

A Study to Determine the Impact of a Precollege Intervention on Early Adolescent Aspiration and Motivation for College in West Virginia

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(ABSTRACT)

The impact of a precollege intervention, the Junior High Washington Gateway Academy (JHWGA), on early adolescent aspiration and motivation for a college education was measured. JHWGA provided an intensive week of activities in career planning, self-concept improvement, and study skills. Specific research questions were: a) did participation in this program increase career readiness, self-concept, productive study habits, aspiration, and motivation to prepare for college? b) what percent of the variance in aspiration to and motivation for college in early adolescents could be explained by career readiness, self-esteem, and study habits?

Using survey research, a questionnaire was developed with five scales (career readiness, self-esteem, study habits, aspiration, and motivation). Questionnaires were sent to 301 West Virginia students in Grade 8 who had been JHWGA applicants in 1996. The 265 (88%) who responded were divided into two groups: a participant group consisting of 104 students who participated in the 1996 program and a comparison group consisting of 161 students who did not attend the 1996 program.

T-tests and chi square tests revealed no significant differences between groups. Multiple regressions were performed for the aspiration and motivation variables using career readiness, self-concept, and study scales as independent variables. An assumption of normal variance was found to be violated because subjects favored endpoints on Likert scale causing data to be skewed. Career readiness, self-concept, and study habits (using transformation and excluding several outliers) were found to explain 59 percent of the variance in the aspiration model. However, two regressors (study habits and career readiness) were discovered to be highly correlated ($r = .66$). Only one regressor for the motivation model (study habits) was found to be significant.

Data results may have been affected by group differences, group selection, and lack of normal distribution. The two groups being measured were found to be unevenly matched with JHWGA participants having significantly lower grades than the comparison group. Based on this information and the low variance in data collected, results are believed to have been inconclusive regarding the effectiveness of JHWGA. Recommendations for further research are included.

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Chapter 1

Introduction

In West Virginia, where the going-to-college rate for recently graduated high school students appears to be lower than the national average (Smith et al., 1996), there is a concern that some children with the potential for earning a college education are not developing aspiration to and preparation for college at an early age. This lack of aspiration is felt to be the result of living in a poor state where per capita income status ranks 50th in the nation (Horner, 1994); where the level of education for the general population is among the lowest in the nation (Ridge and Valley Researchers, 1990); where a rural and mountainous geography inhibits access to institutions of higher education, especially community colleges; and where resources to help develop aspiration to and preparation for a college education may be nonexistent. Although it is believed that aspiration for college begins in early adolescence (Stage & Hossler, 1988; Trent, 1970; Angelo, 1993; Nora & Cabrera, 1993; Hossler, 1985; Hossler & Gallagher, 1987) and that Grade 8 is a critical time for the development of aspiration (Ingels, 1990; Nora & Cabrera, 1993; Rock, 1994; Mau, 1995), there appears to be few programs in West Virginia that motivate early adolescents, other than those with exceptional ability, to consider the possibility for a college education.

The purpose of this study was to examine the impact of an innovative precollege intervention program in West Virginia directed at early adolescents. Funded by the West Virginia Legislature and coordinated jointly by a community and technical college and a four-year college, the Junior High Washington Gateway Academy (JHWGA) is designed to encourage career exploration, building of self-esteem, improvement in academic study skills, and development of aspiration to and motivation for a college education. Of particular interest in this study was the program's effect on participant career readiness, self-perception, and study habits, and how these variables influence aspiration and motivation to pursue college.

Background to the Problem

The number of college educated West Virginians is quite low compared to the national average (U. S. Census, 1990; Horner, 1994). It is suspected that many West Virginians capable of attending college do not consider higher education as a viable career option, especially those living in rural areas (Lyson, 1977 & Franklin, 1985). These suspicions were corroborated by a study of

West Virginia high schools in 1989 conducted by the West Virginia Education Fund and Ridge and Valley Researchers. The Fund reported that interest to pursue a college education among high school students throughout the state was only 42 percent with some remote regions indicating less than 15 percent (Ridge & Valley Researchers, 1990). With the national average for college attendance at 62 percent for recent high school graduates (Snyder & Hoffman, 1995), many of West Virginia's political leaders were alarmed and felt interventions were needed to cultivate more interest in higher education at an early age. To help develop aspiration for college early and eventually increase the state's going-college-rate, the West Virginia Legislature funded the JHWGA program in 1991.

The decision to attend college is thought to occur during a phase known as predisposition (Angelo, 1993; Schmitt, 1991; Hossler, Braxton, & Coopersmith, 1989). Around the ages of 13 to 15, one begins to value the need for a college education and develops aspiration as one progresses through the teenage years. Aspiration to and motivation for a college education is felt to grow as one encounters more positive experiences through success in the classroom, exploration of interest, and positive self-esteem. Although middle school (Grade 8) is considered to be a critical time for college planning, research has shown that many students initiate little discussion with their parents, teachers, guidance personnel or others regarding academic preparation (high school courses) needed to attend college (Ingels, 1990). Other factors thought to increase or decrease the likelihood for college include ability/achievement, academic track, parental levels of education, parental encouragement, and student aspiration (Hossler, Braxton, & Coopersmith, 1989). Others feel that underachievement (McCall, Evahn, & Kratzer, 1992; Burkheimer & Jaffe, 1981) and living in a rural community (Franklin, 1985 & Lyson, 1977) are particularly damaging to college aspiration.

