

# *Promoting Academic Achievement and Motivation:*

*A Discussion & Contemporary Issues Based Approach*

*Gemstone Generating Eager-Minded Students Team*

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## **Abstract**

In the current context of the “No Child Left Behind Act,” schools nationwide are facing an increased level of accountability for their students’ academic performance. Our research focused on exploring methods of improving the academic motivation of adolescent middle school students and relating academic motivation to actual school performance. After studying existing literature on academic motivation and middle school education, our team designed and implemented a 4-month participant-based study at a local Title I middle school with a sample of 8<sup>th</sup> graders. During this period, we established and directed an after-school program for students in which we used an interactive discussion and contemporary issues-based approach as a way to introduce students to various academic areas not necessarily covered in class. By focusing on the relevance of the various topics to students’ own lives and the world around them, we hoped to instill in the students an appreciation and motivation for learning. We also assessed whether students attitudes toward learning were related to their academic performance. Both quantitative survey data and open-ended qualitative student reports suggest that students’ attitudes toward learning improved over the course of the 4-month period, and their academic motivation increased. The relationship between academic motivation and academic performance is still unclear at this point and can only be determined with continued observation of the students that we monitored. Nevertheless, the team stresses the importance of implementing more interactive discussions and activities in middle school classrooms, many of which are facing increasing pressure to design their curricula around standardized tests.

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# **Chapter 1: Introduction**

## *Introduction*

The current political environment offers a unique opportunity to undertake a research project centering on improving academic motivation. Current education reform proposals range from market reforms such as school vouchers, to increased federal investment, to strengthening teaching incentive programs, to even greater accountability. This suggests that the climate of education policy is full of new, or recycled, ideas due to the perception that the American educational system as a whole is underachieving.

## *The No Child Left Behind Act (NCLB)*

The main educational reform that teachers and students will encounter over the next decade is the “No Child Left Behind Act of 2001.” The legislation (Public Law 107-110), which includes provisions intended to close the student achievement gap (achieve 100 percent student achievement in reading and math by the year 2014), seeks to hold public schools accountable for achieving standards of proficiency, sets standards of excellence for every child, and seeks to place a qualified teacher in every classroom. Schools that do not meet their progress targets for two consecutive years will be identified as "needing improvement" and must give students the option to attend other schools. After three failing years, schools must offer students supplemental educational services, including private tutoring. Continued failure could lead to a restructuring or closing of a low-achieving school. NCLB is widely considered by both supporters and detractors to be the most ambitious effort to raise achievement levels in public schools since former President Lyndon Johnson signed the Elementary and Secondary Education Act of 1965.

With the rapidly changing educational climate resulting from the new federal statutes, there is an opening for research exploring solutions to the challenge of enhancing student academic performance. A growing concern among educators is that the lessons taught to students will be so geared towards success on the standardized exams that it will hamper the students epistemological skills, which are traditionally built through more interactive, creative topics and learning techniques. Even if NCLB succeeds in reducing the achievement gap, this legislation may also be placing poor and minority students at a different type of disadvantage. Students attending schools with high proportions of lower income and minority students are most at risk of failing such standardized tests. Thus, these schools can be expected to place the most effort on preparing students to perform highly on assessments – preparation that is likely to take the form of practicing testing and memorization drills. Such a focus may exclude activities and learning experiences that are most likely to excite students. By failing to take consideration of student motivation and engagement in learning into account, high-stakes testing policies may be failing to engage students who are most likely to drop out of school.

### *Our Approach to Education Reform*

It is in this changing educational environment that the team began its research. Although, there has been considerable emphasis on the “3 T’s” which includes technology (diminishing the digital divide), teachers (teacher improvement and accountability), and testing (as the basis of NCLB’s accountability efforts), the team felt the issue of motivation had not been sufficiently addressed.

Team members remembered the importance of personal motivation, as well as the benefits of innovative teaching techniques, from their secondary education experiences. This,

combined with the ineffectiveness of the “3 T’s,” guided the team towards focusing on increasing academic motivation. A concerted effort to motivate students on the benefits of learning, particularly those most at risk of failing the standardized tests, is necessary to prevent schools, teachers, and students from suffering the harsher effects of NCLB.

In terms of research, the team’s overarching question was: What links exist between academic motivation in students and academic performance? It was hypothesized that there exists a positive relationship between academic motivation and academic performance in students. In short, research revolved around the belief that in order to spark student interest, students must develop a love for learning and confidence in their own intellectual abilities.

“Academic motivation” is defined as 1) academic drive 2) attitudes toward school and learning, and 3) enthusiasm for academic achievement. Academic drive involves measuring items such as work habits and scholastic expectations. Attitudes toward school and learning involve students’ opinions of the classroom environment and self-efficacy in learning (Entwistle, 1968). Finally, enthusiasm for academic achievement involves the degree to which students possessed certain specific behavioral characteristics related to motivation (Hwang, 2002). For the purposes of our study, academic performance was defined as a student’s performance in grades and standardized tests.

In order to test the team’s hypothesis, an innovative after-school program aimed at increasing academic achievement in low-achieving students was created. The implementation of this program in a local middle school allowed the team to move our hypothesis from theory to practice, allowing effects of the program on actual students to be monitored.

Two major components of the after-school program was the use of contemporary issues and discussion in order to increase academic motivation. It was the team’s hope that the

utilization of these two components would promote student development of intellectual skills such as critical thinking. It was believed that given the social relevance of the topics covered and the participatory nature of the program, positive changes in academic motivation for students would be observed. Through the use of this after-school program, the team sought to gain a broader understanding between student academic motivation and academic performance over time. It was then hypothesized that this academic motivation would translate into an increase in student academic performance over time.

## **Chapter 2: Literature Review**

## *Introduction*

This chapter outlines the team's primary research which provided a background on factors influencing student performance. It includes theories that have shaped the team's hypothesis, namely theories involving student motivation, underachievement, and transition through school. The literature review also delves into what evolved into two major facets of the team's program: contemporary issues and group discussion. Additionally, this chapter discusses separate factors that also contribute to students' educational experiences, such as after school programs and mentorship. Lastly, the literature review covers methods of data analysis, which was utilized by the team in analysis.

## *Motivation*

While there are a number of factors that affect performance in school, one of the most influential is motivation. Motivation, also referred to as academic engagement, refers to "cognitive, emotional, and behavioral indicators of student investment in and attachment to education" (Tucker, Zayco, & Herman, 2002, p. 477). It is obvious that students who are not motivated to succeed will not work hard. In fact, several researchers have suggested that only motivation directly effects academic achievement; all other factors affect achievement only through their effect on motivation (Tucker et al., 2002). However, it is not as easy to understand what motivates students. Numerous studies have been conducted on this topic, which has led to the development of several theories of motivation.

One widely accepted theory is Goal Theory. It postulates that there are two main types of motivation for achieving in school. Students with an ability or performance goal orientation are concerned with proving their competence by getting good grades or performing well compared

to other students (Anderman & Midgley, 1997; Maehr & Midgley, 1991). On the other hand, students with a task goal orientation are motivated by a desire to increase their knowledge on a subject or by enjoyment from learning the material. Studies have shown that students with a task goal orientation are more likely to engage in challenging tasks, seek help as needed, and adopt useful cognitive strategies, and, possibly most importantly, tend to be happier both with school and with themselves as learners (Ames, 1992; Anderman & Midgley, 1997).

Subsequent research has suggested, however, that despite its potential implications for middle school policy and curriculum design, a dichotomous perspective of either “task-based” or “performance-based” goals may be too simplistic of a model of adolescent motivation (Dowson and McInerney, 2001). In addition, research has also suggested that task and performance goals are not mutually exclusive. While many experimental studies forced research participants to select one goal orientation or the other, correlational research has found that individuals’ endorsement of a task goal orientation is often weakly correlated or uncorrelated with endorsement of a performance goal orientation (Kaplan & Maehr, 2002).

Researchers have also identified a number of other student goals. A third academic goal orientation is work avoidance, where students try to minimize the amount of effort they put into tasks (Dowson and McInerney, 2001). Students also have social goals that influence their motivation alongside academic goals. Urdan and Maehr (1995) describe four types of social goals: social approval, social compliance, social solidarity, and social concern. Research involving qualitative methods has suggested that social goal orientations are associated with academic achievement (Kaplan & Maehr, 2002). Unfortunately, most research has focused on only the previous two orientations.

Dowson and McInerney (2001) found that many studies utilize an a priori approach to identify student goals. They argue that this method is ineffective since it limits the range and descriptions of goals. They instead inductively generated a list of goals by interviewing and observing middle school children and then categorizing these results. They found that students showed characteristics of four different goal orientations: work avoidance, social affiliation, social responsibility, and social concern.

Students attempting to avoid work often had the teacher complete their work for them or copied off of another student, or simply engaged in off-task behaviors (Dowson & McInerney, 2001). While the social affiliation orientation is usually also considered detrimental to students' work habits, students in this study said working with their peers helped engender a sense of belonging but also helped them work more effectively and promoted positive feelings toward learning. Only sometimes would working with other students lead the students off task. Students with a social responsibility goal orientation were motivated by a desire to fulfill their role expectations. These included parent, teacher, and peer expectations (such as participating in extracurricular activities, helping the class as a whole or individual students, and behaving responsibly when holding an important student government position). Students felt proud, excited, and satisfied when they met these expectations. Students with a social concern orientation worked hard to succeed so that they could then help others. This orientation therefore shows that academic achievement is both a result of and a precursor to prosocial behavior. Overall, Dowson and McInerney concluded that perhaps researchers were incorrectly focusing on performance and task goals when students are actually most concerned with meeting their social goals at the middle school level.

Aside from goals, many other factors contribute to students' motivation. Self-Determination Theory states that students need to feel a sense of competence, a sense of relatedness to others, and a sense of autonomy (Anderman & Midgley, 1997). Competence involves not just having the knowledge to complete various tasks, but also believing that one can do so. Relatedness refers to the connections that are formed with one's peers. Autonomy includes initiating and regulating one's tasks. These student needs are particularly relevant to adolescents in middle school since children at this age are developing a sense of identity and have increased cognitive abilities (Anderman & Midgley, 1997).

Ryan (2001) further investigated the importance of relatedness, specifically looking at the impact of one's peer group on motivation. Relationships with peers become much more important in early adolescence as children start to spend more time with peers and form relationships that are closer and more intense than before (Ryan, 2001). This is also the age at which children are most influenced by their peers. In the study, students' motivation and achievement was measured at the beginning and end of their first year of middle school, and a social network analysis was used to identify peer groups. The results showed that the peer groups accounted for change in students' achievement over the school year after controlling for selection. Peer groups also influenced changes in intrinsic value for school, though they did not impact views on the usefulness and importance of school.

Attribution Theory addresses students' sense of competence, specifically how students are affected by their previous performance. It suggests that students are more influenced by their perceptions of what caused their earlier successes and failures than by the actual experience (Anderman & Midgley, 1997). While it is popularly believed that students who are successful will want to continue being successful, Weiner suggests this does not occur if students do not

attribute the success to their own actions and instead attribute it to something else, such as luck (as cited in Anderman & Midgley, 1997). Furthermore, when students fail, they are more likely to be motivated to try harder the next time only if they think that lack of studying or something else in their control led to the failure, rather than attributing the failure to things outside their locus of control.

Several studies have investigated student motivation specifically among African American students. Tucker, Zayco and Herman (2002) studied the motivation of 117 African American students mostly from low-income families in first through twelfth grade. They found that teacher involvement was the strongest predictor of student motivation. However, other studies have shown that African American students, as well as other ethnically diverse and low-income students, feel that they receive significantly less support from their teachers than European Americans students (Tucker et al., 2002). Students' perceived relatedness and perceived autonomy also directly influenced academic engagement, while perceived competence and teacher structure affected perceived relatedness and teacher autonomy support affected perceived autonomy.

Hwang, Echols, and Vrongistinos (2002) interviewed sixty high achieving African American college students about their reasons for choosing their majors and for studying, and about their educational values. They found that, contrary to the predictions of other researchers, the students did not all hold an intrinsic goal orientation (a.k.a. a task goal orientation). Instead, the students integrated a combination of intrinsic, extrinsic (a.k.a. performance), future, and social goals. For instance, many of the students who were extrinsically motivated wanted to perform well so they would have better career opportunities, and were thus incorporating a future goal orientation.

As motivation has been shown to play a significant role in student achievement, techniques that focus on increasing student motivation should be developed. Maehr and Midgley (1991) suggest that changes need to be made at the school-wide level to increase student motivation rather than only focusing on changes in individual classrooms. They believe that schools should stress task goals rather than simply rewarding performance goals. For instance, groups should be formed on the basis of interest rather than ability and cooperative learning should be emphasized over competition (Anderman & Midgley, 1997). Tucker et al. (2002) think teachers need to be encouraged to show concern for and take an active interest in disaffected students. They should also be fair and consistent while allowing students autonomy, and should help students understand the relevance of classroom work to other aspects of their lives. Furthermore, teachers should be aware of the message they are sending their students about their academic ability (Anderman & Midgley, 1997).

### *Underachievement*

Many theories of underachievement are based on the assumption that students who are not motivated will not perform well. Adolescents' self-expectancy for success and the subjective value they place on an academic task have also been proposed as two factors that most directly predict academic performance and choice (Wigfield & Tonks, 2002). In this expectancy-value model, self-expectancy is defined as adolescents' beliefs about how successfully they will perform an upcoming task. Subjective task value or achievement value is defined as how a task meets the different needs of individuals. Such value is determined by factors such as the importance of doing well on the task, the intrinsic enjoyment value of the task, the usefulness of the task, and the cost of performing the task.

Alternative frameworks for examining student achievement do not focus on the psychology of the student, but rather focus on either a particular aspect of schooling and its affect on student achievement, or a particular group of underachieving students, distinguished by gender, race, ethnicity, class, geography, or a combination of these factors. These theories are more sociological in nature, taking into account a host of variables that exist in the student's environment outside of school.

Daniel Solorzano is an example of an educational researcher who examines sociological frameworks for understanding student realities in schooling. He researched Chicano and Latino populations in an attempt to understand their systemic underachievement in public education and under-representation in higher education. Solorzano conducted research solely in predominantly Chicano and Latino populations and found that a variety of factors contributed to their academic performance, including culture-specific characteristics, the shortage of teachers and high turnover in these neighborhoods, absence of high-quality programs, low expectations, and tracking. In his work *The Chicano Educational Experience: Empirical and Theoretical Perspectives*, Solorzano analyzes four theoretical frameworks, under which he argues all theories of underachievement fall; Genetic Determinism, Cultural Determinism, School/Institutional Determinism, and Social Determinism (Solorzano, 1998).

Genetic Determinists believe that the underachievement of minority children in schools is due to their genetic deficiency. Frameworks of this nature are generally out of favor in educational research. However, Solorzano argues that they may have a resurgence considering newfound interest in the work of Lloyd Dunn, who researches the relationship between race and I.Q. Although these theories are generally discredited and have been for a number of years, it is important to recognize the effect that these theories have had on education historically. During

the birth of public education and well into the early 1900's, the belief that whites were the smartest race influenced nearly every aspect of schooling, from segregated schools to the ways in which minorities were taught in these schools (Selden, 1999). The popularity of the Eugenics movement gives credence to the impact that racial inferiority theories had on education. The concept of eugenics was created by a group of white scientists who were attempting to scientifically prove that minorities are intellectually inferior via the use of I.Q. and other standardized assessments (Selden, 1999).

While Cultural Determinism focuses on students' cultures and not genetic make-up, these theories often employ race as a way of distinguishing culture. For instance, U.S. former Secretary of Education Lauro Cavzos said that Latino parents deserve much of the blame for a high dropout rate among their children. "Hispanics have always valued education... but somewhere along the line we lost that" (Solorzano, 1998). Culture-specific characteristics, including parenting styles, work ethic, and conformity to mainstream culture, are viewed as the reasons why students underachieve.

Many culture-specific models employ class as another way of distinguishing student culture. When race is not examined as the reason for underachievement, poverty is. Since the late sixties, there has been an investment of research into the living conditions of students who live in poverty and the effects that poverty has on one's future outlook and educational possibilities (Lewis, 1966).

However, there has been increasing criticism of these culture-centered theories because they more often than not view culture as a deficit to the education of a child, rather than a potential resource. Researcher Herbert Gans writes..."Consequently, perhaps the most significant fact about poverty research is that it is being carried out entirely by middle-class

researchers who differ- in class, culture, and political power- from the people they are studying” (Solorzano, 1998). While it is hard to deny that the cultural environment of a child plays a role in their educational success or failure, the extent and nature of the effect of culture on schooling is easily debatable and hard to ascertain.

Current examples of culture-centered theories include the work of John Ogbu. While Ogbu takes a specific look at race and culture, he does so in a bi-directional way. Whereas most culture-centered theories place the entire responsibility of performance on the student, Ogbu’s theory examines the experiential dynamic between student and teacher. He argues that minorities often form oppositional and reactionary stances within the classroom because of the racialized treatment they receive (Ogbu, 1991). His emphasis on the interplay between students and teachers is based on a strong foundation of evidence which supports the notion that many teachers (whether it be through conscious decision-making or unconscious tendencies) treat students from different backgrounds unequally. Theories such as this one offer a fresher and more realistic perspective of educational realities because they are based on student experiences in school.

School/Institutional Determinism examines the role that schools play in the education of different student groups. Such theories explore differences found within and across schools. Bowles and Gintis offer a widely accepted framework for understanding the role that society and schools play in the education of different groups. Laying down the foundation of Social Reproduction Theory in their book *Schooling in Capitalist America*, they argue that schools do not serve to promote or demote the education of particular student groups but rather perpetuate the existing social inequalities and continue to provide a supply of non-skilled workers for the demand of menial labor in the marketplace (Bowles & Gintis, 1976). In other words, schools do

not make investments in helping certain underachieving groups succeed. They argue that schools are more or less operated by leaders who hold dominant-class values and as such the purpose of schools is to promote their interests. While many theorists find the Social Reproduction Theory as presented by Bowles and Gintis too critical, it is widely accepted in education as a valuable framework for understanding the roles that schools play in the larger society and is often used as a foundation for the formation of other theories, such as the one presented by John Ogbu.

While social reproduction theories hold school structures responsible for the perpetuation of educational and economic inequalities, cultural-reproduction theories examine the use of dominant cultural values as a differentiating tool used by schools and teachers to screen students into tracks of success or failure. Based on the works of Pierre Bourdieu and Jean-Claude Passeron, in the words of Daniel Solorzano, “cultural reproduction theories argue that the dominant class defines what is valued culturally and linguistically, and disguises this ‘cultural arbitrariness’ in the name of neutrality. Schools devalue and/or ignore the cultural and linguistic traits of subordinate groups, thus reproducing dominant ideologies which function to keep our society exactly where it stands” (Solorzano, 1998).

### *Transition Through School*

An issue in secondary education that has been receiving a significant amount of research attention is the transition process that occurs from elementary school to middle school. These transitions often involve significant shifts in both classroom and social environments, which may have different effects on student learning. In addition, the transition occurs during a time when students are beginning to experience both the physical and psychological changes of

adolescence, which may in turn affect their attitudes and motivation levels at school, as well as perception of self and others.

