STUDENTS WHO REJECT ACADEMIC ADVICE: A LONGITUDINAL STUDY OF MIDDLE SCHOOL

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ABSTRACT

Students Who Reject Academic Advice: A Longitudinal Study of Middle School

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This study investigated whether lower achieving students, students whose cumulative academic progress was below the predetermined benchmark needed in order to be recommended for an honors course, showed gains in academic achievement after rejecting their teachers' advice and choosing placement in an academically challenging environment by considering levels of motivation, attitudinal factors toward learning, and other background information. Two groups were considered throughout this research. "Group Z" was defined as students who selected enrollment in an honors course over a less rigorous academic class despite their teachers' recommendations which were based on prior academic performances. "Group A" was defined as students who selected enrollment in courses which were felt by their teachers to appropriately suit their needs in terms of academic challenges as evidenced by prior achievement. A secondary purpose of this study examined characteristics that distinguish high achieving students from average and low achieving students by considering levels of self-efficacy, academic achievement, standardized statewide assessment scores, and propensity to reject teachers' advice.

A mixed methods approach utilized achievement data from archived records on 343 middle school students and assessed attitudes toward learning through questionnaires. A Repeated Measures ANOVA revealed that "Group A" maintained significantly higher cumulative GPAs when compared to "Group Z". Repeated Measures ANOVAs were conducted in each of the four curricular areas and revealed that honors students significantly outperformed academic students and those who rejected their teachers' recommendations in all four curricular areas. In math, honors students outperformed academic students and academic students significantly outperformed students who rejected their teachers' recommendations. High achieving "Group Z" students reported higher levels of parental support and past academic accomplishments/increased self-efficacy, when compared to their high achieving "Group A" peers. A Discriminant Function Analysis confirmed that high achieving students are distinguishable from average and low achieving students due to their higher levels of past academic accomplishments/increased self-efficacy, a decreased propensity to reject their teachers' advice, and higher Pennsylvania System of School Assessment reading scores.

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CHAPTER ONE

INTRODUCTION

Statement of the Problem

Just five appointments into the day and anyone can see that a trend is becoming apparent in a middle school guidance department: adolescent students are experiencing heightened levels of stress as they take on challenging course loads while simultaneously balancing the demands of extracurricular activities and other social commitments. The result of their endeavors may eventuate in lack of sleep, heightened levels of stress, and anxiety.

Why are students so consumed with taking on these academic challenges? Some students are now viewing course selection in middle school as the onset of a 'game'. The 'game' sequentially tests their academic abilities as students must successfully complete the most rigorous course in each curricular area in order to proceed to the next 'level'. The ultimate destination would be earning the top level: an acceptance from an ivy league school. Many districts entice students' ambitions by attaching additional quality points (higher GPAs) to the more rigorous courses while colleges tout that the most attractive candidates are the ones who have taken and earned the highest grades in the most advanced courses offered in their schools.

Needless to say, there is a lot riding on a student's course selection. Not only does a student's choice of courses in middle and high school affect an individual's college experience, but the far reaching implications of course selection influences that individual's educational career, desired area of specialization, and career development (Braddock & Slavin, 1993). Once a student pursues a curricular area in more detail by enrolling in rigorous classes, the individual begins to develop expertise in the academic area and has less time to devote to other curricular domains (Dickhäuser, Reuter, & Hilling, 2005).

It is interesting to consider how schools differentiate curriculum in terms of the degree of academic difficulty offered to students for a given course. Tracking refers to the practice of placing students of similar abilities into the same class (Mulkey, Catsambis, Carr Steelman, & Crain, 2005). Research indicates that an estimated 95% of American high schools and middle schools utilize some type of academic tracking (Schweiker-Marra & Pula, 2005). Tracking allows schools to offer a more rigorous and academically challenging course (often referred to as an honors course) in addition to a course which is typically geared toward low to average achieving students (often referred to as an academic course). The practice of placing students into 'tracks' can vary at the school level, between districts, and as a function of the curricular area.

Typically in middle school, students are recommended for one of two tracks: an academic course, geared toward low and average achieving students, or a more accelerated honors course (Mulkey et al., 2005). Compared to courses offered in middle and high school, elementary schools are less likely to offer tracked classes in all curricular areas. As a result, recommendations for students entering middle school are more often driven by potential (the extent to which the teacher feels that the student will succeed in a higher tracked class) since they may not have been previously enrolled in a higher tracked class (Mulkey et al., 2005).

Policies regarding placement into higher tracked courses may be tied to the nature of the course. Curricular areas based on sequentially taught concepts make it more challenging to move between the tracks (Mulkey et al., 2005) and as a result, districts may develop stricter protocol for determining entrance into a higher level course. Felder and Silverman (1988) described sequentially based classes as courses utilizing “a well-ordered, linear pathway to new knowledge, which is presented as a series of smaller pieces that fit together” (p. 679). For example, in some districts students in academic math 7 are taught general math concepts, while honors 7th grade students learn pre-algebra. In 8th grade academic math, students are taught pre-algebra, while honors 8th grade math students learn algebra. Therefore, if a 7th grade academic math student wishes to take honors math the following year in 8th grade, the student is responsible for learning all of pre-algebra independently between the academic years. Felder and Silverman consider science a sequentially based curricular area because it requires that students be good analysts and skilled at solving complex problems by drawing on previously learned concepts and theories. Areas such as English and social studies, which teach concepts that are less apt to be sequentially linked together, allow students to move with greater ease between the academic and honors tracks.

Districts differ in their policies and subjectivity governing placement for students into tracked curriculums (Kelly, 2007). Placement policies regarding entrance into a higher tracked course may include objectively based indicators such as admitting only students who have obtained a certain score on a standardized test or demonstrated content mastery in a given curricular area. Subjectively based indicators of course placement may consist of allowing students to choose their courses. A middle ground approach aimed at determining class placement may consist of teacher recommendations driven from prior performance and standardized tests (Kelly, 2007)

In regards to the teacher recommendation model, teachers typically compare a student's cumulative academic progress for the current academic year to a benchmark which can be a grade or other quantified calculation of a predetermined level of proficiency which a student must obtain or surpass in order to be recommended for an honors course. Consequently, lower achieving students are not recommended to enroll in honors courses. Once a teacher recommends a student for a class, parents review the recommendation and agree or disagree with the class placement. Ultimately, in some districts, parents decide the rigor of the student's classes by agreeing or disagreeing with the recommendations and then initialing a course selection sheet consenting to the recommendation or change (Mulkey et al., 2005). Teachers may request to change a student's recommended placement anytime during the year. If this is the case, parents must be notified and agree to the change (Kelly, 2007).

In some districts (including the district in which this study was conducted), parents and students have the ability to select their course schedule by overriding a teacher's recommendation. Therefore, one of four scenarios plays out in the teacher recommendation model where low achieving students are those students whose annual cumulative academic progress is below the predetermined benchmark needed in order to be recommended for an honors course and high achieving students are students whose cumulative academic progress exceeds the predetermined benchmark:

1) Low achieving students are recommended for an academic course and accept their teachers' recommendations.
2) High achieving students are recommended for an honors course and accept their teachers' recommendations.

3) High achieving students are recommended for an honors course and select enrollment in an academic course

4) Low achieving students are recommended for an academic course yet enroll in an honors course.

However, a new phenomenon is emerging as more frequently lower achieving students are rejecting their teachers' academic advice and selecting enrollment in an honors course (Mulkey et al., 2005). The purpose of this research is to analyze the effect that rejecting academic advice has on future academic achievement by considering whether lower achieving students who did not follow their teacher's recommendation showed gains in academic achievement after choosing placement in an academically challenging environment. A secondary purpose of this study is to reveal characteristics that distinguish high achieving students from average and low achieving students by considering levels of self-efficacy, academic achievement, standardized statewide assessment scores, and propensity to reject teachers' advice.

For the purpose of this study, the group of students that followed their teachers' recommendations (scenario 1 and 2) will be referred to as "Group A" and the students who rejected their teachers' recommendations will be referred to as "Group Z" (scenario 4). It should be noted that the students utilized in this study very rarely opted enrollment in a lower tracked academic course when they were originally recommended for an honors level course (scenario 3).

Although it is not the purpose of this research to place "Group Z" within the confines of one particular label as the group most certainly varies in their attitudinal beliefs and academic endeavors, it may help us to understand this phenomenon if I highlight commonalties in their behaviors and attitudes. Perhaps some members of "Group Z" may be considered academic risk-takers because they have chosen enrollment in a challenging honors course which poses additional academic challenges, requires additional hours be devoted to studying, and most likely utilizes a more stringent grading system. Perhaps "Group Z" consists of some students with high academic aspirations. Students with high academic aspirations, or the propensity to set high performance goals, may be heavily invested in the 'game' and as a result, these students with high aspirations are plotting their course selection making every attempt to include the most rigorous courses available in hopes that they will eventually land an acceptance from the ivy league. Or, "Group Z" may consist of students who are non-compliant in regards to accepting academic advice. These students may believe that they are more in tuned with their own academic strengths, weaknesses, and limitations than their teachers and that they are consequently more adept at choosing their course schedules.

Regardless of how one conceptualizes this group of students the results of this phenomenon eventuate in success or failure. Confronting academic challenges undoubtedly leads to confusion and frustration; while some students are capable of rising to the challenge, those students who do not may experience decreased levels of self-efficacy that can result in poor academic performance (Usher & Pajares, 2006). It is important to understand how students approach academic challenges by considering the impact that the placement into a rigorous honors course (despite the teacher's recommendation) has on an individual's future achievement which may be influenced by their already developed motivation, attitudes toward learning, and self-efficacy (Usher & Pajares, 2006).

Since course selection significantly influences academic achievement, development of expertise, and career trajectory (Dickhäuser et al., 2005), it is worth considering the choices, factors, and outcomes surrounding course selection. What factors contribute to an adaptive motivational profile from which lower achieving students actively approach challenges and pursue a rigorous course schedule? What attitudes towards school and learning are characteristic of those lower achieving students who actively seek more challenging course loads, converting obstacles into opportunities, and eventually achieve academic success?

With the advent of No Child Left Behind, educators have become increasingly more concerned with students meeting state mandated benchmarks in addition to demonstrating proficiency in math and reading (Fleischman & Heppen, 2009). More attention has been directed towards helping students maintain proficiency in addition to understanding the differences between high and low achieving students. Researchers and educators struggle to identify differences between high and low achieving students in an effort to understand how to help lower achieving students reach their potential (Fleischman & Heppen, 2009). Therefore, a secondary purpose of this research is to distinguish between high and low achieving students by considering levels of self-efficacy, academic achievement, standardized statewide assessment scores, and propensity to reject academic advice.

The following three general hypotheses were explored: 1) In a challenging academic environment, historically high achieving students will continue to experience academic success while historically low achieving students will not experience the same degree of success; 2) Students who rejected their teacher's advice and enrolled in an honors course will be significantly outperformed by their peers who followed their teacher's advice regarding course selection; 3) Courses taught in a sequential nature, such as math and science, will pose a larger obstacle to students who rejected their teacher's advice in regards to course selection.

Statement of Purpose

The purpose of this study was to determine whether lower achieving students showed gains in academic achievement after choosing placement in an academically challenging environment, against their teacher's recommendation, by considering motivational, attitudinal factors toward learning, and other background information between "Group Z" and their peers, "Group A", who selected courses which were thought by their teachers to appropriately meet their needs in terms of academic challenges. The objectives of this research were to examine the similarities and differences between "Group A" and "Group Z" in an attempt to identify characteristics of individuals who successfully meet academic challenges resulting in academic success.

Research Questions

The following primary questions guided data collection and analysis:

(1) Is there a significant difference between "Group A" and "Group Z" in terms of their year end cumulative Grade Point Averages from 7th through 9th grade?

(2) Does "Group A" and "Group Z" tend to perform at the same level of academic achievement from 7^{th} through 9^{th} grade across the four curricular areas (English, science, math, and social studies)?

(3) What effects do attitudes towards learning, parental support, and propensity to reject teachers' recommendations have on high academic achievers (measured by GPA)?

This study addressed the following secondary research questions:

(4) What attitudes and behaviors differentiate between the highest, lowest, and average achieving students?

(5) Does achievement in content standards (as measured by statewide assessments) correlate with academic achievement (as measured by final Grade Point Average)?

Research Hypotheses

Based on the research questions, the following specific hypotheses were generated:

(1) Significant differences exist between the cumulative GPAs in 7th through 9th grade for "Group Z" and "Group A". "Group A" will have significantly higher GPAs when compared to "Group Z".

(2) In terms of the four curricular areas (English, science, math, and social studies), "Group Z" will have a lower probability of maintaining a final Grade Point Average comparable to "Group A" in courses that are sequential in nature (develop new skills by relying on the acquisition of previously learned information) such as math and science.

(3) High achieving students who frequently rejected their teachers' recommendations will demonstrate high levels of self-efficacy and receive parental support.

(4) The highest achieving student group will differ from the average and lowest achieving groups in terms of their past academic accomplishments and their heightened levels of self-efficacy.

(5) Achievement in content standards (as measured by a statewide assessment) and academic achievement (as measured by final Grade Point Average) will be positively correlated.

Theoretical Framework

This study acknowledges that several theories are needed in order to sufficiently understand the effect of rejecting academic advice on academic achievement. Specifically, expectancy X value theory, social cognitive, and social comparison theory were utilized in this study to explore differences corresponding to the way individuals approach academic tasks, experience achievement motivation, and achieve academic success.

Achievement motivation for early to late adolescence has historically been viewed as a goal-directed behavior and is grounded in expectancy-value theory suggesting that motivation is influenced by a utility value, task value, intrinsic value, and cost (Eccles & Wigfield, 2002). According to Eccles and Wigfield (2002), a utility value refers to an individual’s perception of the degree to which an academic task will lead to a future goal. A value is associated with the anticipated success and is referred to as a task value, which can be intrinsically or extrinsically motivating to the individual (Vansteenkiste et al., 2004). Achievement situations can be driven by both positive and negative motives as an individual may engage in an academic endeavor to avoid the fear of failure or to gain the rewards of success.

Social cognitive theory builds upon expectancy-value theory acknowledging that perceived positive outcomes increase behaviors which may become manifested in achievement motivation. The theory also suggests that repetitive behaviors are the result of cognitive affirmation which strengthens individuals' self-efficacies or the belief that individuals hold regarding their ability to act upon academic tasks, thereby directing choice behavior (Usher & Pajares, 2006). Lastly, social comparison refers to the process by which individuals make inferences regarding their ability through comparisons with peers, which in turn affects individuals' self-perceptions and the likelihood of taking on academic challenges.

Significance of Study

With the advent of No Child Left Behind, teachers and administrators are becoming increasingly more concerned as students must meet state mandated benchmarks and make proficient annual yearly progress (AYP). As a result, educators are becoming more interested in identifying factors affecting students' academic achievement and commonalities in high achieving students as a way to understand prerequisites of academic success (Burbach & Butler, 2005). In addition, research suggests that high school academic success is significantly correlated with academic success in college and financial success later on in life (Adelman, 2000), so it is reasonable to argue that tracking and course placement may have significant linkages to stratification in American society (Mulkey et al., 2005). I am particularly interested in understanding this phenomenon because I counsel students in regards to course selection by helping students select course schedules that support their career interests, provide academic challenges, yet are realistically on par with their ability levels.

Very few studies have considered differences in academic achievement as a function of rejecting academic advice, achievement motivation, attitudes toward learning, and perception of self as a learner. This study seeks to determine whether lower achieving students who did not follow their teacher's recommendation showed gains in academic achievement after enrolling in a challenging honors course by considering motivational, attitudinal factors toward learning, and other background factors.

GLOSSARY OF TERMS

The following terms and phrases are utilized throughout this paper and have been operationally defined to clarify their particular use in this paper, since their meanings may vary within different research contexts.

Benchmark- A grade or quantified calculation of a predetermined level of proficiency, which a student must obtain or surpass, in order to be recommended for an honors course in the teacher recommendation model of tracking.