Though a precollege intervention can do little to change environmental and economic conditions, many of the negative factors to college planning can be countered by what Shill (1987) considers precollege counseling programs; counseling that develops aspiration and sustains motivation, promotes effective study skills, differentiates between programs and courses, and uses guidance resources. Precollege intervention programs that promote quality experiences, understanding of the benefits of a college education, and relevancy for education in general may be very helpful to an early adolescent in need of direction. An on-campus experience at an institution of higher education that enables one to experience higher education first-hand, helps one to plan future coursework and careers, and teaches one how to use basic study skills to increase academic

performance could help to increase one's chances for success and positive self-esteem.

Although there is hesitation by some concerning a direct link between precollege interventions and college attendance (Angelo, 1993; Branch, 1993; Burkheimer & Graham, 1979), participation in precollege programs, such as JHWGA, may be the only opportunity for many less fortunate adolescents to break out of their socioeconomic cycles that perpetuate low aspiration and self-esteem. The concept for JHWGA was built upon career planning, increasing positive self-concept, and improving academic performance.

Career Planning. A major developmental task in early adolescence is to achieve a sense of "Who am I?" and a sense of "Who will I become?" The latter question is often answered in terms of a future occupation (Gerler, 1991). Because many early adolescents are vocationally immature and have little knowledge for planning high school courses, many eighth graders are incapable of assessing future plans (Mau, 1995; Rock, 1994; Lee, 1993). According to Super (1974), to become vocationally mature, a child must attain a sense of career maturity/readiness, coping behavior that enables one to broaden his/her understanding of the many possibilities and choices in life. Career readiness is knowing how to handle many preliminary choices and keeping options open through a planful approach (Super, 1960). Career readiness at early adolescence is the ability to understand, translate, and test one's self-concept into occupational terms and occupational realities (Super, 1957).

Self-Concept. There is widespread belief that improvements in self-concept lead to better adjustment and achievement in school (Snow & Jackson, 1992). According to Snow & Jackson (1992), early adolescence is a particularly critical time in the development of one's self-concept (one's perception of self) and self-esteem (one's perceived worth of self). Because many early adolescents naturally engage in feelings of inferiority and low self-confidence (Peppard & Rottier, 1990; Ingels, 1990), interventions are needed that help early adolescents acquire "durable self-esteem" (Carnegie Council on Adolescent Development, 1989).

Study Skills and Habits. The likelihood of quality academic experiences can play a major influence in the development of aspiration during the predisposition phase (Hossler, 1985). The middle school years, unfortunately, are not universally known to be a positive time for many adolescents (Wigfield & Eccles, 1994b; Carnegie Council, 1989). For some early adolescents, this is a time of disinterest in school and academic work (Natalie, 1995; Butler-Por, 1987) and inability

to protect the intent to learn from competing interests or other distractions (Trawick, 1992). Students with poor study habits do not perform well academically, have low self-concept, and consequently see little benefit to academically perform at their true ability (Trawick, 1992). An essential component of JHWGA was to counter this attitude by providing quality and successful experiences in the classroom. It is believed that improvement in basic academic skills can increase the opportunity for achievement and quality school experiences (Natalie, 1995) and with this success, raise positive self-concept and attitudes toward school (Kallman, 1991).

Motivation and Aspiration. Finally, it was hypothesized that the opportunity to explore careers, to have positive experiences that instill self-worth, and to attain success in the classroom will enable an individual to develop what Schmitt (1991) terms as aspiration, one's hope about the future. As values, aspirations must be freely chosen and acted upon in order for them to come to fruition. The drive needed to maintain aspiration is motivation (Trent, 1970). Because motivation is thought to be contingent upon prior positive consequences (Atkinson & Raynor, 1978; Raynor, 1978), one must have positive outcomes that help to maintain interest and create building blocks for aspiration. To increase the opportunity for positive encounters, one must attain an understanding of self in relationship to achievement of long-term career goals, have a career plan with goals that are obtainable, and acquire study habits and skills that enable one to maximize the opportunity for success in an academic environment (Raynor, 1978). The frequency of positive encounters sustains the development of positive self-concept, which is fundamental to maintaining effort and commitment toward a career path.

JHWGA, A Precollege Intervention Program.

In 1991, members of the West Virginia Legislature provided funding for the Junior High Washington Gateway Academy (JHWGA) to increase interest in a college education within the state. Coordinated by Shepherd College, JHWGA is directed at middle school students during the summer between the seventh and eighth grade. Candidates for the program are generally students with grades that fall between average to good but may be lacking in motivation, self-esteem, and an interest to attend college. The goal of JHWGA program is to introduce participants to a college environment and career planning. The college environment emulates actual college classroom experiences in subjects such as career planning, mathematics, science, study skills, and social studies. Hands-on classroom experiences are complimented with related educational trips to nearby Washington, DC, Baltimore, Md, and local historical areas.

At the conclusion of the program, participants return home and prepare for school in the fall with some understanding of what a college education could do for them and how to prepare themselves for college. The intervention's objectives are that each student, as a result of participation in JHWGA, will be able to: (a) develop and understand the need for early college planning; (b) explore interests and understand how these interests relate to real world careers; (c) understand the relevancy of subjects such as mathematics, science, and social studies; (d) obtain basic study skills to improve grades in general; (e) obtain an appreciation of knowledge and reading; (f) understand the need for writing ability and have the opportunity to practice writing skills; (g) reduce fears and uncertainty about the future and strengthen resourcefulness and self-reliance; (h) learn about West Virginia and its relationship to the nation's capital; (i) develop pride in being a West Virginian; (j) learn about citizenship and how the government works; (k) be exposed to a multicultural society; (l) learn how to socialize and communicate with others; (m) become aware of West Virginia's role in U. S. history; (n) visit the metropolitan region and the Eastern Panhandle of West Virginia; and (o) discover new horizons and new ways in which to think.