Much of the scientific investigation on secondary education has centered on the effects of elementary-to-middle and middle-to-high school transitions on academic performance. Previous studies have shown that the changes in student-teacher relationships resulting from these transitions are associated with declines in self-perception and self-esteem, both of which have been shown to influence academic motivation and performance (Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). Alspaugh (1998) explored the nature of academic achievement loss in standardized state test scores associated with the transition from elementary schools to grade 6-8 middle schools as well as the subsequent transition to high school. In this study, three school systems were sampled: a district with a K-8, 9-12 organization, one with a linear organization (one elementary school, one middle school, one high school), and one with a pyramid organization (more than one elementary school, one middle school, one high school). Achievement loss in grades 5 to 6 was found to be the greatest in the pyramid group, followed by the linear school district. Conversely, the K-8 school group was found to have a slight achievement gain. Similar results were found for the transition to high school: the linear and pyramid school districts both experienced significant achievement losses, while the K-8 school group did not. The number of students per grade was directly correlated to the significance of the achievement loss during the high school transition. These findings strongly suggest a negative correlation between number of school transitions and academic achievement (Alspaugh, 1998). However, it remains unclear how direct this relationship is. Other possible issues in a school that may affect academic achievement include students' socioeconomic status, the

number of students present, and the differences in classroom environment and teaching styles offered.

Anderman and Midgley (1996) investigated students' motivation orientations, self-perceptions, and academic performance in a longitudinal study that incorporated grades 5 through 7. A key aspect of this study was the investigation of task goal orientations versus performance goal orientations (please refer to the motivation section of the literature review). Elementary schools were shown to be more task goal oriented than either middle or high schools. Furthermore, a general shift from a task-based goal structure to a performance-based goal structure was reported by the students during the transition from elementary school to middle school. The students declined in their level of task goal orientation throughout the study period. Linking a decline in academic performance to this shift from a task goal orientation in both schools and students to a performance goal orientation, Anderman and Midgley concluded that the use of task goal oriented teaching practices in middle schools may be related to positive shifts in student motivation. Examples of such mastery-focused practices include giving students more control and choices in the learning process, emphasizing personal relevance of the material learned, and working in small groups (Ames, 1992).

The expectancy-value model also applies when examining transition to middle and high school (please refer to the underachievement section of the literature review) (Wigfield & Tonks, 2002). Both the self-expectancies and achievement values of students have been found to decline throughout the elementary and middle school years. One explanation of these trends is that as children develop, they are better able to process cognitive information, including evaluative feedback from others. As a result of their stronger cognitive abilities as well as an increased level of social comparison, they develop more realistic self-assessments. A second

explanation focuses on the external environment as a contributing factor to the decline in adolescent self-expectancies and achievement values. The school environments in which adolescents spend the majority of their time may foster an atmosphere of evaluation and competition, leading to a decline in their self-assessments as they get older (Wigfield & Tonks, 2002).

The compatibility of the middle school environment with an adolescent's developing needs is made all the more significant by the considerable impact that adolescent self-expectancies and achievement values have on academic performance. Many changes in teaching practices accompany the transition to middle school, including an increased use of ability grouping and rigid grading methods. The relationship between students and teachers becomes far less personal, thanks in part to teachers having to instruct a large number of students each day, each of whom may be taught by several different teachers in one day. As a result, there may be little chance of developing a continuous student-teacher relationship. Many student social networks created and strengthened in elementary school are also disrupted during the transition, which may account for findings that adolescents' self-assessed social competence is lowest immediately following the middle school transition, compared with the periods prior to the transition and later on in middle school (Wigfield, et al., 1991). Researchers have argued that many instructional systems at the middle school level may in fact be developmentally inappropriate for young adolescents, contributing to a decrease in academic motivation (Eccles, Lord, & Midgley, 1991). At a time when adolescents desire greater opportunities for personal autonomy and expression, as well as enhanced social relations with both peers and adult mentors, most middle schools do not meet these needs. This "developmental mismatch" may contribute to a decrease in academic motivation as well as achievement value in middle school students.

## *Contemporary Issues*

One broad innovation in curriculum planning is the use of contemporary issues in the classroom. While the use of contemporary issues, including current events and controversial issues, lends itself strongly to social studies curricula, connections can also be made to other subjects like science and mathematics. Integrating contemporary issues into the classroom could serve a definitive role in expanding the learning environment of the student. Previous research in this topic is not comprehensive, and when available, has a focus on social studies curricula. However, the role of discussion and use of media in the classroom intertwine with a contemporary issues-themed lesson.

A survey conducted by Haas and Laughlin (2000) of social studies teachers who were members of the National Council for the Social Studies yielded background information on the use of current events in the curriculum. Of 65 middle school teachers, 59 stated they used current events in the classroom. Middle school teachers specifically stated that studying current events helps middle school-aged children learn where to find sources of information on a topic, as well as provides an opportunity to follow events as they happen. It is important to note that only a third of middle school teacher respondents used controversial current events. On the other hand, two-thirds of high school teachers reported that they included this subset of current events in their classes.

However, middle school teachers described problems with current event usage as well. For one, the nature and complexity of the topics was too high. Also, students failed to see relevance of the events to their lives, and sometimes were unable to generate interest in events peripheral to their personal lives. Lastly, students who selected current events to examine often

chose sensational stories over actual “news worthy” events. Middle school teachers agreed that new standards-based curriculum models increased the challenge of integrating current events.

It is well known that media can be a powerful way to convey contemporary issues. The presence of television, VCRs, and Internet in the classroom has visibly grown. A survey of 130 middle and high school teachers evaluated the use of media and mass media in the classroom (Hobbs, 1999). The purpose of this survey was to find out how prevalent media use was in the classroom, and whether problems occurred on the line connecting “education” and “entertainment.” The most common method of using media was to deliver subject content (40% of teacher responses). Current event use comprised 11.8% of the responses. Other uses included: “read the book, watch the movie,” technology tools, and to document student work.

However, not all of these methods are effective. Hobbs (1999) characterized in detail five “mis-uses” of media in the classroom. The focus was on videotape and television use. First, students have no opportunity to discuss, ask questions, pause, or review material from the program. Second, the teacher completes other work while the students watch, hence “disengaging” from the class. Third, television viewing serves as a reward for students. Fourth, the media is used in class only to attract student attention to the topic. Hobbs stressed that this may not be a mis-use in all situations, but the practice did indicate that teachers assumed students were passive and visually driven. The fifth mis-use was the use of video to keep students quiet and orderly. Hobbs emphasized that teachers must promote media literacy in their classes and that thorough analysis of the material should accompany the presentation.

### *Group Discussion*

In discussing the US's educational system at large, one of the chief complaints among many is the lack of critical thinking occurring in the classroom. This absence is extremely problematic due to the fact that the ability to think critically is essential to the development of students' minds. Education researcher Michael E. Nussbaum (2002) asserts that "literacy, broadly construed, relates not only to the ability to read and write, but also to the ability to think critically" (p. 488). Critical thinking allows students to achieve a "deeper understanding of existing social conditions and power relations" (Luke and Shannon, as cited in Jongsma, 1991, p. 518).

According to Linda Elder, the executive director of research at the Center for Critical Thinking, and Richard Paul (1998), the key to critical thinking is posing questions. "Thinking is driven not by answers but by questions" (p. 297). Answers signal a full stop in thought. Without presenting and analyzing questions, it is impossible for critical thinking to occur. Thus, it is essential for the role of questioning to be highlighted in the teaching context, for "only students who have questions are really thinking and learning" (Elder & Paul, 1998, p. 297). Furthermore, questions are essential in propelling the thinking process forward. Thinking is useless unless it goes somewhere. Questions determine where one's thinking progresses. In order for ideas to develop and academic fields to expand, new questions must be constantly presented. According to Elder and Paul (1998), "If we want to engage students in thinking through content we must stimulate their thinking with questions that lead them to further questions" (p. 298).

Unfortunately, Elder and Paul's research has revealed that both students and teachers do not value the role of questioning enough in the classroom. Thought-stimulating questions are oftentimes not present in a typical classroom. Instead, teachers are so focused on presenting material and information that critical thinking is buried beneath the desire to present answers.

Textbooks are written as presentations of statements and facts. However, it is important to remember that every declarative statement in a textbook is a response to a question. In fact, teachers themselves do not generate questions. They too are not seriously engaged in thinking or rethinking their subject areas. Instead, they relay the questions and answers of others, most frequently the answers found in a textbook.

While teachers are preoccupied with teaching facts, students focus on dead questions such as “Is this going to be on the test?” Questions such as that halt the thinking process, revealing a lack of desire to truly learn or think. No questions equals no understanding. Similarly, superficial questions merely result in superficial understanding.

Thomas R. McDaniel (1998) responded to Elder and Paul’s work with:

Are we burying thinking under tons of information? In our rush to finish the textbook, meet the “objectives,” present the content of a course, we may work against the most valuable objective of all: the development of our students’ minds. Many forces drive us to “cover content,” but we should remember that the word cover can mean “conceal.” How much real thinking is concealed on the petrified forests of subject matter? (p. 301)

A means of fostering questioning in the classroom is through Socratic dialogue. Socratic dialogue upholds the principle that “through doubt and systematic questioning of another person, one gets to ultimate truth” (Tredway, 1995, ¶ 11). It engages students in critical thinking by emphasizing the importance of questioning in the learning process. Critical thinking establishes an “executive level of thinking, a powerful inner voice of reason, to monitor, assess, and

reconstitute- in a more rational direction- our thinking, feeling, and action. Socratic discussion cultivates that inner voice by providing a public model for it” (Elder & Paul, 1998, p. 298).

Another means of utilizing Socratic dialogue involves more than simply implementing pre-thinking and questioning. According to Tredway (1995), “a potent learning model. . . is the Socratic seminar, a form of structured discourse about ideas and moral dilemmas. The process balances two traditional purposes of education: the cultivation of common values and the worth of free inquiry” (§ 3).

Socratic seminars are typically conducted once a week for a period of 50 to 80 minutes. Students in groups of 25 or less will read a common text. This can be a novel, poem, essay, document, or art reproduction. Students are then lead by a facilitator, typically the teacher, in a discussion and response of the questions. Initial ideas are often voted on. All subsequent questions and discussion in the seminar are based on the student ideas and contributions generated in response to the original question. In addition to Socratic questioning, three to five students also act as observers on a rotational basis. This role entails tallying how many and what types of contributions are made by each student.

There are many benefits to Socratic seminars. First, they promote active learning, engaging students in developing “knowledge, understanding, and ethical attitudes and behaviors” (Tredway, 1995, ¶ 13). This interactive participation allows for better retention of material. Socratic seminars also teach “cooperative inquiry.” Students discover knowledge together. Since the students do not raise their hands, they must learn how to use body language, eye contact, and mutual respect in order to contribute to the discussion. Through this, students learn how to “paraphrase, defer, and take turns, as well as to deal with frustration when waiting” (Tredway, 1995, ¶ 15).

In addition to learning how to communicate in a discussion setting, Socratic seminars also reinforce many basic skills taught in school. The reading of a common text allows students to increase their vocabulary, as well as become more skilled in interpretative reading, comparative reading, and text analysis. Through this, students gain experience in synthesis and evaluation, which are the higher levels of cognition according to Benjamin Bloom's much-used taxonomy.

Lastly, Socratic seminars allow students to explore their relationship with others and society, thereby increasing their intellectual and emotional maturity. These seminars also help build self-esteem, increasing a student's belief in his/her own competence. As Alfie Kohn (as cited in Tredway, 1995) observes:

Students acquire a sense of significance from doing significant things. . . . When students meet, make decisions, and solve problems regarding carefully chosen works, they reflect on important values. . . . They then get the message that their voices count. . . . [and] gain a sense of belonging and active participation in their community. (¶ 23)

Similar to Socratic seminars, small-group discussions have also been shown to improve critical thinking in students. There is increasing acknowledgment that "critical thinking involves the ability to participate in ongoing conversations about important issues" (Nussbaum, 2002, p. 488). Nussbaum's (2002) research focuses on how to "enable students to participate in oral discussions about academic and social content, both as a means for deepening understanding of content and as a tool for developing critical thinking" (p. 488). He frames the issue as a question of how to transfer students' natural argumentation skills, learned in non-school settings, to

school settings. It involves both the establishment of discussion as a valuable discourse in the classroom as well as the teaching of formal argumentation skills. Additionally, students need to be motivated by the topic of discussion and be willing to explore it in depth. “Allowing students to explore topics of personal relevance- as may occur in a critical literacy curriculum- is one way of stimulating motivation and therefore complex discussion” (Nussbaum, 2002, p. 489).

The benefits of discussing contemporary issues, specifically, have also been studied. They include a better understanding of issues, enhanced critical thinking skills, and improved interpersonal skills (Hess, 2001). Students participating in a discussion must personally understand the issue in order to contribute ideas, and critical thinking skills enable the student to agree or disagree with support and reason. Interpersonal skills advance because participants in such discussions must adhere to polite expressions of disapproval, and must transition from point to point in a fair manner.

Hess surveyed high school students about the role of discussion in the classroom. It was found that “a clear majority” valued discussion, but the group was divided on whether students should be forced to participate (Hess, 2001). Furthermore, students were split on whether a teacher could assign a grade based on participation in discussion. Student interest in the topic was cited as a major factor in whether students participate, in addition to knowledge about the topic, and time a student had to think before speaking. The criticism or judgment of peers had a greater impact on participation than fear of what the teacher would think of a student’s point or idea. Hess concluded that more controversial issues discussions were needed in social studies classrooms.

### *After-school Programs*

Extracurricular activities have had a long existence, traditionally through such organizations as churches, Boys & Girls clubs, 4-H, and scouting. Recently, however, school-based after-school programs have come into prominence. In 2001, 18.7% of children participated in school-based after-school programs, compared to 7.3% of students who participated in more traditional extracurricular programs (Hagedorn et al., 2003). A recent report surveying 86 cities nationwide found that in the 2002-2003 school year, 461,803 students participated in an official school-based after-school program (*The U.S. Conference of Mayors*, 2003).

There are many reasons for this recent increase in after-school programs. One significant reason for the rise is the desire to increase student involvement in positive after-school activities. We are in an era of “latch key kids” where children are spending more and more time unsupervised after-school. In a recent report by the Departments of Education and Justice entitled *Working for Children and Families: Safe and Smart After-school Programs*, 69% of all married-couple families with children ages 6-17 have both parents working outside the home (Chung, 2000). In addition, in 71% of single-mother families and 85% of single-father families, the custodial parent is working. Furthermore, the 1994 United States Census revealed 18% of children, about 6.9 million, aged from 5-14 cared for themselves on a regular basis. Numerous studies have shown that students who are left with little to do after-school are at risk for engaging in destructive behavior (Smith, 2000; Chung, 2000; Levin-Epstein, 2003). The Youth Violence Prevention Resource Center reported children and teens not supervised are more likely to use alcohol, drugs, and tobacco, get poor grades, skip school, drop out, engage in risky sexual behavior, as well as carry and use weapons (Levin-Epstein, 2003).

In addition, numerous studies demonstrating stagnant student achievement, test scores and literacy rates, also fueled the fire for creating additional assistance for students. Examination of the National Assessment of Educational Progress (NAEP) long term trend reports reveal that while there have been some gains in student achievement since the 1970s when the survey first began, in the last ten years no significant changes in national average scores in math, science and reading have occurred (Campbell, Hombro, and Mazzeo, 2000). In addition, Wirt and Livingston (2002) reported that the achievement gaps between white and black students has increased since the late 1980s, overall 12<sup>th</sup> grade math performance has declined since 1996, and 12<sup>th</sup> graders' interest in school has declined steadily since 1983. For these reasons, local, state and federal education agencies have looked to after-school programs as a way to make gains in student achievement.

In the last ten years the federal government has played an increasing role in the development of after-school programs. In 1994, Congress authorized the creation of the 21st-Century Community Learning Centers (21<sup>st</sup> CCLC Program), an organization that awards grants to school-based programs designed to address the educational, health, cultural and recreational needs of rural and inner city public schools. The organization quickly grew from a budget of \$40 million in fiscal year 1998 to \$1 billion in fiscal year 2002 and currently about 7500 public schools take part in the program (Jacobson, 2003). The 21<sup>st</sup> CCLC Program is a key component of President Bush's "supplemental educational services" provision of the No Child Left Behind Act. In response to this act, forty-two states and the District of Columbia have reported supplemental service programs in their school districts. Nationally, 23.3 million children six to sixteen years old participate in at least one extracurricular activity (Fields, 2001). All of this

evidence points to future in which after-school programs will be engrained in the educational experience of students.

Not only have government bodies become interested in the educational future of our students, organizations from all sectors of society have become interested in funding and creating after-school programs as well. Many colleges and universities, community agencies, and private companies have become interested in participating in after-school programs as a way to encourage students to pursue higher education, specific career choices, and strengthen local school-community ties. Today there are many after-school programs sponsored by foundations, corporations, non-profits, and private donors.

After-school programs have many goals from reducing gang membership to encouraging the pursuit of higher education. Although there are a plethora of programs, each with their own unique focus and design, a study by the Center for Research on the Education of Students Placed at Risk (CRESPAR) reported most activities can be classified into five general categories (Yates, 2000). The first category is language arts programs. The main focus of these programs is increasing literacy and language skills, generally targeting urban students or students for whom English is not their first language. The next category is study skills programs. These programs are often designed for at-risk students who need help with study, comprehension, and organization skills. In addition to students who are performing poorly, study skills programs are often targeted at students who are transitioning to different educational levels and are used to help students learn the appropriate skills needed to adjust to their new grade. Academic subject programs, the third category, also target a wide variety of students. Many programs are aimed at gifted students to supplement learning received in classes and foster interest in more non-traditional enrichment activities. There are also many programs targeted at students in non-

traditional school environments such as extended day programs to expand and strengthen ideas discussed in class. Tutoring is another significant form of after-school program and emphasizes one-on-one homework and subject help. Although most programs use schoolteachers or trained adult volunteers, an increasing number of programs are using such innovative techniques as peer-to-peer tutoring. The last types of programs are community-based ones. These programs emphasize recreational, social, and cultural activities and often are created in response to community concerns or desires.

Although general characteristics of effective programs have been established, there has been little research on the success of after-school programs on student life. There are many reasons for this lack of research, including difficulty in finding a suitable control group, many extraneous variables, and the high drop out rates typical of many after-school programs. In addition, since each program is unique and has its own goals and definition of success, it is hard to generalize results obtained. Even so, several studies have found positive correlations between participation in after-school programs and increased student performance and attendance, as well as decreased juvenile crime and parental stress (Levin-Epstein, 2003; Gerber, 1996). A recent Census Report found that nationally 75% of children who participated in extracurricular programs were academically “on track” (defined as being “enrolled in school at or above the modal grade level for their age”) as opposed to 60% who did not participate in such activities (Fields et al, 2001). In addition, a recent meta-evaluation done by Scott-Little, Hamann, & Jurs, (2002) found that participants in after-school programs scored higher on standardized measures of achievement, as well as non-standardized indicators of academic-related performance such as completing homework and school attendance. It is important to note, however, the latest report assessing the efficacy of the 21<sup>st</sup> CCLC Program reported that after-school programs have

limited impact on student academic performance (Jacobson, 2003). This report was hotly contested and the controversy surrounding the effects of after-school activities underscores the need for more quality research on this topic.

There are many possible reasons for positive effects associated with after-school programs. Voelkl (1997) suggests that during childhood and adolescence, school plays an increasing role in students' everyday lives. Therefore, if students develop a sense of belonging to their school environment, school and school-related outcomes become incorporated into his or her self-concept and students begin to value school as a social institution and tool for facilitating personal advancement. Goodenow and Grady (as cited in Voelkl, 1997) found that identification with school is positively correlated with increased levels of engagement, persistence in the completion of schoolwork, general school motivation and expectations of success. Therefore, the efficacy of after-school programs may stem from students' opportunities to strengthen ties to their academic environment.

The second prominent theory that researchers use to explain the benefits associated with after-school programs is the social capital model. Social capital is defined as the "ability to secure benefits through membership in networks and other social structures" (Portes, 1998, p.8). The attainment of social capital can occur in many settings and during childhood is mainly developed through interactions among students, parents, and the school. As students accrue social capital it becomes easier for them to receive educational information and resources which can directly benefit their achievement (Broh, 2002). In addition, students develop support networks and form positive social relationships with adults and other peers, lessening truancy and juvenile crime participation. Therefore after-school programs become a significant source of social capital and serve as a base from which students gain the resources needed to achieve.

