsupervised, there is a possibility an individual might not be taking the questionnaire themselves. This study, therefore, allowed some latitude combined with supervision (e.g., an administrator in the classroom with no direct contact with respondents unless requested).

Even though the questionnaire was online, the researcher traveled to each school to distribute parental permission forms (see Appendix A), pick up signed forms, and administer the survey. Access to the questionnaire was provided during class at participants' schools, allowing easy data collection in a timely fashion.

With advances in technology, survey administration costs have fallen due to a decrease in data entry errors between data collection and analysis (Wood et al., 2006). The county's classroom computer labs had the same specifications and almost exact layouts. Survey setting, browser options, computer interface, software use, and computer issue support were equivalent in all testing environments.

Participants

The target sample for this study was composed of all Business and Computer Science (BCS) students who attended one of three public secondary schools (Grades 9-12) in a Georgia public school system. Approximately 28 students were enrolled in each of 36 BCS classes in this particular school system for a total of 933 potential participants. All 933 BCS students were asked to participate in the study. Since participation in Future Business Leaders of America (FBLA) was not required of the students enrolled in a BCS class, a larger sample size of BCS students provided an opportunity for obtaining an effective sample size of FBLA members (Cohen, 1988).

The make-up of the survey sample was similar to that of the Business and Computer Science education programs in the state of Georgia (Georgia Department of Education, 2009). In 2009 the state of Georgia reported 52% male and 48% female participation in Business and Computer Science courses, while my sample contained 53% male and 47% female participation

in BCS courses. The state of Georgia (Georgia Department of Education, 2009) reported 15.8% FBLA participation, while this study reported a 14.5% participation rate.

Using a convenience sample that consisted of all secondary Business and Computer Science (BCS) students within a Georgia public school system provided each student an equal opportunity to participate. Olejnik (1984) stated that if a study focuses only on the possibility of a large effect, the sample size selected may be too small if a researcher is wrong. This issue will affect statistical power. "The probability of rejecting the null hypothesis when the null hypothesis is false is referred to as statistical power" (Olejnik, 1984, p. 41). More participants than needed for the study were asked to participate in order to preserve an effective sample size (Cohen, 1988). "For survey research, Seymour Sudman suggested a minimum of 100 participants in each major subgroup and 20 to 50 in each minor subgroup" (Gall et al., 2007, p. 176). Out of 933 there were 472 participants with 470 completed questionnaires.

Based on IRB requirements, nonresponse only occurred when students chose not to participate in the study, parents chose for their child not to participate, a child did not turn in the signed parental permission slip, or a child was absent on the day of administration. The survey was only administered one time; those participants not in attendance were not included. No follow-up was conducted. A follow-up administration may have affected nonresponse, but not likely due to the parental permission requirement. Biases in the data may be a result of not returning parental permission forms. A variety of possible reasons may exist why permission forms are often not returned by minor-aged students. Parents may fail to sign permission forms because of choice, forgetfulness, or lack of interest. Students may have neglected to give the form to his/her parent or turn it into the researcher. Gerrits, van den Oord, and Voogt (2001) indicated that parental permission affects the response rate. According to Ciesla and Spear

(2007), little research on adolescent nonresponse bias on surveys has been conducted. A small difference was found between respondents and nonrespondents on a telephone and paper-based questionnaire (Ciesla & Spear, 2007; Gerrits, van den Oord, & Voogt, 2001). Sax, Gilmartin, and Bryant (2003) found lower response rates in Web-based questionnaires and limited research available on Web-based questionnaires and nonresponse bias.

Table 1 contains demographic data for the sample of all secondary Business and Computer Science (BCS) students within a Georgia public school system who participated in this study. Of the 933 potential participants, there were 472 respondents with 470 completed questionnaires which resulted in a 50.6% participation rate. According to Fowler (2009), "[t]here is no agreed-upon standard for a minimum acceptable response rate" (p. 51). One factor that greatly affected the participation rate was student failure to bring back a signed parental permission form. Another mitigating factor was a lack of attendance on the day of survey administration.

The independent variables identified in research questions two through five were gender, racial/ethnic background, grade level, and FBLA membership status. Gender was coded as 1=female and 2=male. Girls have a greater tendency toward a need for affiliation than boys, while boys have a greater tendency toward a need for power (McClelland, 1987). Subsequently, Crosnoe et al. (2008) stated that "[g]irls often shape their behavior and attitudes to maintain harmony in their close relationships. Alternatively, boys do so to maintain their status in the social hierarchies of their peer networks" (p. 142). Gender plays a role in how motivation is manifested based on a need for affiliation and a need for power (McClelland, 1987; Turner, 1996).

Table 1

Demographic Data For Study Participants

Variable	N	%
Gender		
Female	223	47.4
Male	247	52.6
Total	470	100.0
Race/ethnicity background		
Majority	303	64.5
Minority	167	35.5
Total	470	100.0
Grade level		
Entering high school in 2010	149	31.7
Entering high school in 2009	97	20.6
Entering high school in 2008	82	17.4
Entering high school in 2007	142	30.2
Total	470	99.9
FBLA membership		
Yes	68	14.5
No	402	85.5
Total	470	100.0

Racial/ethnic background was coded as 1=majority and 2=minority. The U.S. Census Bureau (2008) reported racial/ethnic breakdowns for the county being studied as 81.6% White, 16.0% Black, 0.2% American Indian and Alaska Native, 1.2% Asian, and greater than zero but less than half a unit of measure for Native Hawaiian and Other Pacific Islander. School Matters (2009) indicated the racial/ethnic breakdown for the county being studied was 72.3% White, 20.4% Black, 2.9% Hispanic, 1.6% Asian/Pacific Islander, and 0.4% American Indian/Alaska Native. The data gathered on the demographic questionnaire corresponded to the federal classifications for race and ethnicity as follows: Black or African American, White, Hispanic or Latino, Asian, Native Hawaiian or Other Pacific Islander, and American Indian or Alaska Native categories (Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, 1997). The census data (U.S. Census Bureau, 2008) also indicated that there were

persons of multiple races within the county being studied. Therefore, when conducting the data analysis, all categories were either grouped in a minority or majority classification for reporting purposes. The census data (U.S. Census Bureau, 2008) and the School Matters (2009) data for the county being surveyed showed the race category White as being in the majority with 81.6% and 72.3% respectively. McClelland (1987) suggested that climate in different cultures had more to do with motivation than did racial or ethnic groupings. McClelland's (1987) research revealed that people from extremely cold climates and others living in the tropics possessed a similar lack of motivation regardless of race. Toynbee (1947) found that experiential differences could be attributed to social, economic, or climatic issues. Marschall and Stolle (2004) found that neighborhood experiences influenced individual perceptions of different races and ethnicities. Research has shown that minority groups share similar experiences (Marschall & Stolle, 2004; McClelland, 1987; Toynbee, 1947). As a result of previous research (Marschall & Stolle, 2004; McClelland, 1987; Toynbee, 1947), race/ethnicity data were categorized into majority and minority classifications.

According to Meyer and Setzer (2009), race and ethnic subgroups can be limiting, causing data to go uncollected, as in the case of a multiracial individual not choosing to identify with just one race or ethnic category, or in the case when an individual chooses more than one race or ethnic category. Minority could include participants who did not choose a racial or ethnic group eliminating the potential for missing data for this variable (Meyer & Setzer, 2009). Participants who chose more than one racial/ethnic category were grouped in the minority category. Race/ethnicity as it related to participants' motivational needs was explored because as Fouad and Byars-Winston (2005) discovered, race/ethnicity played a role in an individual's perception of what motivated them.

McClelland (1987) suggested that maturity affected motivational levels. Not everyone matures at the same rate but generally as people age, they mature (Freud, 1987; McClelland, 1987; Okano, 2004). Therefore, grade level was included in this study as a proxy for maturity because as students move through grade levels they age and presumably mature. Grade level was categorized as 1=entering high school in 2010 (i.e., ninth grade), 2=entering high school in 2009 (i.e., tenth grade), 3=entering high school in 2008 (i.e., eleventh grade), and 4=entering high school in 2007 (i.e., twelfth grade). The reason for identifying grade level in this manner was to eliminate confusion with respect to which grade a student was supposed to be in at the time of survey administration (e.g., Is she a second-year high school student?, Does she classify herself as a tenth grader when school records do not?). According to Ball (1984) and McClelland (1987), maturity levels influence motivation levels, so grade level as an independent variable was explored.

Research question five cited the independent variable Future Business Leaders of America (FBLA) membership. This independent variable was coded as 1=member of FBLA and 2=non-member of FBLA. Participation in FBLA was deemed a motivator by the Future Business Leaders of America (2011). According to McClelland (1987), individuals with a high need for achievement are motivated by participating in competitions. Alfeld, Hansen, Aragon, and Stone (2006) stated that participating in competitions positively affected achievement motivation. Therefore, since FBLA is an integral part of the Business and Computer Science program and it is directly correlated to a need for achievement, it was included as an independent variable in this study.

Instrumentation

The questionnaire used to gather data for this survey was created by Turner (1996). The instrument was a 15-question survey with Likert-type items. Turner (1996) piloted the survey with secondary students in Agricultural education programs. The questionnaire measures three related constructs: need for achievement, need for affiliation, and need for power. The instrument consists of two parts (see Appendix B). Part one displayed a demographic information section. Part two contained the actual survey instrument with a 4-point Likert-type scale where 1=Strongly agree, 2=Agree, 3=Disagree, and 4=Strongly disagree. Turner's (1996) survey instrument had a 5-point Likert-type scale with an *undecided* midpoint option. This study used a 4-point Likert-type scale, forced-choice response option. Forced-choice required participants to answer the survey with Strongly agree, Agree, Disagree, or Strongly disagree. The *undecided* midpoint option was removed because of the ambiguous nature of midpoint responses (Hodge & Gillespie, 2003). Interpretation of a midpoint option can vary between construing the option as being on a continuum meaning a neutral position in between disagree and agree or meaning not applicable (Hodge & Gillespie, 2003; Raaijmakers, van Hoof, Hart, Verbogt, & Vollebergh, 2000; Weems & Onwuegbuzie, 2001). Research indicates that the inclusion of a midpoint option like *undecided* challenges the reliability of a score due to a respondent's interpretation of the midpoint option (Weems & Onwuegbuzie, 2001). Chang (1997) found that when a middle option was eliminated score differences could not be determined due to an elimination of the middle option.