Low achieving students- Students whose cumulative academic progress is below the predetermined benchmark needed in order to be recommended for an honors course.

High achieving students- Students whose cumulative academic progress exceeds the predetermined benchmark needed in order to be recommended for an honors course.

Tracking- The practice of placing students of similar abilities into the same class.

Honors course- A more academically challenging and rigorous course when compared to an academic course.

Academic course- A course which is typically geared toward low to average achieving students.

"Group A"- Students who followed their teacher's advice and enrolled in a course that was thought to be suited to the students' needs as predicted by prior performance.

“Group A” can be further subdivided into *honors* students, high achieving students that were recommended for an honors course and selected enrollment in the honors courses, or *academic* students, low achieving students recommended for an academic course and selected enrollment in academic courses).

“Group Z”- Students who rejected their teacher’s advice and enrolled in an honors course that was thought to be too challenging for the student as predicted by prior performance (i.e. low achieving students who enrolled in honors courses).

Override- The act of rejecting a teacher’s recommendation and enrolling in an honors course.

Underride- The act of rejecting a teacher’s recommendation and enrolling in an academic course.

CHAPTER TWO

LITERATURE REVIEW

Introduction

A new phenomenon is emerging as lower achieving students are not following their teachers' recommendations by selecting enrollment in honors courses which may not be appropriately suited to their needs as evidenced by their prior academic performance (Mulkey et al., 2005). Two questions must be addressed: Who are these students and what is the likelihood that these students will experience academic success after rejecting their teachers' advice? This literature review is organized in two parts. Section I examines this phenomenon by exploring attitudinal beliefs and behaviors within the academic context that may be characteristic of "Group Z", or students who rejected their teachers' advice and enrolled in honors courses which was thought by their teachers to be too challenging for them as predicted by prior performance. Section II analyzes "Group Z's" decision to reject their teachers' recommendations by considering expectancy X value theory and then predicts trends in "Group Z's" academic achievement by drawing on social comparison and cognitive development theories.

This new phenomenon involving lower achieving students rejecting their teachers' recommendations and selecting enrollment in honors courses has not been sufficiently researched (Mulkey et al., 2005) but has gained the attention of educators, administrators, counselors, and college admission officials. I am not sure why this phenomenon is occurring, although I speculate that students are attracted by the stigma attached to honors courses and believe that enrollment in honors courses is a viable way to gain the acceptance of prestigious colleges and universities. I am also not sure who these "Group Z" students are, so several explanations will be described.

Section I: *"Group Z" - Who are these students?*

Academic Risk-Takers

The concept of academic risk-taking is derived from risk-taking research. According to Kogan and Wallach (1967), risk-taking refers to a situation in which an individual is faced with a choice, among alternatives, that could result in loss or failure. Risk-taking research suggests that individuals prefer moderate risks (Lopes, 1983) and are more conservative when faced with real life situations as opposed to hypothetical situations (Laffery & Higbee, 1974). Studies have found that risk-taking increases with variable payoffs, the value attached to success increases along with the task's difficulty, as opposed to fixed payoff scenarios (Ettenson & Coughlin, 1982). Lastly, individuals often take greater risks when they are informed of the outcome possibilities suggesting that people are more inclined to take greater risks with informed certainty (Ellsberg, 1961).

Clifford (1991) utilized previous work surrounding risk-taking in order to understand risk-taking from an educational perspective and argued that learning is a social process in which knowledge and behaviors are shaped through rewards and punishments. Clifford, Lan, and Chou (1989) defined academic risk-taking as "student selection of academic achievement tasks varying in difficulty" (p. 322). Clifford (1991) later refined her definition and added that academic risk-taking results from students' selection of achievement tasks that vary in probabilistic outcomes and are accompanied by feedback (Clifford, 1991). For tasks to be categorized as academic risk-taking in research studies, Clifford posited that valid information regarding the likelihood of success needs to be given to the individual taking the risk, the individual's perception of the task's difficulty is assessed, and the resulting success in the academic environment is recorded.

It is possible that some of the “Group Z” students may be considered academic risk-takers as a result of their decision to enroll in an honors course. In order to meet Clifford’s (1991) definition of an academic risk-taker, individuals must be given valid information regarding their likelihood of successfully completing the task. “Group Z” students were given information regarding the probability of maintaining academic success in a rigorous honors course via their teachers’ recommendations which suggested that they would not be able to maintain a satisfactory grade in the honors course. Second, students’ perception of the task’s difficulty was assessed. “Group Z” students must have perceived the honors courses’ level of difficulty as strenuous, yet manageable, because they chose to enroll in the honors course. Finally, the resulting success or failure was recorded on the students’ report cards. “Group Z” may also be thought of as academic risk-takers because they chose enrollment in a challenging honors course which most likely posed additional academic challenges, required that additional hours be invested in mastering the material, and utilized a more stringent grading system when compared to an academic course. Last, “Group Z” students took an academic risk because they were placed into an academically challenging course despite their low levels of prior academic success, as evidenced by prior achievement in that curricular area.

If some students in “Group Z” are referred to as academic risk-takers, then what trends may be observed in their academic achievement as a result of their decision to reject their teachers’ recommendations and enroll in honors courses despite the fact that they were low achievers? A review of literature suggests that “Group Z” may not experience gains in academic achievement as a result of being placed in a challenging academic situation because of the impact that their prior achievement may have on future achievement.

Fo¨rsterling and Morgenstern (2002) examined the relationship between assessment and performance in undergraduate students from the University of Munich. Participants took the *Intelligenz Struktur Test* in small groups, were given feedback regarding their achievement (realistic, unrealistically positive, unrealistically negative, or inverse), reported whether the feedback confirmed their expectations, the extent to which pretest feedback would alter their strategies for the next task, their natural ability, and their planned allocation of time for the next trial. The amount of time needed to complete the four subscales was recorded. Results indicated that the experimentally manipulated feedback conditions marginally influenced academic performance $F(3,100) = 2.40$, $p < .072$, with the realistic ($M = 31.21$) and unrealistically high ($M = 31.13$) conditions resulting in higher academic performance. Researchers also found that participants spent the most time on the subscales in which they scored the highest during the pretest $F(3,101) = 6.19$, $p < .001$. A limitation to this study is that no data were given to support the construct validity of the utilized cognitive intelligence test. The researchers found evidence that individuals experienced the greatest levels of academic success when they exerted effort into tasks that resulted in favorable feedback, the tasks resulted in increased knowledge pertaining to their abilities, and the tasks were intrinsically rewarding and on par with their ability levels. An application to Fo¨rsterling and Morgenstern's (2002) research suggests that students may not experience increases in achievement if their ability level is below that of what is needed to meet the challenges provided within the academic environment.

Elliott and Dweck (1988) researched the relationship among academic risk-taking, goal setting, and academic achievement in 5th grade students. Researchers showed participants a stimulus comprised of five geometric shapes and asked participants to identify the shape from three alternative cards over ten trials. Participants were randomly assigned to high or low achievement feedback groups and received feedback according to group assignment. Children were given the option of choosing between a learning or performance task (three levels of difficulty and not resulting in new knowledge) and were then given a discrimination task. Participants chose learning over performance tasks (82%) during non-evaluative conditions and performance over learning tasks (66%) when knowledge was assessed. Thirty-three percent of participants receiving low feedback chose the easiest and moderate tasks while 9% of participants receiving high feedback choose the easiest level and 15% chose the most difficult level. This study's results could be strengthened if questionnaires were utilized to affirm students' intrinsic interest regarding a specific task. Researchers found that 5th graders who received negative feedback avoided challenges and were less inclined to develop intrinsic interest surrounding a specific task during evaluative settings. An application to this study suggests that students who receive negative feedback via unsatisfactory grades may not put forth the needed effort in order to be successful and may consequently experience decreases in academic achievement.

Jagacinski, Kumar, and Kokkinou (2008) researched the relationship between challenge seeking and achievement in 116 undergraduate students (69% male and 83% Caucasian) from a large Midwestern university. In conjunction with a series of cognitive tasks, participants were given either neutral or ego-involving instructions which were instructions phrased in a manner that promoted comparisons between peers and increased competition through performance. Following their one-on-one sessions with the experimenter, participants chose the level of difficulty for 10 nonverbal cognitive problems and then completed questionnaires which assessed perceived ability. The researchers found that the ego-involving group who indicated high initial levels of perceived ability selected tasks with higher levels of difficulty and persevered throughout the tasks. An application to Jagacinski et al.'s research suggests that students with higher levels of perceived ability are more inclined to select difficult tasks and experience academic success when compared to their lower achieving counterparts. Jagacinski et al.'s research would predict that "Group A" should outperform "Group Z" if the students' perceived academic ability is comparable to their actual level of achievement.

According to the reviewed recent research, if "Group Z" is comprised of some academic risk-takers, then their probability of achieving future academic success may be substantially compromised by their low levels of prior academic achievement. For example, Fo¨rsterling and Morgenstern's (2002) research found that negative feedback or poor grades, can negatively affect the future achievement of late adolescent students. Like Fo¨rsterling and Morgenstern, Jagacinski et al.'s research found that individuals with high levels of perceived ability are more likely to select and preserve through difficult tasks when compared to individual with lower levels of perceived ability. Elliot and Dweck found that low levels of academic achievement had a negative impact on future achievement in challenging situations revealing that negative feedback decreases students' desires to put forth the amount of effort required to master the task and experience academic success.

Level of Aspiration

Locke (1966) pioneered the early wave of research surrounding aspirations and referred to level of aspiration as the propensity to set high performance goals. Dandy and Nettelbeck (2002) referred to educational aspirations as individuals' motives to achieve educational goals and Carranza, You, Vichet, Chhuon, and Hudley (2009) similarly defined educational aspirations as "the educational goals that students would like to obtain in their research involving high school students" (p. 317).

Drawing on Locke's (1966) research it is quite possible that "Group Z" may consist of students with high levels of academic aspiration because they chose enrollment in a rigorous honors course, with the intent most likely aimed at experiencing academic success. Likewise, it is conceivable that the students of "Group Z" meet Dandy and Nettelbeck's (2002) and Carranza et al.'s (2009) definitions of possessing high educational aspirations because it is conceivable to view the act of enrolling in a challenging honors course, with the intent of experiencing academic success, as an educational goal.

If some students in "Group Z" have high educational aspirations, then what trends may be observed in their academic achievement as a result of their decision to reject their teachers' recommendations and enroll in the honors courses despite the fact that they were low achievers? A review of literature suggests that similar to goal setting, educational aspirations are largely associated with increases in academic achievement. However, the "Group Z" students may not experience gains in academic achievement as a result of being placed into a challenging academic situation if their educational aspirations far exceed their academic abilities. Other research suggests that additional factors such as increased levels of parental support may be needed in order for high educational aspirations to eventuate in academic success.

A study conducted by Locke (1966) researched the relationship between level of aspiration and achievement in 60 undergraduate students. No other demographic data were provided, which is a limitation to the study. Participants were randomly assigned to a 3x2 research design group which differentiated cognitive manipulation tasks in terms of high versus low difficulty, high versus low aspiration level, and implicit versus explicit directions surrounding the procedures. Results indicated that subjects who set higher goals in relation to their initial ability experienced greater improvements when compared to subjects who did not set high performance goals. Locke's research would predict that holding all other variables constant (i.e., motivation, ability, self-efficacy, parental support, etc.), "Group Z" students with high academic aspirations could potentially experience increases in their academic achievement.

However, in contrast to Locke's (1966) research, a study conducted by Stringer and Heath (2008) researched the relationship between educational aspirations and academic performance in 155 late elementary aged students. Researchers administered individually administered the *Weschler Intelligence Scale for Children III* and *The Wide*

Range Achievement Test to students. The *Self-Perception Profile for Learning Disabled Students* and the *WllAT-3 Mathematics/Reading* subtests were administered one week later but in individual settings and all measures except for the *WISC III* were repeated one year later. Results of the study indicated that individuals who set high goals and did not possess high levels of cognitive ability did not show gains in their academic achievement in reading or math (r = 0.029, p > .05; r = 0.024, p > .05). An application to this study would suggest that large deficits between high aspirations and low cognitive ability levels could adversely affect future achievement for “Group Z”.

A study conducted by Carranza, You, Vichet, Chhuon, and Hudley (2009) researched the relationship between educational aspirations and academic achievement in 298 Mexican American high school students. During a 40 minute period, students were administered *The Perceived Parental Educational Involvement, Acculturation Rating Scale,* and *Rosenberg Self-esteem Scale* and were asked to answer questions regarding their educational aspirations and academic achievement. No data were provided in regards to the validity, reliability, or internal consistency of the educational aspiration questions, which is a limitation to this study. Results of SEM determined that the model with the greatest fit (x^2 = 996.090, p < .001) highlighted the direct effects of perceived parental support on educational aspirations and students' academic achievement. Researchers found that high school students who reported that their parents were invested in their education also reported higher educational aspirations and achievement. Therefore, parental involvement would help “Group Z” students with high educational aspirations reach their goals.

Hill et al. (2004) researched the relationship between educational aspirations and academic achievement in 463 mainly Caucasian adolescents from 7^{th} through 11^{th} grade from several large Southern school districts. Questionnaires assessing demographic variables, level of parental support, and educational aspirations were orally administered to students and their parents in 7^{th} and 11^{th} grade. A limitation to this study is that the researchers did not provide data relating to the questionnaire's validity or reliability. Teachers filled out measures of *Parental-Teacher Support*, commented on the students' behavioral and social statuses, and provided achievement data each year. Results of SEM indicated that the hypothesized model fit the data adequately ($x^2 = 5562.70$, $p < .001$) and that parental support in 7^{th} grade was positively related to grade 11 student educational aspirations and academic achievement. Like Carranza et al.'s research, Hill et al. would predict that parental support may be an important factor in helping "Group Z" students who have high educational aspirations achieve academic success.

Locke's (1966) research indicated that setting educational aspirations can result in increases in performance. However, Stringer and Heath (2008) found that early adolescent students with heightened aspirations in comparison to their prior performance did not show increased academic performance. Hill et al.'s (2004) research found that parental support may be a crucial factor in helping students set high academic aspirations and fulfilling those goals. Carranza et al.'s (2009) research found that students who indicated that their parents supported their academic efforts (i.e. helped them study, provided encouragement, and helped with nightly homework) also reported higher aspirations and academic achievement. In conclusion, "Group Z" students with high academic aspirations may experience academic success if a large discrepancy does not exist between their natural ability and the ability needed to be successful in an honors course and if their parents support their academic endeavors.

Non-compliant in Regards to Academic Advice

A non-compliant individual refers to an individual who fails to obey. In an educational context, students may choose to not comply with a teacher's request or recommendation. The reasons students may choose to not obey a teacher's request are voluminous but may include cognitive inability, defiance and other attitudinal factors, or the presence of an alternative factor which is more rewarding when compared with the anticipated consequences resulting from complying with the teacher's request.

"Group Z" may consist of students that are non-compliant in regards to academic expectations. Perhaps some "Group Z" students chose to disregard their teacher's advice due to attitudinal conflict with the teacher and enrolled in an honors course out of defiance. Secondly, it is possible that "Group Z" students may have disagreed with the anticipated consequences associated with the recommendation such that an external factor (i.e. maintaining the illusion of an 'honors' student) was more enticing than following the teacher's recommendation and enrolling in an academic course. The second scenario will be discussed in more detail later on in the literature review from the perspective of expectancy X value theory.

If some students in "Group Z" are non-compliant in terms of accepting their teachers' recommendations, then what trends may be observed in their academic achievement as a result of their decision to reject their teachers' recommendations and enroll in the honors courses? We turn to a review of research surrounding academic non-compliance and academic achievement to search for answers.