## *Mentorship*

The use of mentors in social services programs has become an increasingly common intervention, and typically aims to increase education and jobs among at-risk youth (Hicks 2002). According to Christine Bennetts (2003), the purpose of mentors is to validate a learner's creativity, provide an environment of understanding, support and provide opportunities for creative endeavor, act as respected critics, and enable the learner's development in 4 aspects of self: self-image, self-esteem, self-confidence, self-worth. As much research has pointed out, the benefits of a mentor for impressionable school age children is immense and is often times pivotal to their success in the future and in the prevention of their taking part in risky activities.

Mentorship can be defined as the process by which an experienced adult forms a relationship with and transfers knowledge to a student. This is not the only definition. Campbell-Whatley (2001) gives a more general explanation of mentorship:

...human relationship that includes encouraging and guiding personal growth and development. A mentor is not a professional counselor, parent, social worker, financier, or playmate, but a friend and confidant. The goal of the relationship is to open the lines of communication and assist the student in developing competence and character. For a mentorship to be successful, both the mentor and the mentee should derive benefits from the relationship. The student will learn to relate to others and develop an increased positive self-concept, whereas the adult will derive the benefits of being useful. (p. 211)

The formal definition of a mentor is one who offers counsel or teaches (Campbell-Whatley, 2001). Due to the nature of the school environment, the teaching that occurs in school is not enough to even remotely qualify as mentorship. Campbell-Whatley (2001) found through implementation of a mentoring program for middle school adolescents with learning and behavior problems that students reportedly were more motivated to learn, used strategies to resolve conflicts and demonstrated better overall attitude. Also students were excited to see their mentors on the days that the mentors visited and shared significant confidential conversations about family, school and the future.

Salovey and Sluyter (1997) found that one specific quality of a good mentor, as mentioned by interviewed mentees, is the trait of emotional intelligence. An emotionally intelligent person has the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional meanings, and to regulate emotions so as to promote both better emotion and thought. The emotional ties between mentor and mentee play an important role in the reception of the mentor by the mentee.

Age difference is another factor that may have an effect on the emotional ties between mentor and mentee. Levinson (1976) argues that the ideal age for a mentor should be half a generation older (8-15 years) than a mentee. If the mentor is much older, the relationship will take on qualities of a parent-child relationship and if too close in age, the relationship will be more like friends or peers. Younger mentees were more likely to report that their mentor served in role-modeling and parenting type roles than were older mentees. In fact some research shows that an age gap that is too large can have negative affects on socially excluded 'disaffected' youth.

There is evidence that mentoring may be counter-productive to policy intentions for interventions with socially excluded young people (Phillip & Hendry, 1996; Colley, 2000), and that even when young people are enthusiastic about the experience of being mentored, their mentors may not share their view. This apathy by the mentor in the mentor-mentee dyad is a very common phenomenon in formal mentoring situations as opposed to informal mentoring situations. Formal mentoring is defined as one in which the mentor-mentee dyad is assigned or established through an outside organizational force, for example in a workplace or as an assigned tutor in school (Bennetts, 2003). Informal mentorship is defined as a mentor-mentee dyad situation that is defined without outside organizational forces, where relationship occurs through chance or is sought out by the protégé individually and is motivated through personal desire (Phillip et al., 1996). Informal mentorship is much more likely to evolve into a friendship than a formal mentorship. Phillip and Hendry (1996) found that protégés with informal mentors reported that their mentors provided career development and psychosocial functions more than mentees with formal mentors.

Though mentoring typically takes on a hierarchal role, in that the mentor is of higher authority or more experience than the protégé that is being mentored, both parties can benefit from the relationship mutually. Relational theory explains the relationships in helping relationships by saying that human beings have a need for a connection and emotional joining. The resulting empathy from this need is characterized by mutuality. The theory stresses the importance of the state and quality of interaction rather than the state of the individual. Mentorship fits into this relational mutuality approach of relationships. The relational model of mentorship challenges the conventional hierarchal conceptualizations of mentoring like senior-junior, boss-employee relationships.

Beyene, Anglin, Sanchez and Ballou (2002) conducted a study that examined how protégés view the mentor-protégé relationship and how relational mutuality is critical to understanding the mentoring process. The study sought to find out how protégés saw the mentor-protégé relationship and especially if the relationship qualified as relational mutuality rather than a hierarchal relationship. The results show that protégés overwhelmingly see their relationships with their mentor as benefiting the mentor and affirmed mutuality. One example of mutuality was the fact that protégés overwhelmingly believed that they were able to challenge the ideas of their mentors and that there was a free exchange of ideas. According to the protégés in this study, key ingredients of a successful mentor-protégé relationship are communication, trust, knowledge, care, nurturance, mutual-interests, open-mindedness, respect and patience, once again affirming the key concepts of mentorship seen in all literature. The mentoring relationship is one in which both parties benefit and is motivated by caring, trust and open exchange of ideas.

### *Data Analysis*

Combining quantitative and qualitative research methods can enable researchers to gain a fuller picture of the phenomenon being studied. Stetcher and Borko (2002) describe the advantages of both case studies and surveys and offer advice about how to integrate both. Surveys provide indicators of system-wide trends or patterns that can be generalized to a large population, but often cannot be used for more than showing correlation. Case studies allow for “richer descriptions of the underlying events,” and may point to some of the causes of the correlations found in the survey results (p. 3). The researchers also viewed case studies as “existence proofs” – a type of research that offers “images of what can be accomplished rather

than documenting what is typically the case” (p. 3). Stecher and Borko advocated the integration of surveys and case studies as the research is being performed, allowing researchers to periodically evaluate their methodology.

McLaughlin, Watts, and Beard (2000) define action research in two parts. “Action” refers to the goal of the research – “the way individual educators, teams of educators, and school wide research teams can take action as a result of what they have learned” (p. 285). Research, in this case, refers to a variety of methodologies that may be “small or medium in scale” and may employ quantitative and qualitative techniques (p. 285). The researchers describe the implementation of action research in a case study of Five Forks Middle School in Gwinnett County, Georgia. Five Forks was pursuing a study of total-school reform, engaging administrators and teachers in a variety of research methods including interviews, observations, and surveys. The analysis of the data was used to identify and address the areas for improvement in the school. One goal the researchers focused on was gaining an understanding of students’ beliefs and opinions about their educational experiences. They suggested that educators conduct case studies that involved interviewing, surveying, and observing students. For example, in one of the Five Forks studies, a teacher interviewed her students to gauge their reactions to three types of evaluations (multiple choice tests, essays, and projects), and revised her teaching methods based on the students’ responses.

To evaluate the effects of an alternative learning program on student motivation and esteem, Nichols and Utesch (1998) surveyed students at the beginning and the end of the program using the same questionnaire. The questionnaire included 66 items using a Likert-type scale, with “strongly agree” and “strongly disagree” at the extremes. Subcategories were defined within the 66 questions to test a variety of dependent variables, including performance goals,

intrinsic and extrinsic motivation, and self-efficacy. Correlations were performed for each of the subscales to test the assumption of interdependence between the variables. The data were also used to test the effectiveness of the alternative learning program; researchers compared students' pre-questionnaires to their post-questionnaires and also compared the pre-questionnaires of students who eventually dropped out of the program to the pre-questionnaires of those who did not. Debacker and Nelson (2000) employed a similar type of questionnaire, using a Likert-type format and subscales, in a study of high school students' motivation to learn science.

A number of studies also point to the value of designing questionnaires that allow the inclusion of teacher responses (Fulk, 2003; Wishart and Blease, 1999). In Fulk's study (2003), two separate surveys were designed: the first was created to assess teachers' perceptions of the strengths and weaknesses in study skills possessed by ninth grade students, and the second allowed students' to assess their own skills. This data was then used to design a number of drop-out prevention initiatives within the school. In Wishart and Blease's study (1999), an initial questionnaire was administered to both students and teachers at the beginning of the year to examine the initial connection between motivation and the use of information technology. The questionnaires were followed by interviews with selected staff members, and a follow-up questionnaire was distributed a year later to most of the original participants. In both cases, the incorporation of both student and teacher responses gave a fuller picture of the issue under study.

## **Chapter 3: Methods**

## *Methodology Overview*

This section recaps the ideological and logistical decisions that shaped the way our program would operate upon implementation in the school. In addition, this section gives a thorough description of the procedures used throughout the program.

### *The Ideological and Methodological Evolution of G.E.M.S.*

Gemstone is a unique interdisciplinary research program for select undergraduate honors students of all majors. Each Gemstone team selects a current social or technological issue to research over three years and at end of their senior year defends a thesis on the chosen topic. Our team chose to research education and the "Generating Eager-Minded Students" project originated out of months of debate and discussion regarding the ideology, methodology, and purpose of the team's research. Only through these months of debate were the team members able to compromise their interests towards a common path on which to pursue our research.

Initial debate within the team concerned deciding what age group our program should target. We all agreed we wanted to work with students labeled as "underachievers." Our team originally decided that we wanted to focus on middle school students for several reasons. The first was that we believe adolescence is the formative period for young people. At this age we believed we could have a maximum effect because students were mature enough to think critically about many diverse topics, but were still young enough that their attitudes toward school had not been cemented. Secondly, middle school builds a bridge to high school, where decisions about pursuing higher education are made. By exposing students to a wide variety of topics and to the mentorship of college students such as ourselves, we hoped to encourage students to include higher education in their future plans. Thirdly, our team found many studies

about early educational intervention but very little about the effects of these programs on middle school students. We were curious to see how our program would affect students from this age group.

Based on topical literature, which emphasizes the importance of motivation for middle school students to maintain success into and throughout high school, we decided that targeting eighth grade students with a program designed to increase and generate motivation for learning would be appropriate. However, the way in which our program would be designed and organized was still in debate.

We knew that our program would target eighth graders, but it remained unclear whether we would actually implement a pilot program or simply design a model for future programs. Eventually, we decided we would become participant researchers in the field, rather than limiting our research to the theoretical realm of education. We realized that in implementing the program ourselves we would have a direct understanding of its successes and failures, allowing us a perspective with which to alter our original program design. More importantly, we realized through our program we could directly and positively affect the lives and academic success of real students. This idea was a major source of motivation for our team and continued to be throughout the life of our program.

Guiding our initial thoughts on program design was our dedication to create spaces for students to explore their own intellectual abilities that may not be developed or fostered in the classroom. Our overarching research question focused on whether increasing motivation in students could translate to academic progress. Could we create a program that would spark student interest by using topics and methods that are not common in today's classrooms while developing intellectual skills that could help students academically? A primary tenet of our

program was that in order to spark interest, students must develop a love for learning and confidence in their own intellectual abilities, and that this love would naturally be translated into academic improvement.

School selection became a major focus of the team at this stage. We developed factors with which to include and exclude schools. We determined that we did not want to work with students with limited English proficiency because we would be unable to provide the appropriate support for these students. Also, we decided not to work with schools with talented and gifted programs because we did not want to introduce another variable to our research and therefore limit the generalizability of our program. Initially, we chose to approach administrators at Montgomery County schools (MCPS) because we believed that this county was the most conducive to our research aims. For our team's purposes, MCPS had the following advantages: a stable administration that has shown initiative in improving low-income education, a broad spectrum of income levels among students, and a close proximity to the College Park campus. After contacting several principals and county administrators, however, we found that the county's stringent research guidelines prohibited us from performing research within a school. While the team began to explore other options, we were fortunate enough to meet Dr. James Greenberg who offered our team a place under the umbrella of the Bladensburg Project.

The Bladensburg Project is a unique collaborative effort between the University of Maryland and schools in Prince Georges County that are a part of the Bladensburg cluster. As a part of this initiative, University of Maryland provides professional development and leadership training for teachers, principals and other managers, as well as interventions and instructional support designed to improve student achievement. After meeting with the team and discussing

our ideas, Dr. Greenberg suggested that our program be incorporated into the larger initiative and therefore put us in touch with William Wirt Middle School.

It seemed as though we had considered all the right variables and developed a strong focus, but we found that creating a tangible, operational program design would require that we iron out a few more issues. Some members of the group believed that many students who are labeled underachievers do in fact have the learning skills necessary for success. The classroom, however, does not provide an environment conducive to students realizing their academic potential. These members advocated for a program based solely in Socratic Dialogue, arguing that our students of interest simply needed a forum with which to express ideas already available to them; therefore, the only guidance these students needed would be as outlined by Socratic Dialogue models. In other words, we would give the students a topic to discuss, pose a prompting question, and leave the students up to their own conversational devices. Other team members contended that this approach would be far less productive than a more activity-based approach.

This approach, which was eventually implemented, hypothesized that the program could be more effective if team members led "guided activities" which would broaden the range of topics available for discussion. In the Socratic dialogue method, we would not be exposing the students to new ideas, but rather constrain the discussion to the extent of the students' prior knowledge and conversational experience. In addition, considering the age and developmental level of the students, it seemed a more guided discussion was appropriate. The activities developed in this approach would make the after-school program attractive to the students, satisfying a major tenet of our program; and hopefully creating an enthusiasm that would carry over into the classroom. To confirm this approach, a group of members met with Robin Rubain,

the guidance counselor from William Wirt Middle School, where we were to conduct the program. Rubain confirmed that this method would be best suited for the challenges of keeping 8<sup>th</sup> graders interested in our program.

With the concept of a discussion-based approach supplemented by guiding activities as a framework for our after-school program, the final debate centered on whether the lessons should focus on contemporary events/issues or on the lessons taught in the eighth grade curriculum. The group once again split on this issue. The side that advocated that our program revolve around the curriculum pushed for activities which would relate directly to present lessons taught in the classroom during the school day. They felt that the addition of the activities alone would make students enthusiastic toward what they were learning in reading, math, and science.

The team members who believed that activities based upon contemporary issues claimed that the former approach would be more exciting to students, particularly since there was no current place for these issues in the school curriculum. Thus, students would be presented with interesting topics, which they likely would be aware of, but only on a cursory level. Such topics would have the potential to facilitate an interactive discussion and also present the students with learning opportunities on topics that stepped outside the bounds of classroom learning. Topics that the students would be genuinely interested in, rather than those which required their interest (subjects taught in the classroom), would allow the team the tools to better cultivate an enthusiasm for the learning process. After long deliberations, the team agreed to utilize the “contemporary issues” based approach, allowing the team to begin the process of creating its own space in the vast field of education reform proposals. We hoped that the resulting program would help provide under-achieving students with academic enrichment and evaluate its ability to better meet their learning needs in an innovative manner.

In the end the program's presiding method was to introduce to the students a variety of contemporary issues in an academic setting through the use of newspaper and magazine articles, as well as other media, through weekly, interactive, non-evaluative discussions. The program thereby provided a non-traditional, interactive classroom environment focusing on socially relevant issues. By using this method, we hypothesized that there would be positive changes in academic motivation. In addition, it was then hypothesized that this academic motivation would translate into an increase in student academic performance.

### *The School*

William Wirt is one of seven 6th-8th grade schools in Prince George's County (PGC); the 18th largest school district in America. The district is also one of the most poorly funded school districts in the D.C. metropolitan area; per pupil expenditure is \$6,087 in PGC compared to as much as \$11,254 per pupil in Arlington County in nearby Virginia. Interestingly enough, PGC is not an impoverished area with relation to the rest of the nation. The 2000 Census revealed that the median household income in PGC is \$47,882, compared to \$45,289 in the state.

Although PGC itself is not impoverished, William Wirt is. The school is a Title I school (William Wirt received \$306,000 in federal funds in 2000-2001) and over 70% of students qualify for free and reduced meals (F.A.R.M.). In addition, the school receives money each year from State Poverty Resources (e.g. Target Poverty Grant brought the school \$126,942 in 2000-2001), which the school uses for instructional materials, field trips, staff development, after-school tutoring, and enrichment programs. William Wirt also receives significant help from the Bladensburg Project, particularly for staff development and planning for school improvement.

William Wirt has very diverse demographics. Over 20% of students are Hispanic, (compared to a 7.1% average Hispanic population for the rest of PGC) and English As a Second Language (ESOL) comprises 18% of the population. In addition, the school is 71% African American, 4% Caucasian, and 2.5% Asian. The school is fair evenly divided between males and females (404 to 423 respectively).

Testing scores at William Wirt reveal that outside academic assistance is needed. Performance on Maryland Functional tests has fallen for 9th graders who graduated from William Wirt. In 2000 96.2% passed the reading tests, 75.9% passed the mathematics tests, and 88.8% passed the writing tests. In 2001, while 96.6% passed the reading tests, only 67.2% passed the mathematics tests, and only 83.4% passed the writing tests. In addition, the school is consistently in the 27th to 30th percentile in comprehensive tests of basic skills in reading, language, mathematics, and language mechanics. The school has developed an improvement plan focusing on language arts and mathematics by adding new teachers, remedial and enrichment programs, using technology to support ESOL programs, as well as the opening of a new "Academy of Reading." Other school improvement plans include the implementation of computer-based instruction and increasing parental involvement.

With these statistics in mind, it is obvious that there existed an opening for the G.E.M.S. team to experiment with a key facet in improving academic achievement: that through motivating and creating enthusiasm among students for learning, we could improve their performance in the classroom. Our research program, detailed below, had this aspect as its primary goal.

## *The Participants*

Student participants were 18 (15 female, 3 male) eighth-grade students at William Wirt, a comprehensive middle school in Prince Georges' County, Maryland. Students were nominated for participation in G.E.M.S. by their guidance counselor and were asked to meet the following criteria: a) achieving a grade point average of 3.0 or above, b) failing statewide functional tests and c) likely to benefit from additional academic enrichment.

Eighteen students began participation in the program however only eleven students were used in data analysis. For inclusion of data analysis, students were required to attend at least 50% of all sessions. In addition, students who dropped out of the program (i.e. students who ceased attending program sessions) were excluded from analysis. Thirteen students qualified by attendance rates but two were forced to drop the program due to other extracurricular obligations. Unfortunately, no data was taken to determine common variables in students who had below a 50% attendance. Of the students for which data was analyzed, the average GPA at the start of the program was 3.09 (SD .498). Three students failed the Maryland functional math test; five failed the writing test and no students failed the reading test.

Throughout the program, six team members served as moderators and randomly worked with students as needed in program sessions. In addition, for several sessions, two team members observed the moderators and students, producing written reflections after each session.

## *Measures*

*Gemstone Student Attitude Inventory (GSAI)*– To assess students' academic motivation the team constructed a test hereby known as the Gemstone Student Attitudes Inventory (GSAI).

This self-administered questionnaire (see Appendix A) is loosely based on the Aberdeen Academic Motivation Inventory, a self-administered questionnaire designed by Noel Entwistle (1968) to assess students' motivation toward academic success. The GSAI consists of 24 questions and has two designated subscales: "academic drive" and "attitudes towards school and learning". The subscale "academic drive" has 10 questions and measures items such as work habits and scholastic expectations. "Attitudes towards school and learning" has 13 questions and measures students' opinions of the classroom environment and self-efficacy in learning. The GSAI is a 5-point Likert-type scale (1=never, 5=always or 1= not like me to 5= like me) and is designed in such a way that a higher score would suggest a student possesses a greater amount of academic motivation. In order to preserve the students' confidentiality, their names will not appear on the survey themselves. Each student will be giving an ID code to put on all the appropriate materials.