Each summer since 1991, an average of 100 students going into Grade 8 have participated in JHWGA. The program uses an intense, one-week schedule (Appendix A) that runs from breakfast to bedtime. Little idle time is provided. On arrival, participants are assigned to an undergraduate counselor and a group of their own peers. Throughout the week, participants attend classes using a rotating schedule, travel to Washington, D.C. and Baltimore, Md., and visit local historical sites.

The purpose of the classroom component is to motivate students to learn collaboratively with others. Working together, JHWGA participants learn fundamental study skills, develop a sense of relevancy for their school work, and develop a "can-do" attitude for success. In a social studies lesson, for example, that deals with the Civil War and how West Virginians played a significant role in American history, participants in a group complete an archival research project on one West Virginia soldier who fought and died at nearby Antietam battlefield. Each group is required to complete a biographical story of this soldier, and during the battlefield visit, lead a discussion of the soldier's life at his gravesite. In the process, participants learn how to use a computerized database and library records of Civil War Union soldiers. With this activity each participant is an active team player in the successful completion of a research project. The same process is used in subjects such as mathematics, science, study habits, and career planning.

In career planning, participants are able to assess their interests, abilities, decision-making skills and relationship to the real world through an interactive software computer program called the System for Interactive Guidance Information or SIGI PLUS (Educational Testing Service, 1985). Students are guided through SIGI PLUS by staff members from the Shepherd College Career Development Center. SIGI PLUS covers several major aspects in career decisionmaking and planning through a carefully constructed system of separate but interrelated sections. During JHWGA, participants work through three of nine sections. They are introduced to: (a) Self-Assessment, where one can examine work related values, interest areas, and work activities; (b) Search, which enables one to compile a personalized list of occupational alternatives; and (c) Information, that enables one to ask what skills, possibilities for advancements, potential income, national employment outlook, and educational requirements are involved in various career fields (Educational Testing Service, 1985).

Problem Statement

Though many believe precollege interventions are very successful with students at the secondary school level (Burkheimer & Graham, 1979; Faulcon, 1994; Okuwa, 1994) there is little knowledge regarding the effect of these programs with early adolescents, especially with children from a rural and economically depressed state. Because subjects in this study are recommended by their schools as having the potential for college, intellectual ability is assumed. Achievement or the potential for underachievement, however, is a concern. West Virginia's low college-entry rate seems to suggest that many residents, capable of college, are not developing a desire to further their education. Given these conditions, the problem for this study is to assess whether JHWGA with its emphasis on self-concept, career readiness, and study habits has impacted significantly on participant aspiration and motivation to pursue a college education.

Research Questions

1. How do early adolescents who have participated in the JHWGA program compare with similar students who have not participated in the program according to career readiness, self-esteem, study habits, aspiration and motivation toward pursuing a college degree?
2. How much of the variation in aspiration and motivation toward pursuing a college degree is explained by the differences in study habits, self-esteem, and career readiness in early

adolescence?

Purpose of the Study

The purpose of this study is to examine the impact of a precollege intervention program on aspiration and motivation to pursue a college education in early adolescence. The intervention is directed at a selected group of early adolescents in West Virginia who are about to enter the eighth grade. Of particular interest is the intervention's focus on career readiness, self-awareness, and study habits and the influence of these variables on participant aspiration and motivation to pursue a college education.

JHWGA is one of a few state-supported precollege intervention programs that involves a community college in the state of West Virginia. Because the intervention is directed at promoting college attendance statewide, the model may be adaptable to other regions of the state. Therefore, by determining the extent to which this program impacts on aspiration and motivation, state planners may have a prototype for precollege intervention that can be coordinated by the community college system throughout West Virginia. Statewide expansion could also lead to more precollege collaboration between institutions of higher education and public school systems.

Definition of Terms

The following terms are used in this study:

Ability - the potential and capacity to learn. Bricklin and Bricklin (1967) see ability as one's capacity to function in a variety of tasks.

Academic performance - the level of performance or achievement as indicated by grades and success in school.

Aspiration - a goal desired or wanted and the value placed on that goal. Aspiration in this study is concerned with the desire and value for a college education.

Career readiness - a level of maturity to acquire specific information on career options; to identify interests, values, and aptitudes; to use this information in career planning and course

selection; and to change plans when pertinent information is presented. Career readiness/maturity is thought to be the interaction between an individual's resources (what he brings to his encounter with reality) and reality demands (Crites, 1971). Winecoff and Lyday (1978) believe that reasonable career maturity for middle school adolescents should involve the understanding of basic work values and attitudes including: an understanding of consumer economics; an awareness of, knowledge about, and some initial experiences with several job clusters; an awareness of personal interests and abilities; higher levels of achievement in basic academic skills; a tentative selection of preferred job clusters; and a sense of civic responsibility.

Early adolescence - a stage after childhood and prior to adolescence. Ages of early adolescence are considered to be between 10 and 15 (Carnegie Council on Adolescent Development, 1989).

JHWGA - an acronym used for the Junior High Washington Gateway Academy, a precollege intervention program.

Postsecondary education planning - the process of developing and implementing an educational plan of study that will lead to postsecondary education.

Precollege intervention - a program designed for students in grades eight through twelve. Precollege interventions provide academic foundation skills, counseling, self-concept building and career planning, which are needed to adequately plan for college. Interventions are offered after school and during the summer break on many college/university campuses.