Turner's (1996) survey instrument was selected for two reasons: it measured McClelland's (1987) three constructs and provided scores to be reliable and valid for similar samples (Rutter, 1998; Turner, 1996). Survey questions were designed to measure student

motivation as it related to McClelland's (1987) theory of human motivation. Five questions (1, 6, 9, 12, 13) solicited information on the need for achievement. McClelland (1987) described a need for achievement as a desire to win, need for affiliation as a desire to be part of a group, and need for power as a desire to lead. An example of a need for achievement survey item was, "I prefer to do my own work and let others do their own work." Data on need for affiliation were gathered through questions 3, 5, 7, 10 and 14. Need for power data were assessed through questions 2, 4, 8, 11, and 15. An example of a need for affiliation survey statement was, "I would rather compete on a team than compete by myself." A need for power survey statement example was, "I tend to organize and direct the activities of others."

Question groupings were added together to form each of the three motivational needs constructs and to determine an individual's score for need for achievement, need for affiliation, and need for power. Scores on each scale could range from 5 to 20. A 5 for need for achievement meant the participant had a high need to succeed in this area, whereas a 20 indicated less interest in the need for achievement. The lower the mean scores, the higher the need for achievement, need for affiliation, or need for power, and, in turn, the more meaningful that area of motivation became for that participant.

Creswell (2008) suggested researchers check for reliability, report on what type of reliability check was used, question whether the researcher used an appropriate type of reliability check, and verify that positive, high reliability coefficients were reported when selecting or evaluating an instrument. Cronbach alpha was used to check for reliability. Reliability scores using Cronbach alpha are sample dependent. Individual attitudes about motivation may have changed in the 15 years since the creation of the questionnaire. Previous survey research (Rutter, 1998; Turner, 1996) used this survey instrument with samples from various geographic areas

(e.g., rural, farm) within the state of Georgia and from different educational programs (e.g., Agriculture, Family and Consumer Sciences). Participants for this study were suburban Business and Computer Science students. Cronbach alpha analysis was conducted to determine whether the scores for the three constructs were reliable for this survey's data.

Cronbach alpha was calculated for all questions in the study to determine inter-item reliability. A Cronbach alpha analysis was run on the questions that comprise the need for achievement construct and equaled .60. The questions that comprise the need for affiliation construct were also analyzed using Cronbach alpha, and the alpha coefficient was .47. The reliability analysis for the questions that comprise the need for power construct resulted in a .67 alpha coefficient. The overall Cronbach alpha score for the questionnaire was .64. Cronbach alpha scores are sample dependent and based on the number of questions in the instrument (Nunnally & Bernstein, 1994). Therefore, the reliability analysis on this data achieved less than standard levels of alpha. However, the Cronbach alpha results are still helpful in analyzing the data for this study as indicated by Schmitt (1996).

Since Cronbach alpha scores are sample dependent, a researcher must interpret the reliability scores for his/her sample data. Schmitt (1996) stated that "there is no sacred level of acceptable or unacceptable level of alpha. In some cases, measures with (by conventional standards) low levels of alpha may still be quite useful" (p. 353). According to previous research (Cronbach, 1951; Cronbach, Gleser, Nanda, & Rajaratnam, 1972; Litwin, 1995), a high value for the internal consistency coefficient alpha indicates good reliability. Cronbach (1951) stated that a perfect score was not required and low scores did not indicate that an interpretable scale could not be obtained. Nunnally and Bernstein (1994) indicated that a reliability score of .70 was modest. Knapp and Mueller (2010) stated that scores between .70 and .80 were "considered

acceptable with values below these cut-offs being acknowledged as study limitations" (p. 341). Cronbach (1951) indicated that a score of .50 should be regarded with caution in that the other .50 is considered error. Nunnally and Bernstein (1994) indicated that increasing the reliability score to above a .80 in basic research was a waste of time and money. Schmitt (1996) suggested that blindly using the accepted value of .70 as the norm for an alpha coefficient was shortsighted. Therefore, in analyzing the reliability scores for this study I considered the benefit of how much construct was measured before conducting further analysis of the data.

Internal consistency reliability for each construct used in the study, need for achievement, need for affiliation, and need for power, was verified historically through Cronbach alpha values for Turner's (1996) and Rutter's (1998) studies. Table 2 displays the Cronbach alpha values for Turner's (1996), Rutter's (1998), and this study. Turner's (1996) and Rutter's (1998) studies had much larger sample sizes and CTSO participant pools which could attribute to the higher need for affiliation scores in their studies versus this study. Turner's (1996) study had 69% FFA membership while Rutter (1998) had 34% participation in FHA/HERO. This study had 14.5% FBLA membership participation in the study. Turner's (1996) and Rutter's (1998) Cronbach alpha values were lower for the need for affiliation variable than for need for achievement or need for power. Turner (1996) did not run a Cronbach alpha analysis on his survey data.

Table 2

Comparison of Cronbach Alpha Values for Turner's (1996), Rutter's (1998), and Current Study

Construct	Turner	Rutter	Current Study
Need for achievement	.89 (pilot)	.64	.60
Need for affiliation	.77 (pilot)	.58	.47
Need for power	.81(pilot)	.72	.67
Overall alpha coefficient	.82 (pilot)	.78	.64

Turner (1996) modified questions derived from an instrument used by Chusmir (1989). To ensure content validity, the modified instrument went through a complete review by a panel of content experts well versed in McClelland's (1987) theory, was edited, and then used in Turner's (1996) doctoral research. Gall et al. (2007) indicated that content validity may be obtained by conducting a comprehensive review of the instrument by a panel of experts. The panel reviewed each item against the construct being measured to determine if the question measured what it purported to measure. Turner and the panel ascertained that 15 items would sufficiently measure McClelland's constructs and that the questions were straight forward and easy to answer. Chusmir's (1989) original 21-question survey was reduced to the current 15-question survey. Subsequently, Rutter (1998) replicated Turner's (1996) study using the same 15-item instrument with secondary Family and Consumer Sciences students. However, before replicating Turner's (1996) study, Rutter (1998) asked a panel of experts from the University of Georgia to review Turner's survey to ensure content validity in the study with Family and Consumer Science secondary students. Additionally, both studies established construct validity by indicating meaning of scores for career and technical education purposes.

A panel of experts with knowledge in the field of Business and Computer Science education was convened for this current study. The experts were the Business and Computer Science program specialist from the Georgia Department of Education (greater than 10 years applicable experience), a work-based learning coordinator from a local school system (greater than 15 years applicable experience), and a Business and Computer Science teacher (greater than 10 years applicable experience). The panelists employed their business education knowledge to conduct a complete review of Turner's (1996) survey instrument. One panelist, the Business and Computer Science teacher, participated via email prior to the October 19, 2010 meeting. The

written answers provided concurred with those discussed by the other panelists. The remaining panelists met in person on Tuesday October 19, 2010, to discuss the student survey. The panelists who participated were the Georgia Department of Education program specialist and the work-based learning coordinator. Each panelist was provided instructions for participation in the panel and construct definitions (see Appendix C). Questions 11 and 15 spurred a discussion on whether the questions measured the need for affiliation or need for power construct. No revisions were made to Turner's questionnaire as the panel agreed the questions measured the constructs they were designed to measure. According to Gall et al. (2007) this process ensured content validity of the modified instrument.

Stapleton (2010) discussed issues that arise when reusing an existing survey such as Turner's (1996). For this study, the following areas of concern were addressed: (a) constructs used in the survey measured what the researcher was seeking; (b) Turner's survey was developed using Chusmir's (1989) model, edited, and finalized by a panel of experts and Turner (1996); (c) the test questions consistently measured McClelland's (1987) three constructs as shown in Turner's and Rutter's (1998) studies; (d) internal consistency was established using Cronbach alpha tests, and (e) content validity was established in Turner's study by a panel of experts knowledgeable in McClelland's theory, in Rutter's study with a different panel of experts at The University of Georgia, and again with a panel of experts in the field of Business and Computer Science education.

According to Creswell (2009), three common forms of validity should be sought when using an existing instrument: content, predictive or concurrent, and construct. Content validity determines whether survey items measure what they are purported to measure (Creswell 2008, 2009; Knapp & Mueller, 2010). Predictive or concurrent validity ensures scores predict a

criterion measure or relate to an external criterion, while construct validity assesses whether constructs being measured are significant or have a meaningful purpose in practice (Creswell, 2008, 2009; Knapp & Mueller, 2010). According to Creswell (2008), scores must be assessed both statistically and practically in order to achieve construct validity. A statistical procedure for this study could be testing a theory such as males will score higher than females in need for power.

Validity issues are concerned with whether an instrument is measuring what it is supposed to measure (Creswell, 2008, 2009). To address potential validity issues, such as a lack of feedback on why questions were answered a particular way or question interpretations that may differ among participants, a pilot study (Creswell, 2008) was conducted with a group of 25 secondary Business and Computer Science students. A question-and-answer-session was conducted directly after the survey administration to obtain feedback. Participants were asked about ambiguities in survey questions, why they answered questions in certain ways, and ease of taking the survey online. Participants were also given the chance to share additional relevant feedback about the online survey design, administrative procedures, and survey content. The pilot study group suggested the colors of the survey be changed on the Web site, an undecided option be added, a results page be included, and age or grade level be eliminated, having both was too confusing. As a result of the pilot study, the colors were changed to a more pleasing palette, a results handout (see Appendix D) was created to provide survey participants personal motivational results, and age was made optional. Age was included in the demographic

information for future studies; it was not one of the independent variables of this study. Due to the potential for misinterpretation of its meaning, a midpoint option was not added (Hodge & Gillespie, 2003; Raaijmakers, van Hoof, Hart, Verbogt, & Vollebergh, 2000; Weems & Onwuegbuzie, 2001).