*Teacher Surveys* – To incorporate outside opinions on students' academic and achievement motivation, each student's math and language arts teachers were given the School Achievement Motivation Rating Scale (SAMRS) (see Appendix B). This scale, developed by Lian-Hwang Chiu (1997), aims to measure specific behavioral characteristics that are critical to academic achievement and includes persistence, overcoming obstacles, maintaining high standards, accomplishing something difficult, responding positively to competition, and willingness to take risks.

The SAMRS scores have been shown to have content validity, criterion-related validity, and construct validity (Chiu, 1997). Content validity was established through the methods in which the scale was constructed. First, behavioral characteristics related to achievement in school settings were listed based on literature in the field. Current teachers then rated the list and

only those characteristics that were consistently rated high for both relationship to school achievement and were clearly observable in school situations were chosen to be included in the scale (Chiu, 1997). Criterion-related validity was established through statistical correlations to course grades, GPA, and standardized achievement tests and construct validity was established by the used of eight other psychological instruments as criterion measures (Chiu, 1997). In addition, the SAMRS test- retest reliability was established and SAMRS scores were shown to be consistent over time (Chiu, 1997).

There are 15 total questions in the teacher survey, each scaled from 1 to 5, (based on the frequency of the behavior manifestation) and the survey is designed so that a higher score would suggest that a student possesses a greater amount of motivation for school achievement.

In order to preserve the students' confidentiality, their names will not appear on the survey themselves. Each teacher will be given as many surveys as he/she has participating students in his/her class. Teachers will complete surveys for each student and write down the ID code corresponding to the appropriate student. The surveys will then be given to the Gemstone team members.

*Student Achievement*– To assess student scholastic achievement students self-report of grades (question 24 of the GSAI, average grade received on assignments) will be used as well as school reported students' grades for math and language arts, history, and science, as well as overall GPA. In addition, Maryland Functional Math, Reading, and Writing Scores will be gathered.

*Program Efficacy*– The efficacy of the individual sessions will be determined based on one-comment feedback reporting by the student, research team created moderator sheets, and research team created observer sheets. The one-comment feedback loop consisted of a single

opened question at the end of each session in which students were asked to comment on the overall program quality as well as detail any questions or concerns they may have (see Appendix C). Moderator and observer sheets also consisted of open-ended questions designed to establish what elements of the program were successful/unsuccessful, as well as a 3 question 5-point Likert-type scale with questions designed to assess interest, discussion level, and overall program successfulness (See Appendix D and E).

In addition, overall program efficacy was assessed by the exit survey created by the researchers as well as reflective interviews of each of the gemstone moderators (see Appendix F). The purpose of the exit surveys was to measure students' attitude towards the distinctive characteristics of the G.E.M.S. program. The self-administered questionnaire consisted of a 5 point Likert-type scale (1=not like me to 5=like me) for 16 scaled questions, with each question linked to a separate variable. Furthermore, students were asked to rate each lesson plan topic and open-ended questions were added to give participants the opportunity to briefly describe their most/least favorite parts of the program, as well as a section that asked for feedback on how to make the program better. Finally, reflective interviews consisting of team generated open-ended questions designed to assess various aspects of the G.E.M.S. program and its' effects on student participants were completed by all moderators at the conclusion of the program.

### *The Procedures*

*Recruitment of Students*— The counselor contacted the students who were selected for participation in the study (See Appendix H). A letter was sent home to their parents explaining the purpose of the program and how it would benefit their child (See Appendix I). An email address was included in the letter for parents who had any questions about the program. The

team also arranged to present at a Parent-Teacher Association meeting to provide more information on the program and to allow parents to ask questions in person. However, the meeting was cancelled due to unforeseen circumstances and the following meeting was not held until after the program had already begun. Students who were interested in attending the after-school program were required to bring in an IRB-approved informed consent form completed by their parents (Appendix J).

*Pre program questionnaire administration* – Once the students had been selected, they were asked to complete the GSAI survey during the first day of the after-school program. Students' math and language arts teachers were also asked to complete the Teacher Surveys as an evaluation of each student.

*Program Sessions* – The program met every Tuesday immediately after-school for ninety minutes over the course of four months (excluding holidays and snow days). The program ended in time for students to take the activity buses home. Attendance at all sessions was entirely voluntary and no students were restricted from activities or field trips due to low attendance rates.

The first session was devoted to introducing the students, moderators, and program, including an explanation of the purpose of the program and the expectations for the students. From then on, the content of each after-school session varied from week to week as different topics were covered. For example, the first lesson week the class analyzed the lyrics of popular songs and discussed the degree to which musical lyrics influence adolescent behavior. In other weeks students discussed school improvements, gender stereotypes, war, and racial discrimination. Freedom of speech, the media, animal testing, the NBA draft, and the possibility of a moon-landing conspiracy were the topics of the remaining sessions.

Lesson plans for each day of the program were approved by both the Institutional Review Board and the school. These lesson plans were modified before each session based on feedback from the previous weeks. The themes of the lessons were not changed, but the format of the class activity was altered to be more successful at engaging the students. The modified lesson plans are included in the Appendix K. After each session, students completed a one-comment feedback loop to assess their reaction to the day's session. Moderators also completed observation forms.

Two field trips were also included in the lesson plans. Students toured the WPGC radio station and spoke with a DJ as part of the Media session. For the last session, students were invited to the University of Maryland for a tour and reception with their parents.

*Post Program Questionnaire Administration* – During the last session at University of Maryland, students completed the GSAI survey and Exit survey. In addition, students' math and language arts teachers again completed teacher surveys.

## **Chapter 4: Results**

## *Section Introduction*

The results section delineates the quantitative and qualitative data acquired from various measures and observations. These data include GSAI data, grades, teacher surveys, and exit surveys. The section also discusses qualitative data such as post-session feedback and moderator observations. Both quantitative and qualitative data were merged into individual case studies for each student, which are presented at the end of this section.

## *Quantitative Data Analysis*

Analysis of quantitative survey data provides an opportunity to extract a set of general conclusions from the eleven students in our after-school program. According to Stecher and Borko (2002), quantitative studies make it “possible to measure the reactions of a great many people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data.” While our sample size was relatively small compared to most quantitative studies, the data were helpful in formulating general conclusions about student perceptions of the program, and determining any changes in student academic motivation from the beginning to the end of the program.

Before the data were analyzed, the team set standards for cleaning the data. It was decided that data would only be analyzed for students who had attended at least half of the after-school program sessions, reducing the number of students included in the analysis from eighteen to eleven. Where data were missing for a particular student, the average of the remaining students was calculated – not enough data were available to estimate a possible score for the missing student’s data.

After the data were cleaned, the eleven students’ pre- and post- GSAI and teacher survey scores were averaged. These averages as well as functional test scores and grades were used to

create an academic profile of our students. Average scores from pre-GSAI and teacher surveys were compared to post-survey data, exit surveys, and term three grades. T-tests were performed on the differences between pre- and post- GSAI and teacher survey scores to determine whether the differences in the scores were statistically significant. Below are the results of the quantitative analysis (Table 4.1).

### **Profile of Participating Students**

Although 18 students began participation in the program, only the data of the eleven students (9 female, 2 male) who participated in over 50% of the sessions were analyzed. Of the students for whom data were analyzed, the average GPA at the start of the program was 3.09 (SD = 0.498). Four students had GPAs below 3.0 and one student had a perfect 4.0 GPA during the first term. Of these eleven students, three students failed the Maryland Functional Math Test, and five failed the Writing test. All of the students had passed the reading test. Two students had failed both the Math and the Writing tests. Students' math and language arts teachers tended to rate students highly in terms of academic motivation; math teachers rated five out of seven students as above average, while language arts teachers rated four out of five students as above average.

**Table 4.1 Measures of Students’ Academic Motivation: Pre- and Post- Program Averages**

<i>Measures</i>	<b>Pre-Program Average</b>	<b>Post-Program Average</b>	<b>Difference in Averages</b>	<b>Significance Level</b>
<b>GPA (Terms 1 &amp; 3)</b>	3.09	3.08	- 0.01	0.25
<b>GSAI – Academic Drive</b>	4.61	4.66	0.05	0.004
<b>GSAI – Attitudes Toward Learning</b>	3.58	4.08	0.50	2.08E-9
<b>Teacher Survey – Language Arts</b>	4.34	3.72	- 0.62	0.13
<b>Teacher Survey – Math</b>	3.92	3.79	- 0.13	0.37

**GSAI**

The GSAI had two subscales: the Academic Drive subscale and the Attitudes Toward Learning subscale. The

scores of both subscales increased from when the survey was administered at the first session of the program to when the survey was administered at the last session. Complete data were collected for nine of the eleven students. The increase between the average scores for the Academic Drive subscale (0.05) was small but statistically significant ( $p = 0.004$ ). The increase between the average scores for the Attitudes Toward Learning was approximately a half point (0.50), large enough also to be statistically significant ( $p = 2.08E-9$ ).

**Teacher Surveys**

There was no statistical change in Language Arts and Math teachers’ assessments of students’ academic motivation from the beginning to the end of the program. The difference between Math teachers’ averages for the students (0.13) was so small as to be statistically insignificant ( $p = 0.37$ ), and the difference between Language Arts teachers’ averages (0.62), while much larger, also was statistically insignificant ( $p = 0.13$ ). However, these results were complicated by incomplete data. A complete set of pre- and post- surveys from Language Arts teachers were only collected for three of the eleven students, and a complete set of Math teachers’ surveys were only collected for six of the students.

## **Exit Surveys**

The program was rated very highly by students in their exit surveys. In response to a question about whether they liked the program, all eleven students gave the most positive possible response to the question. All students but one responded that they would be very willing to repeat the program again, and all students said that the program was fun and that they would recommend it to their friends. All students but one rated the program's discussion method, field trips, and innovative format as above average. Group activities received above average responses from nearly all of the students, and all students said that they were at least mostly comfortable sharing their opinions with each other.

Students gave mixed responses on questions related to their increased awareness of current issues, and the impact of working in a small group environment. The timing of the program did not appear to make a large difference to the students – all but one student said that they did not mind staying after-school for the program and seven of the eleven students said that they would like to take a class similar to this program as an elective in school.

## *Qualitative Data Analysis*

In addition to quantitative measures, qualitative data based on student responses were collected regularly throughout the program. At the end of each session, students were asked to write a brief statement simply detailing their thoughts about the day's session. The task was intentionally designed to be open-ended so that students would be free to respond about any aspect of the program they wished. Their responses were not shared between students, so student responses were not affected by the opinions of others. Responses from students who

attended at least five of the sessions were analyzed. From this group, responses from two students were excluded because these two students dropped out of the program due to schedule conflicts. Of the eleven remaining students (nine females and two males), the average number of entries provided per student was 7.36 out of a possible 10. Students wrote about different aspects of their views toward the program and their responses were analyzed qualitatively for recurrent themes, which are presented below. This summary is followed by an in-depth analysis of the “Race Relations” and “Moon Landing Conspiracy” sessions based on the inside observations of a non-moderator team member who was present. Finally, case study analyses, which incorporate multiple data measures with moderator observations, of each of the eleven students are presented.

In the examples that follow below, student comments have been edited appropriately for spelling, grammar, and diction. The names of students have also been changed to protect participant confidentiality.

### **Compilation of Student Post-Session Feedback Comments**

All eleven students reported satisfaction with the freedom to express their own opinions and on learning about the opinions of others. To some students, this aspect of the program helped it stand out in their minds. One student wrote, “I like to be in Gemstones because we can express our feelings and talk about different topics.” Another student emphasized the opportunity for students to speak their minds in the final session comment: “I had a lot of fun at Gemstones with being honest and all.” Other students attributed this aspect of the program to specific topics covered in individual sessions. One student reflected that the discussion from the “Racial Stereotypes” session led to “very good talks about certain topics, and it helped me a lot

to express my feelings.” Students similarly reported that the program allowed them to hear the opinions of their classmates on topics that they normally did not discuss. Following the “Moon Landing Conspiracy” session, for example, one student reported being “able to ask a lot of questions that I was curious about and...hear other peoples’ opinions.” Students also reflected that the session provided opportunities for them to form their opinions on the issue. One student wrote, “I still don’t know what to believe about the moon [landing], but I think it’s fake!”

One student wrote that the topic “taught me a lot but it felt like I was in school for another hour or so.” No other comparison between our program and the usual classroom setting of the students was made.

A particularly noteworthy session was the “War: What is it Good for?” session, which included a student debate on whether the United States should attack Iraq (prior to the actual war). Because students were assigned to different sides of the debate without regard to their own opinions, the session provided a challenge for some students. Three students reported that the topic was difficult because they had to argue for a side that they were personally against. One student selected for the pro-war side wrote, “Today’s debate was difficult. I am against the war, so I really could not play a role as someone for the war. It is very difficult.” Although students who were assigned to defend sides they were personally against were reluctant to do so, they were willing to participate fully in the debate. Another anti-war student assigned to the pro-war side expressed this opinion: “I say we shouldn’t [go to war], but I had to be on the pro side so it was very hard for me. However, I tried my best anyway.” Not all of the students had strong opinions about the war coming into the debate. One student simply reported that “today both sides were good, and I was glad [my] side won.”

The students individually reflected their appreciation for learning and the importance and relevance of the issues covered. These responses varied per session and came at different times during the program. For the “Freedom of Speech” session, for example, one student reported “[learning] a lot about the First Amendment that I did not know. I had a lot of fun and thought about the first amendment more.” Another expressed her satisfaction with learning about the topics covered with her peers, adding, “this group is consistently on my level.” Student interest varied, however, and some students reported that the more abstract topics such as the “Freedom of Speech” session were not as enjoyable. One wrote that “today’s topic was not as interesting as the last ones,” while another reported that “I would prefer to talk about other things than history.” Another student reported feeling bored, saying, “It feels like the same topic comes up every time.” Students tended to appreciate the sessions that incorporated more activity. While one student wrote that the “Moon Landing Conspiracy Theory” session “was great because I like the things we talked about and our investigation,” the student was less complimentary toward the “The Ethics of Animal Testing” session: “Today it was okay because we only talked and it wasn’t that fun.” Another wrote, “I think the topic that we talked about was important, but it was a little boring. I think that it would be better if we have interactions.”

The program seemed successful in providing an overall enjoyable experience for the students. All students reported the program as an enjoyable experience at least once during the program. A few students expressed disappointment when the program came to an end. One student wrote, “I will miss coming on Tuesdays.” Another student final comment summed up her thoughts on the program:

I had fun today and I am going to miss coming to Gemstones. It was fun and interesting, and it gave me something to do after-school instead of going home right away being bored.

Overall, students and moderators agreed that the overall program was an enjoyable experience for the students. Although student retention was an issue during the later months, a fair number of students stayed in the program without any pressure for doing so. In order to reinforce the idea that attendance was compulsory, no analysis (e.g. exit interviews, exit surveys) was completed on reasons on why certain students attended the program more than others.

The negative responses and criticism reported by students seemed to be focused on individual sessions rather than the program as a whole. One student who expressed enjoyment at the “The Media” field trip, for example, did not hesitate to express boredom during the “School Improvement” session. One student who expressed boredom during the “Ethics of Animal Testing” session wrote that “it was still okay, though I would rather talk more about media,” which showed that their negative comments were restricted only to individual sessions, rather than the entire program. Because students were unafraid to be forthcoming with negative comments, student subjective feedback appeared to be a reliable indicator of ad-hoc student perceptions of the program. There was no evidence that students were pressured in writing their comments one way or another.

### **Evaluation of Two Actual Lesson Plans**

Team member Adam Kaplan served as an observer during the “Race Relations” and “Moon Landing Conspiracy Theory” sessions. He recorded and analyzed student reactions to both lessons.

*“Race Relations” (1/7/03)*

On January 7, 2003, the G.E.M.S. team presented its “race relations” lesson to the 8<sup>th</sup> grade students at William Wirt Middle School. This proved to be an interesting lesson, as all but one of the students represented a racial minority. The lesson’s activity revolved around team member’s passing around several stereotypical (and offensive) racial pictures. One was a photograph of fraternity members from the University of Auburn in Alabama dressed up for Halloween as Ku Klux Klan members and lynched African-Americans. Another was a Pokemon cartoon where one character appeared to be wearing a turban. A third presented a group of college-aged students. The white students had books in their hands and were playing musical instruments, while the black students were holding basketballs and wore headphones. Like most of the G.E.M.S. lessons, these catalysts spurred further enthusiastic discussion amongst the students who as they became more and more comfortable with the lesson, became more eager to participate.

Carla, an aspiring lawyer, viewed the pictures, specifically that of the Auburn University students, with a mix of shock and amusement. “It’s so sad, it’s funny,” she remarked at the university students’ antics. In addition to accusing the Auburn students of ill-intent, she blamed their antics on “ignorance.” “Racists don’t realize the impact they’ve had on society,” she remarked. Coretta, another minority student took offense at the picture which she claimed compared “black people to animals.”

While the Auburn picture elicited anger and disbelief from the students, it was the basketball picture that spurred the most thought-provoking discussion. Students such as the soft-spoken Bobby, an African-American, passionately resented the picture’s message which he claimed implied that “blacks *should* be good at basketball....that ‘you people’ [blacks] are only

good at rap and sports.” Alexandra, a student whose mother is Portuguese and father is African-American, followed Bobby’s statement immediately, observing, “Everybody is their own person...if you want, you can be on the basketball team, but that should not be the only thing you are expected to excel at.”

The discussion peaked when Carla extended the previous comments to bring up the topic of “reverse racism.” Carla expressed that often times in her experience, she was put down by her African-American peers for being too successful in school, or “acting white.” “Just the majority of students who are my race want to [not excel in school for fear of ‘acting white’] doesn’t mean that I have to be like them. Alexandra agreed, citing an instance where she told an accusing peer, “I’m not trying to ‘be white’, I’m trying to succeed.” Carla recommended that a method of solving this problem within the classroom would be to, “give black students the same opportunity to learn about their heritage as white students have.” That, she said, would transform the idea that education is ‘only’ for white students. However, she, along with Bobby, and Alexandra, refused to wait until this concept is completely fulfilled.

This lesson aptly exemplified how discussion of a pertinent current issue, in this instance, race relations, could lead to a renewed resolve to succeed in the classroom. The students reflected on the challenges they face in a racist society and the low-expectations from their fellow peers towards education. However, the discussion, in the eyes of Carla, Bobby, Alexandra, and others, refocused the idea that education was the key to overcoming these social obstacles.

*“The Moon Landing Conspiracy Theory” (1/14/03)*

The January 14, 2003 lesson presented to the Wirt students was based on the 1969 moon landing and the various conspiracies claiming that the event never took place. The lesson was set up with the students playing the role of “investigative journalists,” whose “assignment” was to piece together a story to find what they perceived to be the truth about the moon landing. They would hear from team member Ron Thomas, playing the role of a political historian, Allison Kirk portraying a conspiracy theorist, and Anand Francis and Attia Goheer, as NASA scientists refuting Allison’s theories.

Ron began giving the political history behind the moon landing, emphasizing why the moon landing and space race were so important in the context of the Cold War between the United States and the Soviet Union. Ron’s references to President Kennedy spurred excitement from Bobby, who immediately raised his hand and told of his grandmother’s fondness for Kennedy. Ron’s chart on the Vietnam War casualties also spurred interest amongst students, particularly Keisha who spoke about a television program that she had viewed at home regarding the connection between the moon landing and the atmosphere of America at war. These early minutes alone of the lesson demonstrated how the use of contemporary issues can galvanize students to participate in a classroom environment.

Allison, playing the role of a conspiracy theorist, followed Ron by distributing a handout legitimizing moon conspiracy arguments. Keisha immediately was critical of Allison’s handout, claiming “you’re from Russia, you get paid off by their government to say those things.” Bobby continued the give and take, arguing to Keisha that the moon landing is “not physical evidence, but only pictures.” The argument spread amongst the “investigative journalists.”

“[NASA] could make [the moon pictures] smaller...like from using word art.”