Middle/junior high school - a bridge that provides transition between elementary and secondary school. In West Virginia, a junior high includes grades 7 through 9 while a middle school are grades 6 through 8. Although West Virginia uses both middle and junior high school structures throughout the state, there are a few rural school systems that use a high school with Grades 7 through 12.

Motivation - an intervening variable which arouses, maintains, and channels behavior toward a goal (Chaplin, 1975).

Predisposition stage - the first phase in the college choice theory where one develops an aspiration, desire, or value for going to college. The other two phases are search and choice (Angelo, 1993; Nora & Cabrera, 1993, Schmitt, 1991; Stage & Hossler, 1988; Hossler & Gallagher, 1987).

Self-esteem/self-concept - a multidimensional construct related to self-worth, value, and satisfaction. In distinguishing self-concept from self-esteem, self-concept is an individual's self-knowledge ("I can read well"), whereas self-esteem is an individual's perceived sense of self-worth and self-respect that has an affective quality associated with it ("I feel good about how I look") (Snow & Jackson, 1992).

SIGI PLUS - a comprehensive, interactive software program for career guidance and information used in JHWGA. The software was developed and is licensed by Educational Testing Service. This system enables the user to interactively self-assess interests, values, and abilities; search and seek information on careers; learn what skills are needed for each career field; and prepare by coping with, and deciding on a plan of study for a specific career field (Educational Testing Service, 1985).

Study skills/habits - academic skills needed for students to perform better in school. Study skills and habits provided in precollege interventions usually include skills such as; reading, note-taking, test-taking, listening, and time management.

Underachievement - a student that does not perform academically to the level he or she is capable of performing.

Delimitations of Study

Although participants in the study were selected statewide and were required to be entering the eighth grade prior to JHWGA, study subjects were nominated by schools and not randomly selected. Due to the distance between Shepherd College and schools throughout West Virginia there was little control over how the subjects were nominated at the school level. It is assumed that subjects nominated were in need of the intervention and were not academically performing to their capability. For these reasons, study subjects may not generalize very well to typical West Virginia middle school children.

Due to financial constraints and limited space, JHWGA could not take every student nominated. Also the program is limited to one-week format with few follow-up activities to monitor participant progress toward a college education. Since 1991, over 620 participants have participated in JHWGA, and former participants are now in grades 8 through college. To reduce the likelihood of confounding extraneous variables over time, the study focused on applicants in the 1996 program who were surveyed in April 1997.

Chapter 2

Literature Review

The following chapter describes the background for this study. A review of career development, self-concept, academic success, aspiration, motivation, and their relationship to the interest for a college education is examined. The chapter also reviews the history of the college choice theory; the economic, social, and cultural factors associated with preparing for college; and early adolescence development. The chapter will conclude with a discussion of several precollege interventions being coordinated throughout the United States.

Aspiration and Career Development

The pursuance of a career requires what is known as career striving (Raynor, 1978, 1982). Raynor hypothesizes that for one to strive for a career, one must learn the “rules of the game” or the acquisition of general step-path schema which relate to achievement of large rewards and skills exhibited in a sequence of interrelated activities over time. To endure striving over a long period of time, Raynor feels that one must develop “delayed gratification,” the behavior associated with learned schema or knowledge about the anticipated size and ordering of rewards. To effectively strive for a career, one must acquire a plan that uses activity-outcome structures and successful experiences. With success, one can build confidence, attain an understanding in self-evaluation, and continue achievement toward long-term career goals as a means of obtaining self-esteem (Raynor, 1978, 1982).

Super (1974) saw career development as a development of self-concept. The basic theme of the development/self-concept theory is that individuals choose occupations that will allow them to function in a role that is consistent with their self-concept. Developmental/self-conceptual theories have three basic themes: individuals develop more clearly defined self-concepts as they grow older; people develop images of the occupational world which they compare with their self-image; and eventual career decisions are based on the similarity between an individual’s self-concept and the vocational concept of the career eventually chosen (Osipow, 1983).

Super believed that the development of self-concept occurred over a lifetime, and this life-long process required successful progression through five stages: crystallization (ages 14-18),

specification (ages 18-21), implementation (ages 21-25), stabilization (ages 25-35) and consolidation (over 35). Early adolescence and aspiration in the predisposition phase of the college choice theory, therefore, would occur in the Super's crystallization stage. Prior to the crystallization, career interest began as tentative probes and questions. As one entered early adolescence, vocational concerns became stronger, and these concerns led to educational and vocational decisions. In crystallization, decisions are evaluated, modified, or crystallized and progress to a mature stage of elaboration and embellishment of career behaviors. Career behaviors include awareness, use, differentiation, formulation and planning of concepts, which are used in determining actions regarding goals, interests, values, occupations, and preferences over the next three stages: specification, implementation, and stabilization (Osipow, 1983).

According to Super (1957) successful progress through each of these stages required successful vocational adjustment at each stage. Vocational adjustment is defined as the outcome of the handling vocational development problems encountered by the individual. It is the result of the interaction between one's personal resources including his/her vocational maturity (What one can bring to his/her encounters with reality on the one hand, and the reality demands on the other). Crites (1971) defined this adjustment as career maturity. A person with career maturity is thought to be emotionally stable and have the ability to make good vocational choices (Osipow, 1983). Most theorists concur that if an individual's psychological development is inadequate, career development will not progress smoothly (Pendergrass, 1987).