Procedures

Procedures and instruments used in the study were approved by the Institutional Review Board at The University of Georgia prior to data gathering. The survey instrument was placed online using SurveyMonkey (2010), a Web site for data gathering. The survey was confidential for all participants with informed consent who participated in the research study. Each respondent was presented with a participant assent script (see Appendix E). The participant assent script detailed the research study. Respondents clicked a button to agree to voluntarily participate in the research study. The data were stored on a secure server through SurveyMonkey (2010), and signed parental permission slips were stored in a locked file cabinet.

After the Institutional Review Board (IRB) approval (see Appendix F) was received on November 17, 2010, countywide approval from the Georgia public school system's Board of Education (see Appendix G) was obtained on November 17, 2010. Appendix H displays the letter sent to principals to obtain approval to conduct the research study in the three schools. On December 13, 2010, approval from principals of two (see Appendix I and J) out of the three high schools in a Georgia public school system were obtained prior to speaking with the BCS teachers. Approval from the third secondary school (see Appendix K) was obtained on January 6, 2011. Once administrative approval was attained, the BCS teachers were asked to participate.

According to The University of Georgia Institutional Review Board's (IRB's) guidelines, informed consent was required for this study due to the research being conducted with minors (Office of the Vice President for Research at The University of Georgia's, 2009). Permission letters for participants were distributed to potential participants. Students could choose at any time not to participate.

On January 19, 2011, January 27, 2011, and February 1, 2011 the initial meetings with School A, School B, and School C were conducted. The study was explained, copies of approval letters were provided along with a copy of the parental permission form and survey instrument. The parental permission forms were distributed on January 26, 2011, February 22, 2011, and February 23, 2011 at School A, School B, and School C. The survey was administered on February 2, 2011, March 1, 2011, and March 2, 2011 at School A, School B, and School C. At the time of survey administration, students were provided with login instructions as well as a participant consent form. The survey was made available for a one-time administration. There were 119 participants from School A, 174 from School B, and 179 from School C.

The researcher administered the survey in each classroom. The same instructions (see Appendix L) were read verbatim to each participating class. The researcher provided accurate instructions on how to access and navigate the questionnaire. All participant questions were answered by the researcher and computer issues addressed promptly. The researcher completed a checklist (see Appendix L) immediately following each survey administration to ensure consistency in survey administration across sites.

Data Analysis

Data were analyzed using SPSS version 19.0 for personal computers (Hwang, Zhang, & Chen, 2001). SPSS is a statistical software program used to analyze data for the social sciences.

The alpha level was set to 0.05 which is the probability of committing a Type I error (Keppel & Wickens, 2004). Setting the significance level at 0.05 decreased the chance of reporting no statistically significant differences when significance was found. According to Keppel and Wickens (2004), there are three determinants of power: significance level, effect size, and sample size. Statistical power analysis was conducted using G*Power 3 software after the survey research was completed (Erdfelder, Faul, & Buchner, 1996; Faul, Erdfelder, Lang, & Buchner, 2007). G*Power 3 is a free online power analysis tool. Keppel and Wickens (2004) indicated that power reflects the degree to which differences can be detected. Descriptive statistics were gathered for all five research questions. Each construct (i.e., need for achievement, need for affiliation, and need for power) was evaluated against categories of independent variables (male, female, FBLA member, non-FBLA member). Research questions two through five were analyzed using a series of one-way analysis of variance (ANOVAs) calculations as each question had two or more categories for each independent variable analyzed and there were three distinct dependent variables (e.g., need for achievement, need for affiliation, and need for power). Table 3 details the data analysis plan used for the research questions in this study.

ANOVA is used to determine if several group means are equal and "to detect differences in a variable [e.g., need for achievement, need for affiliation, or need for power] as a function of another [e.g., race/ethnicity and grade level]" (Hwang, Zhang, & Chen, 2001, p. 275). Advantages to using this statistical model are capacity to generalize data to more than two groups, established approval within the statistical community, and computer software availability

to run statistical analyses (Olejnik & Hess, 2001). A disadvantage with ANOVA is that if a significant difference exists between three or more groups, there is no way of knowing where the difference exists.

To control for the familywise adjusted alpha rate over all comparisons within this study and reduce the risk of Type I error, the familywise adjusted alpha rate was calculated by dividing the alpha value of .05 by the number of tests run for each research question (Olejnik & Hess, 2001). The overall a priori alpha value for the study remained at .05. Using the familywise adjusted alpha rate calculation for research questions two through five, a familywise adjusted alpha rate of .017 was used since three ANOVAs were run per question.

Tukey's Honestly Significant Difference (HSD) post hoc test was run on question four since the results were significant. Tukey's post hoc test "adjust[s] for the probability that [I] will find a statistically significant difference between mean scores simply because many comparisons are made on the same data" (Gall et al., 2007, p. 319). Since statistical significance was found with respect to the grade level variable which has four levels, Tukey's post hoc test was run to determine where the statistical significance existed between the groups. Tukey's post hoc test can handle larger numbers of comparisons with an alpha level set at 0.05 and not reduce power as with other post hoc tests (Keppel & Wickens, 2004).

Effect size is used to indicate practical significance of mean differences or to determine sample size (Hess & Olejnik, 2001; Keppel & Wickens, 2004). In this study, Cohen's *d* was used to determine the effect size or practical significance of any statistically significant difference (Cohen, 1988). According to Thalheimer and Cook (2002), the advantages of using Cohen's *d* to calculate effect size include both the opportunity to readily compare results with other published studies and the existence of established benchmarks. The Cohen's *d* suggested guidelines of

d=0.02, *d*=0.05, and *d*=0.08 for small, medium, and large effects respectively were used as working criterion and reference point for interpretation of effect size within this study (Thalheimer & Cook, 2002). Rutter (1998) used omega squared to calculate effect size where statistical significance was found. Since Rutter (1998) conducted a similar study with a different population, I wanted to see how the omega squared effect sizes compared to Cohen's *d* effect sizes. Therefore, I conducted an analysis of Rutter's (1998) results using Cohen's *d*. Using Cohen's (1988) suggested guidelines, the interpretation of effect size was consistent (i.e., small effect using omega squared was also a small effect using Cohen's *d* and medium effect using omega squared was also a medium effect using Cohen's *d*; there were no large effects in Rutter's (1998) study or this one). The final factors I used to determine and interpret effect sizes were the sample size, mean score, and standard deviation for each construct. According to Cohen (1988, 1990, 1994), a researcher must interpret effect sizes for his/her data because interpretation depends on population variability. Therefore, I analyzed effect sizes for the sample data using a Cohen's *d* calculation.

Table 3

Data Analysis for Research Questions of the Study

Questions of the Study	Independent Variables	Dependent Variables	Data Analysis
1. What is the perceived motivational need for achievement, need for affiliation, and need for power of students enrolled in secondary Business and Computer Science programs?		nAch nAff nPower	Mean, standard deviation
2. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on gender?	Gender 2 levels	nAch nAff nPower	One-way ANOVA
3. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on racial/ethnic background?	Race/ethnic background 2 levels	nAch nAff nPower	One-way ANOVA
4. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based grade level?	Grade level 4 levels	nAch nAff nPower	One-way ANOVA Tukey's post hoc test
5. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on FBLA membership?	FBLA membership 2 levels	nAch nAff nPower	One-way ANOVA

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to examine and describe the motivational needs of secondary Business and Computer Science (BCS) education students in one Georgia county at one point in time. The study used McClelland's (1987) theory of human motivation as a basis for determining the participants need for achievement, need for affiliation, and need for power. The study analyzed the independent variables of gender, racial/ethnic background, grade level, and membership status in Future Business Leaders of America (FBLA) and the dependent variables of need for achievement (nAch), need for affiliation (nAff) and need for power (nPower). The research questions were the foundation for the findings of the study. The research questions that guided the analysis of this study are as follows:

1. What is the perceived motivational need for achievement, need for affiliation, and need for power of students enrolled in secondary Business and Computer Science programs?
2. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on gender?
3. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on racial/ethnic background?

4. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on grade level?
5. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on FBLA membership?

A series of one-way ANOVAs were completed utilizing a .05 significance level. To avoid an inflated probability of Type I error, the familywise adjusted alpha rate was calculated by dividing the a priori alpha value of .05 by the number of tests run for each ANOVA (Olejnik & Hess, 2001). The overall a priori alpha value for the study remained at .05. Using the familywise adjusted alpha rate calculation for research questions two through five, a familywise adjusted alpha rate of .017 was used for the three ANOVAs run for each question. Tukey's Honestly Significant Difference (HSD) was calculated on question four because statistical significance was discovered. Statistical power analysis was also conducted on question four where statistical significance was found. Reiteration of the statement of the problem and the findings of the study are reported in this chapter.

Statement of the Problem

According to Georgia's Career Technical Education (CTE) report (CTAE annual report for 2009) (Georgia Department of Education, 2009), the largest group of ninth through twelfth grade students were enrolled in Business and Computer Science courses, more than any other CTE program. It is important to know how Business and Computer Science students from various racial/ethnic backgrounds, genders, grade levels, and FBLA affiliation differ with respect to motivational needs. Business and Computer Science teachers need to educate their diverse

students for a future workforce, and they need to know how best to motivate their students to accomplish that goal. Additionally, in order to prepare students properly for postsecondary education, it is essential to understand what motivates students to achieve. Literature was available on how to motivate students but limited on what self-motivators students possessed.

The findings of the study provide practitioners with information on a particular group of students' motivational needs. The secondary Business and Computer Science teachers and students in this county may use the results of this study when establishing student career goals, participating in student organizations, and encouraging success in school. Results of the study may inspire teachers to create specific opportunities to motivate their students based on the specific findings. Additionally, students may use their personal results to get more involved in activities that motivate them.

Motivating and teaching students about career development including non-traditional fields, making positive choices, exploring possibilities for the future, learning how to efficiently use technology, and employing critical thinking skills for effective business management decision-making are a few of the components of the Business and Computer Science curriculum (Georgia Performance Standards, 2010; Stitt-Gohdes, 2002). Georgia Performance Standards (2010) identify the three components comprising the Business and Computer Science program as (a) experience in the classroom or laboratory; (b) opportunity for work-based learning based on classroom instruction; and (c) participation in a cocurricular program, FBLA.