Burroughs (2007) researched the relationship between attitudes and compliance in an academic setting in 564 (56% males and 44% females) undergraduate students from a large mid-Atlantic university. Students completed both open and closed questions, which assessed students' perceptions of previous teachers, in the beginning of the year. Thirteen weeks into the school year, students were orally administered the *Teacher Nonverbal Immediacy*, and *Affective Learning Styles Questionnaire*, in addition to a questionnaire that assessed student academic compliance and use of compliance resistance strategies. Results of an analysis of variance revealed that non-compliant students reported higher levels of learning loss ($F = 10.37$, $p < .05$). Results further revealed that non-compliant students reported higher levels of passively rejecting teacher advice in addition to a reported disinterest in learning and lower cognitive scores. Burroughs found support that non-compliant late adolescents also reported a disinterest in learning, lower cognitive abilities, and loss of learning. Burroughs would predict that "Group Z" students who are non-compliant in regards to accepting academic advice may also experience a disinterest in learning and learning loss.

Roach (1994) researched the relationship among compliance, affective, and cognitive learning in 190 undergraduate students from a large southwestern university. Questionnaires were orally administered to students at three separate times throughout the semester and included the *Behavioral Altercation Messages, Behavior Altercation Techniques*, and *Student Affective Learning Scales*, in addition to a questionnaire which assessed student perceptions of their cognitive abilities. Results revealed significant positive correlations between affective learning and compliance with teacher expectations ($r = .22$, $p < .01$) and positive correlations between increases in cognitive perception of academic abilities (i.e. students reported that their problem solving skills increased over time) and teacher compliance ($r = .24$, $p < .02$). A limitation to this study is that the sample only utilized participants from one class, interacting with one teacher, in one university setting. The restricted sample size is a threat to external validity. Roach found support that undergraduate students who complied with teacher expectations experienced increases in their perceived cognitive abilities and expressed more positive affect in regards to learning. Roach's research would predict that non-compliant "Group Z" students may experience a decreased perception in their cognitive abilities and a negative affect in regards to learning.

A review of research surrounding non-compliance in an educational context suggests that students who do not comply with academic expectations are also students who do not enjoy learning and do not experience academic success to the same degree as students who comply with academic expectations. An application of Burrough's (2007) research would predict that some "Group Z" students, who rejected their teacher's advice, are students that are disinterested in learning and have gaps in their learning when compared to students who did not reject their teacher's advice. Roach's (1994) research would predict that "Group Z" students who repeatedly choose to not comply with their teacher's expectations may experience declines in perception of their cognitive abilities and may not enjoy learning to the same degree as students who comply with teacher expectations. Obviously, we cannot infer that all "Group Z" students are non-compliant or that they do not comply with teacher requests or recommendations all of the time.

Section II: *"Group Z" - Why are they there and how will they do?*

What is the likelihood that "Group Z" will experience academic success after rejecting their teacher's advice? Expectancy X value theory is utilized in order to understand why "Group Z" may have selected enrollment in a challenging honors course by exploring the values attached to an honors course, the probability of maintaining academic success, and the trade off associated with selection of an honors course over an academic course. Cognitive development and social comparison theories will then be utilized to predict trends in "Group Z's" academic achievement as a result of rejecting their teachers' recommendations and enrolling in an honors course.

Expectancy X Value Theory

The ideas of Lewin et al. (1944) were expanded by Rotter (1954) who applied previous theories governing economic interactions and behavior into the social realm by coining terms including expectancy, behavior potential, and reinforcement value. An example of Rotter's expectancy X value theory suggests that an individual estimates the probability that a social action will eventuate in a desirable action, assesses the value of the desirable action, and compares the expectancy-value perceptions with alternative social outcomes and actions to determine the behavior that would elicit the best payoff. Rotter also demonstrated that sampled participants possessing an internal locus of control (individuals who believe that their lives are controlled by effort and ability) were more apt to take risks when compared to their counterparts with an external locus of control (individuals who believe that their lives are controlled by external forces including luck and others) and those risks were more likely to eventuate in success.

Atkinson (1964) hypothesized that the degree to which an individual strives to achieve success or avoid failure resulted in the individual's decision whether or not to engage in the risk. He also tied an affective component into his theory positing that as the probability of the success decreases an individual's resulting pride after a success increases and feelings of shame after a failure decrease. Atkinson's theory predicted that the more likely a reward can be obtained, the less valuable the reward becomes suggesting that regardless of individuals' desires to achieve academic success, individuals will chose the intermediate risk. Atkinson also highlighted the need to avoid failure, which he believed resulted in embarrassment or shame following an unsuccessful task completion. He further postulated that individuals most likely withdraw from situations that have yielded failed attempts in previous evaluative settings and engage in situations that have yielded favorable results.

Applying expectancy X value theory to the phenomenon involving "Group Z" suggests that in comparison to "Group A", "Group Z" students have a lower predicted probability of maintaining academic success in an honors course due to their comparatively lower levels of prior academic achievement. The actual teacher recommendation may serve as a tangible calculation of the probability of maintain success in an honors course suggesting that those students who received the honors recommendation have a higher probability of maintaining academic success when compared to those students who have not received the honors recommendation. It is possible that "Group Z" recalculated the perceived probability of maintaining academic success by factoring in self perception of internal factors including self-efficacy, competency, personal goals, and motivational level (Watkinson, Dwyer, & Nielsen, 2005).

Expectancy X value theory would also predict that the value attached to the honors course must be very appealing in order to entice "Group Z" to take on additional academic challenges despite their lower probability of achieving academic success when compared to "Group A". According to Black (1992) "high level students often receive greater recognition in school, whereas lower level students are not as highly regarded" (p. 47). Burris, Wiley, Welner, and Murphy (2008) found that teachers often have higher expectations, provide a more enriched curriculum, and are more committed to helping higher tracked students obtain academic success when compared to lower tracked students. Hallinan (1994) found that higher tracked students experienced larger increases in academic achievement and a more enriching curriculum when compared to lower tracked students. It is reasonable to argue that "Group Z" students believe that higher tracked students are more highly regarded, have access to a more enriching curriculum, experience increases in academic achievement, and have access to more educational opportunities. As a result, "Group Z" may attach a high value to an honors course.

Perhaps "Group Z" students have compared the expectancy-value of taking the more rigorous honors course, which requires more effort, studying, etc. and an accompanying lower likelihood of achieving a superior grade, to the expectancy-value of taking an easier academic course, which requires less effort and will most likely yield a higher final grade, and chose enrollment in the honors course. Meece, Wigfield, and Eccles (1990) found that academic achievement was predicted by individuals' performance expectancies and that course enrollment was predicted by value perceptions.

Eccles and Wigfield (1995) found that student decisions to approach an academic task resulted in analysis of the task's value and perceived utility in addition to an individual's competence, performance perceptions, expectancies that the task will eventuate in success, and the perception of the effort required in order to complete the task.

Taken collectively, expectancy X value theory would predict that "Group A", students who have done well in the past (experienced reinforcement from their efforts), will be more successful in the future when compared to "Group Z" who have not been rewarded for their efforts. Expectancy X value theory would also predict that students who were recommended for an academic course and calculated their perceived probability of achieving academic success in an honors course by factoring in their motivational level, goals, perceived competency, and the task's difficulty and selected enrollment in the honors course may be "Group Z" students. Finally, expectancy X value theory would predict that students who were recommended for an academic course and have attached a high value to their participation in the honors course will compare the expectancy-value of the academic course with the expectancy-value of the honors course and reject their teacher's advice.

Cognitive Development Theory

The theory of cognitive development asserts that challenges, direct feedback, supports, and instruction are necessary to help individuals perform at their optimal level of functioning. In the absence of such a stimulating environment, individuals' cognitive development can be retarded (Clifford, 1991). Vygotsky contended that social supports are needed to scaffold students from their baseline ability to a higher level of thinking which increases cognitive development (Clifford, 1991). Thompson (1999) defined support as “available resources within assistance for the coping process” (p. 56) and posited that support can be cognitive (i.e. structural support, guidance, opportunity for extra one-on-one assistance) or affective (sharing concerns with someone or problem solving). In general, cognitive development theorists would support the notion that academically challenging classes are crucial for the acquisition of new knowledge, even for lower achieving students.

Cognitive theory can be used to predict “Group Z’s” trends in academic achievement as a function of rejecting their teachers’ advice and enrolling in a challenging honors course. Cognitive development theorists would support the notion that challenges provided in an honors course may help “Group Z” access their potential. Furthermore, if the right amounts of social supports are provided, students can increase their cognitive development. Three articles were reviewed in an attempt to predict trends in “Group Z’s” academic achievement by considering cognitive development theory.

Three articles reviewed the positive effect incurred by lower achievers as a result of receiving social support during a challenging task. Sarason and Sarason (1986) researched the relationship between social support and academic performance in 80 freshman undergraduates. Researchers administered the SSQN *(Social Support Questionnaire Number)* to participants, calculated a mean score for the group, and divided participants into High and low SSQN groups each with an experimental and control group resulting in a 2 X 2 factorial design. Both experimental and control groups were given a series of anagrams to solve, but only the research assistant in the experimental group indicated that assistance would be provided upon request. All participants completed a *Cognitive Interference Questionnaire* following the experiment.

An ANOVA indicated that students given additional support performed significantly better than those in the control condition $F(1,172) = 8.98$, $p < .01$. The control group scored significantly higher than the experimental group on the CIQ, $F(1,72) = 9.08$, $p < .01$, suggesting that the control group experienced more off-task thoughts during the experiment. A limitation to this study is that no measures of internal consistency were provided for the assessments utilized in this study. Sarason and Sarason found evidence that support experienced during a difficult task can increase academic performance. An application of Sarason and Sarason’s work would predict that students in challenging academic environments can experience academic success if they are provided with additional support.

Ben-Ari and Kedem Friedrich (2000) researched the relationship between acquisition of knowledge and learning environment in 1017 3rd through 5th grade students from 36 different classes and 29 teachers. Researchers assessed students’ on-task interactions through structured observations, teacher role within the classroom, cognitive ability (they utilized the MAN test), and academic status. Teachers were in-serviced in teaching students complex thought processes and collaboration techniques within a heterogeneous classroom. Researchers administered the MAN test in the beginning of the year and observed teachers and students for 30 minutes each month for ten months. Results revealed that the 'developing' teacher was significantly related to social-verbal and on-task pupil interaction ($r = .45$). In addition, change in cognitive development for the low academic participants was affected by their teachers' role during activity in the classroom ($r = .14$). A limitation to this research is that no control group was utilized in order to test the knowledge acquisition of low achieving students who did not utilize the complex instruction method. Results of Ben-Ari et al.'s research suggests that “Group Z” can respond favorably to academically demanding challenges if they are given the appropriate supports.

Fuchs et al. (2000) researched the relationship between academic environments and academic achievement in 36, 4th grade students from a large southeastern suburban school district. Children were randomly assigned to a group according to size (pair or small group) and structure (individual, collaborative, or collaborative with structure). Students took performance tests each week for four consecutive weeks. Groups were videotaped and anecdotal data were collected on a weekly basis. Results of an analysis of variance found that low achieving students in dyads showed academic gains ($F = 13.39$, $p < .01$) and participated more frequently in a group format utilizing collaborative structure ($F = 21.7$, $p < .001$). Researchers found evidence that lower achieving early adolescents can make academic gains if one-on-one support is received in a challenging environment. Fuchs et al.’s research would predict that “Group Z” students who receive parental (one-on-one) support may experience increases in their academic achievement in an honors course.

A review of literature surrounding cognitive development supports the notion that “Group Z” students can experience increases in their academic achievement as a result of enrolling in an honors course. The results of this literature review would support the notion that “Group Z” students whose parents are involved and support them with their academics may be able to tap into their potential. Sarason and Sarason (1989) found evidence that social support experienced by late adolescences during a difficult task can lead to increases academic performance. Therefore, it is possible that “Group Z” students who also report increased levels of parental support may also experience increases in their academic achievement. Similarly, Ben-Ari and Kedem Friedrich would predict that "Group Z" can further develop their cognitive skills if support is given within a challenging academic environment and would contend that students whose parents provide them with support by helping with homework or proofreading assignments may experience increases in their academic achievement. Lastly, applications from Fuchs et al.'s research would suggest that "Group Z" students can make academic gains in an honors course if they receive parental (one-on-one) support .

Social Comparison Theory:

Social Comparison can be defined as an individual's evaluations of his or her perceived ability in comparison with the perceived ability of someone else (Skaalkik & Skaalvik, 2002). The term was originally coined by Festinger (1954) who hypothesized that individuals will engage in social comparisons in situations that do not readily provide other means for obtaining feedback relating to their abilities. According to Festinger (1954), individuals tend to engage in upward comparisons, comparing themselves to others with slightly better or roughly the same abilities (Chiu et al., 2008)

"Group Z" most likely engages in social comparisons as a means to obtain feedback regarding their abilities, especially in the absence of formative assessments. According to Festinger (1954), individuals are more likely to engage in upward comparisons so it is reasonable to assume that "Group Z" are more likely to make comparisons with other honors students. Chiu et al. (2008) found that students are more likely to compare themselves to students of similar abilities within the same track. Therefore, social comparison theory will be used to highlight trends in "Group Z's" academic achievements as a result of rejecting teacher' recommendations and through comparisons with other honors students.

Three studies reviewed the negative effects incurred by lower achieving students as a result of being placed in an academic environment with higher achieving students. Carmona, Buunk, Dijkstral, and Peiró (2008) researched the relationship among social comparison, self-efficacy, and academic performance in 120 Dutch undergraduate students. Limitations to this research include the relatively small sample. Researchers administered the *Motivated Strategies for Learning Questionnaire*, *Identification-Contrast Scales*, and *Regulatory Focus Questionnaire* to groups of students who were given unlimited time to complete the questionnaires. First trimester grades were collected as measures of performance. Results of SEM indicated that individuals using social comparisons with higher achieving peers where more apt to focus on avoiding failure and experienced lower self-efficacies when compared to individuals who did not socially compare themselves to higher achieving peers. Carmona et al. would predict that "Group Z" students who socially compare themselves to higher achieving peers will experience decreases in their self-efficacies which could negatively affect academic performance.

Thompson and Perry (2005) researched the relationship between social comparison of self-worth and academic performance in 96 undergraduate students from the University of Tasmania. The sample consisted of 312 students who were administered the *Self-Worth Protection Scale* and the highest and lowest scores resulted in 96 participants. Researchers administered the *Goals Inventory, State-Trait Anxiety Inventory, Positive and Negative Affect Subscales*, and *State Goal Orientation Scale*. Participants were given success or failure feedback after having completed a cognitive task, which primed participants to pursue either mastery goals or social comparison. Results indicated that for students possessing high self-worth protection, failure prompted social comparison goal priming and resulted in poorer performance when compared to students with low self-worth protection $F(1,92) = 10.39$; $p < .002$. Results also revealed that students in the combination of the mastery goal priming and success condition showed greater academic performance $F(1,22) = 25.48$; $p < .001$ when compared to the success and social comparison goal priming condition. A limitation to this study is that it was conducted in a laboratory setting which threatens the study's external validity. Thompson and Perry would predict that "Group Z" will experience decreases in their achievement level and ability to preserve through difficult tasks after making comparisons with higher achieving honors students.

Guay, Boivin, and Hodges (1999) researched the relationship between social comparison and academic achievement in 1,002 French Canadian children from 10 elementary schools located in Quebec City, Canada. Children were interviewed individually and asked to choose three friends and three individuals that they did not associate with from a class picture. Students completed *The Self-Perception Profile for Children* in groups and teachers provided researchers with achievement data. Results of a regression analysis indicated that academic achievement was positively correlated with perceived academic competence and that academic achievement and perceived academic competence maximized for individuals who made comparisons with lower achieving friends ($\beta = .57$, $p < .001$). Perceived academic competence was minimized when comparisons were made with a higher achieving friend ($\beta = .26$, $p < .01$). No significant interactions were reported for comparisons made with peers (non-reciprocated friends). A limitation of this study is that the utilized measures consisted mainly of interviews, which can increase subject reactivity. Guay et al. found that early adolescents who compared levels of academic achievement with higher achieving friends experienced decreases in their own academic self-evaluations which adversely affected future achievement.