“You couldn’t trust what NASA says, but maybe if they test the moon rock, it will confirm that we did land on the moon.”

This high level of enthusiasm spurred by Allison’s conspiracy theory had virtually the entire classroom involved. Perhaps the best exchange occurred between Allison and Adele, a student who attended fewer than half of the sessions. “Why would you believe NASA?” asked Allison. “Well why would we believe you? You’re only one person,” responded Adele.

The next round of student questioning came in response to “NASA spokesmen” Anand and Attia’s presentation which dismissed the conspiracy theory of Allison. Their presentation was immediately criticized by Hien, who asked how our flag was flying if there is no atmosphere on the moon. She also wondered aloud why “when the rocket landed, it did not leave any craters on the moon.” Alexandra offered her own criticism, accusing the scientists of “going to another country to get fake lunar rocks.” Carla asked, “Where did [NASA] get all the money to do this, and why did they do it at that specific time?”

The students, who had been split into three groups to promote intimacy with the team members that they were “investigating,” responded very positively to this lesson. The first group concluded that the moon landing was indeed fake, refuting piece by piece Anand’s rock technology analysis. Group two believed that the moon landing was real, particularly since Allison’s pictures appeared to be fabricated. Group three was split, though those in the group who supported the conspiracy theory interestingly based their decision on the fact that the political climate in the late 1960s was enough reason for the government to deflect attention from the casualties suffered during the Vietnam War, by sending astronauts to the moon.

Overall, this lesson more than served its purpose. For one thing, students were willing to engage in fairly serious “give & take” dialogue both with team members and with fellow peers.

The transformation from disinterested students at the beginning to passionate “investigative reporters” who were willing to take a stand to defend a particular position bodes well for how the G.E.M.S. program could inspire students to take a greater interest in classroom discussions and thus improve academic performance.

Case study analyses were completed for all regularly participating students by the moderators who interacted directly with them. Academic performance, qualitative student responses, and moderators’ personal observations contributed to the following series of case studies.

## Case Study: Carla

**Table 4.2 Grades for Carla**

<b>Subject</b>	<b>Pre— Term 1</b>	<b>During— Term 2</b>	<b>Post— Term 3</b>
Science	A	A	B
US History	D	B	B
Language Arts	B	B	C
F/C Science	N/A	N/A	N/A
Health	A	A	N/A
Pre-Algebra	A	A	A
<b>Overall GPA</b>	<b>3.28</b>	<b>3.46</b>	<b>3.28</b>

**Table 4.3 MD Functional Test Results for Carla**

<b>Functional Test</b>	<b>Result</b>
Math	P
Reading	P
Writing	P
Total Score	383

Carla was arguably the strongest student in G.E.M.S.. A straight “A” student in Math, and one of the highest scorers on the Maryland Functional Tests, Carla was always attentive and interested in discussions. In fact, Carla was one of a few students who seemed to really understand the purpose of the program.

In her comments she talks about learning information and learning about how others form beliefs, opinions, and understandings. She benefited from both.

Carla was perhaps the most outspoken member of the group. She not only contributed her thoughts but asked good questions. She was particularly moved by the discussion on gender stereotypes. She commented that she “learned different things from different points of view.” Although Carla talked freely with all of the other students she did not have any particular friends in the program.

Carla expressed interest in almost every lesson, both through her participation and her comments. She was particularly moved by the discussion on the current war in Iraq. She was adamant about her anti-war position but was open to alternative opinions and perspectives. She was able to make her point that she was “100%” anti-war and not disrespect other group

members.

**Table 4.4 Teacher Survey & GSAI Results for Carla**

<b>Subscale</b>	<b>Pre</b>	<b>Post</b>
Teacher Survey – Math	4.47	4.47
Teacher Survey -- Language Arts	3.92	2.83
GSAI -- Attitude	3.4	3.7
GSAI – Achievement	4.5	4.5

Carla should be given some credit for the success that the G.E.M.S. program had. She exhibited intellectual leadership as well as social maturity. She was a serious student who did nothing but contribute to group discussions and activities. The fact that she generally stayed to herself shows that it was not necessarily peer support which engaged her, but rather her own curiosity and desire to push herself.

Carla's G.P.A. at the end of the school year was identical to her G.P.A at the beginning. However, in two of her classes her grade dropped a letter grade in the quarter, and in U.S. History, she brought her grade from a D in the first quarter, to a holding B for the next two quarters. Although Carla did not have the best grades, she passed all parts of the Maryland Functional Test, receiving a total score of 383, one of the highest in her class.

## Case Study: Bobby

**Table 4.5 Grades for Bobby**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	C	C	B
US History	A	D	B
Language Arts	A	C	B
F/C Science	B	E	N/A
Pre-Algebra	A	D	C
<b>Overall GPA</b>	<b>3.09</b>	<b>1.60</b>	<b>2.60</b>

**Table 4.6 MD Functional Test Results for Bobby**

Functional Test	Result
Math	F
Reading	P
Writing	F
Total Score	375

Bobby was a good student with average grades in Language Arts and Math. He was one of only three boys who originally signed up for the G.E.M.S. program. This, however, did not deter him from being one of the most outgoing members of the group. Bobby showed interest in the program since day 1. He was so eager to take part in discussions and share his opinions that he often tried to speed up the activities and discussions to cover more ground and provide new opportunities for discussion. Bobby’s first feedback comment was that the G.E.M.S. “program is better than class

sometimes.”

Throughout many discussions with different team members, Bobby expressed adamantly that school was boring. He was able to show the group that he had talents and insights that would not be realized during school hours. He enjoyed the arts, specifically visual art; drawing and animation. On the day we discussed school reform, Bobby was able to combine his frustrations with school and his artistic vision by drawing a picture of a middle school that he designed. The picture was rather simple (the students had a short time to come up with a

**Table 4.7 Teacher Survey &**

**GSAI Results for Bobby**

<b>Subscale</b>	<b>Pre</b>	<b>Post</b>
Teacher Survey – Math	4.13	N/A
Teacher Survey -- Language Arts	4.13	N/A
GSAI -- Attitude	N/A	N/A
GSAI – Achievement	N/A	N/A

creative way to depict school reform), however through Bobby’s explanation it was obvious that he had been quite thoughtful about school improvement. Bobby’s grades, especially in the second quarter reflected his attitude about class. Although he started out the school year with 3 A’s, a B and a C, his grades dropped significantly in the second quarter, during our program. However, Bobby made an amazing turnaround from the second quarter to the third, increasing his G.P.A. from a 1.6 to a 2.6, almost back to where he started in the first quarter, with a 3.09. Bobby was

a quiet student, but he was not shy. During the course of the program he continued to open up and become more vocal. It seemed as though Bobby had a lot to say but that he was used to having no one to listen to it. The G.E.M.S. program not only served an intellectual purpose for Bobby, but an expressive emotional outlet that he could benefit from. He continued to comment on the fact that he liked the program because he could talk about things that he could not talk about in school.

## Case Study: Alexandra

**Table 4.8 Grades for Alexandra**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	B	B	B
US History	B	B	B
Language Arts	B	B	B
F/C Science	A	A	N/A
Health	A	A	N/A
Pre-Algebra	B	C	B
<b>Overall GPA</b>	<b>3.21</b>	<b>3.01</b>	<b>3.28</b>

**Table 4.9 MD Functional Test Results for Alexandra**

Functional Test	Result
Math	P
Reading	P
Writing	F
Total Score	370

What Alexandra seemed to get

from the program was a chance to break out of her label as “smart girl” and to share her personal views as well as listen to others. She showed up to almost every meeting and seemed to enjoy the opportunity to be intellectually challenged. Alexandra also seemed to appreciate the attention of college students, it gave her a new cohort group with which to interact and learn from. She exhibited both a social and mental maturity throughout the duration of the program. Like her grades, her participation in the program could be best described as consistent. She had one of

the highest attendance rates of the students in the program, and she always participated. Her G.P.A. dropped a little in the second quarter however by the third quarter her G.P.A. was higher than the first. What is most interesting about Alexandria was that her grades were not excellent, however, she had the confidence of a star student. She was not shy, she could accept criticism, and she was able, by example, to get other students more engaged. In many ways Alexandria

represented the type of student that the G.E.M.S. program aimed to generate.

**Table 4.10 Teacher Survey & GSAI Results for Alexandra**

<b>Subscale</b>	<b>Pre</b>	<b>Post</b>
Teacher Survey – Math	4.53	4.27
Teacher Survey -- Language Arts	4.57	4.07
GSAI -- Attitude	3.4	3.8
GSAI -- Achievement	4.5	4.5

## Case Study: Keisha

**Table 4.11 Grades for Keisha**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	B	A	C
US History	C	B	C
Language Arts	B	B	C
F/C Science	N/A	N/A	B
Pre-Algebra	B	C	B
<b>Overall GPA</b>	<b>2.90</b>	<b>3.21</b>	<b>2.40</b>

Keisha was an African American 8th Grade girl at William Wirt Middle School. She attended 8 G.E.M.S. after-school sessions. Like most other students, it took some time for Keisha to become involved in the program but she became a very vocal, energetic and receptive student after she became familiar with the G.E.M.S. mentors and the class expectations.

**Table 4.12 MD Functional Test Results for Keisha**

Functional Test	Result
Math	F
Reading	P
Writing	P
Total Score	361

At the beginning of our program, it was obvious that Keisha did not feel that the entire program demanded her concentrated attention. She attended the program with a friend of hers, Coretta, whom she would sit next to and chat with

at the beginning of class as the mentors gave instructions. During several of the first lessons, she would be hunched over on her table, rarely speaking unless the topic at hand interested her.

Aside from her friend Coretta, Keisha did not interact much with the other members of the class, but she was not socially excluded. She chose to sit with Coretta, apart from the other students.

However, Keisha did very well in lessons in which the students could voice their personal opinions and speak freely. For example, in the first lesson in which the students discussed

current song lyrics, Keisha commented that she very much enjoyed being able to express herself about a topic that she was genuinely interested in but never had the chance to discuss in a classroom. In another lesson, the discussion segued temporarily and the students began talking about the teachers of William Wirt. The conversation centered on the students' most and least teachers. Keisha was very interested in the conversation and was very expressive and opinionated about her teachers. Though this was not the major point of the lesson, Keisha wrote later in her one-comment feedback that she liked talking about her teachers openly, but did not comment on taking anything else out of the lesson.

As the G.E.M.S. program went on and Keisha realized that she was able to voice her opinions in the classroom, she became increasingly attentive throughout the whole session. She also seemed to interact much more freely with other members of the class. In the ethics lesson, students arranged themselves at one of the four corners of the room in a response to certain questions or statements posed by the moderator. The corners represented strongly agree, somewhat agree, somewhat disagree and strongly disagree. Keisha was very vocal during this lesson. To the statement that "Stealing is wrong in all situations," Keisha first stood in the strongly agree corner for a short time and then moved to the strongly disagree corner while loudly telling the class of an instance when she stole a candy bar when she was very young and how it was not punishable because she did not know at that age that it was wrong. Several times during that lesson, Keisha was very expressive about her opinions and enjoyed arguing her point of view with her classmates and the mentors.

Just as with most students, Keisha responded very well to topics that she had previously been interested in. In the Moon Landing Conspiracy lesson, Keisha was very attentive to the mentors as they gave the lesson plan because she had seen a program on the moon landing before

on TV sometime before. She made sure to announce to her group and the mentor at her table that she was partially aware of how the Space race between Russia and the US played a role in the US moon landing. In the lesson, each mentor played a different role as a political historian, a conspiracy theorist or a NASA scientist and the class was broken down into teams of investigative journalists whose mission it was to prove or disprove whether the moon landing was a conspiracy engineered by the US.

**Table 4.13 Teacher Survey & GSAI Results for Keisha**

Subscale	Pre	Post
Teacher Survey -- Math	N/A	3.67
Teacher Survey -- Language Arts	N/A	3.21
GSAI -- Attitude	3.6	4.1
GSAI-- Achievement	4.7	4.9

When Keisha met with the conspiracy theorist, she immediately snapped, “We’re not listening to you. You work for the Russians.” She had gathered information given to her by the political historian and applied it when investigating the conspiracy theorist. Not only did she stay very involved with the whole investigative process and ask many questions but she also was extremely skeptical of her information and critical of its source.

At the end of the lesson, when the teams could ultimately discuss as a class whether the moon landing was a conspiracy and argue their cases with the mentors, Keisha came up with some very innovative ideas arguing that the moon landing was a conspiracy. First she asked why all of the rocks from the moon were still not on public display except for a very small piece at the Aerospace museum. She also argued that the US faked the moon landing because it was in a Cold War with Russia.

The transition from Keisha’s first lessons to her later lessons, such as the moon landing conspiracy lesson, was huge. At the beginning, Keisha was often apathetic and inattentive and one of the softest in the class, but as she realized that she could speak freely on things that

interested her, she became far more expressive and one of the most vocal members of the class.

The open discussion format of much of the class allowed students such as Keisha to thrive.

Also, as exemplified by Keisha, students are far easier to stimulate intellectually with topics that they are unfamiliar with but find interesting.

## Case Study: Ali

**Table 4.14 Grades for Ali**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	B	A	B
US History	C	C	B
Language Arts	A	A	B
Pre-Algebra	C	A	A
<b>Overall GPA</b>	<b>2.80</b>	<b>3.60</b>	<b>3.46</b>

Ali was an 8th grade boy of Middle Eastern origin who attended 8 G.E.M.S. after-school sessions on a regular basis. He held a job after school at the middle school library that he worked nearly every school day and would occasionally come to G.E.M.S.

late, after he finished work at the library or arranged to leave early.

**Table 4.15 MD Functional Test Results for Ali**

Functional Test	Result
Math	P
Reading	P
Writing	P
Total Score	376

Ali was very soft-spoken at most G.E.M.S. sessions. Most times, he was the only boy in a group of more than 9 students. In the beginning it was not uncommon for him to come in and take a seat at his own table while all the other

children were sitting in groups, despite the fact that there were open seats at every table.

However, he was not shunned by any of the students, nor did he seem to have a hard time getting along with anyone. He would often joke with some of the other classmates before G.E.M.S. began but still remain at his own table. It seemed as if Ali enjoyed a healthy social life in school but was just much more reserved at G.E.M.S. sessions. One could easily get the impression that had one or more of Ali's friends attended G.E.M.S. with him, he would have been a lot more vocal. For the most part, Ali did not speak unless spoken to first. There were, however, lessons in which he was very engaged and outspoken. In the Ethics discussion, for example, the students

were allowed to take places in certain corners of the room in response to certain ethical questions. Each corner of the room represented one of the following, “Somewhat Agree, Somewhat Disagree, Strongly Agree, and Strongly Disagree.” Some examples of questions would be “If your friend asks you the answers for a quiz or test in a class you have already had but he/she hasn’t is it ok to give the answers?” Ali, took the “Strongly Agree” place by himself and when asked to explain himself was very willing to and able to defend his choice.

Ali did not have any qualms about not only telling the truth but also choosing something despite the fact that no one else did. Had it been a regular classroom with a real teacher and the same exercise repeated, one can wonder if Ali would have been so open, honest and expressive. In another lesson, the students had to act out a play in which they were given lines/roles of a Dave Barry parody of the typical husband and wife. The husband and wife are driving home and their thoughts are relayed. The wife is thinking about their relationship, and she is portrayed as being very sensitive and emotional. Meanwhile, the husband is thinking about the car they are driving the whole ride home and portrayed as a vacuous and emotionally clueless person. Ali was chosen to represent the husband and had to read the husband’s lines of dialogue. He struggled reading the lines but didn’t shy away from doing so.

A female classmate read the parts of the wife. In the discussion about gender stereotypes following the play, Ali explained the stereotype shown in the reading, described why it was wrong and talked about why the stereotype is continually promoted by the media without being asked.

**Table 4.16 Teacher Survey & GSAI Results for Ali**

Subscale	Pre	Post
Teacher Survey – Math	3.07	3.60
Teacher Survey -- Language Arts	N/A	4.07
GSAI – Attitude	3.2	3.5
GSAI – Achievement	4.9	4.4

The biggest change that could be seen in Ali over the course of G.E.M.S. was his willingness to speak up and become involved. Even in lessons in which Ali did not speak much, he still was willing to write and exchange ideas with his group members. In one lesson, groups were supposed to write a script for a commercial that would be recorded on a tape recorder in the hallway. Ali wrote the script for his group and put in many of his own ideas while also including those from group members. He interacted well with all the members of his group and clearly seemed to have a good time.

On one of the last days of Ali's attendance at G.E.M.S., Ali showed several mentors his report card, pointing out the fact that he had improved from a grade of "C" to a grade of "A" in Pre-Algebra. The importance of this event was that Ali clearly showed pride in his increased school performance. This expression of pride in a grade jump was a clear expression of increased academic motivation for doing well.

## Case Study: Carmen

**Table 4.17 Grades for Carmen**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	A	B	A
US History	B	B	B
Language Arts	A	A	A
F/C Science	N/A	N/A	A
Health	A	A	N/A
Pre-Algebra	B	A	B
<b>Overall GPA</b>	<b>3.60</b>	<b>3.60</b>	<b>3.60</b>

**Table 4.18 MD Functional Test Results for Carmen**

Functional Test	Result
Math	P
Reading	P
Writing	F
Total Score	346

Carmen, having attended 9 out of the 12 sessions and field trips, was very comfortable with the program by the last few sessions. She was more reserved than some of the more outspoken students, but she was by no means shy. A polite and modest student, Carmen never showed off in front of the group. It seemed that she preferred talking privately with one or two other students rather than addressing the whole group. Carmen had no problem speaking to the group, however, when the group was addressing a topic about which she felt strongly. She spoke up many times unprompted during discussions and

debates. Following the “War on Iraq” debate, for example, she reported the experience as “difficult because I had to support something that I was against.” The challenge that she felt originated not from speaking in front of a group, but defending a position that she personally did not support.

Carmen’s academic performance was mixed. While she passed both the Maryland Functional Math and Reading tests, she failed the Functional Writing test. Her total Maryland Functional Test score was 346, the lowest of all participating students. Carmen received only

fair evaluations from her math teacher both prior to and after the program. In the classroom, however, Carmen had the highest GPA of all participating students during the program. Her GPA remained constant at 3.6 throughout both the first, second, and third academic quarters. As measured by the GSAI, Carmen’s measured attitudes toward learning increased from 4.1 to 4.4. Achievement measured by the GSAI remained almost constant.

**Table 4.19 Teacher Survey & GSAI Results for Carmen**

Subscale	Pre	Post
Teacher Survey – Math	4.2	3.7
Teacher Survey -- Language Arts	4.53	N/A
GSAI -- Attitude	4.1	4.4
GSAI – Achievement	4.7	4.6

Carmen had a good-natured sense of humor, and while she did not typically joke around in class, she laughed as loud as everyone else at the jokes made by others. During the “Gender Stereotypes” day, for example, Carmen appreciated the humor of the topic: “I enjoyed this class because we got to talk about the topic as a group and the play was funny.” Carmen seemed comfortable in the atmosphere of the program, demonstrated by her honesty about how she felt about the class. During the “Animal Testing” day, Carmen reflected, “I think the topic that we talked about was important, but it was a little boring. I think that it would be better if we have interactions.” She was able to appreciate the significance of the topics covered while still feeling no hesitation about offering constructive criticism. Carmen openly preferred activities involving more activity and opportunities for self-expression, such as the last day’s activity involving ethics: “I had fun today because we had an activity where we got to move around,” she reported after an activity involving moving into different areas in the room to physically express opinions on ethical issues.

## Case Study: Gloria

Gloria attended 9 out of the 12 sessions, as well as the final field trip to the University of Maryland. A warm and friendly student, Gloria seemed very comfortable at the sessions and interacted openly with both moderators and fellow students. Though she was not a leader in the group, she was fairly outspoken, and often contributed many worthwhile opinions during discussions and debates.