Crites (1971) believed that psychological and outcome variables are related to the career maturity and attitudes in adolescence. Career maturity is related to academic self-concept, achievement, and vocational choice. On the other hand, poor vocational choices and low self-concepts are related to underachievement. "Vocational immaturity and underachievement" (Tamminen & Miller in Crites, 1971, p. 49) represents a situation in which students are vocationally immature underachievers, who tend not to go to college.

Several studies (Somers, 1981; Mau, 1995; Rock, 1994; Burkheimer & Jaffe, 1981; Lee, 1993; Ingels, 1990; Hafner et al., 1990) seemed to suggest that many adolescents remain vocationally immature, lack understanding of the importance of career planning, and lack the knowledge to plan their high school curricula. Although middle school children appear to value the need for postsecondary education (Larter, 1982), few understand the importance of preparatory work (Mau, 1995) and the knowledge of career resources available to them (Lee, 1993).

Helping children to understand career readiness and nullifying the effects of vocational immaturity and underachievement is the basic premise for precollege interventions. In a meta-analysis study of 67 career interventions, Evans and Burck (1992) discovered that average ability students involved in career interventions appeared to profit the most in academic achievement. Toepfer (1994) concurred by stating that children who learn to relate school work with the real world experiences do better in school.

Career programs in middle school can help children understand the changing circumstances that face them in trying to achieve the work ethic (Toepfer, 1994). As life-long learning becomes a basic educational outcome, it is essential that young adolescents understand their need to become life-long learners. The value of education could be powerfully influenced by career programs that connect them with potential employment and career interests (Toepfer, 1994). Career readiness in middle school would include what Winecoff & Lyday (1978) calls a basic understanding of work values and attitudes such as an understanding of consumer economics, an awareness of and some experience with job clusters, an awareness of personal interests and abilities, higher levels of achievement in basic academic skills, a tentative selection of preferred job clusters, and a sense of civic responsibility.

The variable of career readiness is critical to college planning. It is believed that for one to develop aspiration, one needs to have some understanding of occupational information and self-awareness (interests, values, abilities, etc.). This understanding gives way to broad career possibilities and opportunities, the purpose of school, and the development of a career plan. Without this understanding, one may lack the maturity to progress to the next development stage and/or succumb to internal and external negative impediments to college aspiration.

Self-Concept

As early adolescents begin to construct a new identity and discontinue the old, there is an intense preoccupation with self and an increased capacity for self-reflection (Harter, 1990). Although it is unclear at what age a child begins to make self-evaluations that are the basis for self-esteem, self-esteem is thought to develop during the elementary and middle school years (Wigfield & Eccles, 1994a). Early adolescence is known as a time for adjustment, and negative shifts in self-esteem can put some early adolescents at the risk for later school failure (Wigfield & Eccles, 1994a).

Waltz (1991) defined self-concept as the totality of complex, organized and dynamic systems that each person holds true about his or her personal existence. Snow and Jackson (1992) saw self-concept as a multidimensional construct. It is comprised of and closely related to: self-esteem (worth, value, satisfaction); self-confidence/self-image (beliefs about one's ability to complete a given task and to accomplish goals); self-determination (will, freedom from boundedness); and self-efficacy beliefs (personal agency beliefs). Self-concept and self-esteem are closely related and often used interchangeably. According to Snow and Jackson (1992), self-concept is an individual's self-knowledge ("I can read well"), and self-esteem is an individual's perceived sense of self-worth and self-respect that has an affective quality associated with it ("I feel good about how I look").

Coopersmith (1983) saw self-esteem as a self-evaluation an individual makes and maintains along with a set of attitudes and beliefs that an individual has developed. Waltz (1991) viewed self-esteem as a cognitive element (characterizing of self in descriptive terms, e. g. power, confidence), an affective element (positiveness or negativeness), and an evaluative element related to some ideal standard (what I should be able to do). "In psychological terms, self-esteem provides a mental set that prepares the person to respond according to expectations of success, acceptance, and personal strength" (Coopersmith, 1983, p. 5).

Self-concept is learned. As it is learned, it is organized so that perceptions are orderly, stable, and consistent. Perceptions serve to direct action, and people strive to behave in ways that are consistent with their perceptions (Purkey, 1988). One's self-concept is always viewed through a present lens - a lens through which individuals view and understand their relationship with the world (Snow & Jackson, 1992). Self-concept is thought to be correlated with achievement (Snow & Jackson, 1992; Guerin et al., 1994; Brewer, 1989; McCall, Evahn & Kratzer, 1992), motivation (Raffini, 1993), personal goals (Lazarus, 1991), and emulation (Ryan, Stiller & Lynch, 1994; Foad, 1995).

Although much of the research on self-concept and achievement lacks theoretical basis, good measuring instruments, methods, and consistent results (Snow & Jackson, 1992), there is widespread belief that improvements in self-concept will lead to improvements in adjustment and achievement (Snow & Jackson, 1992; Guerin et al., 1994; Brewer, 1989; McCall, Evahn & Kratzer, 1992). One of the most significant personality characteristics of underachievement is its relationship to low self-concept (Butler-Por, 1987; McCall, Evahn & Kratzer, 1992). Because of

low tolerance for frustration, the underachiever will only try things he or she is capable of doing, must be assured of success before he or she will even try, and will avoid failure rather than achieve success (Bricklin & Bricklin, 1967; Cogen, 1992; Natalie, 1995).