Holding all other variables constant from the previous year (i.e. level of motivation, interest, amount of time studying, etc), social comparison theory would predict that “Group Z” students, who have historically been lower achievers, will most likely experience declines in their academic achievement as a result of comparing their abilities with their peers in an honors course. According to Carmona et al.'s (2008) research, students with the lowest grades (who most likely would be “Group Z” students if all other variables are held constant from the previous year) will experience diminished levels of self-efficacy if they compare themselves to their higher achieving peers. Thompson and Perry’s (2005) research would predict that “Group Z’s” self-efficacies may decrease as a result of comparing themselves to students who have historically been high achievers, which results in declining academic performance. Lastly, Guay et al.’s research would predict that “Group Z” students who enrolled in an honors course in order to be in a friend’s class may experience decreases in their academic self-evaluations because Guay et al. found that social comparisons with high achieving friends adversely affected self-evaluations of lower achieving peers.

A review of literature surrounding cognitive development and social comparison theories is ambiguous as to whether historically low achieving students who rejected their teachers’ recommendations and selected enrollment in a challenging course will experience increases in academic achievement. Cognitive development theory asserts that challenges are vital to the cognitive development of all students and that low achieving students can learn to convert these challenges into successes if they are given the right amounts of support. Social comparison theory contends that upward comparisons made with higher achieving peers can adversely affect an individual's self-efficacy which can eventuate in declining academic achievement.

Conclusion

Results of this literature review suggest that "Group Z" could consist of academic risk-takers, students with high academic aspirations, or students who are non-compliant in terms of accepting their teachers' recommendations. Results of this literature review also suggest that previous academic success is a key factor in predicting future academic success and students who attach a high value to an honors course may decide to reject their teachers' recommendations. Predicting "Group Z's" future achievement by considering cognitive development and social comparison theories reveals conflicting results, which will be investigated in further detail in the following research.

CHAPTER THREE

METHODOLOGY

Methods

Research Design

A longitudinal research design was utilized, collecting data on a cohort of students from 6th through 9th grade. In 8th grade students completed a questionnaire which assessed their motivation, beliefs regarding themselves as learners, and attitudes towards school.

Participants

Three hundred and forty-three students from six schools, one middle school, one high school, and four elementary schools, in a large Philadelphia suburban school district located in Pennsylvania were utilized in this study. Sixth grade students (approximately 12 years old) were followed into 9th grade (approximately 15 years old) and final course grades were collected each year. Fifty-two percent of the participants were female and 48% were male. Participants included in this research were primarily Caucasian (95%), but also included a variety of ethnic backgrounds as well as socioeconomic status representative of the district population. The overwhelming majority (76%) of the participants had at least one parent obtain a four year college degree. The median annual household income from the sample was $81,571, which is significantly higher than the median Pennsylvania household income of $41,073. Only 2% of the students from the intended sample were eligible for free and reduced lunch (Public School Review, 2006).

Access and Permission

I reviewed archived data collected from students' cumulative folders kept by school personnel as a function of my job working for the school district. As a result, no parental consent was needed and the IRB qualified my research for exemption status. A questionnaire was distributed to students during the last month of their 8^{th} grade year, as part of routine administrative procedures, to assess attitudes towards school and motivation. The questionnaire was approved by the school's vice principal as a measure to assess students' attitudes toward their school in an effort to improve the school climate. Confidentiality was maintained by assigning a case number to each student. The key questions and objectives of this study were considered by the researcher as a function of the researcher's job working within a school district. All questionnaires and methods of data collection were approved by my administrators.

Materials

Materials utilized in this study consisted of the students' cumulative folder, a questionnaire, and the Statistical Package for the Social Sciences (SPSS).

Motivation Questionnaire

Adaptation

There has been much debate regarding the stability and onset of achievement motivation. Some researchers believe that as early as first grade children can make judgments regarding their motivation and competence (Wigfield et al., 1997) while other researchers believe that motivation becomes apparent during the middle elementary years (Harter, 1992). Researchers also diverge in their conception of the stability of motivation. Some researchers contend that motivation and key components relating to motivation including self-efficacy, self-regulation, goal-setting, and expectancies for success (Schunk, 2000) become crystallized at an early age and are not significantly impacted by internal or external factors. According to Gottfried, Fleming, and Gottfried (2001), "The construct of academic intrinsic motivation maintains a strong degree of continuity, or stability, during a child's education, from middle elementary through the high school years. It may not be easy to change academic intrinsic motivation in adolescence" (p. 11). I support the research of Gottfried et al. and for the purposes of this study, the construct of motivation and other factors assessed by the Motivation Questionnaire, will be viewed as a stable construct and operate independent of the research design.

The main instrument utilized in this study consisted of a 24 item questionnaire which was modeled after Fitt and DuCette's (2006) scale. Similarities between the two questionnaires include the 4-point Likert scale, the number of statements, and four paraphrased questions (Motivation Questionnaire items: 3, 4, 10, and 23). Fitt and DuCette's scale was originally intended to assess the degree to which individuals felt connected to their school and measured the following subscales: paternal and maternal support, teacher support, academic engagement, achievement motivation, and peer support.

Construction

Prior to this research, the questionnaire had not been normed or validated. The final version of the questionnaire consisted of a 4-point Likert scale in which participants indicated varying levels of agreement with 24 counterbalanced statements. The questionnaire was constructed with the intent of measuring six motivational constructs including affect regarding belongingness to school, goal setting, prior achievement, self-regulation, self-efficacy, and parental support in order to highlight differences in the ways that students approach academic tasks and their attitudes towards learning. Four counterbalanced questions (two positive loadings and two negative loadings) were intended to measure each of the six constructs. An explanation as to why the six constructs were chosen follows.

Construct Selection

The questionnaire consisted of four questions which assessed an individual's affect toward school in addition to whether or not the student enjoys coming to school. A study conducted by Wentzel (1989) found that the degree to which 6^{th}-8^{th} grade students perceived their teachers as caring was related to students' academic effort, continued interest, self-regulation and adoption of mastery goals. Therefore, statements such as 'my teachers care about me as a person' and 'I am NOT involved at school' were included into the questionnaire.

Prior research from Harackiewicz, Barron, and Elliot (1998) suggested that high levels of initial interest and adoption of mastery goals resulted in higher grades, continued regulation of their goals, and continued interest in a given academic domain for college students. Two questions 'I DO NOT enjoy learning' and 'school will help me to become successful one day' were intended to assess mastery goal setting and intrinsic motivation. Research also determined that performance goal oriented students demonstrated competence and higher achievement when compared to students without performance goals (Barron & Harachiewicz, 2001). Statements which assessed extrinsic or performance goal orientated tendencies were utilized in the questionnaire such as 'it is important for me to get the best grades in the class' and 'it DOES NOT bother me when my peers get better grades than me'.

Motivation research has determined that prior achievement plays a large role in mediating and directing future achievement motivation. For example, Wentzel (1989) found that higher achieving high school students reported monitoring academic mastery goals, interest in subject matter, and increased motivation. Four questions assessed an individual's prior achievement, two of which included the following questions: 'as a result of my grades, my peers DO NOT view me as a good student' and 'I feel good about my past academic accomplishments' were included in the questionnaire.

Self-regulation, or the ability to use applied strategies to monitor and direct effort towards an academic task, have been an established construct necessary for the advancement of achievement motivation (Usher & Parjares, 2006). Usher and Parjares (2006) discovered that increased self-regulation and self-efficacy are associated with increased achievement motivation. Therefore, four questions which assessed individuals' sense of their self-regulation were incorporated into the questionnaire. Two examples consist of 'I have good study skills' and 'I DO NOT do my homework on time.

Academic self-efficacy, or individuals' beliefs that they can control how they do in school, is a key component in advancing the construct of achievement motivation (Zimmerman, Bandura, & Martinez-Pons, 1992). In a study conducted by Zimmerman et al. (1992), researchers conducted a path analysis and determined that self-efficacy describing self-regulated learning significantly predicted both student grade goals and final grade. As a result, four questions which assessed an individual's self-efficacy were utilized in the questionnaire including ‘I can set academic goals and achieve those goals’ and ‘I CAN NOT control how I do in school’.

Lastly, parental involvement has been linked to achievement motivation (Roeser, Strobel, & Quihuis, 2002). A study conducted by Roeser et al. (2002) found that middle school students who felt supported by their parents reported a desire to learn, increased self-efficacy, and increased levels of achievement motivation. Four questions were included in the questionnaire in order to assess participants’ perceptions of how much their parents provide additional academic support. Examples of these questions include ‘my parents help me to study’ and ‘my parents DO NOT help me with my homework’.

Analysis of Questionnaire

Two procedures were utilized to identify and assess factors emerging from the Motivation Questionnaire. The first procedure assessed internal consistency reliability using Cronbach’s alphas on the six constructs that were utilized to create the Motivation Questionnaire. The six factors of the Motivation Questionnaire produced coefficients ranging from .71 - .22: Affect toward school/belongingness (items 11,23,16,9) = .55, Goal Orientation (items 3, 10, 14,24) = .22, Prior achievement (items 7, 20, 4, 15) = .50, Self-regulation (items 18, 2, 8, 21) = .56, Self-efficacy (items 1, 13, 19, 5) = .65, and Parental support (items 12, 6, 17, 22) = .71. Since alpha levels of .70 or higher are regarded as an adequate measure of reliability (Garson, 2010), parental support (α = .71) was the only factor that yielded an adequate measure of reliability while self-efficacy yielded a slightly less adequate measure of reliability (α = .65).

The second procedure performed on the Motivation Questionnaire consisted of a principal components factor analysis followed by a varimax rotation. The analysis resulted in seven factors with eignvalues greater than one. After close examination, it appeared that questions in factors five, six, and seven did not consistently measure a readily identifiable construct and thus were excluded from further analysis. The factor analysis was run again, forcing four rotations and only factor loadings greater than .4 were reported in Table 3.1.

Table 3.1

Principle Components Factor Analysis of Motivation Questionnaire

Item	Description	Factor I Prev. Aca. Success/ Self-Efficacy	Factor II Parental Support	Factor III Seeks after school help/ involvement	Factor IV Indifference to School/Learning
Q7	I feel good about my past academic accomplishments	0.412			
Q11	I DO NOT feel connected to school/I don't like going to school	-0.413			
Q1	I can set academic goals for myself and achieve those goals.	0.295			
Q13	If I am doing poorly in a subject, I CAN NOT improve my grade	-0.341			
Q5	I can take on academic challenges and be successful	0.29			
Q18	I set academic goals for myself and monitor my progress	0.402			
Q2	I have good study skills (use agenda book, hmwk website, tutor, etc)	0.371			
Q20	In the past I have gotten good grades in school	0.305			
Q23	My teachers believe in me as a person and a student	0.312			
Q8	I DO NOT do my homework on a regular basis	-0.294			
Q4	Because of my grades, my peers DO NOT view me as a good student	-0.325			
Q3	I DO NOT like studying	-0.325			
Q19	I CAN NOT control how I do in school	-0.262			
Q9	My teachers DO NOT care about me as a person	-0.261			
Q10	School will help me to become successful someday	0.219			
Q15	I typically DO NOT do well on standardized testing (PSSA)	-0.256			
Q12	My parents DO NOT help me with my homework		-0.878		
Q6	My parents help me to study		0.711		
Q17	My parents DO NOT proof read my assignments		-0.677		
Q22	My parents encourage me to go to clinic or provide tutoring for me			0.896	
Q21	I DO NOT go to clinic or seek help when I need it			-0.35	
Q16	I am involved at school (sports, clubs, service groups, etc)			0.301	
Q14	It is important for me to get the best grades in the class				-0.693
Q24	It DOES NOT bother me when friends get better grades than me				0.609

Table 3.1 reveals the emergence of factors as a result of the factor analysis. Factor I contains 16 items (7, 11, 1, 13, 5, 18, 2, 20, 23, 8, 4, 3, 19, 9, 10, 15) and consists of themes suggesting that students have experienced academic success, can self-regulate performance, and have an increased sense of academic self-efficacy. A name for this factor may be termed "Previous academic success and increased self-efficacy" as it purports to measure positive attitudes surrounding an individual's ability to set goals, monitor academic success, and ability to control academic success in school. Factor II contains 3 items (12, 6, 17) and consists of themes relating to the role a parent plays in a student's academic career. "Parent support" is an appropriate name for Factor II as it describes how much time parents help their child study, complete homework, or prepare for tests. Factor III contains 3 items (22, 21, 16) and measures individuals' desires to seek after school academic help in addition to their involvement within the school community. "Seeks after school help and involvement" would be an appropriate label for Factor III. Factor IV contains 2 items (14, 24) and measures individuals' indifferent views toward learning and their connectedness to school. Factor IV could be termed "indifference to school/learning". As a result of factor analysis the following factors have emerged:

Factor I: Previous academic success and increased self-efficacy
Factor II: Parent Support
Factor III: Seeks after school help and involvement
Factor IV: Indifference to school/learning

In order to assess internal consistency reliability, Cronbach's alphas were computed for each of the four factors of the Motivation Questionnaire and produced coefficients ranging from .77 - .23 as follows: Previous academic success and increased self-efficacy - .77, Parental support - .76, Seeks after school help/involvement - .40, and Indifferent attitude toward school and learning - .23. Since alpha levels of .70 or higher are regarded as an adequate measure of reliability (Garson, 2010), Factors III and IV were omitted from this study because they did not appear to reliably measure the intended construct.

Comparing both procedures, which identified and assessed the internal consistency reliability of various factors emerging from the Motivation Questionnaire, resulted in relatively strong alphas for parental support ($\alpha = .71$, $\alpha = .76$) and self-efficacy/Previous academic success and increased self-efficacy ($\alpha = .65$, $\alpha = .77$). Although any additional data analysis utilizing the Motivation Questionnaire should be interpreted with caution, it does stand to reason that the Motivation Questionnaire adequately reliably measures constructs relating to parental support and self-efficacy/past academic success.

Students' Cumulative Folder

The measures utilized in this research consisted of report cards, course selection sheets, demographic questionnaires, and PSSA scores which were collected from students' cumulative folders. Demographic questionnaires, which were administered to parents during a student's enrollment, were utilized in order to obtain data regarding age, date of birth, gender, and student ID. This information was obtained by the school district under its legal mandate and was not produced as a result of my research.

Report cards were administered every nine weeks and maintained in a student's cumulative folder. Report cards detail the rigor of the course (honors or academic track) in addition to the student' GPAs. First through third marking period report cards reflected the students' current class grade, while the fourth marking period report card reflected the cumulative grade over the four marking periods. Final GPAs were used as a measure of student academic achievement.

Course selection sheets were generated each year for students and were maintained in the students' cumulative folder. Course selection sheets detail the teacher recommended course in addition to any overrides (parents requesting that that their child be placed into an honors class when the child was originally recommended for an academic course) or underrides (parents requesting that that their child be placed into an academic class when the child was originally recommended for an honors class). It should be noted that only three underrides were recorded during the course of this study.

Each spring students participated in a statewide assessment. The participants in this research study took the Pennsylvania System of School Assessment (PSSA) in math and reading. PSSA scores are reported on an IRT scale from 700-2400. Students spend approximately 150 minutes a day for three days completing both open ended and multiple choice questions to complete the math and reading sections. PSSA 7^{th} grade math and reading scores have shown a reliability score of .94 and .92 respectively and are stored in the students' cumulative folders.

Procedure

An enrollment list for the designated class was generated by school personnel at the end of the students' 8^{th} grade year. Subsequent lists were also generated including all students from the class that withdrew or enrolled in the district at any time during their 6^{th}, 7^{th}, or 8^{th} grade years or participated in the special education program. Students protected under chapter 14 of IDEA (Individuals with Disabilities Education Act) were not included in the study because their placement is an Individualized Educational

Program team decision. Approximately 15% of students participated in the gifted program (Chapter 16 of IDEA), receiving their enrichment through their social studies courses. These students' social studies placements were not included in the study because their placement is the result of a Gifted Individualized Educational Plan team decision. Approximately 20% of the class was not utilized in this study because they were enrolled in the special education program or they had enrolled or withdrawn during the course of the study.