The components of the Business and Computer Science education program foster an environment rich in options to guide students toward making good career and postsecondary decisions. The purpose of this study was to explore the motivational needs of secondary BCS

students. The results of this study may help teachers to understand how student self-motivation is impacted by need for achievement, affiliation, and power.

Motivational Needs of BCS Students

The perceived motivational needs (achievement, affiliation, and power) of secondary students enrolled in a Business and Computer Science course was the focus of research question one. Each dependent variable had a possible range for the total score of 5 to 20. The mean scores for each dependent variable are reported in Table 4. The lower the mean score, the higher the motivational need in that particular area. Hence, the overall scores produced a higher need for affiliation than for power and achievement. The data for all Business and Computer Science participants are outlined in Table 4.

Table 4

Means and Standard Deviations for Business and Computer Science Education Students and the Motivational Need for Achievement, Need for Affiliation, and Need for Power

Source	*M*	*SD*
Business and Computer Science Education Students		
Motivational Needs		
Achievement	11.06	2.27
Affiliation	9.04	2.19
Power	11.75	2.66

Motivational Needs Based on Gender

The differences in the motivational need for achievement, need for affiliation, and need for power of secondary students enrolled in a Business and Computer Science course based on gender was the focus of research question two. There were 223 females which constituted 47% respondents and 247 males which comprised 53% of the total participants in the research study. A series of one-way analysis of variances (ANOVA) were conducted to ascertain if differences

existed based on the dependent variable. A familywise adjusted alpha rate of .017 was used for the three ANOVAs run for this question. The a priori alpha level for this question remained .05. No statistically significant differences were found for need for achievement or need for affiliation based on gender. However, a statistically significant difference was found in the need for power based on gender. Since statistical significance was found, Cohen's *d* was calculated to determine effect size. The result was a small effect size between males and females with a *d* of 0.36. Analyzing the minimal differences in sample size, mean, and standard deviation scores between males and females contributes to the determination that .36 signifies a small effect. The data are presented in Table 5.

Table 5

Means, Standard Deviation, and Analysis of Variance for Gender Differences and the Motivational Need for Achievement, Need for Affiliation, and Need for Power

Gender	*N*	*M*	*SD*	*df*	*F*	*p*
Achievement				1	2.73	.099
Female	223	8.87	2.17			
Male	247	9.20	2.19			
Affiliation				1	.100	.753
Female	223	11.10	2.08			
Male	247	11.03	2.44			
Power				1	14.75	.000
Female	223	11.26	2.44			
Male	247	12.19	2.78			

Motivational Needs Based on Race/Ethnicity

Research question three examined whether differences existed in the motivational need for achievement, need for affiliation, and need for power based on race/ethnicity. The two categories of race/ethnic background for this study are majority and minority. The census data (U.S. Census Bureau, 2008) and the School Matters (2009) data for the county being surveyed

showed the race category White as being in the majority with 81.6% and 72.3% respectively. Since previous research indicates that characteristics and life experiences of races and ethnic groups help to classify individuals from varied backgrounds (Marschall & Stolle, 2004; McClelland, 1987; Toynbee, 1947), race/ethnicity data were categorized into majority and minority classifications. The majority consisted of 303 participants which was 64% of the total and the minority group consisted of 167 participants which was 36% of the total respondents. Several one-way analysis of variances (ANOVA) were conducted on the data. A familywise adjusted alpha rate of .017 was used for the three ANOVAs run for this question. The a priori alpha level for this question remained .05. Statistical significance was found in the need for achievement but no statistically significant differences were revealed in the need for affiliation or need for power based on race/ethnicity. The Cohen's *d* calculation was run on need for achievement based on race/ethnicity. There was a small difference between the majority and the minority with a *d* of 0.25. Table 6 details the results of the study.

Table 6

Means, Standard Deviation, and Analysis of Variance for Race/Ethnicity and the Motivational Need for Achievement, Need for Affiliation, and Need for Power

Race/Ethnicity	*N*	*M*	*SD*	*df*	*F*	*p*
Achievement				1	6.562	.011
Majority	303	9.23	2.21			
Minority	167	8.69	2.11			
Affiliation				1	.051	.821
Majority	303	11.05	2.26			
Minority	167	11.10	2.31			
Power				1	.962	.327
Majority	303	11.84	2.63			
Minority	167	11.59	2.72			

Motivational Needs Based on Grade Level

Research question four explored whether differences existed in the motivational need for achievement, need for affiliation, and need for power based on grade level. The participants consisted of 149 (32%) ninth graders, 97 (21%) tenth graders, 82 (17%) eleventh graders, and 142 (30%) twelfth graders. Grade level was categorized as 1=entering high school in 2010 (i.e., ninth grade), 2=entering high school in 2009 (i.e., tenth grade), 3=entering high school in 2008 (i.e., eleventh grade), and 4=entering high school in 2007 (i.e., twelfth grade). A series of one-way ANOVAs was conducted. According to McClelland (1987), as people mature their need for power grows evidenced by the mean scores in Table 9. A familywise adjusted alpha rate of .017 was used for the three ANOVAs run for this question. The a priori alpha level for this question remained .05. No significant results were discovered in need for achievement or need for affiliation. Statistical significance was found in need for power based on grade level. Since statistically significant differences were found, Tukey's HSD was conducted to ascertain within which subscale the difference was located. The post hoc test results revealed that twelfth graders had a higher need for power than ninth graders. Additionally, Cohen's *d* was run between twelfth graders and ninth graders. The result for the comparison of twelfth graders to ninth graders was 0.50, indicating a medium effect size between the groups. Tables 7, 8, and 9 present the data for research question four.

Table 7

Means, Standard Deviation, and Analysis of Variance for Grade Level and the Motivational Need for Achievement

Source	*N*	*M*	*SD*	*df*	*F*	*p*
Grade Level				3	1.156	.326
Ninth graders	149	9.13	2.25			
Tenth graders	97	9.08	2.38			
Eleventh graders	82	9.29	1.97			
Twelfth graders	142	8.77	2.10			

Table 8

Means, Standard Deviation, and Analysis of Variance for Grade Level and the Motivational Need for Affiliation

Source	*N*	*M*	*SD*	*df*	*F*	*p*
Grade Level				3	1.011	.387
Ninth graders	149	11.04	2.39			
Tenth graders	97	10.74	2.26			
Eleventh graders	82	11.18	2.17			
Twelfth graders	142	11.24	2.21			

Table 9

Means, Standard Deviation, and Analysis of Variance for Grade Level and the Motivational Need for Power

Source	*N*	*M*	*SD*	*df*	*F*	*p*	Tukey post hoc
Grade Level				3	6.306	.000	4>1
Ninth graders	149	12.42	2.61				
Tenth graders	97	11.87	2.81				
Eleventh graders	82	11.49	2.44				
Twelfth graders	142	11.12	2.59				

Note. Ninth graders = 1; Tenth graders = 2; Eleventh graders = 3; Twelfth graders = 4

Motivational Needs Based on FBLA Membership

Research question five examined the independent variable membership in Future Business Leaders of America (FBLA) of secondary Business and Computer Science students and need for achievement, affiliation, and power. There were 68 (14.5%) FBLA members and 402 (85.5%) non-FBLA members who responded to the survey. To control for unequal sample sizes a test of homogeneity of variance, the Levene test, was run (Nordstokke, Zumbo, Cairns, & Saklofske, 2011). According to Keppel and Wickens (2004), the Levene test "is an analysis of variance based on the deviations of the scores from the mean" (p.186). For need for achievement, the Levene test revealed an F=.029 with a p=.864. For need for affiliation, the Levene test revealed an F=.033 with a p=.856. For need for power, the Levene test revealed an F=.881 with a p=.348. The test indicated there was no reason to suspect the variances of the groups were different. The data were analyzed using a series of one-way ANOVAs. A familywise adjusted alpha rate of .017 was used for the three ANOVAs run for this question. The a priori alpha level for this question remained .05. Statistically significant differences were found in need for achievement and need for power, but no statistical significance was revealed in need for affiliation. The Cohen's d calculation for FBLA member versus non-member for need for achievement revealed a d of 0.31, indicating a small effect size. The comparison between FBLA members and non-members based on need for power revealed a d of 0.48, indicating a medium effect size. Table 10 displays the data for research question five.

Table 10

Means, Standard Deviation, and Analysis of Variance for FBLA Membership and the Motivational Need for Achievement, Need for Affiliation, and Need for Power

FBLA Membership	*N*	*M*	*SD*	*df*	*F*	*p*
Achievement				1	5.745	.017
FBLA member	68	8.46	2.18			
FBLA non-member	402	9.14	2.17			
Affiliation				1	.148	.701
FBLA member	68	11.16	2.09			
FBLA non-member	402	11.05	2.30			
Power				1	14.80	.000
FBLA member	68	10.62	2.74			
FBLA non-member	402	11.94	2.60			

Summary

In summary, this study indicated that Business and Computer Science students were more motivated by a need for power and a need for achievement than a need for affiliation. In fact, no statistical significance was found in this study based on need for affiliation even though the mean for the overall study was lowest, yet strongest, for need for affiliation (M=9.04), indicating that the overall sample had a higher need for affiliation than need for achievement or need for power. The independent variables of gender, grade level, and FBLA membership revealed a statistically significant difference in the need for power. Statistical significance was found in the independent variables of race/ethnicity and FBLA membership based on need for achievement. All independent variables showed statistical significance in at least one dependent variable. However, the independent variable, FBLA membership, showed statistical significance in two dependent variables, need for achievement and need for power. The differences in the number of participants may have influenced the outcome of the findings in at least one independent variable (i.e., FBLA membership).

CHAPTER V

RESULTS, DISCUSSION, RECOMMENDATIONS, AND SUMMARY

This chapter begins with a restatement of the purpose, rationale, and research questions of the study. A summary of the research study follows. Results and implications for the future are addressed. Discussion, recommendations, and a final summary conclude the study.

Purpose, Rationale, and Research Questions

The purpose of this study was to describe the motivational needs of secondary Business and Computer Science (BCS) education students in one Georgia county at one point in time. The study used McClelland's (1987) theory of human motivation as a basis for determining the participant's need for achievement, affiliation, and power. The independent variables analyzed were gender, racial/ethnic background, grade level, and membership status in Future Business Leaders of America (FBLA). The dependent variables explored were motivational need for achievement (nAch), need for affiliation (nAff) and need for power (nPower).