**Table 4.20 MD Functional Test Results for Gloria**

Functional Test	Result
Math	P
Reading	P
Writing	P
Total Score	393

**Table 4.21 Teacher Survey & GSAI Results for Gloria**

Subscale	Pre	Post
Teacher Survey – Math	3.13	2.93
Teacher Survey -- Language Arts	N/A	4.4
GSAI -- Attitude	3.6	4.2
GSAI – Achievement	4.7	4.8

Gloria’s performance on

standardized state tests was one of the best among the student group. She passed all three Maryland Functional Tests, and her overall functional test score was 393, the highest among all the students. Gloria’s grades were unavailable for analysis. Gloria’s self-assessment of her academic performance, however, dropped from “Mostly A’s” to “Mostly B’s” by the end of the program, suggesting that Gloria’s classroom performance worsened during

the year. Gloria’s evaluation by her math teacher dropped over the course of the year. Attitudes toward academic achievement as measured by the GSAI remained almost constant at a high level. It is therefore unclear what may have led to the subjective deterioration in Gloria’s academic performance as reported by both herself and her math teacher. Her attitude towards learning as measured by the GSAI, however, increased from 3.6 to 4.2. Interestingly, Gloria was

chosen to recite a poem at the 8<sup>th</sup> grade commencement, which suggests that she was perceived as a top student in her grade level.

Gloria was one of the few students who shared stories about her home and family environment. During the “School Improvement” discussion about gangs in school, for example, Gloria spoke of her older brothers’ involvement in local gangs. She shared much about the different competing social factions at school, which were usually based on ethnic differences. Gloria openly rejected the gang culture that her brothers were a part of during the discussion and reported that she stands out among her siblings because of the significance she places in school and academics. She never, however, downplayed the importance of her family in her life; rather, it seemed as if she had learned to balance both her role as a student as well as her role as one of the youngest siblings in her family.

Gloria connected well with moderators and was willing to speak frankly and openly with them. When she enjoyed a session or activity, she enthusiastically let us know. Following the “School Improvement” session, for example, Gloria wrote: “I felt that this was a very exciting topic. I think that next time we talk about School Improvements we should invite the principal and/or another teacher.” Gloria appreciated spending time on a topic that she saw as being very relevant and exciting. Her suggestion to involve school faculty in future discussions reflects her motivation to take pertinent issues beyond discussion into meaningful action. She was comfortable with making suggestions to the moderators about what future sessions should include. Following the “Moon Landing Conspiracy Theory” session, Gloria was quite open about her satisfaction: “This topic was very good. It took good observations as well as questions to prove or disprove something. I would enjoy more topics similar to this one.” She was also frank with her disapproval as well. During the “First Amendment” session, Gloria seemed

visibly uninterested in the session, which contrasted sharply with her enthusiasm during the “School Improvement” session the previous week. Her feedback from that session came as no surprise: “I would prefer to talk about other things than history.” Her honesty reflected her sense of comfort in the relaxed environment of the program. Gloria’s ratings of the overall program were among the highest of all the students. She was very satisfied with the program by the end: “I really enjoyed having you and sharing good/funny times!” When asked what she liked the most about the program, Gloria reported that she “liked that everyone could share opinions in small groups.” Interestingly, she gave the program a “1” rating on “Similarity to class,” indicating that the program seemed quite different to her from her daily classes.

## Case Study: Coretta

Coretta was a black female who attended most of the sessions. She also came to both field trips. Throughout the program, Coretta seemed a little more mature than other students

**Table 4.22 Grades for Coretta**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	C	B	B
US History	C	B	C
Language Arts	B	B	D
Pre-Algebra	C	C	C
<b>Overall GPA</b>	<b>2.55</b>	<b>3.09</b>	<b>2.55</b>

less frequently.

**Table 4.23 MD Functional Test Results for Coretta**

Functional Test	Result
Math	F
Reading	P
Writing	P
Total Score	357

engaged but spent the majority of the session listening to other students.

From a moderator’s perspective, Coretta did not really form a strong connection to any of the G.E.M.S. moderators and often was overshadowed by other personalities in the program. She tended to be more aloof than over students and didn’t actively seek out moderator attention.

and more wary of our role as a moderator and mentor. Although she got along with all the students it is was clear she felt like she did not have much in common with the other G.E.M.S. participants perhaps due to her maturity. She had a couple of friends who also came to the program but

Although at times Coretta appeared disinterested with our program she kept coming back, even when one of her friends stopped coming. She did participate in all activities but at times needed prompting. There were a few activities in which she became very

Coretta grades improved during our program but then fell to their original values at the conclusion of the program. She began with a GPA of 2.55 then rose to a 3.09 then fell again to a 2.55.

**Table 4.24 Teacher Survey & GSAI Results for Coretta**

Subscale	Pre	Post
Teacher Survey -- Math	N/A	3.53
Teacher Survey -- Language Arts	N/A	2.79
GSAI -- Attitude	3.5	4.2
GSAI -- Achievement	4.75	4.8

It is hard to quantify the effects of the program.

Based on the attitude toward school and learning scales of the GSAI, Coretta's participation translated into more positive attitudes. There are several indications that the moderators affected her in positive ways. At the beginning of the program, Coretta indicated on the GSAI that she was unsure whether she would graduate from high school. By the conclusion of the program she indicated she reported expecting to graduate and seemed more determined to attend

college. In addition, Coretta indicated on her exit survey that her favorite part of the G.E.M.S. program was the field trip to University of Maryland and indicated if she could have planned another trip she would have liked to go on another college. She also wished that the program had incorporated more discussions on high school. All of these things indicated that Coretta began thinking about her academic future and may have realized the importance of school in accomplishing her education goals.

## Case Study: Hien

Hien was a quiet Vietnamese female who attended the program regularly, missing only three sessions. Although Hien seemed very open to talking with moderators individually and genuinely enjoyed the sessions, she was very shy and had difficulty expressing her opinions with the large groups. In sessions she would participate with very short comments or questions directed at other participants. However, her one-comment feedback responses demonstrated a clear passion about many topics, suggesting she was afraid to assert her opinion with the other students.

**Table 4.25 Grades for Hien**

<b>Subject</b>	<b>Pre— Term 1</b>	<b>During— Term 2</b>	<b>Post— Term 3</b>
Science	A	B	B
US History	C	B	A
Language Arts	B	A	B
Pre-Algebra	B	B	B
<b>Overall GPA</b>	<b>2.55</b>	<b>3.09</b>	<b>2.55</b>

Hien was one of the more successful students from the onset of the program and throughout the G.E.M.S. program she improved academically. Her GPA at the beginning of the program was a 3.21, one of the highest in the program, and rose to a 3.3 in the second term and

was a 3.46 at the conclusion of the program.

**Table 4.26 MD Functional Test Results for Hien**

Functional Test	Result
Math	P
Reading	P
Writing	P
Total Score	383

**Table 4.27 Teacher Survey & GSAI Results for Hien**

Subscale	Pre	Post
Teacher Survey -- Math	4.13	4.2
Teacher Survey -- Language Arts	4.54	4.27
GSAI -- Attitude	N/A	4.0
GSAI -- Achievement	N/A	4.2

From a moderator’s perspective, Hien gained many positive benefits from the program. It was clear she enjoyed the attention from the moderators and often came before or after sessions to speak with moderators. Hien liked the opportunity to speak her opinion and she frequently wrote in her one comment feedbacks that she enjoyed G.E.M.S. because it gave her a chance to express her thoughts and feelings. For example, in the media lesson, a journalism major talked to the class about her experiences in gathering and reporting the news. Each student then made their own news story and tape-recorded it for the class.

During the lesson, moderators had to prod her into speaking and her written reflection on the lesson indicated she disliked speaking in front of others and felt very shy. Despite this, she later reported that was her favorite session.

It is hard to say the role G.E.M.S. had in the improved academic motivation. Unfortunately, she did not complete a pre-GSAI. As a result, her attitude cannot be analyzed. She indicated in her exit survey she enjoyed the program and that it enabled her to think more about current issues, which helped in other classes.

## Case Study: Dorita

**Table 4.28 Grades for Dorita**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	A	A	A
US History	A	B	B
Language Arts	A	B	B
F/C Science	A	B	N/A
Pre-Algebra	A	A	B
<b>Overall GPA</b>	<b>4.00</b>	<b>3.40</b>	<b>3.46</b>

**Table 4.29 MD Functional Test Results for Dorita**

Functional Test	Result
Math	P
Reading	P
Writing	P
Total Score	349

Dorita’s attendance was dismal, as she attended half of the lessons, with two large breaks over the course of the program. She participated in only the radio station field trip. Like Elizabeth, Dorita had a reserved personality and did not seek attention by speaking much. As an African-American, she was not as isolated (at least by perception) as Elizabeth appeared. She listened well, carefully looking at the speaker in the eyes.

Dorita’s grades were better than her functional test results. She passed all

three portions of the Maryland Functional Test (Math, Reading, Writing). However, her total score was lower than the average of other students in the program. Her overall GPA dropped from a 4.0 before the program to around 3.4 during and after the program. The drop in GPA apparently occurred in the grading period during which the program took place. Her classroom performance was rated higher than others in G.E.M.S., based on post-program teacher surveys. There is no pre-program teacher data available to make a comparison. The GSAI data were encouraging, especially in the “achievement” category. There was no exit survey data available for Dorita.

**Table 4.30 Teacher Survey & GSAI Results for Dorita**

Subscale	Pre	Post
Teacher Survey -- Math	N/A	4.67
Teacher Survey -- Language Arts	N/A	4.87
GSAI -- Attitude	4.0	4.1
GSAI -- Achievement	3.9	4.6

Dorita did not distinguish herself during the lessons.

This did not mean she was bored or not willing to participate.

She was instead quiet, which actually enabled moderators to home in on her more during the sessions. Her written

reflections about each topic were longer and more complete than the other students' reflections. This proved her disdain

for writing was not as strong as her disdain for speaking. She

always began each reflection with a summary of that day's

lesson. She then would write a sentence or two on her

favorite part of the session. With the School Improvements and Moon Landing lessons, she actually stated her stance on the topic, with some evidence as to why she chose that view.

Unfortunately, Dorita never wrote about her least favorite parts of the lesson, so perhaps she

wrote the reflections with an aim to please the moderators. For the Freedom of Speech lesson

plan, she wrote how she knew she was not "talkative," yet stated she understood the point of the lesson was significant and that she still enjoyed learning about it. Her reflection suggested that,

despite her silence during the session, she still recognized the benefits of the broad topics

covered in the program.

## Case Study: Elizabeth

**Table 4.31 Grades for Elizabeth**

Subject	Pre— Term 1	During— Term 2	Post— Term 3
Science	C	A	B
US History	C	C	C
Language Arts	D	C	C
F/C Science	B	A	N/A
Health	N/A	N/A	B
Pre-Algebra	B	B	A
<b>Overall GPA</b>	<b>2.28</b>	<b>3.09</b>	<b>2.70</b>

**Table 4.32 MD Functional Test Results for Elizabeth**

Functional Test	Result
Math	P
Reading	P
Writing	F
Total Score	383

Elizabeth was one of a small group of students that had high attendance rates in the program. In fact, she never missed a single session. She also attended all field trips. Elizabeth’s race further distinguished her, since she was the only Caucasian in the program, and one of the few in the entire school. She had an extremely quiet and shy demeanor. Even when prompted to speak, she would politely smile and say, in a hushed voice, as minimal as possible. Occasionally, some of the other students in the program would gently ask her why she did not speak, but she would not give a solid

reply. Unlike other students in the program, Elizabeth did not associate with a circle of friends, though it never appeared that she was socially alienated from the others.

Elizabeth always carried around her textbooks, however, her grades were not stellar. She showed improvement in some of her classes during the program, especially science. Her overall GPA increased as well, only to drop again after the program. Her GSAI scores did not change for the “achievement” category, and increased in the “attitude” category.

**Table 4.33 Teacher Survey & GSAI Results for Elizabeth**

Subscale	Pre	Post
Teacher Survey -- Math	N/A	4
Teacher Survey -- Language Arts	N/A	N/A
GSAI -- Attitude	4.0	4.3
GSAI -- Achievement	4.8	4.8

From a moderator’s point of view, Elizabeth contributed minimally to the atmosphere of the sessions. There was one lesson plan where she visibly was excited above the levels she normally demonstrated. This lesson was the ethics of Animal Testing (January 21, 2003). She expressed bright curiosity when discussing genetic engineering, specifically in response to a picture showing a mouse genetically engineered to express an ear on its back. While almost all of her feedback comments each week were

generally positive and unenlightening, her feedback for animal testing was a definite “I think it is wrong.” This was the only time she wrote her stand on the contemporary issue discussed in that week’s lesson. At the parent’s reception in March, one of the moderators informally shared Elizabeth’s enthusiasm about the animal testing topic to her father. Her father added that she talked about the topic at home that night, after the lesson plan. This gave further evidence that she had attached to this science oriented issue. However, in her exit survey, she ranked the Animal Testing lesson as her least favorite, with the Moon Landing Conspiracy Theory as her most favorite. It is unknown what characteristics Elizabeth used to evaluate lesson plans. She wrote no suggestions to make the program better, and rated the program very highly. When questioned about the similarity of the program to school, she took middle ground, indicating with a score of 3 out of 5 that she was not in complete agreement (nor complete disagreement) that G.E.M.S. differed from her daily classes.

## **Chapter 5: Discussion**

### *Section Introduction*

In this section, the research team considers the specific effects of the G.E.M.S. program. Analysis of the program begins with an understanding of the importance of combining both qualitative and quantitative data when making conclusions. Since this study was predicated on human subjects in a traditionally observational research environment, there were numerous factors that limited correlations and trends observed for each quantitative and qualitative measure. Examination of the factors affecting the G.E.M.S. program also led to important conclusions about this program, which are presented in this section. Successful elements may have implications in the classrooms of day school teachers. Finally, the research team offers limits to our research and considerations for future researchers in this unique field.

### *Discussion of Measures*

Research has stated the need for a more holistic approach to the study of academic motivation in adolescents, in light of how relevant biological, psychological, and sociological factors play into students' attitudes towards achievement (e.g. Roeser and Galloway, 2002). In addition, research has shown that combining qualitative and quantitative data analysis methods can provide a more complete picture of the phenomenon being studied than either method on its own (Stetcher and Borko, 2002). Both methods have benefits and drawbacks. Quantitative analysis of survey data can point to larger patterns among participants in a sample and identify significant correlations between two variables. Quantitative data analysis alone, however, is insufficient to explain the context of the correlations found. Qualitative measures may be helpful in painting a fuller picture of the underlying forces behind these correlations, but the subjective method by which such data is collected and reported is vulnerable to researcher bias. By combining both qualitative and quantitative data analysis methods, our team was able to find a

pattern of increased academic motivation in our students. Our case studies and other qualitative measures were instrumental in helping us identify different factors of our program that may have been related to this increase in student motivation.

In addition, Stetcher and Borko (2002) also advocate the integration of data analysis as the study is being performed to allow researchers to better tailor their methodology to their research. On the basis of qualitative feedback from the students as to what motivated them to participate in discussion, our team tailored our lesson plans to fit students' interests and preferences. During the Gender Stereotypes lesson plan, for example, the original plan involved students reading a humorous column on gender roles. The column was later changed into a skit performed by the students to increase the amount of interaction during the session. These on-going revisions also helped our team track what methods seemed related to increases in student academic motivation.

Our team also attempted to track changes in student academic performance. Quantitative measures provided a solid framework to track changes in academic performance as well as motivation in the students. In addition, the moderators of the G.E.M.S. program interacted with all participants, each of whom shared many forms of discourse (written, verbal, non-verbal) during every session and field trip. The wealth of qualitative "information" generated through such interactions enabled analysis of student motivation and performance from different angles.

In this section, measures will first be discussed individually. The analysis of data collected from each of these measures will be subsequently discussed together. The measures include the GSAI, teacher surveys, GPA, post-session feedback, and case studies.

### **Student Surveys (GSAIs)**

The increase in the average scores for both the academic drive subscale and the attitudes

toward learning subscales of the GSAI were statistically significant, suggesting that students' academic motivation did increase at the conclusion of our program. However, interpretation must be approached with caution. There is reason to suggest the test instrument used in the experiment may not have been valid. The test was loosely based on a survey called the Aberdeen academic motivation scale constructed by N.J. Entwistle (1968) but there were significant differences between the original survey instrument and the final GSAI. Due to the nature and timing of our program, it was not possible to test the instrument prior to its implementation. The differences between the two surveys may have affected the test-retest validity and reliability. Furthermore, the original survey instrument the on which the GSAI was based was written in 1968 and designed for a British population of students. It is possible that the test questions were outdated or not applicable to our student population.

## **Teacher Surveys**

Because the majority of our student sample lacked complete sets of pre- and post-teacher surveys (due in part to our inability to ensure teacher response), we were unable to draw conclusions from the results. Therefore data from the teacher surveys were not included in our overall data analysis.

## **GPA**

There was no significant change in the GPA of the students, suggesting that participation in the G.E.M.S. program was not correlated with academic performance. The constraints of our data, however, made it difficult to uncover any relationship between participation in the G.E.M.S. program and GPA. Due to the small sample size, regression analysis was not possible. In addition, the many factors that interact to affect students' grades may have distorted any

relationship between our program and student academic performance. Furthermore, since the program was only eleven weeks long, and team moderators provided no direct academic assistance to students, it is reasonable to assume that G.E.M.S. program participation was not correlated to student academic performance.

### **Post-Session Feedback (one comment feedback)**

Written feedback from students had the potential to clearly show signs of increased motivation and academic drive. Unfortunately, the feedback comments in the G.E.M.S. program were originally intended as a means for monitoring student reactions to specific lesson topics as opposed to a significant form of data collection. Since many of our lesson plans discussed controversial issues, weekly comments were collected as a tool for the guidance counselor to gauge students' comfort with the lessons and were not initially intended as a qualitative data source. The prompts were therefore too open-ended and were often crammed in at the end of busy lesson plans. As a result, student responses were not geared towards measuring changes in motivation. The responses did, however, highlight positive and negative aspects of the program and were therefore incorporated into the case study analyses.

### **Case Studies**

A true qualitative analysis would interpret student changes in both the classroom and after-school, in addition to following up after the program's conclusion. While such analysis was impossible to achieve in the G.E.M.S. project, many worthwhile conclusions can still be discussed.

Many of the students were observed to be quiet in nature. By later sessions, these quiet

students were speaking out with alacrity and intelligence. Moderators took special notice of these cases, since they often were sudden in nature. Elizabeth, who spoke relatively infrequently, excitedly posed a question during the animal testing and genetic engineering lesson. Bobby and Carmen both rebutted arguments on their own volition during the war in Iraq lesson. Students' initiatives to share ideas out loud may have been indicators of increased motivation. Changes in other areas, such as grades, may have required longer durations of data collection for any actual changes to be evident.

Increased participation did not always mean increased verbal participation. Students such as Dorita, Carmen and Bobby exhibited increased participation through the avenues of writing and art although, unfortunately, the G.E.M.S. program had lesson plans that did not utilize these types of participation to a great extent. Gloria and Elizabeth were both quiet students, but their participation pointed to signs of positive change. For example, Elizabeth's sharing of her excitement about genetic engineering at home testified to her interest in the topic. Moderator and teacher observations, however, cannot gauge this change in motivation if it is mostly expressed outside of the school environment. It was important to understand that not all students are naturally comfortable with speaking in front of their fellow classmates, and students should not have to change inherent characteristics of their personality to demonstrate an increase in academic drive. Therefore, alternative forms or venues of expression must also be examined when studying academic drive, as these other factors may be related to academic motivation.