The next step involved collecting the 7th, 8th, and 9th grade report cards for each of the 343 students. All students were assigned a case number and the final grades for each of the four core curricular subjects (math, science, English, and social studies) were entered into a database. Students' reading courses were omitted from this study because some of the sampled students in this research took a world language in lieu of reading in 8th grade and consequently the researcher would not be able to analyze differences in academic achievement in the area of reading over a three year period. Academic achievement was not analyzed in physical education or arts classes because these classes consist of only one track. PSSA scores from 7th grade were collected for each participant in the areas of reading and math. These scores were also inputted into the database.

All 6th grade course selection sheets were analyzed and coded. Information extracted from each course selection sheet included the following: student name, student ID number, teacher recommended English class, teacher recommended math class, teacher recommended science class, and teacher recommended social studies class. Following the teacher recommendations, any over/underrides were noted as the actual class placement (decided by the parent and student) and inputted into the database in the areas of English, math, science, and social studies. Seventh grade course selection sheets were coded in a similar manner.

Students were administered questionnaires during the last month of their 8th grade year. The questionnaire consisted of 24 questions in which participants respond to a 4-point Likert scale. Students were told that the results of the questionnaire would be used to understand how students felt about learning and their school so that administrators could improve the school climate. Students completed the questionnaires during their homeroom period and were given up to 30 minutes to complete the survey. Most students finished responding to the questionnaire within six minutes. Students who were absent the day questionnaires were administered completed the questionnaire the following day. Students' responses were inputted into the database.

Research Design

Attribute Grouping Variables

Academic Achievement Group

Each student's final cumulative GPA (7th through 9th grade) was recorded. Grade Point Averages are based on a 4.0 scale. Students with final cumulative GPAs between 0.0 and 2.6 were labeled low academic achievers. Students with final cumulative GPAs in the range of 2.6 to 3.6 were considered average academic achievers and students with final cumulative GPAs surpassing 3.6 were considered high academic achievers. These benchmarks were derived from district policy regarding academic recognition and intervention. The district in which this study was conducted used a GPA of 3.6 or above to recognize students who made the high honor roll. Likewise, students with a GPA below 2.6 were considered at-risk and may have received academic intervention support.

The Z Factor- Number of Overrides

This study defines “Group Z” as students who selected enrollment in an honors course over a less rigorous academic class against their teacher’s advice, which was based on prior academic performance in a given curricular area. The number of times students opted to take honors courses over less rigorous academic classes, against their teachers’ recommendations, in 7th and 8th grade years was recorded. The maximum number of times students could have overriden their teachers’ recommendations totaled eight times, or one time in each of the four curricular areas over a two year period. Each student was assigned a number from 0-8 corresponding to the number of times students opted to take a challenging honors courses over less rigorous academic courses, without a teacher’s recommendation. This is referred to as the Z factor or number of overrides.

Group Status- “Group Z” versus “Group A”

“Group Z” students have been operationally defined as students who selected enrollment in a more rigorous honors course over a less challenging academic course against their teachers’ recommendations. Students were placed into two groups based on their history of overriding their teachers’ recommendations. Of the 343 students sampled, the average number of overrides per student totaled 1.7. Two approaches were utilized in order to determine eligibility of “Group Z” status. The first approach involved classifying students as “Group Z” if they rejected their teacher’s recommendation at any time during 7th or 8th grade meaning that the students overrode one teacher recommendation out of 8 possible recommendations. This approach was later rejected because overriding one teacher’s recommendation did not constitute a readily identifiable pattern of behaviors and seemed shortsighted because on average, students overrode two teachers during middle school. The second approach defined "Group Z" as students who overrode two or more times during their 7th and 8th grade years and those who overrode less than two times were considered "Group A". Descriptive information pertaining to the frequency of overrides is provided in Table 3.2.

Table 3.2

Frequency of Overrides

Number of Overrides	Frequency	Percent	Cumulative Percent
0	184	12.3	53.6
1	70	4.7	74.1
2	51	3.4	88.9
3	25	1.7	96.2
4	10	0.7	99.1
5	2	0.1	99.7
6	1	0.1	100.0

Course Selection- Academic, Honors, or Override

In order to mitigate the effects of prior academic achievement on future achievement for "Group Z" and "Group A", students were placed into categories based on their selected courses. Four scenarios were defined in Chapter 1. "Group A" consists of students who were recommended for academic courses and selected academic course (scenario 1) in addition to students who were recommended for honors courses and selected honors (scenario 2). "Group Z" consists of students who were recommended for an academic course, yet selected enrollment in an honors course (scenario 4).

Seventh and 8th grade course selection sheets were analyzed in order to place students into one of three groups (academic, honors, or override) based on their history of selecting classes in a given curricular area. Students who were recommended and selected an honors course were placed into the *honors* group, students who were recommended and selected an academic course were placed into the *academic* group, and students who overrode their teacher's recommendation were placed into the *override* group. It should be noted that students selected only two courses (one in 7^{th} grade and one in 8^{th} grade) in each curricular area and that four course selection variables were recorded for students in order to reflect their group status in each of the four curricular areas.

CHAPTER FOUR

RESULTS

This research explored the following five research questions: (a) Is there a significant difference between “Group A” and “Group Z” in terms of their year end cumulative Grade Point Average from 7th through 9th grade? (b) Do “Group A” and “Group Z” tend to perform at the same level of academic achievement from 7th through 9th grade in the four curricular areas (English, science, math, and social studies)? (c) What effects do attitudes towards learning or additional parental support have on high academic achievers (as measured by GPA) for “Group A” and “Group Z”? (d) What attitudes and behaviors differentiate between the highest, lowest, and average achieving students? (e) Does achievement in content standards (as measured by a statewide assessment) correlate with academic achievement (as measured by final Grade Point Average)?

In an attempt to explore all possible viewpoints posed by the research questions, multiple procedures including Repeated Measures Analysis, one-way Analysis of Variance, Discriminant Function Analysis, Principal Components Factor Analysis, and Bivariate Correlations were conducted. In some instances, “Group A” which was previously defined as students who followed their teacher’s advice and enrolled in a course that was thought to be suited to the students’ needs as predicted by prior performance were subdivided into honors students (high achieving students who were recommended and selected enrollment in an honors course) and academic students (low achieving students were recommended and selected enrollment in an academic course) in order to mitigate the effects of prior achievement on future achievement.

Research Question 1

Is there a significant difference between "Group Z" and "Group A" in terms of their year end cumulative Grade Point Average from 7th through 9th grade?

The first approach to answering Research Question 1 utilized a Repeated Measures ANOVA with year end cumulative GPA for 7^{th}, 8^{th}, and 9^{th} grade as dependent variables and group status as the between-subjects factor. This analysis revealed that cumulative 7^{th}, 8^{th}, and 9^{th} grade GPAs were significantly different ($F = 6.732$, $p = .001$) across the three year period with 2% of the within-subjects variation in cumulative GPA explained by knowledge of the student's academic year. A significant difference was found between "Group Z" and "Group A" cumulative GPAs across the three years ($F = 4.341$, $p = .038$), with "Group A" significantly outperforming their "Group Z" peers. Results are presented in Table 4.1.

Table 4.1

Repeated Measures Analysis of Variance for Cumulative GPA and Group Status

Source	*df*	*F*	*p*	η^2
	Between Groups			
"Group Z"	1	4.341	0.038	0.014
Error	310			
	Within Groups			
Year	2	6.732	0.001	0.021
Year x "Group Z"	2	0.751	0.472	0.002
Error	620			

In discussing the results of Research Question 1 it was suggested that the question may have been posed incorrectly. Specifically, it is possible that "Group A" outperformed "Group Z" in part because "Group A" consists of some high achieving honors students. Typically, the way to control for this would be to covary 6th grade GPA, thus equating the groups. However, in the district in which the data were collected, the GPA from 1st to 6th grade is calculated differently from the GPA for grades 7 through 12, thus making the use of analysis of covariance impossible. As a consequence, a different approach was taken. In order to control for the effects of prior achievement on future acheivement, a Repeated Measures ANOVA utilizing year end GPA for 7th, 8th, and 9th grade as dependent variables and course selection (academic, honors, or override) as the between subjects factor was conducted. Means and standard deviations of cumulative GPA by grade are presented in Table 4.2 and results are presented in Table 4.3. Figure 4.1 provides a visual representation of cumulative 7th, 8th, and 9th grade GPA by course selection.

Table 4.2

Means and (Standard Deviations) of Cumulative GPA by Academic Year

	Mean		
Group	GPA 7	GPA 8	GPA 9
Honors	3.73	3.78	3.78
(*n* = 78)	(0.29)	(0.24)	(0.32)
Academic	3.09	3.2	3.24
(*n* = 155)	(0.45)	(0.49)	(0.54)
Override	3.19	3.27	3.25
(*n* = 77)	(0.39)	(0.41)	(0.49)

Table 4.3:

Repeated Measures Analysis of Variance for Cumulative GPA and Course Selection

Source	SS	*df*	*MS*	*F*	*p*	η^2
			Between Groups			
Group	56.621	2	28.311	64.793	0.000	0.297
Error	134.14	307	0.437			
			Within Groups			
Grade	1.348	2	0.674	9.889	0.000	0.031
Grade x Group	0.316	4	0.079	1.165	0.325	0.008
Error	41.843	614	0.068			

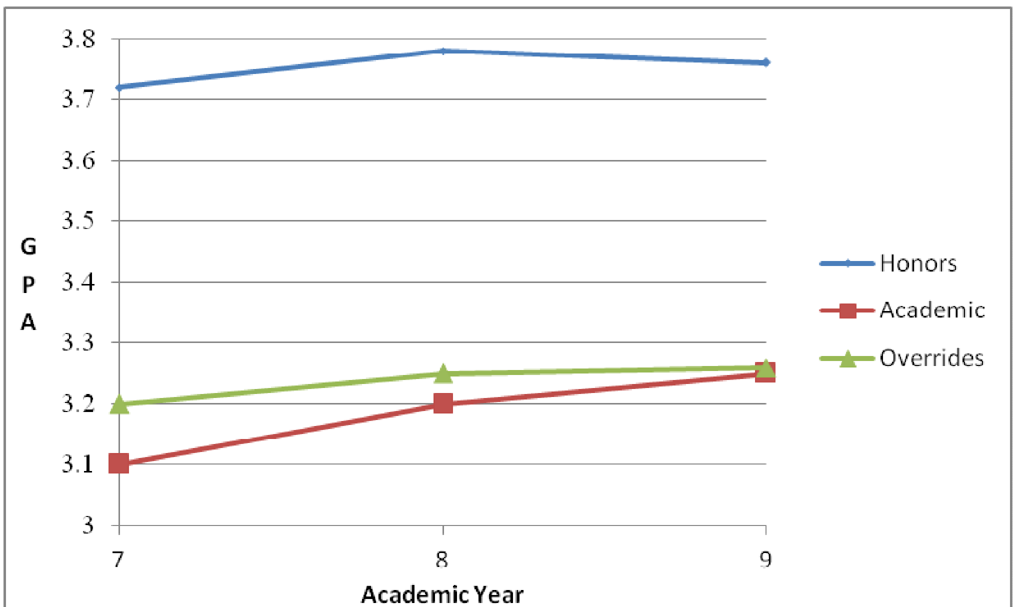

Figure 4.1. Final cumulative GPA from 7th- 9th Grade by Course Selection

Results of the Repeated Measures ANOVA revealed that cumulative 7th, 8th, and 9th grade GPAs were significantly different (F = 9.889, p = .000) across the three year period with 3% of the within-subjects variation in cumulative GPA explained by knowledge of student's academic year. Results of a follow up Post Hoc Tukey Test for the main effect of grade are presented in Table 4.4 and indicate a significant difference between 7th and 8th grades (*m* = 3.291, *m* = 3.423, *p* = 0.000) in addition to 7th and 9th grades (*m* = 3.291, *m* = 3.424, *p* = 0.000).

Table 4.4

Post Hoc Tukey Test for Academic Year in Cumulative GPA

	m	7th	8th	9th
7th	(3.291)	-	0.000	0.000
8th	(3.423)	-	-	0.795
9th	(3.424)	-	-	-

Students' GPAs tended to increase from 7th through 9th grade. A non significant interaction between year and group status was reported from 7th through 9th grade for cumulative GPAs (F = 1.165, p = .325). A significant main effect for group was found across the three years (F = 64.793, p = .000). An additional Post Hoc Tukey Test for group revealed that honors students significantly outperformed both academic (*m* = 3.765, *m* = 3.179, *p* = 0.000) and override students (*m* = 3.765, *m* = 3.241, *p* = 0.000). No significant difference was found between the academic and override groups (*p* = .479). Results are presented in Table 4.5.

Table 4.5

Post Hoc Tukey Test for Group in Cumulative GPA

	m	Academic	Override	Honors
Academic	(3.179)	-	0.479	0.000
Override	(3.241)	-	-	0.000
Honors	(3.765)	-	-	-

Research Question 2

Do "Group Z" and "Group A" tend to perform at the same level of academic achievement from 7th through 9th grade across the four core curricular areas?

The second approach used to answer Research Question 1 mitigated the effect of prior achievement on future achievement by subdividing "Group A" into honors and academic groups. The same approach was used to ascertain whether "Group Z" and "Group A" (consisting of academic and honors students) performed at the same level of academic achievement from 7th through 9th grade across the four curricular areas. Four Repeated Measures ANOVAs were conducted utilizing the year end GPA in each curricular area from 7th through 9th grade as dependent variables and course selection status as the between-subjects factor for each specific curricular area.

Social Studies

In order to control for the effects of prior achievement on future acheivement, a Repeated Measures ANOVA utilizing year end social studies GPA for 7th, 8th, and 9th grade as dependent variables and course selection as the between subjects factor was conducted. Means and standard deviations of social studies GPA by academic year are presented in Table 4.6 and results are presented in Table 4.7.

Table 4.6

Means and (Standard Deviations) of Social Studies GPA by Academic Year

	Mean		
Group	GPA 7	GPA 8	GPA 9
Honors	3.54	3.47	3.57
(n = 68)	(0.43)	(0.55)	(0.44)
Academic	3.13	2.83	3.26
(n = 125)	(0.60)	(0.67)	(0.66)
Override	3.12	3.04	3.2
(n = 52)	(0.60)	(0.65)	(0.58)

Table 4.7

Repeated Measures ANOVA for Year End Social Studies GPA and Course Selection

Source	SS	*df*	*MS*	*F*	*p*	η^2
			Between Groups			
Group	29.312	2	14.656	23.128	0.000	0.16
Error	153.354	242	0.634			
			Within Groups			
Grade	5.8	2	2.9	13.367	0.000	0.052
Grade x Group	3.024	4	0.756	3.484	0.008	0.028
Error	105.028	484	0.217			

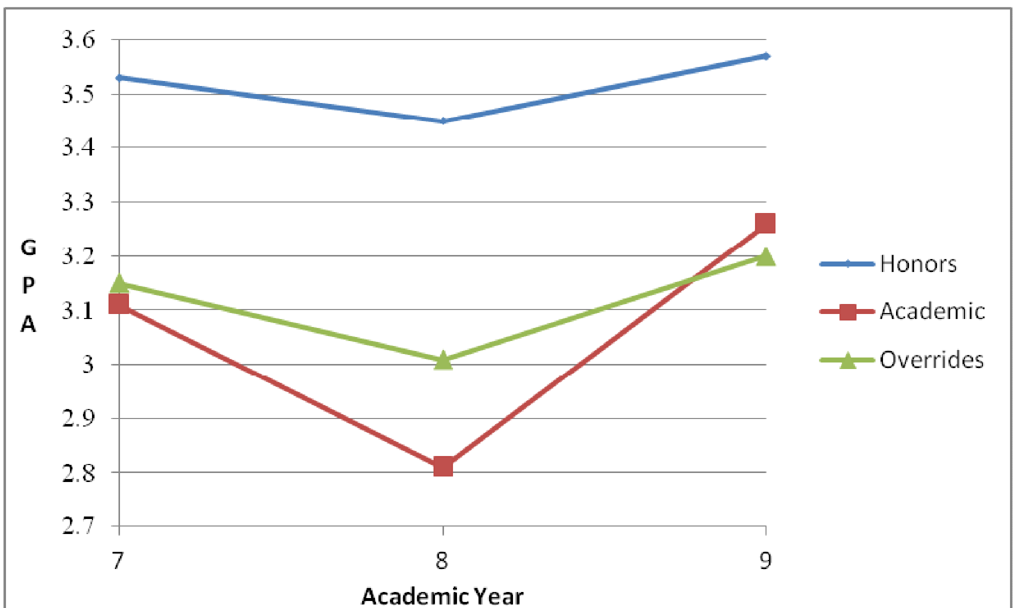

Figure 4.2. Year End Social Studies GPA from 7^{th}- 9^{th} Grade by Course Selection

Results of the Repeated Measures ANOVA revealed that year end social studies 7^{th}, 8^{th}, and 9^{th} grade GPAs were significantly different (F = 13.367, p = .000) across the three year period with 5% of the within-subjects variation in year end GPA explained by knowledge of student's academic year. Results of a follow up Post Hoc Tukey Test for the main effect of academic year are presented in Table 4.8 and indicate a significant difference between 7th and 8th grades (*m* = 3.244, *m* = 3.052, *p* = 0.000) in addition to 8th and 9th grades (*m* = 3.052, *m* = 3.330, *p* = 0.000).