According to Georgia's Career Technical Education (CTE) report (CTAE annual report for 2009) (Georgia Department of Education, 2009), the largest group of ninth through twelfth grade students were enrolled in Business and Computer Science courses, more than any other CTE program. It is important for teachers to know how Business and Computer Science students from various racial/ethnic backgrounds, genders, grade levels, and FBLA affiliation differ with respect to motivational needs. In anticipation of the 2008-2018 labor needs identified by the U.S. Bureau of Labor Statistics (2009), students will be entering the workforce and will need to be prepared. In order for Business and Computer Science teachers to prepare their

diverse students for the future workforce and postsecondary education, they need to know what motivates their students to achieve. Literature was available on how to motivate students, but limited on what self-motivators students possessed.

Using McClelland's (1987) theory of human motivation, teachers can cultivate a student's need for achievement, affiliation, and power by offering opportunities based on his/her needs. The opportunities the BCS program offers includes participation in a cocurricular program, job shadowing, work-based learning, and field trips (Pautler, 1990; Scott & Sarkees-Wircenski, 2008). These options can encourage student achievement. According to Riggs and Gholar (2009), students need to be supported, encouraged, acknowledged, and expected to achieve high standards.

The Carl D. Perkins Career and Technical Education Act (2006) provides a challenge to CTE teachers to motivate students to achieve. The legislation requires that CTE teachers encourage students to seek high skill, high wage jobs and in non-traditional areas. To motivate students to achieve high standards, set career goals, open doors to pursue goals, challenge them to succeed, and explore program offerings provided to facilitate success are all ways in which CTE plays a part in motivating students to succeed (Pautler, 1990; Scott & Sarkees-Wircenski, 2008). Osgood, Francis, and Archer (2006) found that students expressed an interest in wanting to try a non-traditional career work placement to inform future career decisions. Students equated work placement experiences with future employment. However, students were more apt to pick gender-traditional placements even though they showed interest in non-traditional fields (Osgood et al., 2006). Encouraging and providing choices for females as well as providing inspiration to seek jobs in non-traditional fields is part of career development (Greene & Stitt-

Gohdes, 1997). Career development is one feature of the Business and Computer Science program designed to motivate students to succeed.

The Business and Computer Science program offerings include a multitude of technology-based and business-related courses to inspire students' critical thinking skills for effective business management decision making (Georgia Performance Standards, 2010; Stitt-Gohdes, 2002). The program offerings attract a distinctive blend of individuals eager to plunge into technology, business, and computer science courses as well as participate in work-based learning opportunities (Georgia Performance Standards, 2010; Stitt-Gohdes, 2002). The components of the Business and Computer Science education program provide a variety of options intended to motivate students to make good career and postsecondary decisions. The purpose of this study was to explore the motivational needs of secondary BCS students. In addition, this study provides BCS teachers insight into how to motivate students to take full advantage of the program offerings in order to be successful. The study answered the following research questions:

1. What is the perceived motivational need for achievement, need for affiliation, and need for power of students enrolled in secondary Business and Computer Science programs?
2. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on gender?
3. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on racial/ethnic background?

4. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on grade level?
5. Do differences exist in motivational need for achievement, need for affiliation, and need for power of students enrolled in Business and Computer Science education classes based on FBLA membership?

Research Summary

This descriptive research study used an online questionnaire to gather data at one point in time from secondary Business and Computer Science (BCS) students in a Georgia public school system. Survey data identified participants' motivational needs for achievement, affiliation, and power. Results were summarized by gender, race/ethnicity, grade level, and involvement in FBLA. The survey research was conducted with the assistance of an online survey tool used for data gathering, SurveyMonkey (2010). The survey was confidential for all participants with informed consent who participated in the research study.

The questionnaire used to gather data for this survey was created by Turner (1996). The instrument was a 15-question survey with Likert-type items. The questionnaire measures three related constructs: need for achievement, need for affiliation, and need for power. The instrument consists of two parts displayed in Appendix A. Part one includes a demographic information questionnaire that participants completed on the independent variables of gender, grade level, race/ethnicity, and FBLA affiliation. Part two contains the actual survey instrument that was used in this study with a 4-point Likert-type scale where 1=Strongly agree, 2=Agree, 3=Disagree, and 4=Strongly disagree.

Survey questions were designed to measure student motivation using McClelland's (1987) theory of human motivation. Five questions (i.e., 1, 6, 9, 12, and 13) solicited information on the need for achievement. An example of a need for achievement survey item was: "I prefer to do my own work and let others do their own work." Data on need for affiliation was gathered through questions 3, 5, 7, 10 and 14, where need for power was assessed through questions 2, 4, 8, 11, and 15. An example of a need for affiliation survey statement was, "I would rather compete on a team than compete by myself." A need for power survey statement example was, "I tend to organize and direct the activities of others." Question groupings as listed were added together to determine an individual's entire score with respect to need for achievement, need for affiliation, and need for power. A 5 for need for achievement meant the participant had a high need to succeed in this area, whereas a 20 indicated an individual's lesser interest in achievement. Mean scores for each independent variable for each construct as they related to the research questions were analyzed. The lower the mean scores; the higher the need for achievement, need for affiliation, or need for power, and the more meaningful that area of motivation became for that participant.

Cronbach alpha was used to calculate reliability scores on the three constructs being measured. The Cronbach alpha value for the need for achievement construct was .60. The questions that comprise the need for affiliation construct had an alpha coefficient of .47. The reliability analysis for the questions that comprise the need for power construct resulted in a .67 alpha coefficient. Reliability scores using Cronbach alpha are sample dependent. Individual attitudes about motivation may have changed in the 15 years since the creation of the questionnaire. Previous survey research (Rutter, 1998; Turner, 1996) used this survey instrument with samples from various geographic areas (e.g., rural, farm) within the state of

Georgia and from different educational programs (e.g., Agriculture, Family and Consumer Sciences). Participants for this study were suburban Business and Computer Science students. Cronbach alpha analysis was conducted to determine whether the scores for the three constructs were reliable for this survey's data.

The target sample was a convenience sample of all Business and Computer Science (BCS) students who attended one of three public secondary schools (Grades 9-12) in a Georgia public school system. Approximately 28 students were enrolled in each of 36 BCS classes in this particular school system, for a total of 933 potential participants. All 933 BCS students were asked to participate in the study.

Approval for the research was obtained from The University of Georgia's Institutional Review Board (IRB) prior to conducting the research (see Appendix F). Appropriate approvals were obtained at the district (see Appendix G), school (see Appendix I, J, and K), and teacher levels for the three high schools in a Georgia public school system. Students could choose at any time not to participate.

Over the course of six weeks, initial meetings with the teachers at each school, distribution of parental permission forms (see Appendix A), and survey administration was conducted. The researcher conducted all meetings, explained the study to the teachers and potential participants, distributed parental permission forms, and administered the surveys at the three high schools. An instruction script (see Appendix L) was used to ensure the survey was conducted the same way in all 36 classes with the exact same instructions and a checklist (see Appendix L) was completed for each survey administration.

The data were analyzed using a series of one-way ANOVAs and descriptive statistics. Where statistical significance was discovered Cohen's *d* was used to determine effect sizes. Additionally, Tukey's Honestly Significant Difference (HSD) and statistical power analysis were calculated to determine where statistical significance existed between groups.

Results

The perceived motivational need for achievement, affiliation, and power in secondary students enrolled in a Business and Computer Science course was the focus of research question one. Each dependent variable had a possible range for the mean score of 5 to 20. The mean for each dependent variable was as follows: (a) need for achievement equaled 11.06 (*SD*=2.27), (b) need for affiliation equaled 9.04 (*SD*=2.19), and (c) need for power equaled 11.75 (*SD*=2.66). The overall results show that secondary Business and Computer Science students have a higher need for affiliation than achievement or power, but no statistical significance was found in need for affiliation based on any of the independent variables. The need for achievement was higher than the need for power.

Question two focused on the need for achievement, affiliation, and power of secondary students enrolled in a Business and Computer Science course based on gender. There were 223 females which constituted 47% of the respondents and 247 males which comprised 53% of the total participants in the research study. A series of one-way analysis of variances (ANOVA) was conducted to ascertain if differences existed based on the dependent variable. No statistically significant differences were found for need for achievement or need for affiliation based on gender. However, a statistically significant difference was found in the need for power based on gender. Since statistical significance was found, Cohen's *d* was calculated to determine effect size. The result was a small effect size between males and females with a *d* of 0.36.

Research question three examined whether differences existed in need for achievement, affiliation, and power based on race/ethnicity. The two categories of race/ethnic background were majority and minority for this study. The majority consisted of 303 participants which was 64% of the total number of participants and the minority group comprised of 167 participants was 36% of the total respondents. Several one-way analysis of variances (ANOVA) were conducted on the data. Statistical significance was found in the need for achievement, but no statistically significant differences were revealed in the need for affiliation or need for power based on race/ethnicity. The Cohen's *d* calculation was run on need for achievement based on race/ethnicity. There was a small effect size between majority and minority groups with a *d* of 0.25.

Research question four explored whether differences existed in need for achievement, need for affiliation, and need for power based on grade level. The participants consisted of 149 (32%) ninth graders, 97 (21%) tenth graders, 82 (17%) eleventh graders, and 142 (30%) twelfth graders. A series of one-way ANOVAs was conducted. No significant results were discovered in need for achievement and need for affiliation. However, statistical significance was found in need for power based on grade level. Since statistically significant differences were found, Tukey's HSD was conducted. The post hoc test results revealed that twelfth graders had a higher need for power than ninth graders. Additionally, Cohen's *d* was run between twelfth graders and ninth graders. The results for the comparison of twelfth graders to ninth graders was 0.50 indicating a medium effect size between the groups. McClelland (1987) indicated a person's

need for power increases as they mature. The lower the mean score, the stronger the need. The results for need for power concurred with McClelland's (1987) findings as twelfth graders (M=11.12) had a lower mean score than eleventh graders (M=11.49), eleventh graders had a lower mean score than tenth graders (M=11.87), and tenth graders had a lower mean score than ninth graders (M=12.42).