Activities which utilized personal reflections also elicited student participation. For example, Gloria's candid reflections on gangs and their effect on her siblings may not have had much use in a day school classroom. However, the opportunity to share her opinions and feelings and intelligently frame them in a discussion may have been related to a measured

increase in Gloria's attitude toward learning on the GSAI. Similar opportunities to share personal stories and thoughts could be beneficial for students like Gloria and therefore deserve consideration in teacher's curricula.

The type of students in the G.E.M.S. program lent evidence to its efficacy. Students such as Keisha and Coretta were average students and were generally uninterested in the beginning of the program. In fact, they would often talk while moderators spoke at the start of lessons. Both were markedly different by the end of the program. Keisha took a very vocal role in the moon landing and ethics lessons, while Coretta took a personal interest in college and college admission. Their stories attested to the success of the G.E.M.S. program in engaging its students. Realistically, the content of G.E.M.S. may not be the sole reason that Keisha and Coretta increased participation and showed interest. The development of moderator-student relationships, time spent with other students, the presence of external incentives such as food, or a combination of all these outside factors may have also been related to the observed increases in Keisha's and Coretta's participation and interest.

The case studies suggest that students such as Keisha and Coretta have the most to gain from a program like G.E.M.S., since they were not highly motivated to begin with, yet proved capable of being in the same league as students who were the highest achievers. For example, Carla and Alexandra were already high achieving, high participating student leaders. Attendance in a program like G.E.M.S. may have extended their knowledge, but may not have been related to any changes in their already stellar academic motivation. It is unclear how the presence of students like Carla and Alexandra may have affected students who possessed less academic distinction and/or motivation, such as Keisha, Coretta and Bobby, if indeed such an effect

existed. Future work will need to address the role of peer influence, especially the influence of higher achieving peers on lower achieving peers.

The environment of the program could have contributed to the occurrences of increased participation. The after-school setting was not strict, and many of the students had already established social relationships with each other from outside the program. Since students had already established various levels of friendship and popularity coming into the program, and it is clear from the case studies that students' social behaviors varied, social system dynamics may have affected the dynamics of the G.E.M.S. program. Furthermore, almost all of the participants were female. This could have highly complicated the qualitative progress observed. For example, were the girls more comfortable with each other in the G.E.M.S. program than they were in the classroom? Though studies on adolescent education have suggested that gender differences in self-expectancy and academic task values are relatively minor when other factors are controlled (e.g. Wigfield and Tonks, 2002), it remains unclear how the gender ratio of our students may have affected the social dynamics in the program. This gender ratio may have contributed to the increased participation observed in many of the female students throughout the program. The low male-to-female student ratio may also have affected male student behavior. For example, Ali frequently chose an empty table to sit by himself during the sessions. He participated in group discussion only occasionally, but spoke eloquently when he did. Ali's exuberance was unmistakable when he displayed his report card (with improved math grades) to a moderator at the end of the program. Would Ali have behaved differently in the presence of other male students? It is unclear how the lack of male counterparts may have affected the engagement of male participants in the program.

In addition, the students increasingly befriended the moderators as the weeks progressed. The mentor-student relationships that formed may have been a significant factor that affected attendance, participation, and perhaps even academic achievement. The students only saw the moderators once each week in an informal setting (no exams, many activities, numerous opportunities to speak out, fresh and interesting ethnic food) and may have therefore perceived them differently from their teachers and counselors. Regardless of the moderators' technical role as researchers, the moderators and the students did bond throughout the program, and this relationship may have affected student behavior and responses.

### *Academic Achievement*

Based on analysis of the measures individually and as a whole, the effects of the G.E.M.S. program are inconclusive. No significant changes in GPA were noted, and since the teacher data was incomplete, full analysis of the impact of the program on academic achievement in the classroom was impossible. In addition, although case study analysis did reveal individual instances of academic improvement and success, overall no significant trends in academic performance were noted. Considering the varied results of our measures, as well as incomplete data and instruments designed to measure academic achievement, results were inconclusive as to whether G.E.M.S. participation was correlated to academic achievement.

Due to the short nature of the program, no dramatic change in student's performance was expected. However, it is possible that the program affected behavioral characteristics in the classroom that could not be measured. For instance, students were required to critically read and analyze the "catalyst" of each lesson from many different types of media and vocalize their opinions. The opportunities for students to practice their reading comprehension and speaking

skills could conceivably affect behavior and/or academic performance in the classroom.

### *Academic Motivation*

Although analysis of the data revealed no relationship between the G.E.M.S. Program and academic achievement, analysis did reveal significant correlation with academic motivation. Case studies, the attitudes towards school and learning scale of the GSAI, and one comment feedback all pointed to increased academic motivation within the G.E.M.S. Program. Unfortunately, since the teacher surveys could not be used, changes in academic motivation outside the program were inconclusive although the GSAI suggested that increases occurred.

There are several reasons for the positive relationship between participation in the G.E.M.S. program and academic motivation. Possible explanations for this positive relationship include the discussion and contemporary issues-based format of the G.E.M.S. program, moderator-student relationships, creation of a unique environment, as well as external incentives. In reality, as a social research process, it is impossible to untangle what aspect of the program had the most effect and therefore each will be discussed in turn.

### *Discussion/Activities-based approach*

One cornerstone of the G.E.M.S. program was discussion. According to Hess (2001), it is valuable to practice and develop the critical thinking skills required of students in discussion. Every one of our lessons had some form of discussion. Students could gain skills in politely disapproving and transitioning from point to point in many of the later lessons, like the war debate, animal testing, and racial discrimination.

Often times, the "quiet" students would speak up because they felt they had something worthwhile to say and they knew that their opinions would be respected in the discussion. It is the facilitation of this collective expression by the students of the class that feeds on itself. This motivates others to speak up and also feel that their thoughts are important. By commending the free expression of students, the discussion format gave students motivation to take an active part in the learning process.

In addition to allowing free expression of students, the discussion focus of the G.E.M.S. program encouraged social interactions among students, and between students and moderators. As social goal theory suggests, it is probable that social goals, in this case, collective expression of the class, played a significant role in individual student motivation to participate in discussion and attend the program regularly (Kaplan and Maehr, 2002).

Aspects of another prominent theory, the self-determination theory, were incorporated using the discussion format and may also have contributed to the positive effects shown. Self-determination theory refers to development of confidence in students and the belief that they can complete assigned tasks. It has three main components: sense of competency, sense of relatedness to others, and a sense of autonomy (Anderman and Midgley, 1997). Although our program did not center on completing tasks, we did aim to strengthen the three components researchers claim supports self-determination.

The first component is competence. With opportunities to speak at will and without graded assignments, students were able to explore intellectually, free from the pressure of having to provide the "right" answer. This enabled the students to cover new intellectual ground which promoted their sense of competence, especially exploring new ideas. It is possible that student interest in learning increased, along with an increase in confidence. This may have been due to

the free exploration of topics combined with the importance other participants and moderators gave to shared ideas. Both of these factors could lead to a rise in academic motivation.

Our team also strengthened a second component, relatedness to others, by creating small group discussions. We encouraged students not only to respond to questions posed by the moderators, but also to respond to the comments made by their peers, as well as, pose questions themselves. As shown in the data analysis, the heavy emphasis on social interaction through discussion influenced even some of the more shy students. As students realized that intellectual probing and exploration was celebrated and not criticized, every student became engaged and participated in discussion.

The third component of self-determination theory is autonomy. We made a conscious effort to allow students to express themselves in different ways, not just verbally. Many of our activities were open-ended. We allowed students to decide whether they wanted to express their views through drawing, writing, theater, and even music. Although not traditionally considered in a discussion format, all of these different forms of discourse added to the richness of the discussion and had positive effects on students. Also, although competitive debate was promoted, no judgments were made on students' opinions. For instance, we never closed a session by stating one student's perspective was the "better" one. Instead, we maintained the autonomy of students and allowed them to develop and maintain their own perspectives. Students grappled with the issues related to the topic during the session, which enabled them to begin understanding their viewpoints. In many lessons, the contemporary issue was left open ended so that students could value the complexity of the topic at the end of the afternoon. Though our program constituted a group process where students worked together to expand on many diverging ideas and opinions, the end of each lesson left it up to the individual students to

come away with their own conclusions. This method not only allowed for students to develop a broad understanding of a topic but also to develop critical thinking skills often used in debating and critical reading.

To keep discussions focused and enhance critical thinking, we often employed the techniques of Socratic dialogue. Tredway (1995) had shown that there are numerous benefits to the use of Socratic dialogue in the classroom and that this method often targets the skills not taught in many American classrooms. First of all, Socratic dialogue has been shown to improve the critical thinking skills of students. Secondly, the requirements of active learning and interactive participation allows for better retention of material. Socratic dialogue also teaches "cooperative inquiry" in which students acquire knowledge together and build upon the answers of others. This was most evident in our program. Students spoke freely when they had something to offer to the discussion or in response to ideas put forth by other students. This was usually compounded and advanced by other students. Thus, the use of Socratic dialogue promoted cooperation in gaining knowledge in the class and could have aided in increasing collective motivation among the students.

Discussion alone however was not enough to maintain interest. It was effective in stimulating students up to a certain point; their attention and interest level varied afterwards depending on the topic being discussed. By modifying our lesson plans to include more activities and more structured discussions, we found that we could capture our students' interest and engagement for longer periods of time (e.g. Gender Stereotypes lesson). We also found that giving students some structure made it easier for them to construct their own thoughts.

Frequently, topics were introduced and some students had no opinions on them. However, these

students would listen to other students, participate with them in discussion and activities, and then develop their own understanding and perspective on the issue.

### *Contemporary Issues*

Data analysis revealed that group discussion about topics that were interesting and academic in nature played an extremely influential role in collectively motivating the students. Research has shown that student interest in a topic presented to them greatly affects whether or not they participate in classroom discussion (Hess, 2001). Thus, to engage and motivate the students, it was necessary that the topics we presented in each lesson capture the students' attention so that a lively discussion could arise and critical thinking skills required of students could be nurtured.

To intellectually stimulate the students, the G.E.M.S. program focused on contemporary issues. Each of our lessons centered on a unique contemporary issue based topic which we felt would be relevant and interesting to the students. The topics chosen for each lesson were on issues that the students probably encountered outside of school that were not only academic in nature, but also would generate interest in the students and possibly could be further probed outside the classroom.

Like many academic subject programs, we tried to foster an interest in non-traditional learning on topics that did not fit neatly into a school subject and that were not normally covered in the classroom. Because of our emphasis on expanding the academic learning environment beyond the classroom through enjoyable, constructive means, student motivation for learning was developed.

Most of the G.E.M.S. lessons were on controversial topics. According to the literature, only a third of middle school respondents used controversial current events in their classrooms (Haas and Laughlin, 2000). Therefore the use of controversial issues was a unique characteristic of our lesson plans. We were not as constrained with curriculum content as day teachers. Students felt compelled to present their opinions on unique, intellectually stimulating topics and would often build on the ideas of their peers when constructing an argument. This may have had a positive effect on maintaining student interest and stimulating discussion. It could also have had a negative effect on students in their day classes. The freedom and excitement of exploring such topics in G.E.M.S. may have demeaned the process of learning fundamental academic skills during the day. This “backfire” effect was not tracked on a regular basis in G.E.M.S. participants.

In addition, we tried to make our program relevant to all of the students across all genders, cultures and backgrounds. An example of this was evident in the different cultural foods we gave the students at the beginning of every session. Moreover, the diverse and universal array of topics we covered ensured that all students were included. Since students felt they could directly relate to the issues being discussed, students took an active role in learning and their academic motivation was increased.

### *Factors Affecting the G.E.M.S. Program*

#### **Incentives**

Other features unique to the G.E.M.S. program, such as bringing in a fresh ethnic food every week for the students, and taking students on a field trip to a popular radio station, may have been positive attributes in the success of the students. The provision of international food

each week, combined with a brief explanation of its ethnicity, captured the students' attention at the beginning of each session. This followed the model of the G.E.M.S. program, which blended an academic-type lesson with an enjoyable "catalyst" that attracted student attention.

As for the field trip to radio station WPGC-FM, the students were taken to a popular place within the context of their after-school program. The students were aware of the trip in advance, which likely gave an incentive to attending the after-school program in the weeks before. This may align with the traditionally held notion that if academics and experiential learning are combined, students will appreciate academics more. This relation was not unique to the G.E.M.S. program, and must be considered as a factor in increasing motivation during the program.

### **Moderator-Student Relationship**

Though our functions as moderators in the G.E.M.S. program was to lead the lessons, facilitate discussion and make observations, we also took an intrinsic role as mentors to the students in the program. This mentor-student relationship was extremely influential in the progress of the program.

The literature states that one characteristic of a good mentor is emotional intelligence (Salovey and Sluyter, 1997). As moderators, we tried to develop a friendly relationship with the students. We began each session by chatting with the students to get to know them better. By doing so, we became much more familiar with what the students' backgrounds were and we were more emotionally sensitive to their short-term and long-term situations.

Another factor that plays a role in the success of the moderator-student relationship is age difference (Levinson, 1976). The ideal age for a mentor should be half a generation older than

the students, which represented the age gap between students and team moderators. Students often commented on how comfortable they felt in the presence of the team moderators because we were able to understand very well what they were going through and had faced the same challenges of adolescence not too long ago.

One strong requirement of successful mentorship is relational mutuality, meaning that both parties, the mentor and the student, are affected positively from their shared relationship (Campbell-Whatley, 2001). We made it a point to display happiness and praise when any of our students did well in any regard. We also expressed thanks when the students would come in to greet us even if they could not attend that day, or when they gave us small gifts at the end each session. Considering that the students probably did realize that we gained a lot of satisfaction from our participation in the program through our actions and words, the moderator-student relationship contributed greatly to making learning in the G.E.M.S. program a more enjoyable process.

The G.E.M.S. program presented additional factors which may have contributed to the results of the program. For one, the students increasingly befriended the moderators as the weeks progressed. This caused a sort of collective mentorship model to develop, as the 8<sup>th</sup> graders began to embrace the moderators over time. Such a relationship may have been a noteworthy factor that drove attendance, participation, and even academic achievement. The students only saw the moderators once each week, and could easily bond with them due to a smaller age gap, compared to that of their regular teachers and counselors.

While our role as college moderators transcended this function, we felt it important to consider the significance of our role in our students' understanding of their future possibilities.

In a way, by talking to our students about college life and taking them on a tour of our campus, we were able to extend their vision as well as become positive role models for them.

The Social Capital Model was relevant to our program because the interactions the students had with moderators, guidance counselors and other authority figures as part of the G.E.M.S. program may have helped students develop positive social relationships and gain resources for educational information, advice, and encouragement. This may have positively affected their academic motivation and achievement.

Our research on adolescence and the transition from middle school to high school revealed that middle school reforms and intervention programs should allow for a more integrated curriculum, with more opportunity for continuous teacher-student relationships and smaller learning communities to enhance social network formation. These concepts were primary foci of the G.E.M.S. program and contributed significantly to the environment in which students participated.

### **Creation of a Unique Environment**

A third factor contributing to the success of the G.E.M.S. program is that it occurred in an after-school environment. This environment provided students with a break from the rigors, pressures, and stereotypes related to the classroom environment. In the G.E.M.S. program, students knew they were not going to be tested, receive grades, or be judged by teachers. The absence of this fear may have encouraged students to speak out more than they normally would during the school day. Since students did not have the pressures of taking exams and turning in homework assignments, they may have been more likely to speak out and enjoy the lessons presented by the moderators, rather than stressing over the possibility that the lessons may be on a test. This environment may have helped the G.E.M.S. team extend its purpose: to cultivate in

students the necessary skills to become motivated about learning *and* to possibly promote greater success in the classroom.

Incorporating previous research on goal theory, we tried to encourage students to form mastery goals as opposed to performance goals. Many teachers and schools tend to focus on the importance of receiving good grades and performing well compared to other students in the class. However, we wanted to motivate the students through stimulating topics and a genuine interest in the subject as opposed to a desire to get good grades. Student attendance and increased participation may have suggested our participants were intrinsically motivated. We found that our approach was effective given the school environment of our students. Middle school is commonly understood as a transition period into young adulthood, a time when students are full of new ideas and ways of understanding their world and how they fit in. However, middle school is often characterized as a time when students' school experiences do not provide sufficient outlets for them to express their thoughts and emotions. The absence of sufficient outlets in school for all types of abilities means that students have intellectual capacities that are not tapped and subsequently are not progressed. One of the goals of our program was to provide space for this excess capacity that is not fully utilized in the classroom. We did find, however, that it is important to find the right balance between allowing room for intellectual movement as well as providing a supportive and solid structure.

### *Implications for the Classroom*

Many schools do not have the resources to run and fund additional after-school programs after their Title I funding is exhausted, and students are often either unable to attend such programs or simply not interested. Therefore, it may be in the best interest of the school and the students to consider incorporating some features of our program in a classroom setting versus an

after-school setting. Elements of the G.E.M.S. program could be distilled into successful techniques that can motivate students. Based on analysis of the qualitative data collected from our students and the overall quantitative GSAI results, it appears that certain aspects of our program were greatly correlated with the observed increase in student motivation. Students may benefit from the inclusion of these aspects, which are described below, directly into the classroom. It remains to be seen whether incorporating certain elements of the G.E.M.S. program into the classroom may correlate with a similar increase in student motivation in a formal classroom setting. How these highlighted elements of the G.E.M.S. program may affect academic performance in the classroom setting is also unknown.

## **Discussion**

The discussion-based nature of our program was designed to give students a more active role in the class. This concept of active learning, having students grapple with topics and try to make connections, was evident in all lesson plans and a viable method among a group of students from a low-income, low-performing middle school.

We believe that adolescent students should be expected to think critically and voice their opinions, and it is therefore important to provide as many opportunities for them to do so as possible. Based on qualitative observations and student reports, it appears that students enjoy contributing to the lesson because it helps them feel more connected to the topic. Giving students opportunities to reflect personally is very powerful, as it helps them learn perspective and the value of experience. In addition, students benefit from hearing what other students have to say about a topic. Furthermore, involving students in a hands-on role during a lesson may help them keep their focus.

We encourage teachers to incorporate more discussion-based lesson plans into their curricula. An example of doing so was our war lesson plan, which received positive feedback from our students. Rather than simply lecturing on the pro and cons of war or having students read about them, we assigned students roles of actual people involved with the decision to go to war and had them share these views with the rest of the class as part of an in-class debate. Although courses such as English and history/social studies are especially conducive to discussions, even courses that do not lend themselves to discussion, such as mathematics, can be structured to incorporate student input as much as possible. We believe that this would be an innovative method of conveying information to students.

Although discussion is necessary to guide students to critically think and share ideas, the mixture of activity and discussion is also beneficial. The G.E.M.S. program featured various activities every week, and this element of surprise may have kept students interested. Similar tactics could be utilized more in the classroom, depending on the nature of the students, and what would be appropriate for them. In addition, using activities required a constant change in the environment of the G.E.M.S. program, such as using multiple classrooms, utilizing small groups scattered throughout a conventional classroom, and field trips. Because such activities and changes helped to keep student attention in the G.E.M.S. Program, students may benefit from increased incorporation of these activities into the classroom.

## **Topics Covered**

One goal of the G.E.M.S. program was to cover academic topics that would stimulate the students mentally and that would relate to their lives. Student feedback indicated that the program was successful in doing so for the most part. Qualitative data from the one-comment feedback loops and exit surveys reflected students' interest in the majority of the topics covered

during the G.E.M.S. program. At one point, a student reported continuing our discussion on a particular topic with her parents at home, which demonstrates the connection she felt to the topic. These results suggest possible implications inside the classroom. School curricula can be updated to include more topics that are relevant to students. We encourage the use of contemporary issues and current events as topics whenever possible in all academic subjects, as they concretely demonstrate how concepts covered in school come up in the “real world,” and more importantly, the students’ own day-to-day lives. An example of this in the G.E.M.S. program was the use of “popular music” as a gateway into discussing the topic of freedom of speech. Again, research on the use of contemporary issues in the classroom is limited, and we encourage researchers to further study its applicability in the classroom.