Table 4.8

Post Hoc Tukey Test for Academic Year in Social Studies

	m	8th	7th	9th
8th	(3.052)	-	0.000	0.000
7th	(3.244)	-	-	0.005
9th	(3.33)	-	-	-

Students' year end social studies GPAs tended to decrease from 7th to 8th grade and increased in 9th grade for all groups. A significant interaction between year and group status was reported from 7th through 9th grade for year end social studies GPAs (F = 3.484, p = .008). A significant main effect for group was found across the three years (F = 23.128, p = .000). An additional Post Hoc Tukey Test for group revealed that honors students significantly outperformed both academic (*m* = 3.530, *m* = 3.073, *p* = 0.000) and override students (*m* = 3.530, *m* = 3.119, *p* = 0.000). No significant difference was found between the academic and override groups (*p* = .812).

Table 4.9

Post Hoc Tukey Test for Group in Social Studies

		Academic	Override	Honors
Academic	(3.073)	-	0.812	0.000
Override	(3.119)	-	-	0.000
Honors	(3.530)	-	-	-

English

A Repeated Measures ANOVA utilizing year end English GPA for 7th, 8th, and 9th grade as dependent variables and course selection as the between subjects factor was conducted. Means and standard deviations of English GPA by academic year are presented in Table 4.10 and results are presented in Table 4.11.

Table 4.10

Means and (Standard Deviations) of English GPA by Academic Year

	Mean		
Group	GPA 7	GPA 8	GPA 9
Honors	3.48	3.57	3.6
(n = 81)	(0.49)	(0.50)	(0.53)
Academic	2.68	2.91	2.96
(n = 200)	(0.74)	(0.65)	(0.71)
Override	2.88	2.97	3.18
(n = 30)	(0.41)	(0.44)	(0.55)

Table 4.11

Repeated Measures ANOVA for Year End English GPA and Course Selection

Source	SS	*df*	*MS*	*F*	*p*	η^2
Between Groups						
Group	83.275	2	41.638	49.739	0.000	0.244
Error	257.834	308	0.837			
Within Groups						
Grade	4.884	2	2.442	12.883	0.000	0.04
Grade x Group	1.34	4	0.335	1.765	0.134	0.011
Error	117.04	616	0.19			

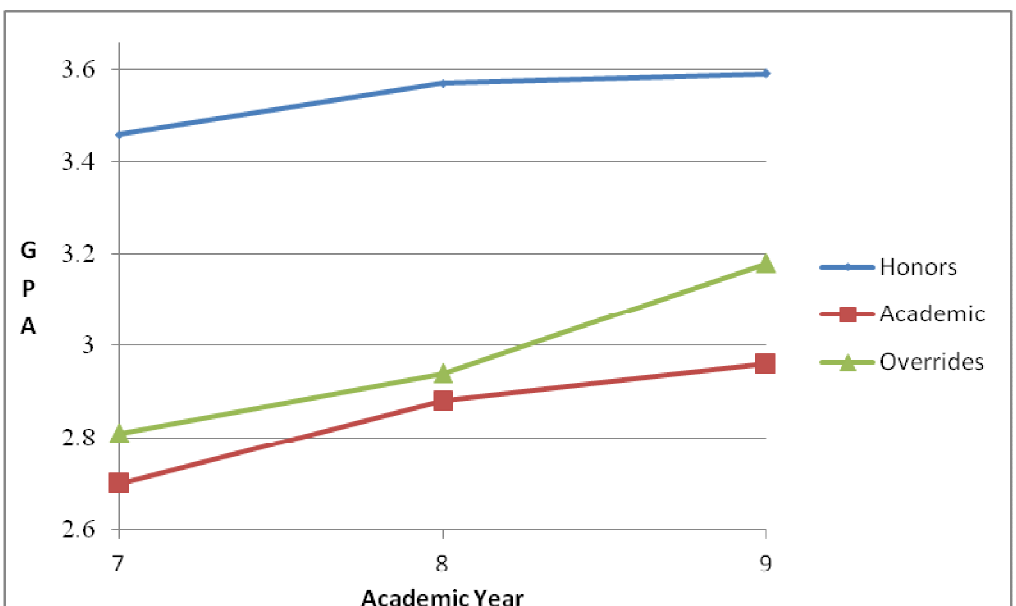

Figure 4.3. Year End English GPA from 7th-9th Grade by Course Selection

Results of the Repeated Measures ANOVA revealed that year end English 7th, 8th, and 9th grade GPAs were significantly different (F = 12.883, p = .000) across the three year period with 4% of the within-subjects variation in year end GPA explained by knowledge of student's academic year. Results of a follow up Post Hoc Tukey Test for the main effect of academic year are presented in Table 4.12 and indicate a significant difference between 7th and 8th grades (m = 2.903, m = 3.101, p = 0.000) in addition to 7th and 9th grades (m = 2.903, m = 3.149, p = 0.000).

Table 4.12

Post Hoc Tukey Test for Academic Year in English

	m	7th	8th	9th
7th	(2.903)	-	0.000	0.000
8th	(3.101)	-	-	0.081
9th	(3.149)	-	-	-

Students' year end English GPAs tended to increase from 7th to 9th grade for all groups. A non-significant interaction between year and group status was reported from 7th through 9th grade for year end English GPAs (F = 1.765, p = .134). A significant main effect for group was found across the three years (F = 49.739, p = .000). An additional Post Hoc Tukey Test for group revealed that honors students significantly outperformed both academic (m = 3.544, m = 2.850, p = 0.000) and override students (m = 3.544, m = 3.011, p = 0.000). No significant difference was found between the academic and override groups (p = .269). Results are presented in Table 4.13.

Table 4.13

Post Hoc Tukey Test for Group in English

		Academic	Override	Honors
Academic	(2.850)	-	0.269	0.000
Override	(3.011)	-	-	0.000
Honors	(3.544)	-	-	-

Science

A Repeated Measures ANOVA utilizing year end science GPA for 7th, 8th, and 9th grade as dependent variables and course selection as the between subjects factor was conducted. Means and standard deviations of science GPA by academic year are presented in Table 4.14 and results are presented in Table 4.15.

Table 4.14

Means and (Standard Deviations) of Science GPA by Academic Year

	Mean		
Group	GPA 7	GPA 8	GPA 9
Honors	3.59	3.46	3.46
(*n* = 80)	(0.43)	(0.59)	(0.52)
Academic	3.02	3.145	2.56
(*n* = 185)	(0.60)	(0.65)	(0.72)
Override	2.96	2.69	2.67
(*n* = 47)	(0.67)	(0.65)	(0.73)

Table 4.15

Repeated Measures ANOVA for Year End Science GPA and Course Selection

Source	SS	*df*	*MS*	*F*	*p*	η^2
			Between Groups			
Group	64.741	2	32.371	39.674	0.000	0.204
Error	252.121	309	0.816			
			Within Groups			
Grade	4.33	2	2.165	11.517	0.000	0.036
Grade x Group	19.172	4	4.793	25.489	0.000	0.142
Error	116.184	618	0.188			

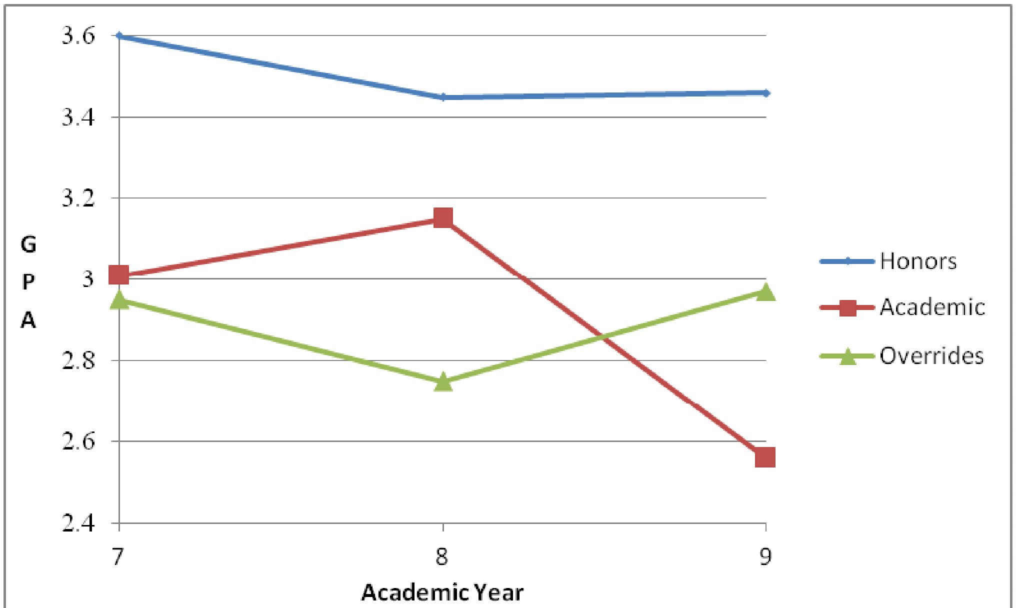

Figure 4.4. Year End Science GPA from 7th-9th Grade by Course Selection

Results of the Repeated Measures ANOVA revealed that year end science 7th, 8th, and 9th grade GPAs were significantly different (F = 11.517, p = .000) across the three year period with 4% of the within-subjects variation in year end GPA explained by knowledge of student's academic year. Results of a follow up Post Hoc Tukey Test for the main effect of academic year are presented in Table 4.16 and indicate a significant difference between 7th and 9th grades (m = 3.152, m = 2.852, p = 0.000) in addition to 8th and 9th grades (m = 3.171, m = 2.852, p = 0.000).

Table 4.16

Post Hoc Tukey Test for Academic Year in Science

	m	9th	7th	8th
9th	(2.852)	-	0.000	0.000
7th	(3.152)	-	-	0.569
8th	(3.171)	-	-	-

The students in the honors courses (override and honors students) tended to have lower grades in 8th grade while the students in the academic courses experienced increases in their 8th grade science grades. A significant interaction between year and group status was reported from 7th through 9th grade for year end science GPAs (F = 25.489, p = .000). A significant main effect for group was found across the three years (F = 32.371, p = .000). An additional Post Hoc Tukey Test for group revealed that honors students significantly outperformed both academic (m = 3.503, m = 2.908, p = 0.000) and override students (m = 3.503, m = 2.872, p = 0.000). No significant difference was found between academic and override groups (p = .907). Results are presented in Table 4.17.

Table 4.17

Post Hoc Tukey Test for Group in Science

	m	Override	Academic	Honors
Override	(2.872)	-	0.907	0.000
Academic	(2.908)	-	-	0.000
Honors	(3.503)	-	-	-

Math

A Repeated Measures ANOVA utilizing year end math GPA for 7th, 8th, and 9th grade as dependent variables and course selection as the between subjects factor was conducted. Means and standard deviations of math GPA by academic year are presented in Table 4.18 and results are presented in Table 4.19.

Table 4.18

Means and (Standard Deviations) of Math GPA by Academic Year

	Mean		
Group	GPA 7	GPA 8	GPA 9
Honors (n = 110)	3.45 (0.47)	3.54 (0.50)	3.22 (0.82)
Academic (n = 144)	2.99 (0.70)	2.92 (0.73)	2.87 (0.72)
Override (n = 88)	2.48 (0.85)	2.8 (0.7)	2.85 (0.75)

Table 4.19

Repeated Measures ANOVA for Year End Math GPA and Course Selection

Source	SS	*df*	*MS*	*F*	*p*	η^2
			Between Groups			
Group	76.8	2	38.5	45.645	0.000	0.212
Error	285.934	339	0.843			
			Within Groups			
Grade	2.754	2	1.377	4.183	0.016	0.012
Grade x Group	11.744	4	2.936	8.917	0.000	0.5
Error	223.062	678	0.329			

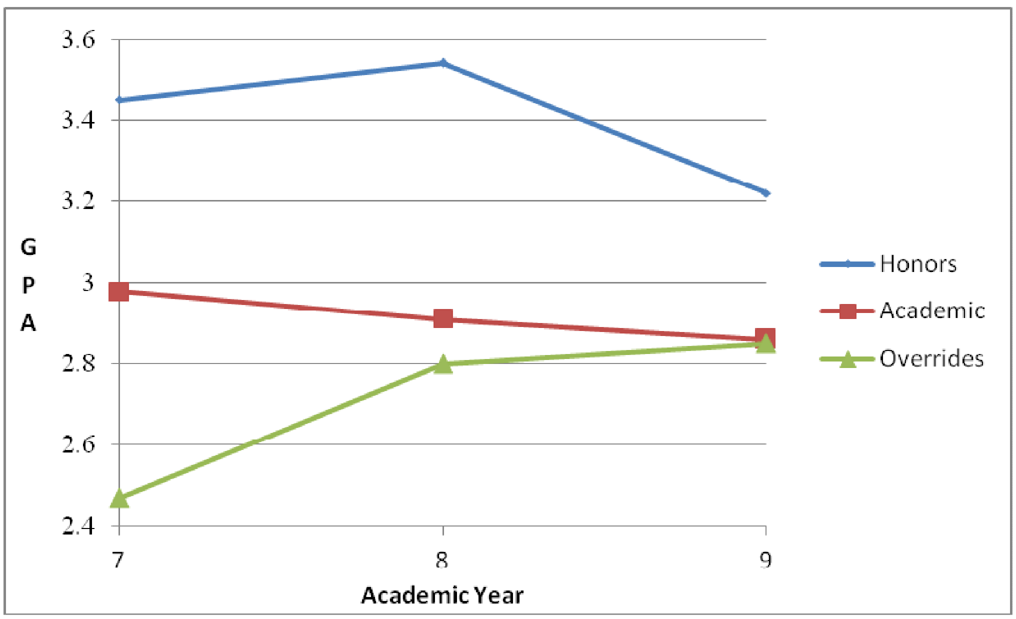

Figure 4.5. Year End Math GPA from 7th-9th Grade by Course Selection

Results of the Repeated Measures ANOVA revealed that year end math 7th, 8th, and 9th grade GPAs were significantly different (F = 4.183, p = .016) across the three year period with 1% of the within-subjects variation in year end GPA explained by knowledge of student's academic year. Results of a follow up Post Hoc Tukey Test for the main effect of academic year are presented in Table 4.20 and indicate a significant difference between 7th and 8th grades (m = 3.006, m = 3.090, p = 0.019) in addition to 8th and 9th grades (m = 3.090, m = 2.975, p = 0.019).