Research question five examined the independent variable membership in Future Business Leaders of America (FBLA) of secondary Business and Computer Science students and need for achievement, affiliation, and power. There were 68 (14.5%) FBLA members and 402 (85.5%) non-FBLA members who responded to the survey. To control for unequal sample sizes a test of homogeneity of variance, the Levene test, was run and there was no indication that the group variances were different (Nordstokke, Zumbo, Cairns, & Saklofske, 2011). For need for achievement, the Levene test revealed an F=.029 with a p=.864. For need for affiliation, the Levene test revealed an F=.033 with a p=.856. For need for power, the Levene test revealed an F=.881 with a p=.348.

The data were analyzed using a series of one-way ANOVAs. Statistically significant differences were found in need for achievement and need for power, but no statistical significance was revealed in need for affiliation. The Cohen's d calculation for FBLA member versus non-member for need for achievement revealed a d of 0.31 indicating a small effect size. The comparison between FBLA members and non-members based on need for power revealed a d of 0.48 indicating a medium effect size.

A final result was found regarding the instrument. Due to low reliability scores the instrument should either be modified or not used in future research studies. More specifically, the questions measuring need for affiliation have revealed inconsistent reliability scores with

different samples from different geographic areas (e.g., rural, farm) (Rutter, 1998; Turner, 1996). The questionnaire was created 15 years ago and students attitudes toward motivation may have changed.

Discussion and Recommendations

A conversation with a colleague about a desire to study motivation resulted in a discussion with Dr. Rutter (1998) before this study was conducted. Dr. Rutter suggested her study on motivation be replicated with another population. Not clear at the time was that the survey instrument would result in inconsistent reliability scores, most specifically on the questions measuring need for affiliation. There was no statistical significance found based on need for affiliation, most likely because of the instrument. In hindsight, Turner's (1996) survey instrument may not have been used. The alternative would have been to create a new survey instrument or conduct a qualitative study and use the Thematic Apperception Test (McClelland, 1987). A pilot study provides insight into issues that may need to be addressed. As a result of the pilot study, the colors were changed to a more pleasing palette, a results handout (see Appendix D) was created to provide survey participants personal motivational results, and age was made optional. Finally, to encourage greater participation an incentive would have been offered to individuals who returned signed permission forms.

This study sought to describe the motivational needs of secondary students in one Georgia county's Business and Computer Science program. Results varied when compared to similar studies (Alfeld, Hansen, Aragon, & Stone, 2006; Cantwell & Andrews, 2002; Cervelló, Moreno, Villodre, & Iglesias, 2006; Filak & Pritchard, 2007; Fouad & Byars-Winston, 2005; Leondari & Gonida, 2007; Johnson, 2008; Martin, 2003; Pang & Schultheiss, 2005; Rutter, 1998; Stahl, 1986; Turner, 1996; van der Werf, Opdenakker, & Kuyper, 2008). There were

consistent findings. Pang and Schultheiss (2005), Rutter (1998), and Turner (1996) found statistical significance in need for achievement based on race/ethnicity, as did this study. Additionally, statistical significance was found in need for power based on membership in a Career Technical Student Organization (CTSO) in Rutter's (1998), Turner's (1996), and this study. Each of the three studies researched students from different Career Technical Education (CTE) programs. The CTE programs that typically attract more males (e.g., Agriculture and Business and Computer Science) (Georgia Department of Education, 2009) had a higher need for power based on gender as McClelland (1987) suggested. Motivational needs seem to vary by educational program, sample, and geographic area (e.g., rural, farm, suburban). Results may have been affected by the 15-year gap between Turner's (1996) study and this one. Fifteen years ago, secondary students may have thought differently about motivation.

The need for affiliation dependent variable showed no statistical significance based on any independent variable. Females typically have a higher need for affiliation than males (Pang & Schultheiss, 2005; McClelland, 1987; Turner, 1996). The results may have been different had more females participated in the study or the female participants had a higher need for affiliation. Additionally, improved findings might have resulted had a different instrument been selected. Also, only main effects were observed in this study, therefore, if interactions were considered, the results might have been different.

McClelland (1987) indicated that motivational needs change as people mature. Freud (1987), McClelland (1987), and Okano (2004) indicated that as people age, they typically mature. Therefore, since people age as they progress through grade levels, grade level was used as a proxy for maturity. Grade level showed statistical significance in need for power in Turner's (1996) and this study. Twelfth graders had a higher need for power than ninth graders in this

study. Turner (1996) found that ninth graders had a lower need for power than tenth, eleventh, and twelfth graders as did this study. McClelland (1987) indicated that maturity levels affect need for power and need for achievement levels. Therefore, McClelland's (1987) research might suggest that since twelfth graders are more mature than ninth graders that that would explain the relationship between grade level and need for power discovered in this study. Teachers should use this information to help motivate their students to achieve as they grow.

McClelland (1987) suggested that a high need for power usually pairs with a low need for affiliation in U.S. citizens which could inform the results of this study. FBLA membership nurtures the need for affiliation but there was no statistical significance found on this variable perhaps because there was only a 14.5% FBLA participation rate or the instrument was inadequate in measuring this construct appropriately. This particular group of students displayed a high need for power based on gender, grade level, and FBLA membership and a high need for achievement based on race/ethnicity and FBLA membership. The results of this study revealed that participants were highly motivated to achieve, compete, and lead but did not favor teamwork or group-related activities (McClelland, 1987).

By conventional standards, the alpha coefficients achieved for this data were below the standard norm of .70 (Nunnally & Bernstein, 1994). Nunnally and Bernstein (1994) indicated that it is misleading to assume that an alpha coefficient for one population will have the same value in another population. Therefore, even though Turner (1996) and Rutter (1998) used the same survey instrument as this study it cannot be assumed that the alpha coefficients will be the same for different populations. The instrument's reliability scores for need for affiliation were consistently lower than need for achievement and need for power on Turner's (1996), Rutter's (1998), and this study. This indicates that the reliability of the questions that measure need for

affiliation are less consistent than the questions that measure need for achievement and need for power based on the results from this questionnaire with this sample. Based on previous research (Rutter, 1998; Turner, 1996) with this survey instrument, questions were not eliminated before survey administration. However, since conducting the research and obtaining low reliability scores, I would suggest the survey instrument be modified by eliminating, re-wording, or adding questions for use in future research studies.

Cronbach alpha values are sample dependent (Nunnally & Bernstein, 1994). A mitigating factor contributing to the low reliability scores could be the characteristics of the survey participants being that it was a convenience sample, not random. Additionally, there was only a 50.6% participation rate due to absenteeism, parents choosing for their child not to participate, and students neglecting to bring in the signed parental permission form. Therefore, the low reliability scores achieved on this study's data reflect the nature of the participants in this study. Cronbach alpha reliability scores indicate how much of the construct and how much error is being measured. For instance, a .50 alpha coefficient is measuring 50% construct and 50% error. Therefore, a .60 alpha coefficient for need for achievement and .67 alpha coefficient for need for power are acceptable for this data. An alpha coefficient of .47 for need for affiliation is acceptable with reservation knowing that the questions measuring the construct only account for part of the construct. Finding no statistical significance in the motivational need for affiliation based on any of the independent variables could be a result of the participants' lack of need in this area or potential issues with the instrument. The need for affiliation data were analyzed and retained for this study to provide insight into the needs of this group of respondents. Even though statistical significance was not found based on need for affiliation, mean and standard

deviation scores may offer meaning for this group of participants. Low reliability may be attributed to poorly written questions which must be addressed before future administrations of this survey instrument are conducted.

Business and Computer Science teachers can use these research findings to help motivate their students. Leadership opportunities should be offered to eleventh and twelfth grade males and FBLA members. More opportunities for achievement should be offered to individuals from different racial and ethnic backgrounds and FBLA members. Individuals are motivated in different ways. This sample of student participants resulted in an overall motivational need for affiliation being the dominant need, even though statistical significance was not found based on any of the independent variables. This anomaly could be attributed to the instrument. Teachers should not attempt to motivate their students in the same manner because differences do exist in student's motivational needs (i.e., need for achievement, need for affiliation, need for power) based on gender, race/ethnicity, grade level, and FBLA membership.

The following recommendations for additional research were developed as a result of the findings presented in this study.

1. A study of the motivational needs of all Business and Computer Science students in the state of Georgia should be conducted to determine if the findings of this study are consistent with that of the state of Georgia. Since this is the only study found that defines a group of Business and Computer Science students' motivational needs in the state of Georgia, it is important to replicate the findings in other states and programs. Additional studies would provide support for the limited body of literature on the motivational needs of Business and Computer Science students.

2. According to Ball (1984), student motivation studies should include race/ethnicity when achievement motivation is examined. A study should be conducted with individuals from various racial/ethnic groups to learn more about achievement motivation. A relationship was found in motivational need for achievement based on race/ethnicity in this study and others (Pang & Schultheiss, 2005; Rutter, 1998; Turner, 1996). Therefore, the relationship should be explored to determine why and where the connection exists. Research should be conducted and submitted to peer reviewed journals that explore race/ethnicity and the motivational need for achievement to increase the literature base.
3. A study should be conducted to examine if membership in CTSO's, other cocurricular, and extracurricular programs influence a member's motivational need for achievement, need for affiliation, and need for power. Research (Rutter, 1998; Turner, 1996) shows that members of Career Technical Student Organizations (CTSOs) have a higher motivational need for affiliation than non-members. This study did not find statistical significance based on FBLA membership and need for affiliation possibly due to the low number of respondents who were members of FBLA. However, a statistically significant difference was found in the motivational need for achievement and motivational need for power based on FBLA membership. This research study could add to the limited literature base on whether participation in CTSO's and extracurricular activities influence students' motivation.
4. A final recommendation for future research using this instrument would be to proceed with caution. Inconsistent and low reliability scores were discovered in Turner's (1996), Rutter's (1998), and this study (Nunnally & Bernstein, 1994). The questions designed to

measure motivational need for affiliation (i.e., 3, 5, 7, 10, and 14) specifically need to be addressed due to consistently lower alpha coefficients than motivational need for achievement and motivational need for power in three research studies (i.e., Turner (1996), Rutter (1998), and this study). Schmitt (1996) indicated that a survey with low reliability scores could increase alpha coefficients via modifying the test length by adding more questions and raising the sample size. Therefore, a recommendation for further use of Turner's (1996) survey instrument would be to modify the number of questions and the question verbiage. Additionally, a pilot study should be conducted using the modified questionnaire and Cronbach alphas of .70 or higher should be achieved on all measures before proceeding (Nunnally & Bernstein, 1994).