Raffini (1993) believed there is a relationship between self-concept and motivation. People naturally seek experiences that generate feelings of success, accomplishment, and esteem and avoid those experiences that generate feelings of failure, worthlessness, and social disapproval. Lazarus (1991) viewed self-concept as a type of ego-involvement related to the development of personal goals. An individual's goals are interconnected, and a threat to any one personal goal is a threat to oneself. For a person to make a nontraditional career choice or go against family desires or pressures requires someone to have a belief in their ability to make appropriate plans and decisions (Walz, 1991). Self-esteem, therefore, is the empowerment and resistance needed to ward off "self-defeating and socially undesirable behavior" (Waltz, 1991, p. 103).

Studies of emulation have found that adolescents who emulate parents, teachers, and other adults generally have more positive school adjustment and motivation, and when emulation is focused on peers and friends there is a tendency for more negativity and lower self-esteem (Ryan, Stiller & Lynch, 1994). Positive contacts with adults outside of the family and school can give an adolescent a sense of connectedness that promotes self-worth and identity integration and provide a secure base from which an adolescent can extend himself/herself into the world. This phenomenon suggests that identification with other adults may also be associated with internalization of values they transmit, feelings of security, and relatedness, which are essential nutrients for self-development (Ryan, Stiller & Lynch, 1994). Precollege intervention models have reported success in increasing self-esteem when participants: a) are brought to college campuses; b) have direct contact with adults (such as college students, faculty members, and other career professionals); and c) are exposed to self-esteem enhancement activities, (Fouad, 1995; Drummond & Drummond, 1995).

Aspiration and Study Skills/ Habits

Although improved study skills cannot increase ability, the use of better academic skills may lead one to become a better learner and have more quality experiences in school. Programs that teach students how to learn and develop skills in listening, note-taking, time management, and test-taking can produce quality experiences for frustrated and turned-off students (Natalie, 1995).

Quality educational experiences are also believed to influence the development of aspiration during the predisposition phase of college choice (Hossler, 1985).

Early adolescence is a particularly challenging time for learning to study and in taking control of academics (Wigfield & Eccles, 1994a), and the opportunity for positive experiences in middle school is often questionable (Wigfield & Eccles, 1994b). An approach directed at reversing underperformance by creating interest and encouraging enjoyment with learning can benefit children who have not formerly acquired good learning habits (Butler-Por, 1987). Cogen (1992), however, warns that symptomatic remedial efforts should be used sparingly because they can induce frustration when students realize they are slipping again.

Several studies have, however, cited success in teaching study skills. Bruns (1992), working with a small sample of work-inhibited seventh and eighth graders in Fairfax County, Virginia, reported “promising” success with an intervention to improve study habits. The intervention provided counseling and instruction where students were taught how to communicate, organize, utilize their strengths, and complete assignments. McCall, Evahn & Kratzer (1992) believed that training students how to study should be combined with activities designed to improve self-esteem. Kallman (1991), using an intervention that focused on improvement of academic performance, attitude, and self-confidence for school drop-outs and at-risk students, reported that her intervention was successful in raising academic motivation and self-esteem. In a study of Upward Bound programs, Lowery (1985) concluded that programs with a summer component were significantly effective in developing basic skills and contributing to educational involvement.

Aspiration For College and the College Choice Theory

The literature describes aspiration as an activity that comes from the depths of personal experience and expresses an individual’s hopes about the future (Schmitt, 1991). A student who is thinking about education after high school is considered to have aspiration for postsecondary education. Aspiration for college occurs during what is known as the predisposition stage of the college choice theory (Angelo, 1993; Nora & Cabrera, 1993, Schmitt, 1991; Stage & Hossler, 1988; Hossler & Gallagher, 1987). The college choice theory evolved from the work of D. Chapman’s Conceptual Model in 1981, Jackson’s Three Phase Model in 1982, Litten’s Three Phase Model in 1982, and R. Chapman’s Behavioral Model in 1984 (Schmitt, 1991). These

previous models were combined into a Three-Stage Model developed by Hossler and Gallagher (1987) and later refined by Stage and Hossler (1988). Regardless of whether the decision is from a rational economic investment or social status attainment perspective, the decision to go to college is developmental and occurs over three stages: predisposition, search, and choice (Stage & Hossler, 1988; Hossler & Gallagher, 1987, Schmitt, 1991).

Hossler's and Gallagher's Three-Stage Model (1987) posits that students move toward an increased understanding of their postsecondary educational options as they progress through high school. In the predisposition stage a student determines whether she or he would like to continue education beyond high school and progresses to the search stage of the process when he or she becomes predisposed toward acquiring postsecondary education. In the search phase, one gathers information, investigates postsecondary education alternatives, and develops a list of colleges with similar attributes. Finally, in the choice phase, one evaluates a set of colleges selected for consideration and chooses a college to attend.

Most literature describes the process of the college choice theory occurring at the high school level (Schmitt, 1991; Hossler & Gallagher, 1987; Hossler, Braxton & Coopersmith, 1989). The literature, however, indicates that events preceding the college choice theory, especially those connected with the predisposition phase, are not well understood (Hossler, 1985; Hossler & Gallagher, 1987; Hossler, Braxton & Coopersmith, 1989). Actually, there appears to be some disagreement as to when aspiration and predisposition actually occurs. Schmitt (1991) believes it occurs during early high school. Hossler and Gallagher (1987) write that it happens at some point in the precollege years. Others have established the ninth grade for the onset of predisposition (Stage & Hossler, 1988; Trent, 1970). Angelo (1993), in developing evaluation guidelines for the Talent Search program, believes that the predisposition phase begins at Grade 7. Nora and Cabrera (1993) add that it may occur sometime between Grade 7 and Grade 9. Therefore, a number of writers have pinpointed Grade 8 as a critical grade for aspiration to develop (Ingels, 1990; Nora & Cabrera, 1993; Rock, 1994; Mau, 1995).