Table 4.20

Post Hoc Tukey Test for Academic Year in Math

	m	9th	7th	8th
9th	(2.975)	-	0.528	0.019
7th	(3.006)	-	-	0.019
8th	(3.09)	-	-	-

Students' year end math GPAs tended to decrease slightly in 9th grade for honors and academic groups. A significant interaction between year and group status was reported from 7th through 9th grade for year end math GPAs (F = 8.917, p = .000). A significant main effect for group was found across the three years (F = 45.645, p = .000). An additional Post Hoc Tukey Test for group revealed that honors students significantly outperformed both academic (m = 3.401, m = 2.923, p = 0.000) and override students (m = 3.401, m = 2.711, p = 0.000). Academic students significantly outperformed the override group (m = 2.923, m = 2.711, p = 0.009). Results are presented in Table 4.21.

Table 4.21

Post Hoc Tukey Test for Group in Math

	m	Override	Academic	Honors
Override	(2.711)	-	0.009	0.000
Academic	(2.923)	-	-	0.000
Honors	(3.401)	-	-	-

Research Question 3

What effects do attitudes towards learning, parental support, and propensity to reject teachers' recommendations have on high academic achievers (measured by GPA)?

Given an academic challenge, it would be helpful to know what a student can do to increase the likelihood of experiencing academic success. In order to answer Research Question 3, a sample of high achieving students was created consisting of all students who obtained a cumulative GPA greater than 3.60. A regression analysis was conducted utilizing Factor I (previous academic success and increased self-efficacy), Factor II (parental support), cumulative GPA, and the number of times the student rejected a teacher's recommendation (number of overrides). Results are displayed in Table 4.22.

Table 4.22

Regression Analysis for Motivational Factors of High Achieving Students and Overrides

Source	*r*	Previous Academic Success/ Increased self-efficacy	Parental Support	Cumulative GPA	Number of Overrides
Previous Academic Success/ Increased self-efficacy	*r*	-	0.149	0.002	$.279^{**}$
Parental Support	*r*	-	-	$-.389^{**}$	$.433^{**}$
Cumulative GPA	*r*	-	-	-	$-.361^{**}$
Number of Overrides	*r*				-

Note. **p* < .05. ***p* < .01.

Results of Table 4.22 reveal a significant positive relationship between number of overrides and heightened levels of previous academic success/self-efficacy ($r = .279$, $p < .01$) in high achieving students. For high achieving students, as the number of times they rejected their teachers' recommendations increased, their reported levels of previous academic success/self-efficacy also increased. A significant positive relationship was also found between number of overrides and parental support in high achieving students ($r = .433$, $p < .01$), suggesting that as the number of times the students overrode their teachers' recommendations increased, their reported levels of parental support also increased. A significant negative correlation was found between overrides and final cumulative GPA (r = -.361, p < .01), suggesting that for high achieving students, increases in overrides were correlated with decreases in GPA. Lastly, a negative correlation was found between level of parental support and cumulative GPA (r = -.389, p < .01) in high academic achievers, suggesting that as cumulative GPA increased, students reported declining levels of perceived parental support.

Research Question 4

What attitudes and behaviors differentiate between the highest, lowest, and average achieving students?

To determine the characteristics of the highest, average, and lowest achieving students, an equal number of high achieving students (cumulative GPA > 3.60), average achieving students (cumulative GPA $\geq$ 2.60; GPA $\leq$ 3.60), and the same number of low achieving students (cumulative GPA < 2.60) were randomly selected. Students were coded on an achievement group variable in accordance to their cumulative GPA. A Discriminant Function Analysis was conducted using Achievement Group as the grouping variable with the two factors from the Motivation Questionnaire, 7^{th} grade PSSA math scores, 7^{th} grade PSSA reading scores, and number of overrides as the discriminating variables. The results are presented in Table 4.23 and Table 4.24.

The results of the Discriminant Analysis suggest the emergence of two functions, with Function 1 being the only significant function. Function 1 encompasses positive feelings about past academic accomplishments and self-efficacy, PSSA reading scores, and not rejecting academic advice. The results of the Discriminant Analysis also suggest that students with high levels of academic self-efficacy typically have done well in the past, are higher achieving students, and have enrolled in course that were thought by their teachers to appropriately meet their academic needs. Since the group's centroids indicate that the high achieving students (group 0) differed in value from the other two centroids (-1.627 as opposed to -.401 and 2.028), it can be inferred that the high achieving group can be discriminated from the average and low achieving group in terms of higher levels of self-efficacy and academic accomplishments, PSSA reading scores, and a decreased propensity to override a teachers' recommendation.

Table 4.23

Discriminant Analysis of Motivation Factors by Achievement Group

Test of Function(s)	Wilks' Lambda	Chi-square	*df*	*p*
1 through 2	0.259	84.998	14	0.000
2	0.885	7.695	6	0.261

Source	Function 1	Function 2
Previous Aca. Success/Self-Efficacy	.619*	
PSSA Reading 7	.505*	
Number of Overrides	-.060*	
PSSA Math 7		-.756*
Parental Support		.203*

Note. *$p < .05$.

Table 4.24

Unstandardized Canonical Discriminate Functions Evaluated at Group Means for Low, Average, and High Achievers

Achievement Group	Function 1	Function 2
High Achievers	-1.627	-0.325
Average Achievers	-0.401	0.49
Low Achievers	2.028	-0.164

Research Question 5

Does achievement in content standards (as measured by statewide assessments) correlate with academic achievement (as measured by final Grade Point Average)?

A bivariate correlation was conducted correlating the cumulative GPA, a measure of academic achievement, and both 7^{th} grade math and reading PSSA scores, considered a measure of achievement in content standards. Results are presented in Table 4.25. Results indicated that cumulative GPA, a measure of achievement, significantly correlated with both PSSA in reading (r = .589, p = .000) and PSSA in math (r = .572, p = .000).

Table 4.25

Correlation Matrix for Achievement in Content Standards and Academic Achievement

Source	r	Cumulative GPA	PSSA Reading 7	PSSA Math 7
Cumulative GPA	r	-	$.589^{**}$	$.572^{**}$
PSSA Reading 7	r	-	-	$.624^{**}$
PSSA Math 7	r	-	-	-

Note. *p < .05. **p < .01. n = 343 for all groups.

CHAPTER FIVE

DISCUSSION

Summary of the Purpose and Results

The purpose of this study was to investigate whether lower achieving students, students whose cumulative academic progress was below the predetermined benchmark needed in order to be recommended for an honors course, showed gains in academic achievement after rejecting their teachers' advice and choosing placement in an academically challenging environment by considering levels of motivation, attitudinal factors toward learning, and other background information. "Group Z" was defined as those students who enrolled in an honors course over a less rigorous academic course despite their teachers' recommendations, which were based on prior academic performance in a given curricular area. "Group A" was defined as those students who selected enrollment in a course that was recommended by their teacher. This research considered whether "Group A" significantly outperformed "Group Z" and if this effect is influenced by funds of knowledge relating to a specific curricular area, prior academic performance, academic self-efficacy, or parental involvement.

This study came to fruition after a thorough review of current literature resulted in conflicting research contrasting the hypothesized effects that rejecting a teachers' recommendation regarding course selection may have on future academic achievement. For example, cognitive development theory asserts that challenges, instruction, and supports are crucial components required in order to allow individuals to perform at their optimal level of functioning (Thompson, 1999). Furthermore, cognitive development theory contends that in the absence of such a stimulating environment, individuals' cognitive development can be delayed (Clifford, 1991). Cognitive development theorists support the notion that academically challenging classes are crucial for the acquisition of new knowledge, even for lower achieving students (Clifford, 1991). However, advocates of social comparison theory believe that comparisons made with higher achieving peers may have detrimental effects on students, resulting in decreased self-efficacy of the individual making the comparison (Carmona, Buunk, Dijkstral, & Peiró, 2008).

In order to better understand the conflicting predicted effects that rejecting academic advice may have on future academic achievement, this study was created and utilized a longitudinal design following 343 students from 6^{th} through 9^{th} grade. Class lists were generated when students were in 8^{th} grade and all students who enrolled or withdrew from school during the three year longitudinal study were excluded from the research. In addition, special education students were not utilized in the research. The measures utilized in this research consisted of demographic surveys, course selection sheets, report cards, 7^{th} grade PSSA scores for math and reading, and a questionnaire which was administered in 8^{th} grade.

This study addressed the following primary research questions:

(1) Is there a significant difference between “Group Z” and “Group A” in terms of their year end cumulative Grade Point Average from7th through 9th grade?

(2) Do “Group Z” and “Group A” tend to perform at the same level of academic achievement from 7^{th} through 9^{th} grade in the four curricular areas (English, science, math, and social studies)?

(3) What effects do attitudes towards learning, parental support, and propensity to reject teachers' recommendations have on high academic achievers (as measured by GPA)?

This study addressed the following secondary research questions:

(4) What attitudes and behaviors differentiate between the highest, lowest, and average achieving students?

(5) Does achievement in content standards (as measured by a statewide assessment) correlate with academic achievement (as measured by final Grade Point Average)?

The results of this research supported my hypothesis suggesting that students who rejected their teachers' recommendations, electing enrollment in a more rigorous honors course over a less challenging academic course which was thought to be better suited to the student's needs based on prior performance, did not experience the same degree of academic success when compared to their peers who enrolled in the teacher recommended course. However, when the effects of prior achievement on future achievement were controlled for this difference became less significant because math was the only curricular area yielding a significance between the academic and override group. Perhaps "Group Z" had a harder time competing with "Group A" in classes which sequentially build upon prior knowledge to create new concepts and further mastery development. Results supported my hypothesis revealing that the highest achieving students who frequently rejected their teachers' recommendations possessed high levels of self-efficacy and parental support. A specific discussion of each research questions follows:

Research Question 1) Is there a significant difference between "Group Z" and "Group A" in terms of their year end cumulative Grade Point Average from 7th through 9th grade? I hypothesized that significant differences exist between the cumulative Grade Point Averages from 7^{th} through 9^{th} grade between "Group Z" and "Group A" and that "Group A" would have a significantly higher GPA when compared to "Group Z".

The initial results, comparing the cumulative achievement between "Group A" and "Group Z", supported the initial hypothesis revealing that "Group A" had significantly higher cumulative GPAs from 7^{th} through 9^{th} grade when compared to their "Group Z" peers. However, in discussing the results of Research Question 1 it was suggested that the question may have been posed incorrectly because it is possible that "Group A" may have outperformed "Group Z" in part because "Group A" consists of some high achieving honors students. Since it was impossible to covary 6^{th} grade GPA (thus equating the groups), the effects of prior academic achievement were controlled by running a Repeated Measures ANOVA utilizing year end GPA for 7^{th}, 8^{th}, and 9^{th} grade as dependent variables and course selection (academic, honors, or override) as the between-subjects factor.

The results of the second Repeated Measures ANOVA revealed a significant main effect for group and a follow up Post Hoc Tukey Test indicated that honors students significant outperformed both the academic and override groups. A significant difference was not found between the cumulative academic progress of the academic and override groups. A significant main effect for grade was revealed and a follow up Post Hoc Tukey Test indicated that significant differences exist between 7^{th} and 8^{th} grade GPAs in addition to 7th and 9th grade GPAs. No significant interactions between grade and group were discovered.

Taken collectively, the results of Research Question 1 suggest that “Group A” significantly outperformed “Group Z” but that the difference in cumulative academic achievement was most likely attributed to the effects of prior academic performance since a significant difference was not found between the academic and override groups. It is arguable that the students who overrode their teachers’ recommendations did not achieve the same degree of academic success as students who followed their teachers’ recommendations because the students who rejected their teachers’ recommendations did not possess the grades needed in order to be recommended for the honors course. Since students who were recommended and enrolled in the academic courses did not meet the benchmark needed in order to be recommended for the honors courses, their function in this research design is to serve as a control group to the override group with the difference between the groups being that the override group rejected their teachers’ recommendations. Since no difference was found between the cumulative GPA of the override and academic groups, it can be argued that the “Group A” outperformed “Group Z” largely due to the effect of prior achievement as opposed to the fact that “Group Z” rejected their teachers’ recommendations.

The results of Research Question 1 further revealed significant differences between cumulative GPAs across the three year period for all three groups. Perhaps cumulative GPAs increased from 7th to 9th grade as students became increasingly more serious about their schooling, investing more effort into their studies as the college application process became more apparent. Or, when compared to their middle school

GPAs, students' 9^{th} grade high school GPAs may have been slightly higher because students had the option of taking more electives in high school than they did in middle school which could potentially inflate their 9^{th} grade GPAs. Lastly, 7^{th} grade cumulative GPAs may have been lower than 8^{th} and 9^{th} grade GPAs because 7^{th} grade marks a transition year between elementary and middle school. It is possible that the transition between the two schools inflicted emotional and academic stress on students, which could have resulted in lower cumulative GPAs.

Research Question 2) Do "Group A" and "Group Z" tend to perform at the same level of academic achievement from 7^{th} through 9^{th} grade across the four curricular areas (English, science, math, and social studies)? The results supported my hypothesis that sequentially based curricular areas, which build upon previously learned concepts in order to develop further concept mastery, were a greater obstacle to students who rejected their teachers' recommendations when compared to curricular areas that do not require retention of previously learned concepts to build new knowledge.

Research Question 2 was answered by running four separate Repeated Measures ANOVAs utilizing year end GPAs from 7^{th} to 9^{th} grade for each curricular area as dependent variables and course selection (academic, honors, or override) as the between-subjects factor. Results of the four Repeated Measures ANOVAs revealed that honors students significantly outperformed both academic and override students in all four curricular areas. No significant differences were discovered between the override and academic groups in terms of their year end GPAs in the curricular areas of social studies, English, or science. However, the academic group significantly outperformed the override group in math. Significant interactions for group and academic year were revealed in the areas of math, science, and social studies. All four curricular areas yielded a significant main effect for group. Results of the four Repeated Measures ANOVAs indicated that students' GPAs were significantly different across the three years in all four curricular areas.

Significant differences were found between the academic and override groups' year end math GPAs from 7^{th} through 9^{th} grade with academic students outperforming their peers who rejected their teachers' recommendations. Due to the fact that the academic group outperformed the override group and that both groups had comparable levels of prior academic achievement in the areas of math, it is arguable that the decision to reject the teachers' recommendation adversely affected the override groups' future performance in math. Why was math the only area where a significant difference was revealed between the academic and override groups' performance? Math may differ from social studies and English in that math requires students to retain key concepts from previous math courses in order to develop future concept mastery. Furthermore, math courses are generally taught in a sequence. For example, a student should take pre-algebra before the student can take algebra and must take algebra before enrolling in algebra II. Therefore, students who have not successfully mastered all of the concepts in an honors pre-algebra class, yet choose to enroll in a course of the same rigor the following year, will most likely be at an academic disadvantage when compared to students who have successfully mastered the majority of concepts presented in the honors pre-algebra class. In contrast, courses like social studies and English, which are not sequential in nature or require students to access previously learned concepts (like formulas or mathematic equations) to build new knowledge did not pose a threat to the students who rejected their teachers' recommendation in terms of course selection.

Collectively, the results of the four Repeated Measures ANOVAs revealed that when compared to honors and academic groups, students who rejected their teachers' recommendations were at a significant disadvantage in the area of math. The results also revealed that students' GPAs were significantly different across the three year period in all curricular areas and that the three groups performed differently in each curricular area over the three year period.

Research Question 3) What effects do attitudes towards learning, parental support, and propensity to reject teachers' recommendations have on high academic achievers (as measured by GPA)? I hypothesized that high achieving students who frequently overrode their teachers' recommendations would also report high levels of self-efficacy in addition to increased measures of parental support. The results of this research supported my hypothesis.