The following recommendations for practice were devised as a result of the findings presented in this study.

1. The information from this study can inform Business and Computer Science teachers to provide more opportunities for male students to cultivate their motivational need for power, a self-motivator. Males were higher in self-sabotage than girls and demonstrated a fear of failure in Martin's (2003) study. Since the job outlook will be more competitive for males, self sabotage could interfere with the ability to self motivate and find a job. Understanding how males need to be motivated can help them to be more productive and inspired to seek employment. Therefore, teachers should prepare males for challenging opportunities in school by focusing on their motivational need for power.
2. Business and Computer Science teachers should provide competitive, achievement-oriented opportunities to students of all racial and ethnic backgrounds. Turner's (1996)

study found that Black students showed a higher motivational need for achievement than Whites and that Whites showed a high motivational need for affiliation. Rutter (1998) found that Black students showed a high motivational need for achievement. The current study discovered a significant motivational need for achievement based on race/ethnicity.

3. The results of this study inform Business and Computer Science teachers that twelfth graders need more leadership opportunities as they have a higher motivational need for power. Ninth graders had the lowest motivational need for power of the four high school grade levels analyzed. McClelland (1987) indicated that maturity and motivational need for power levels were directly correlated. Therefore, as students advance to the next higher grade level their motivational need for power increases.
4. The results of this study should advise Business and Computer Science teachers that FBLA members have a higher motivational need for achievement and need for power. They displayed statistical significance in motivational need for achievement and need for power. McClelland (1987) indicated that as students mature their need for power increases. Ideally, high school students should be recruited to participate in FBLA in ninth and tenth grades to nurture their need for power as they mature. Teachers should encourage eleventh and twelfth graders to take a more active role in FBLA, allow them to take ownership of the chapter, and provide autonomy support. Filak and Pritchard (2007) found that when advisors of student organizations provided autonomy support to their members, they were more apt to be actively involved and invite their peers to join.

Summary

In summary, this study indicated that Business and Computer Science students were more motivated by a need for power and a need for achievement than a need for affiliation. In fact, no statistical significance was found in this study based on need for affiliation even though the mean for the overall study was lowest, yet strongest, for need for affiliation (9.04). The independent variables of gender, grade level, and FBLA membership revealed a statistically significant difference in the need for power. Statistical significance was found in the independent variables of race/ethnicity and FBLA membership based on need for achievement. All independent variables showed significance in at least one dependent variable. However, the independent variable, FBLA membership, showed significance in two dependent variables, need for achievement and need for power.

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APPENDICES

APPENDIX A

PARENTAL PERMISSION FORM

PARENTAL PERMISSION FORM

I agree to allow my child, _____, to take part in a research study titled, "***Motivational Needs of Secondary Business and Computer Science Students***", which is being conducted by Ms. Susanna Craddock, from the Workforce Education, Leadership, and Social Foundations Department at the University of Georgia under the direction of Dr. Elaine Adams, Workforce Education, Leadership and Social Foundations Department (706-542-5204). I understand that participation in this research study is voluntary. My child can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which she/he is otherwise entitled. I can ask to have the information related to my child returned to me, removed from the research records, or destroyed.

- The reason for the study is to find out what inspires Business and Computer Science students to be motivated. The researcher hopes to learn something that may help other children in the future by providing teachers with information on what inspires various types of students.
- Participants will be asked to take an online questionnaire. The 15-item questionnaire will be given on one day only during students' Business and Computer science classes. Students not participating in the study will be allowed to complete other schoolwork as usual. Instructions for the survey administration will take approximately 5 minutes and completion of the questionnaire will take another 5 minutes, 10 minutes total time commitment. Demographic information will be gathered during the survey (e.g., age, race/ethnicity, grade level, and Future Business Leaders of America membership status).
- Participants will be given information regarding their own personal motivators.
- The research will not cause any harm or discomfort to participants. My child can quit at any time. My child's grade will not be affected by participation or nonparticipation in this research.
- Any individually-identifiable (e.g., gender, race/ethnicity, and grade level) information collected about my child will be held confidential unless otherwise required by law. No personally identifiable information will be gathered on student participants (e.g., name, social security number, or birth date). All data will be kept in a secured location.
- The researcher will answer any questions about the research, now or during the course of the project, and can be reached by email at: stryard@uga.edu. I may also contact the professor supervising the research, Dr. Elaine Adams, Workforce Education, Leadership and Social Foundations Department, at 706-542-5204.
- I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to allow my child to take part in this study. I have been given a copy of this form to keep.

Susanna Craddock	***Susanna Craddock***	_____	stryard@uga.edu
Researcher	Signature	Date	Email

_____	_____	_____
Name of Parent or Guardian	**Signature**	**Date**

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your child's rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE AND STUDENT SURVEY

Demographic Questionnaire

Please answer the following questions:

1. Age, as of last birthday (select one): 14 15 16 17 18 19 20 21

2. Gender: _____ Female _____ Male

3. Grade Level:

    a. _____ Entered high school in 2010
    b. _____ Entered high school in 2009
    c. _____ Entered high school in 2008
    d. _____ Entered high school in 2007

4. Are you a member of FBLA? _____ Yes _____ No

5. Race/Ethnic background:

    a. _____ Black or African American
    b. _____ White
    c. _____ Hispanic or Latino
    d. _____ Asian
    e. _____ Native Hawaiian or Other Pacific Islander
    f. _____ American Indian or Alaska Native

6. Including this class, how many Business and Computer Science classes have you taken?

    _____

7. During the last year, in how many Region _____, State _____, and/or _____ National

    _____ FBLA activities did you participate? (e.g., competitions, meetings, etc.)

8. Are you or have you been a local FBLA officer? _____

9. Have you been a state or national FBLA officer? _____

Student Survey

Please circle one answer for each question:

SA = Strongly Agree
A = Agree
D = Disagree
SD = Strongly Disagree

1. I try to do better (achieve more) than other students.	SA	A	D	SD
2. I tend to organize and direct the activities of others.	SA	A	D	SD
3. I enjoy helping other students.	SA	A	D	SD
4. I am active in the leadership of school activities.	SA	A	D	SD
5. I would rather compete on a team than compete by myself.	SA	A	D	SD
6. I prefer to do my own work and let others do their own work.	SA	A	D	SD
7. I rely on others to help me with a problem.	SA	A	D	SD
8. I like (or would like) to be known as an officer in school organizations.	SA	A	D	SD
9. I try to win as many awards as I can.	SA	A	D	SD
10. In group decisions, I generally go along with the crowd.	SA	A	D	SD
11. I enjoy helping other students set and achieve goals.	SA	A	D	SD
12. I rely on myself to get a job done.	SA	A	D	SD
13. I like being known as a hard worker who gets things done.	SA	A	D	SD
14. I try to work in a group instead of by myself.	SA	A	D	SD
15. I enjoy teaching other students new ideas.	SA	A	D	SD

APPENDIX C

PANEL INSTRUCTIONS AND CONSTRUCT DEFINITIONS

PANEL INSTRUCTIONS AND CONSTRUCT DEFINITIONS

Content/Construct Validation Responses

Panel Directions: *Please complete questions 1 through 3. Familiarize yourself with the construct definitions that the survey instrument is expected to measure. Read through the survey questions and prepare for the panel discussion to re-validate the questionnaire being used in the current research study.*
***Background*:** the Student Survey questionnaire has been used to examine the motivational needs of secondary Agriculture education and Family and Consumer Sciences education students in two previous research studies.

1. **Total number of years in education:**
2. **Current role:**
3. **Years experience in current role:**

4. **General comments about the questionnaire:**

5. **Identification of Problematic Items:**

McClelland's (1987) Construct Definitions

1. **need for Achievement (nAch):** refers to individuals who seek to achieve high grades although external rewards are not their singular motivation, are primarily intrinsically motivated, and focus on competition and goals
2. **need for Affiliation (nAff):** refers to individuals who desire social interaction, teamwork, conformity, and wish to avoid conflict
3. **need for Power (nPower):** refers to individuals who are extrinsically motivated, risk-takers, aggressive, and seek leadership positions

APPENDIX D

SURVEY RESULTS HANDOUT

SURVEY RESULTS HANDOUT

SA = Strongly Agree = **1;** A = Agree = **2;** D = Disagree = **3;** SD = Strongly Disagree = **4**

					Put the number corresponding to your answer in the box provided, then add totals at the bottom		
Question	**Circle 1 Answer**				**Need for Achievement**	**Need for Affiliation**	**Need for Power**
10.	SA	A	D	SD			
11.	SA	A	D	SD			
12.	SA	A	D	SD			
13.	SA	A	D	SD			
14.	SA	A	D	SD			
15.	SA	A	D	SD			
16.	SA	A	D	SD			
17.	SA	A	D	SD			
18.	SA	A	D	SD			
19.	SA	A	D	SD			
20.	SA	A	D	SD			
21.	SA	A	D	SD			
22.	SA	A	D	SD			
23.	SA	A	D	SD			
24.	SA	A	D	SD			
Motivational Needs Totals							
					Need for Achievement	**Need for Affiliation**	**Need for Power**

The answers to the questions in this research study determine whether you have a high need for achievement, need for affiliation, or need for power. Your responses could range from a low score of 20 to a high score of 5. The lower your score in a particular area, the greater your motivation is fueled by that particular need. The definitions of these motivational needs are as follows:

1. **need for Achievement (nAch):** refers to individuals who seek to achieve high grades, although external rewards are not their singular motivation, are primarily intrinsically motivated, and focus on competition and goals

2**. need for Affiliation (nAff):** refers to individuals who desire social interaction, teamwork, conformity, and wish to avoid conflict

3. **need for Power (nPower):** refers to individuals who are extrinsically motivated, risk-takers, aggressive, and seek leadership positions

APPENDIX E

PARTICIPANT ASSENT SCRIPT

Dear Participant

You are invited to participate in my research project titled, "Motivational Needs of Secondary Business and Computer Science Students." Through this project I am learning about high school student's motivational need for achievement, affiliation, and power.