The literature also indicates that there are several intervening variables that can enhance or impede one's consideration of college (Hossler & Gallagher, 1988; Anderson, 1989). Because little research has been conducted on early phases of the college choice model, factors that increase or impede predisposition draw heavily from correlates of actual postsecondary attendance (Hossler, Braxton & Coopersmith, 1989). An array of factors have been associated with college

attendance. These factors include family socioeconomic status, student ability and achievement, parent education level, parental encouragement, peer encouragement, college bound curriculum (Nora & Cabrera, 1993; Hossler, Braxton & Coopersmith, 1989; Stage & Hossler, 1988, Trent, 1970), and family environmental conditions (Hossler, Braxton & Coopersmith, 1989; Stage & Hossler, 1988). To this list, Hossler, Braxton, and Coopersmith (1989) add gender, ethnicity, encouragement from high school counselors and teachers, student aspiration and career plans, quality of school, and labor market and the potential for increased rates of return. Schmitt (1991) writes that the interaction of factors such as socioeconomic status, student ability, achievement, race, and gender have an effect on the development of student aspiration. In an extensive review of college entry research, Hossler, Braxton, and Coopersmith (1989) concluded that few factors have been found to strongly correlate with postsecondary participation. Factors with a strong association with college entry are ability/achievement, academic track, parental levels of education, and student aspirations. Peer encouragement was found to be only moderately associated, while family residence, ethnicity, gender, high school counselors, teachers, labor market, socioeconomic status, and school quality are weakly related to the decision to attend college (Hossler, Braxton & Coopersmith, 1989).

Hossler (1984) writes that student aspirations are closely connected with ability/achievement. The interrelationship of intelligence and socioeconomic status, according to Trent (1970), is as important as their individual influences on decision to attend college. Ability helps to determine whether or not a student will want to go to college, and achievement will influence what kind of college or university a student will aspire to and whether or not the applicant will be admitted (Trent, 1970). Hossler (1984) reports that at least 70 percent of students in the top half of their graduating class will attend college compared to only 40 percent of those in the bottom quartile. Burkheimer and Jaffe (1981) discovered that graduates, capable of college, tended not to attend college when they had lower class rank and fewer math courses completed. They also found that many of these students failed to follow a college preparatory program. In a 1970 study of college entry in California, Trent discovered that many talented youths did not prepare for college because they lacked student motivation during early years of school.

Parent educational level is considered to have a strong influence on educational aspirations (Carpenter & Western, 1982; Stage & Hossler, 1988; Hossler, Braxton & Coopersmith, 1989; Trent, 1970; Fedirko, 1994). The level of a child's educational aspiration for college is related to his or her parent's educational aspirations (Keith, 1992); family stability (McCartin and Meyer,

1988); parent educational level, especially the father's educational level (Stage & Hossler, 1988); and time spent discussing college with parents (Stage & Hossler, 1988). In a study of low-income, minority students, Kiley (1989) found that parent apathy toward postsecondary education caused a sense of powerlessness and low aspiration. Parental influence on a child's college aspiration is both complex and varies from family to family (Stage & Hossler, 1988). In light of this discussion, it is necessary to note that the parental level of education in West Virginia is among the lowest in the nation (Horner, 1994; U. S. Census, 1990).

Student educational aspirations and career plans have been found to be positively associated with postsecondary participation (Hossler, Braxton & Coopersmith, 1989). Burkheimer and Jaffe (1981) noted that many highly abled students simply do not aspire to college because they are not oriented toward occupational success in areas for which they believed that a college education would increase their opportunities. Hossler, Braxton, and Coopersmith (1989) concede that while student aspirations may be a good indicator of students outcomes, "aspirations may simply reflect the effects of other variables" (p. 259).

Aspiration for College and Rural Students

Children in rural areas are at a disadvantage when it comes to developing aspiration for college (Parker, 1972; Medina & Drummond, 1993). Compared to urban students, rural students are the least likely to go to college (Hossler & Gallagher, 1987) and rural females are especially vulnerable to low aspiration (Lyson, 1977). In a study of 3,270 senior high school students in coal producing areas of West Virginia and Kentucky from 1968 to 1970, Lyson (1977) found that living in Appalachia lowers college ambition among all but the most academically talented and economically advantaged young people. He also attributed low aspiration to marginal economic structures and the lack of numerous and varied positive role models in a rural poverty environment.

Lyson (1977) discovered that children in coal mining families were especially vulnerable to low aspirations. He reasoned that low aspiration in these families was because they remained segregated and homogeneous having little interaction with other manual working families in cities and towns where they reside. Living in occupationally homogeneous neighborhoods tended to encourage low occupational models, perpetuate lower educational ambitions, limit access to non-coal occupational opportunities, and increase the likelihood for out-migration (Lyson, 1977).

One of the greatest hinderance to rural youth aspirations is the lack of encouragement or support at home. Resistance to education among Appalachian people is also believed to be due to fear. For some families there is a “traditional fear” that education will cause families to separate and destroy the family and community cohesiveness (Parker, 1972). Franklin (1985) found that rural parents tended to lack information on financial aid and believed that immediate employment was preferable to college. They guided their children toward career options not requiring a college education. Therefore, living in Appalachia had a dual effect on career development. First it lowered college ambition among all but the most academically talented (those with high grades) and the economically advantaged young people. Secondly, it amplified a propensity to migrate from the state (Lyson, 1977).