### *Limits to Our Research*

#### **Sample Selection**

A significant drawback to our study was the use of a very select sample of students. Once we had designed the G.E.M.S. curriculum and decided to implement the program in an area middle school, logistical considerations cornered us into making the program strictly after-school. Our initial desire to work with low-achieving students was met with a logistical obstacle: the most low-achieving students were already enrolled in after-school Title I-funded tutoring. The students who participated in our program were selected by a guidance counselor not based on low achievement, but based on which students she thought would benefit the most from the program. Her criteria included students who earned satisfactory grades but were failing state functional tests. In addition, the self-selection of only eleven regular attendees was rather disappointing. We may have contributed to this low number of students by self-selecting for

academically motivated students. Several of our students were unable to attend regularly due to other after-school commitments, such as chorus. Furthermore, students who chose to stay after the school day may have had difficulties finding ways of getting home. The eleven students who attended five or more sessions, however, may have been a more motivated sub-group of the original twenty-student sample. If this is true, our sample may be even less generalizable than we originally thought.

One strength of our sample was that it represented a very ethnically and culturally diverse group of students. However, our sample size did not adequately represent other differences within the student population. The students in our sample had no major behavioral issues, required no additional tutoring, and were sometimes very highly regarded by their teachers. In addition, our sample of students was predominantly female, thus under-representing the school's male student population.

Because of the in-depth nature of our research, we would not have been able to support a much larger sample size. However, future researchers who choose to further our research would benefit from recruiting a sample that was representative of the student population as a whole, despite any negative effects this may have in the success of such an after-school program. The select sample of students in this particular study definitely places a significant limit on the generalizability of our findings.

### **Measuring Student Academic Perceptions and Motivation**

Many researchers (e.g. Roeser & Galloway, 2002) have called for further studies to place an increasing emphasis on attaining first-person, subjective accounts by members of the school population, in order to gain a more holistic sense of the school environment. Accordingly, we

collected open-ended qualitative data from students on a regular basis. In order to complement the quantitative data collected for each student, we also created subjective assessments of the students based on our experiences together. The resulting case study analyses on each student provided significant insights into the intrapsychic, social, and cultural factors affecting each student's attitude toward academics, many of which would not have been apparent from the analysis of quantitative data collected from the GSAI and school records alone. Our experiences lend agreement to the other researchers' claims (Kaplan & Maehr, 2002) that a shift from correlational, quantitative research to exploratory, qualitative research would be beneficial in creating a far more accurate portrayal of both school environment and student intrapersonal dynamics.

Because we did not initially realize what a central role this data would play in our analyses, we collected a relatively limited amount of qualitative data from the students throughout the study. The use of a qualitative case study analysis, while successfully allowing us to attain more descriptive measures of student attitudes, was hampered by the inadequate data we initially collected.

Despite the challenges presented by our limited data set, we believe that an emphasis on qualitative data collection would be instrumental in helping future researchers gain a better understanding of academic motivation in adolescents. For this reason, we advocate the use of open-ended qualitative data collection from members of the school populations themselves in future educational research, either as an alternative or a complement to the use of surveys and other traditional quantitative data sources. Based on our own research, writing prompts should be well defined in order to obtain contemplative responses and should be designed to reduce the effects of social desirability. We would also recommend that future researchers collect a wider

variety of qualitative data, including one-on-one informal interviews; occasional group discussions centered on academic performance, and/or increased discussions with teachers. Doing so would allow researchers to gain a broader understanding of the various aspects of student perceptions on their academic experiences.

## **Longitudinal Approach**

Another drawback of our research was our inability to take a more longitudinal approach to studying the academic attitudes and motivation of adolescent students. Adolescence, many researchers have argued, is a link between childhood and adulthood, and therefore must be studied in the context of mental and physical development (Roeser & Galloway, 2002). Logistically, it was impossible for us to track our students back to their elementary school days or to follow them into high school, which they are currently experiencing. Thus, our research is but a window into the changing lives of the adolescents with whom we interacted. Considering the dimension of time would drastically increase research possibilities. For example, researchers could use a combination of observer/participant research strategies at different points in the students' maturation process to investigate where the attitudes students have during adolescence fit into the larger picture of their physical and cognitive development. It may be very beneficial to treat adolescence as a period influenced by childhood and hopes for adulthood rather than as a separate and independent stage.

## *Considerations for Future Research*

### **Participant vs. Observer Research**

We encourage future researchers to consider the use of a participant approach to educational research, rather than simply an observer approach. In most of the past educational research conducted (e.g. Alspaugh, 1988; Anderman & Midgley, 1996), researchers adopted the role of third-person objective observers, studying different aspects of the school experience without interfering in the school lives of students. While instrumental in allowing researchers to learn how adolescents naturally think and act in an academic environment, an observer method makes it difficult for researchers to acquire subjective data from adolescent students on their own perspectives. In order to incorporate qualitative data collection into our research methodology, we took the step of actually stepping *into* the school environment and interacting directly with the students, rather than be seen merely as enigmatic outsiders.

One of the most significant advantages to this research strategy was that students felt comfortable to share their views on various subjects, even unprompted. As a result, we were able to collect “insider” information on students’ attitudes toward learning and school by participating directly with students in their familiar school setting. In addition, we were also able to make our own assessments of students over an extended period as insiders, though these assessments are obviously limited by our own biases. The open line of communication and the comfortable atmosphere of trust made possible by this research method, however, doubtlessly allowed us to gain a broader understanding of the school as it is seen by its students, as well as student perceptions of academic performance. While the line between education researcher and teacher/mentor needs to be more clearly defined, we encourage future researchers to bring many

educational theories to life by participating directly with students in subsequent studies and exploring the consequences of implementing new classroom methods.

### **Creating a Flexible Environment**

Another notable aspect of our research methodology was the fact that we created an environment for the students that responded to students' needs or interests over time. In order to do so, we kept the structure of our program flexible by adjusting future sessions based on both subjective student and moderator feedback. By tailoring the program to match the needs of our particular students (e.g. more interactive activities, opportunities to take charge), we were able to create a comfortable atmosphere in which students felt free to share their thoughts and feelings with program moderators. In selecting this strategy, we hoped to mold an environment that would foster open communication and therefore facilitate effective qualitative data collection. Similar strategies may also be successful in gaining a broader understanding of academic motivation in adolescent students in future research by aiding the process of collecting subjective, qualitative data from members of the school population.

### **Age Gap Between Students and Moderators**

In assessing the utility of participant research in future studies, it is important to consider the age gap between researchers and students. Though this was not a focal point of our research, we cannot ignore the relatively small age gap between the researchers and the students in our study. While insiders in the school, we were for the most part clearly seen as separate from their teachers, if only by our age difference.

Some researchers (Eccles et al., 1991) have proposed that a central need of adolescents is to form relationships with non-parental adult mentors, a need which often cannot be met in a

large middle school environment. It is possible that the students' willingness to share information and personal views with us was not merely due to their assurance that we were insiders of the school environment, but also due to the 6 or 7-year age gap between the researchers and the students. Our age may have allowed us to more easily connect with our students and create an atmosphere of openness and trust, which contributed immensely to the success of our participant strategy. We believe it is important not to neglect the importance of the age gaps between researchers and adolescents, especially in the context of more participant-based research. We therefore encourage researchers utilizing a participant methodology to explore the significance of researcher-student age gap at different stages of adolescence.

### *Conclusion*

The G.E.M.S. project represents a pilot study in the field of adolescent motivation in many ways. The project yields several implications regarding academic motivation and performance in adolescents. The student-centered approaches characterized by the G.E.M.S. program appear to be linked to increases in student motivation, especially the use of a discussion-based format. Additional factors, such as moderator-student relationships and the social dynamics of the participants, also appear to be closely related to increases in academic motivation. It remains unclear what link might exist between participation in a G.E.M.S.-like activity and student motivation and performance in the classroom. We observed, however, several students who performed poorly on standardized tests, who were able to perform comparably during discussions with some of the highest-achieving students in our sample. The implications regarding expectancy and student motivation provided by these surprising observations are unclear. We believe that it would be very worthwhile to study this relationship,

especially in the current context of the “No Child Left Behind” policy, which creates a strong school and teacher preferences for high-performing students over low-performing students.

The G.E.M.S. project provides several other suggestions for future research in the area of adolescent education. The project demonstrates many of the benefits of utilizing a more participant-based research methodology, such as increased contact with members of the school population, the ability to obtain subjective accounts, and the opportunities to interact with students in their normal school environment. Further studies may also benefit from the utilization of a flexible, exploration-focused approach, which in our case, revealed several outside factors relating to academic motivation and performance that we had not previously considered. Finally, our research testifies to the potential of combining quantitative with qualitative data collection and analysis, particularly through the use of individual case studies. Because the two forms of data collection complement each other, data-analysis strategies combining both types of data collection will yield much more holistic assessments of adolescent students in school. It is our hope that these implications will enhance the already-broad range of research possibilities and allow more light to be shed on the topic of adolescent education.

## **Works Cited**

- Alexander, K. L., Dauber, S. L., & Entwisle, D. R. (1996). Tracking and transitions through the middle grades: Channeling educational trajectories. *Sociology of Education*, 69, 290-307.
- Alsbaugh, J. W. (1998). Achievement loss associated with the transition to middle school and high school. *The Journal of Educational Research*, 92(1), 20-25.
- Ames, C. (1992). Classrooms: Goals, structures and student motivation. *Journal of Educational Psychology*, 84(3), 262-271.
- Anderman, E. M. & Maehr, M. L. (1999). Declining motivation after the transition to middle school: Schools can make a difference. *Journal of Research and Development in Education*, 32, 131-147.
- Anderman, E. M., & Midgley, C. (1996, March). *Changes in achievement goal orientations after the transition to middle school*. Paper presented at the biennial meeting of the Society for Research on Adolescence, Boston, MA.
- Anderman, E. M. & Midgley, C. (2002). Assessing the Motivational Goal Orientations of International English for Academic Purposes (EAP) Students [Electronic version]. *Current Research in Social Psychology*, 7(15). Retrieved October 18, 2003, from Center for Study of Group Processes, University of Iowa.
- Anderman, L. H., & Midgley, C. (1997). Motivation and middle school students. In J. L. Irvin (Ed.), *What current research says to the middle level practitioner* (pp. 41-48). Columbus, OH: National Middle School Association.
- Bowles, S. & Gintis, H. (1976). *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life*. New York, NY: Basic Books.
- Broh, B. (2002). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education*, 75, 69-91.
- Campbell, J. R., Hombo, C. M., & Mazzeo, J. (2000). *NAEP 1999 Trends in Academic Progress: Three Decades of Student Performance*. National Center for Education Statistics, U.S. Department of Education, Office of Educational Research and Improvement.
- Chiu, L. H. (1997). Development and validation of the School Achievement Motivation Rating Scale. *Educational & Psychological Measurement*, 57(2), 292-305.
- Chung, A. (2000). *Working for Children and Families: Safe and Smart After-School Programs*. U.S. Departments of Education and Justice.
- Debacker, T. K. and Nelson, R. M. (2000). Motivation to learn science: Differences related to gender, class type, and ability. *Journal of Education Research*, 93(4), 245-255.

- Dowson, M., & McInerney, D. M. (2001). Psychological parameters of students' social and work avoidance goals: A qualitative investigation. *Journal of Educational Psychology*, 93(1), 35-42.
- Eccles, J. S., Lord, S., & Midgley, C. (1991). What are we doing to early adolescents? The impact of educational contexts on early adolescents. *American Journal of Education*, 99(4), 521-542.
- Elder, L. & Paul, R. (1998). The role of Socratic questioning in thinking, teaching, and... *Clearing House*, 71(5), 297-301.
- Entwistle, N. J. (1968). Academic motivation and school attainment. *British Journal of Educational Psychology*, 38(2), 181-188.
- Feuerstein, A. (2000). School characteristics and parent involvement: Influences on participation in children's schools. *The Journal of Educational Research*, 94, 29-39.
- Fields, J., Smith, K., Bass, L., & Lugaila, T. (2001). A child's day: Home school and play (selected indicators of child well-being). *Current Population Report*. U.S. Department of Commerce, Economic and Statistics Actions, U.S. Census Bureaus, 70-68.
- Fulk, B. M. (2003). Concerns about ninth grade students' poor academic performance: One school's action plan. *American Secondary Education*, 31(2), 8-28.
- Gerber, S. (1996). Extracurricular activities and academic achievement. *Journal of Research and Development in Education*, 20(1), 42-50.
- Haas, M., & Laughlin, M.A. (2000). Teaching current events: Its status in social studies today [Electronic version]. Annual Meeting of the American Educational Research Association, New Orleans, LA (ERIC Document Reproduction Service No. ED440899).
- Hagedorn, M., Montaquila, J., Nolin, M.J., Kim, K., Kleiner, B., Waits, T., Chapman, C., Chandler K. (2003). *National Household Education Surveys of 2001: Data File User's Manual, Volume III, Before- and After-School Programs and Activities Survey*, U.S. Department of Education, National Center for Statistics.
- Hess, D. (2001). *Teaching students to discuss controversial public issues*. Washington DC: Office of Educational Research and Development. (ERIC Document Reproduction Service No. ED 457106)
- Hicks, C., & Hoffman, D. J. (2000). Mentoring school-age children: Relationship development in community-based and school-based programs. *Spectrum: Journal of State Government*, 73(3), 17-18.
- Hobbs, R. (1999). The uses (and misuses) of mass media resources in secondary schools. (ERIC Document Reproduction Service No. ED439452).

- Hwang, Y. S., Echols, C., & Vrongistinos, K. (2002). Multidimensional academic motivation of high achieving African American students. *College Student Journal*, 36(4), 544-554.
- Jacobson, L. (2003). When schools stay open late: The national evaluation of the 21<sup>st</sup> century learning centers program, first year findings. U.S. Department of Education, Office of the Under Secretary.
- Jongsma, K. S. (1991). Critical literacy. *Reading Teacher*, 44(7), 518-519.
- Kaplan, A. and Maehr, M. (2002). Adolescents' achievement goals: Situating motivation in sociocultural contexts. In F. Pajares & T. Urdan (Eds.), *Academic Motivation of Adolescents* (pp. 125-167). Greenwich, CT: Information Age Publishing.
- Levin-Epstein (2003). After school programs play key role in school safety efforts. *Inside School Safety: Effective Management Strategies for School Administrators*, 7(10), 1-4.
- Levinson, D.J. et al. (1976). Periods in the adult development of men: Ages 18-45. *Counseling Psychologist*, 6, 21-25.
- Lewis, O. (1966). *The Culture of Poverty*. San Francisco, CA: W.H. Freeman.
- Maehr, M. L. & Midgley, C. (1991). Restructuring the school environment to enhance student motivation and learning. *American Educational Research Association Annual Meeting*, 2-18.
- McDaniel, T. R. (1998). Response to Elder and Paul: The role of Socratic questioning in thinking, teaching, and... *Clearing House*, 71(5), 301.
- McLaughlin, H. J., Watts, C., & Beard, M. (2000). Just because it's happening doesn't mean it's working: Using action research to improve practice in middle schools. *Phi Delta Kappan*, 82, 284-90.
- Nichols, J. D. and Utesch, W. E. (1998). An alternative learning program: Effects on student motivation and self-esteem. *Journal of Educational Research*, 91(5), 272-78.
- Nussbaum, M. E. (2002). The process of becoming a participant in small-group critical discussions: A case study. *Journal of Adolescent and Adult Literacy*, 45, 488-498.
- Ogbu, J. (1991). *Minority Status and Schooling: A Comparative Study of Immigrant and Involuntary Minorities*. New York, NY: Garland.
- Philip, K. & Hendry, L. B. (1996). Young People and Mentoring: Towards a Typology? *Journal of Adolescence*, 19, 189-201.

- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24(1), 1-24
- Reed, D. F. & Rossi, J. A. (2000). "My Three Wishes": Hopes, aspirations, and concerns of middle school students. *The Clearing House*, 73, 141-144.
- Roeser, R. and Galloway, M. (2002). Studying motivation to learn during early adolescence: A holistic perspective. In F. Pajares & T. Urdan (Eds.), *Academic Motivation of Adolescents* (pp. 331-372). Greenwich, CT: Information Age Publishing.
- Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development*, 72, 1135-1150.
- Salovey, P., & Sluyter, D. (Eds.). (1997). *Emotional development and emotional intelligence: Educational implications*. New York: Basic Books.
- Scott-Little, C., Hamann, M., & Jurs, S. (2002). Evaluations of after-school programs: A meta evaluation of methodologies and narrative syntheses of findings. *American Journal of Evaluation*, 23(4), 387-419.
- Selden, S. (1999). *Inheriting Shame: The Story of the Eugenics & Racism in America*. New York: Teachers College Press.
- Smith, K. (2000). Who's minding the kids? Child care arrangement. *Current Population Report*. U.S. Department of Commerce, Economic and Statistics Actions, U.S. Census Bureau. Household Economic Studies, 70.
- Solorzano, D. (1998). *Sociology of Education: Emerging Perspectives*. Albany, NY: State Univ. of N.Y. Press.
- Stecher, B. and Borko, H. (2002). Integrating findings from surveys and case studies: Examples from a study of standards-based educational reform. *Journal of Education Policy*, 17(5), 547-570.
- Tredway, L. (1995). Socratic seminars: Engaging students in intellectual discourse. *Educational Leadership*. Retrieved December 10, 2003, from <http://www.middleweb.com/Socratic.html>.
- Tucker, C. M., Zayco, R. A., & Herman, K. C. (2002). Teacher and child variables as predictors of academic engagement among low-income African American children. *Psychology in the Schools*, 39(4), 477-488.
- U.S. Conference of Mayors. (2003, June). *After school programs in cities across the United States survey report*. Retrieved November 14, 2003, from [http://www.usmayors.org/uscm/uscm\\_projects\\_services/education/afterschoolreport03.pdf](http://www.usmayors.org/uscm/uscm_projects_services/education/afterschoolreport03.pdf) f293.7330

- Urduan, T. C., & Maehr, M. L. (1995). Beyond a two-goal theory of motivation and achievement: A case for social goals. *Review of educational research, 65*(3), 213-243.
- Voelkl, K. (1997). Identification with school. *American Journal of Education, 105*, 294-319.
- Wigfield, A., Eccles, J., Mac Iver, D., Reuman, D., & Midgley, C. (1991). Transitions during early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. *Developmental Psychology, 27*(4), 552-565.
- Wigfield, A. and Tonks, S. (2002). Adolescents' expectancies for success and achievement task values during the middle and high school years. In F. Pajares & T. Urduan (Eds.), *Academic Motivation of Adolescents* (pp. 53-82). Greenwich, CT: Information Age Publishing.
- Wirt, J. & Livingston, A. (2002). *Condition of education, 2002 in brief*. National Center for Education Statistics, Institute of Education Science, U.S. Dept of Education.
- Wishart, J. and Blease D. (1999). Theories underlying perceived changes in teaching and learning after installing a computer network in a secondary school [Electronic version]. *British Journal of Education Technology, 30*(1). Retrieved November 13, 2003, from EBSCO database.
- Yates, L. (2000). Urban After-School Programs: Evaluations and Recommendations. ERIC/CUE Digest, Number 140. *ERIC Clearinghouse on Urban Education, Institute for Urban and Minority Education*.