If you decide to participate, you will allow me to analyze your questionnaire scores to make inferences about high school students and their motivational needs. Your participation in this project will not affect your grades in school. I will not use your name on any papers that I write about this project nor will any identifying information (e.g., name, social security number, birthday, address, telephone) be gathered on you. However, because of your participation you may have a greater insight into what encourages you and how to better utilize this knowledge. I hope to learn something about what inspires students to act that will help other children and teachers in the future.

This 15-item questionnaire should take approximately 5 minutes to complete. **This survey is completely anonymous. Your participation is voluntary. You can choose not to participate and can stop taking part at any time without giving any reason, and without penalty.** There are no foreseeable or known risks for your participation in this research.

Internet communications are insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However once the materials are received by the researcher, standard confidentiality procedures will be employed. All data gathered from today's survey administration and login codes will be transmitted in encrypted format. Firewall technology will be used to protect the research computer from unauthorized access. The hardware storing the data will be accessible only to authorized users with log-in privileges.

By pressing the button to begin the questionnaire you agree to participate in this research project. To begin the questionnaire please press the **Begin** button.

To print a copy of this cover script press the **Print** button. If you have any questions or concerns you can always contact me or call my teacher, Dr. Elaine Adams, at 706-542-5204. Thank you for participating in my research project.

Sincerely

Susanna Craddock
Doctoral candidate
UGA Department of Workforce Education, Leadership, and Social Foundations
stryard@uga.edu

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX F

INSTITUTIONAL REVIEW BOARD APPROVAL

From: Chris Joseph [mailto:cjoseph@uga.edu]
Sent: Wednesday, November 17, 2010 5:44 PM
To: SUSANNA CRADDOCK
Subject: RE: IRB Approval-Adams/Craddock

PROJECT NUMBER: 2011-10287-0

TITLE OF STUDY: Motivational needs of secondary...

PRINCIPAL INVESTIGATOR: Dr. Adams

Dear Susanna,

The University of Georgia Institutional Review Board (IRB) has approved the above-titled human research application that was reviewed by the Expedited-7 review procedure. You may now begin this study. Your approval packet will be sent by campus mail.

Please be reminded that any changes to this research proposal can only be initiated after review and approval by the IRB (except when necessary to eliminate apparent immediate hazards to the research participant). Any adverse events or unanticipated problems must be reported to the IRB immediately. The principal investigator is also responsible for maintaining all applicable protocol records (regardless of media type) for at least three (3) years after completion of the study (i.e., copy of approved protocol, raw data, amendments, correspondence, and other pertinent documents). Any HIPAA-related research documents must be retained for a minimum of six (6) years. You are requested to notify the Human Subjects Office if your study is completed or terminated.

Good luck with this study, and please feel free to contact us if you have any questions. Please use the IRB project number and title in all communications regarding this study.

Best,

Chris A. Joseph, Ph.D.
Department of Anthropology
University of Georgia
Athens, GA 30602

cjoseph@uga.edu

APPENDIX G

DISTRICT APPROVAL

WALTON COUNTY BOARD OF EDUCATION

200 Double Springs Church Road, Monroe, Georgia 30656, Telephone 770-266-4520, Fax 770-266-4415
www.walton.k12.ga.us

November 15, 2010

Susanna Craddock
106 Brentwood Blvd
Monroe, GA 30655

Dear Ms. Craddock:

Your request to approve your survey study titled "Motivational Needs of Secondary Business and Computer Science Students" was received and reviewed by the Research Review Committee. I am pleased to notify you that your request is approved.

If you publish and/or present the findings of this study, you must include the following statement:

> The Walton County Public Schools approved the conduct of this study. However, this approval is not an endorsement of the design of the research or the methodology used. Nor does the Walton County Public Schools endorse the findings of this study.

I am sure that you will work closely with Dr. George, Mr. Franklin, and Mr. Boutwell to ensure that the research activities are not intrusive to the instructional program at their respective high schools, and you will maintain the confidentiality of the student information you receive.

I would appreciate receiving a copy of your findings and recommendations.

Please let me know if I can be of assistance.

Sincerely,

[redacted]

Louise Hutchens
Coordinator of Testing and Research

cc Dr. Bill George
Mr. Nathan Franklin
Mr. Thomas Boutwell
Dr. Robert Daria
Dr. Rita Dickinson
Dr. Marci Campbell

APPENDIX H

REQUEST FOR PRINCIPAL APPROVAL

From: Susanna Craddock [mailto:stryard@uga.edu]
Sent: Monday, December 13, 2010 9:14 AM
To: Franklin, Nathan; George, Bill; Boutwell, Thomas
Cc: Smith, Teresa (LHS); Brown, Patricia; Head, Lisa
Subject: Research request

Mr. Franklin, Dr. George, and Mr. Boutwell,

Attached is the Walton County Board of Education approval to conduct my dissertation research within Walton County Public Schools. I am writing to request your permission to conduct research within your high school. I would like to conduct my research within the Business and Computer Science classes in your schools. I briefly mentioned my research to the Business and Computer Science department chairs within your schools to give them a heads up in the event that I was approved.

The survey design research study is entitled *Motivational Needs of Secondary Business and Computer Science Students*. The survey is based on McClelland's theory of human motivation. McClelland's theory focuses on the need for affiliation, achievement, and power. This survey research study will capture the motivational needs of a convenience sample of Business and Computer Science students from Walton County.

I would like to conduct the research within your schools during the month of January. The research will be in the form of a survey taken during a class period. The attached parental permission slip will be distributed to the students prior to the survey administration. No student will participate without returning a signed permission form. As the researcher, I will be administering the survey within the classrooms. The teacher's will only be asked to collect signed forms and place in an envelope. They will not be administering the survey. The research study from start to finish should take no more than 15 minutes within a classroom. I would like to meet with the teachers after school one day in January to discuss the process and the best day to conduct the research.

The data gathered will be kept confidential. No personally identifiable information will be collected.

I assure you that I will do my best to minimize disruption within the classroom. Please let me know if you have any questions about the research study. Thank you in advance for your consideration of my request. I look forward to hearing from you soon.

Susanna "Su" Craddock
UGA Graduate Research Assistant
EdD student

APPENDIX I

PRINCIPAL APPROVAL FROM SCHOOL A

From: Boutwell, Thomas [mailto:thomas.boutwell@walton.k12.ga.us]
Sent: Monday, December 13, 2010 9:31 AM
To: 'Susanna Craddock'
Cc: Head, Lisa
Subject: RE: Research request

Ms. Craddock,

Thank you for considering Walnut Grove High School in your dissertation research. You have my approve to conduct your research through our Business Department. Please contact us with the dates that you are considering conducting the survey.

Thank you,

Thomas Boutwell

APPENDIX J

PRINCIPAL APPROVAL FROM SCHOOL B

From: Franklin, Nathan [mailto:nathan.franklin@walton.k12.ga.us]
Sent: Monday, December 13, 2010 9:29 AM
To: 'Susanna Craddock'
Cc: LHS Administrators; Smith, Teresa (LHS)
Subject: RE: Research request

Ms. Craddock

LHS will be glad to assist in this study. Please coordinate this with Teresa Smith at LHS.

APPENDIX K

PRINCIPAL APPROVAL FROM SCHOOL C

From: George, Bill [mailto:BGeorge@walton.k12.ga.us]
Sent: Thursday, January 06, 2011 2:11 PM
To: 'stryard@uga.edu'
Subject: Re: Research request

I have no problem with the research if it has been approved by the BOE. Please contact Mrs. Tricia Brown for any further assistance.

APPENDIX L

INSTRUCTIONS FOR COMPLETION OF SURVEY AND RESEARCHER CHECKLIST

INSTRUCTIONS FOR COMPLETION OF SURVEY

SURVEY PARTICIPANT INSTRUCTIONS: ***(to be read by survey administrator to student-participants)***

1. *The questionnaire you are answering is to provide insight into the motivational needs of high school Business and Computer Science students.*
2. *This research study is being conducted by Ms. Susanna Craddock, a doctoral student at the University of Georgia.*
1. *Your honest participation is greatly appreciated.*
2. *The answers you give today will be kept confidential.*
3. *Your name or any other personal information will in no way be associated with the answers you provide, so please answer honestly.*
4. *At any time in the survey if there are computer problems or questions, please raise your hand and I will get to you as soon as I can.*
5. *There are only 15 questions in the actual survey. You will answer up to 9 questions on you.*
6. *The possible answers for the survey are Strongly Agree, Agree, Disagree, or Strongly Disagree.*
3. *At this time, please key in the following link on the Internet address bar:* ***http://www.surveymonkey.com/s/motivationalNeeds***
7. *Thank you for participating in today's survey administration!*

Complete the checklist after the survey has been conducted, noting any irregularities in survey administration.

RESEARCHER CHECKLIST

Teacher's Name: _____ Today's date: _____

Number of students present and completing questionnaire: _____

Beginning time of survey: _____ Ending time of survey: _____

Researcher's Instructions: *Please write the link for the survey on the board (see Survey Participant Instructions). Ask students to wait for your instructions to proceed. Read the* ***Survey Participant Instructions*** *to students. When survey administration is complete, please complete this form, sign, and date the document that all directions have been adhered to as prescribed. Place the completed sheet in the envelope provided for the signed permission slips for the participating class.*

	YES	NO	NOT APPLICABLE
1. I read the directions to the student participants exactly as written.			
2. I stayed in the room at all times during the survey administration to answer respondent's questions.			
3. In the area provided below, I listed any computer issues encountered (if applicable).			
4. In the area below, I listed any additional issues experienced with survey administration or participants (if applicable).			
5. I signed and dated in the area provided indicating that I read and followed all directions provided.			

Computer issues experienced during survey administration: _____

_____

Additional issues experienced during survey administration: _____

_____

_____ _____

Researcher's Signature **Today's Date**