The Motivation Questionnaire was subjected to a principal components factor analysis followed by a varimax rotation which eventuated in the emergence of four factors: Previous academic success/increased self-efficacy, Parental support, Seeks after school help/involvement, and Indifference toward school/learning. After running Cronbach's alphas on the four factors, Factors III and IV were discarded because they did not appear to reliably measure the intended construct. A regression analysis was conducted utilizing Factor I, Factor II, cumulative GPA, and the number of times students rejected teachers' recommendations. The results indicated that as the number of times high achieving students rejected their teachers' recommendations increased, their reported levels of previous academic success/self-efficacy and reported levels of parental support also increased. For high achieving students, increases in overrides were correlated with decreases in GPA. Lastly, as cumulative GPA increased, students reported declining levels of perceived parental support

For high achieving students, as the number of overrides increased so did their reported level of prior academic successes/increased self-efficacy. The results of Research Question 3 also revealed a positive correlation between number of overrides and reported parental support in high achieving students. The results support the notion that parents of the high achieving "Group Z" students played an integral role in helping their children to achieve academic success.

Collectively the results surrounding Research Question 3 suggest that high achieving students who reported frequently overriding teachers' recommendations also reported higher levels of perceived parental support and higher levels of self-efficacy/past academic accomplishments. It stands to reason that students who are considering rejecting their teachers' recommendations in regards to course selection and want to be successful should seek additional academic support from their parents. Students who reject their teachers' recommendations should feel good about their past academic successes, believe that they can control their academic achievement, and be able to elicit additional help from parents when needed.

Research Question 4) What attitudes and behaviors differentiate between the highest, lowest, and average achieving students? I hypothesized that the highest achieving student group would differ from the average and lowest achieving student groups in terms of their past academic accomplishments and their heightened levels of self-efficacy. Utilizing an equal sample of high, average, and low achieving students and performing a Discriminant Function Analysis utilizing student group as the grouping variable and the two factors of the Motivation Questionnaire, number of overrides, and 7th grade math and reading PSSA scores as the discriminating variables, the results revealed the emergence of two functions, with Function I being the only significant function.

Function I encompasses positive feelings about past academic accomplishments and increased self-efficacy in addition to high PSSA reading scores and a history of not rejecting their teachers' recommendations in regards to course selection. Based on the results from this research, it can be inferred that students with high levels of academic self-efficacy who have typically done well in the past are also higher achieving students who abide by their teachers' recommendations regarding course selection and have obtained advanced scores on their reading PSSA test in 7th grade. It is interesting to note that the high achieving group can be distinguished from the average and low achieving groups in terms of their higher levels of self-efficacy/academic accomplishments, PSSA reading scores, and a decreased propensity to reject their teachers' recommendations.

Research Question 5) Does achievement in content standards (as measured by a statewide assessment) correlate with academic achievement (as measured by final Grade Point Average)? I hypothesized that achievement in content standards, or the skills, knowledge, and concepts that children should acquire for each grade level and across the major curricular areas (defined by their state's department of education), and academic achievement are positively correlated. The results obtained from this research supported my hypothesis that a positive correlation exists between cumulative Grade Point Average and 7th grade math and reading PSSA scores. Therefore, students who experience high levels of academic achievement concurrently experience high levels of achievement in content standards, or key concepts and ideas sanctioned by the department of education at the state level.

"Group Z" - Do we have a better idea of who they are?

In chapter two I indicated that we do not know much about "Group Z" but for the sake of trying to identify common behavioral trends, I hypothesized that "Group Z" could potentially consist of academic risk takers, students with high academic aspirations, or students that are non-compliant in regards to taking academic advice. Although it is not the purpose of this research to confine "Group Z" to a particular label, I thought it worthwhile to reconsider this question in light of the current research.

The research revealed that when compared to honors students, students who overrode their teachers' recommendations scored significantly lower in all curricular areas and were even outperformed by the academic students in math. This suggests that "Group Z" students who did not meet with academic success could be categorized along the lines as academic risk takers or students who are non-compliant in terms of accepting academic advice since they apparently did not have the follow through, devote the effort, or elicit additional supports over the course of the academic year in order to meet with success. Instead, it seems as though low achieving "Group Z" students were interested in obtaining the status of an honors student even knowing that the course would be challenging (academic risk-taking) and consequently rejected their teachers' recommendations (non-compliant) yet their grades remained unchanged as a result of their decision to enroll in the honors course.

We also found that the highest achieving “Group Z” students reported high levels of perceived parental support and academic self-efficacy/previous accomplishments. The “Group Z” students who experienced success were those who also elicited additional support and believed in their ability to control their success. These students most likely set academic goals for themselves and created a plan in order achieve those goals by taking advantage of additional supports. These students would fit more readily into the category of students with high academic aspirations. I do not believe that all “Group Z” students fit one label. Perhaps “Group Z” student can be described along a spectrum with the lower achieving “Group Z” students fitting more readily into the non-compliant category with low to moderate achieving “Group Z” students fitting more readily into the category of academic risk takers and the higher achieving ones possessing high levels of academic aspirations.

Limitations

The results from this research add to the empirical knowledge base of understanding future academic achievement as a function of middle school students' attitudes towards learning, prior achievement, and history of rejecting teachers' recommendations regarding course selection. Despite this research's significant gains to the field of educational psychology, there are limitations including questionnaire usage, the relatively small and homogenous sample, and the reliability of teacher recommendations.

As with any research that utilizes a questionnaire, this study is limited in knowing whether the reported attitudes and behaviors realistically encompass the feelings of the participants and the degree to which the participants engaged in biased responding.

Although participants were assured that their responses to the questionnaire would remain confidential, it is possible the that participants engaged in biased responding in an effort to promote social desirability and therefore a discrepancy may exist between actual and purported beliefs (Agnew & Pike, 1994). Utilizing other research questions including open-ended questions and direct observations may give future researchers a more accurate picture of beliefs and attitudes surrounding adolescents' decision-making process in response to course selection.

A limitation to this research includes the use of the questionnaire assessing attitudes toward learning adapted from some items included in the Fitt & DuCette scale (personal communication, May 16, 2006) measuring the following subscales: paternal and maternal support, teacher support, academic engagement, achievement motivation, and peer support. Although the questionnaire was subjected to Cronbach's Alphas and received internal consistency ratings ranging from (.77 -. 76) for Factors I and II respectively, the questionnaire was not normed or validated prior to being utilized in this research. The results of this research surrounding students' attitudes towards school and learning should be approached with caution. Future researchers should use more psychometrically sound instruments to assess students' attitudes towards learning and school.

Another limitation to this research is that the relatively small and homogenous sample population posed a threat to the external validity of the research. Although the research obtained participants from four elementary schools and one middle school, the students utilized in this study were all enrolled in schools from the same school district. Furthermore, the demographic data revealed that participants were relatively homogenous in regards to their ethnicity and socioeconomic status. Therefore, caution should be exercised when interpreting the results of this research to larger and more diverse participant samples.

The internal validity of this study could be strengthened by achieving inter-rater reliability between teachers recommending students for future classes. Although it is the student's teacher who is responsible for making a recommendation based on previous grades, past achievement, and knowledge of study skills, it may be advisable for another teacher to review a student's report card, observe the child in class, and interview the child in regards to his or her motivational patterns and study skills. The two teachers would recommend the student for a course and an inter-rater reliability score could be obtained. However, it seems highly likely that two teachers would agree on student placement by simply looking at a student's cumulative progress recorded on the student's report card.

Despite the above discussed limitations, my research design yielded many advantages. First of all, the design decreased participant reactivity and experimental bias. By using content analysis of archived data, this research systematically eliminated participant reactivity and experimenter bias. Information collected from the demographic surveys, report cards, course selection sheet, PSSAs, and questionnaires was inputted directly into the computer, requiring no subjective interpretation or analysis. The fact that research assistants were not needed and that the researcher had no contact with the participants not only promoted measures of standardization, but also decreased experimenter bias and participant reactivity.

Another advantage of this research design, which utilized longitudinal data, was that the effects of historical, or in-the-gap variables, was significantly decreased. For example, final course grades are an aggregate sum of the student's work over the entire year. Whereas a fight with a friend prior to a test may result in a failing grade for that one test, the fight has a significantly smaller impact on the student's final grade which is comprised of multiple test scores. Furthermore, the effects of maturation, or time-tied variables, have a less significant impact on a final course grade as opposed to one particular test. Therefore, in-the-gap and time-tied variables had only a marginal effect on a student's final grade and teacher recommend courses.

Last, it should also be noted that the research design decreased experimental bias by keeping teachers blind to which students were overridden into their courses and which students were originally recommended for their courses. By keeping teachers blind to the status enrollment of their students, teachers were unable to direct any biases towards overridden students which also promoted equitable grading.

Implications for Future Research

The current research was meant to provide a general foundation in which to understand whether lower achieving students, students whose cumulative academic progress was below the predetermined benchmark needed in order to be recommended for an honors course, showed gains in academic achievement after rejecting their teachers' advice and choosing placement in an academically challenging environment by considering levels of motivation, attitudinal factors toward learning, and other background information. Future research should consider the above mentioned factors in more detail in an effort to continue to investigate the effects of rejecting teachers' recommendations in regards to course selection on future achievement.

Future research should consider using more psychometrically sound instruments. Perhaps future researchers could use other forms of assessments such as focus groups and open-ended questions which would provide more information regarding adolescents' decisions to reject their teachers' recommendations in regards to course selection. More detailed or qualitative data could be of value, helping a future researcher to understand an adolescent's decision-making process when confronted with an academic endeavor. Qualitative data obtained through open-ended questions may help highlight specific reinforcers and consequences associated with academic risk-taking.

An area of future research may include utilizing a longitudinal research design, continuing to follow students from middle school throughout high school. It would be interesting to determine whether students who repeatedly reject their teachers' recommendations and seek enrollment in challenging honors courses continue to engage in this trend throughout their high school years. From a longitudinal perspective, it would be interesting to highlight the existence of any long-term implications of selecting enrollment in courses that are thought to be too challenging for the student based on prior performance. For example, future researchers could determine whether students who enroll in honors courses despite their teachers' recommendations experience a decline in academic performance or recover in the following years. Last, it would be interesting for future researchers to compare "Group Z" students to "Group A" students in terms of college acceptance rates.

Implications for the Field

Few empirical studies have researched differences in student achievement as a function of course selection by considering levels of motivation, attitudinal factors toward learning, and other background information (Clifford, 1991). However, course selection and future achievement is an integral topic confronted by many students as students' choice of courses in high school and middle school undoubtedly affect individuals' college experiences, desired area of specialization, educational career, and career development (Braddock & Slavin, 1993). Some students may enroll in an honors course without having the prior success needed in order to be recommended for the course and rise to the challenge experiencing academic success while others may experience confusion and frustration (Usher & Pajares, 2006). This research endeavored to highlight factors contributing to an adaptive motivational profile from which students actively approach challenges, pursuing a rigorous course schedule, while experience academic success.

Very few studies have considered characteristics that distinguish high achieving students from average and low achieving students by considering levels of self-efficacy, academic achievement, standardized statewide assessment scores, and propensity to reject teachers' advice (Mulkey, 2005). A strength of this study is that it endeavors to develop profiles for high achieving students. The results of this study revealed that high achieving students can be discriminated from average and low achieving students in that high achieving students have higher levels of self-efficacy, better past academic accomplishments, higher PSSA reading scores, and a decreased propensity to override their teachers' recommendations regarding course selection. The results of this study could be used to identify ways to increase academic performance for low achieving students who are at risk of failing or dropping out of school. For example, students who have historically not met with academic success should refrain from enrolling in honors courses. In addition, measures should be taken to increase the self-efficacy of low achieving students.

Finally, this study considered whether lower achieving students showed gains in academic achievement after rejecting their teachers' advice and choosing placement in an academically challenging environment by considering different core subjects and the nature in which curriculum is taught. The results revealed that low achieving academic students who were recommended and enrolled in an academic course significantly outperformed low achieving students who selected enrollment in an honors course suggesting that the sequential manner in which math is taught can adversely affect an individual's future academic performance if prior skills and knowledge have not been sufficiently mastered. An application of this research would suggest that low achieving students wishing to enroll in an honors math course should be counseled on the consequences of taking such risks. Furthermore, these students should also seek remediation so that they have a solid basis from which to build future knowledge.

Collectively, the results of this study can be used to better understand the effects that going against a teacher's recommendation and enrolling in a rigorous honor course has on future academic achievement by understanding how attitudes towards learning and the manner in which curriculum is taught affects academic achievement. The results of this study have added to the field of educational psychology as school personnel can counsel students on their chances of obtaining academic success as a result of rejecting their teachers' recommendation in regards to course selection. Measures to increase self-efficacy and efforts to remediate concepts which were not sufficiently learned should be taken in an effort to improve the chances that a student will approach a challenging academic environment and meet with success. The results of this study will help school personnel guide their students to enroll in courses which pose academic challenges yet are still suitable for their cognitive needs. Finally, the results of this study can be used by policy makers to reform procedures for selecting courses.

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APPENDIX A

IRB APPROVAL LETTER

TEMPLE UNIVERSITY®

Office for Human Subjects Protections

Institutional Review Board

Medical Intervention Committees A1 & A2

Social and Behavioral Committee B

3400 North Broad Street

Philadelphia, Pennsylvania 19140

Phone:215.707.3390
Fax:215.707.8387

e-mail: richard.throm@temple.edu

MEMORANDUM

To: FARLEY, FRANK
PSYCH STUDIES IN EDUC (1904)

From: Richard C. Throm
Director, Office for Human Subjects Protection
Institutional Review Board Coordinator

Date: 17-Mar-2010

Re: Exempt Request Status for IRB Protocol:
13042: The Effects of Academic Risk-Taking, Prior Achievement, Motivation and Attitudes Toward Learning on Academic Achievement: A Longitudinal Study

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It has been determined by Expedited Review that this study qualifies for exemption status as follows:

45 CFR 46 Protection of Human Subjects

Section 101 (b): Unless otherwise required by department or agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

Exemption 4: Collection or Study of Existing Data. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subject.

Nothing further is required from you at this time; however, if anything in your research design should change, notify the Institutional Review Board immediately. If you should have any questions, please contact me at 215-707-8757. Thank you for keeping the IRB informed of your clinical research.

APPENDIX B

MOTIVATION QUESTIONNAIRE

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I can set academic goals for myself and achieve those goals.	4	3	2	1
2. I have good study skills (use agenda book, hmwk website, tutor, etc)	4	3	2	1
3. I DO NOT enjoy learning	4	3	2	1
4. As a result of my grades, my peers DO NOT view me as a good student	4	3	2	1
5. I can take on academic challenges and be successful	4	3	2	1
6. My parents help me to study	4	3	2	1
7. I feel good about my past academic accomplishments	4	3	2	1
8. I DO NOT do my homework on a regular basis	4	3	2	1
9. My teachers DO NOT care about me as a person	4	3	2	1
10. School will help me to become successful someday	4	3	2	1
11. I DO NOT feel connected to school/I don't like going to school	4	3	2	1
12. My parents DO NOT help me with my homework	4	3	2	1
13. If I am doing poorly in a subject, I CAN NOT improve my grade	4	3	2	1
14. It is important for me to get the best grades in the class	4	3	2	1
15. I typically DO NOT do well on standardized testing (PSSA)	4	3	2	1
16. I am involved at school (sports, clubs, service groups, etc)	4	3	2	1
17. My parents DO NOT proof read my assignments	4	3	2	1
18. I set academic goals for myself and monitor my progress	4	3	2	1
19. I CAN NOT control how I do in school	4	3	2	1
20. In the past I have gotten good grades in school	4	3	2	1
21. I DO NOT go to clinic or seek help when I need it	4	3	2	1
22. My parents encourage me to go to clinic or provide tutoring for me	4	3	2	1
23. My teachers believe in me as a person and a student	4	3	2	1
24. It DOES NOT bother me when friends get better grades than me	4	3	2	1