Although West Virginia’s economy and state spending on education improved during the 1980’s and 1990’s (Horner, 1994), data from Ridge and Valley Researchers (1990) and the National Center for Education Statistics suggests that aspiration for postsecondary education in West Virginia continues to lag far behind the national norm (Snyder and Hoffman, 1995; Smith et al., 1996). For these reasons, speculation remains that many West Virginians, especially at the middle school level, are in need of assistance in preparing for postsecondary education.

According to Franklin (1985) rural and urban disadvantaged youth lack information networks that are usually available to middle class youth. Due to location, middle class suburban youth have greater access to resources in the local school system, in the community of business, to professional people, and from family and peers. One obstacle for rural youth is the lack of access to school guidance, and for this reason, some rural youth do not enroll in college preparatory classes and prepare for college (Franklin, 1985).

Rural isolation tends to limit exposure to career options and lends to the perception that postsecondary education is not an option (Franklin, 1985; Medina & Drummond, 1993). Working with Florida youth, Medina and Drummond (1993) discovered that rural students in Florida lacked access to resources and programs that would enable them to consider a college education. Resources and programs in most need were those that improved academic performance skills, guided course selection for the future, explored career options, and enhanced self-esteem (Medina and Drummond, 1993).

Motivation for College

Chaplin (1975) in the *Dictionary of Psychology* defines motivation as an intervening variable which arouses, maintains, and channels behavior toward a goal. Lazarus (1991) sees motivation as a condition of emotion that has two interrelated senses: personality traits and reaction to environmental conditions. Cogen (1992) sees motivation existing in conjunction with other factors as the “ongoing results of integrated operating emotional elements” (p. 99). Following his study of college entry, Trent (1970) wrote that motivation is a need or desire accompanied by an intention to attain a goal that will satisfy a need. College attendance is the result of motivational determinants such as the need/desire for achievement, identification, learning, and response to social pressures, especially from family.

Taking from Lewin’s theory that behavior is the result or function of the interaction between personality and the environment [$B=f(P,E)$], Atkinson (1979) posited that motivation is the interaction of the belief that some act will be followed by some consequence and the incentive value of the expected consequence or goal. Trent (1970) argued that expectancy is distinct from motive in that expectancy is an anticipation that an act or behavior will lead to a particular consequence. The strength of expectancy depends on the subjective probability of the anticipated consequence. Incentive value is also distinct from motive and is the relative attractiveness of a reward or goal, the strength of which depends on the difficulty of attainment. Trent (1970) believed that motives are relatively stable and general characteristics of the personality, and expectancies and incentives are variables that depend on ongoing experiences. Motivations are manifested in the form of a variety of attitudes and perceptions, and motivation for college is the result of selective rewards, inculcated values, and interactions from earliest childhood. Although motivational elements underlying the decision to achieve academically and enter college frequently appear in conjunction with other variables, Trent (1970) believed that motivation alone provides the catalytic force behind the decision to attend college.

Lazarus (1991) saw motivation as an expression of one’s emotion, and these emotions are either dispositional or transactional. Motivation is the “actual mobilization of mental and behavioral effort in a particular encounter to achieve a goal or to prevent its thwarting” (p. 97). Lazarus (1991) explained that latent motivational disposition and transactional state are antecedents to the condition of emotion. In a dispositional state, the goals that an individual has prior to the encounter set the stage for the possibility of thwarting (harm) or gratification (benefit). Emotions, negatively or

positively, occur as the individual appraises the outcomes that have happened or will be anticipated. “Positive emotions are strongly related to personal goal striving and past fulfillment, whereas negative emotions are associated with a low probability of future success in these strivings or with conflicts about the goals being strived for” (p. 98).

In transactional motivation, emotion becomes a drive. When harm or threat generates a negative emotion (anger, anxiety, shame, guilt, etc.), a person is motivated to respond in some way to counter the negative condition. The stronger the goal commitment activated in an encounter, the more effort invested and the greater the emotional distress is associated with its thwarting. Appropriate movement toward attainment of a goal is tantamount to benefit and positive emotional states. Thwarting a goal, threat, and unexpected delay are negative emotional states. If the desired emotion is to be positive, it depends on having a strong goal commitment that is not thwarted but favored by life conditions. Positive or negative emotions result from the positive or negative outcomes of an encounter (Lazarus, 1991).

Raffini (1993) wrote that motivation is the result of how one perceives oneself in relationship to emotions. He posited that all people have a need to seek experiences that generate feelings of success, accomplishment, and esteem and to avoid experiences that generate feelings of failure, worthlessness, and social disapproval. Motivation, according to Raffini, is based on personal perceptions of reality at any given moment. Individuals strive to behave in ways that are consistent with the view they hold of themselves. Individuals are all highly motivated to behave in ways that enhance their self-perceptions (Raffini, 1993).

As previously noted, motivational drive can also be explained using Lewin’s force field model. Lewin (1951) posited that any change in movement toward a new future is accompanied by forces that promote or impede it. Forces that promote change can push one toward the fulfillment of goals. Forces that resist or impede change may restrain one’s ability to achieve goals. If these forces are in equilibrium, there is no movement. If restraining forces are stronger than driving forces, the situation may regress. If driving forces are stronger than restraining forces, then positive change may occur.

In 1989, Anderson adapted Lewin’s force-field model to retention and persistence in college. He cited several variables that act as driving external and internal forces, which enable a student to attend and persist in college. Anderson (1989) identified parental values and education

level; peers with college aspirations; cultural values that emphasize learning; college information on programs of study, financial aid, admission procedures, and personal development; teacher and counselor encouragement; information on the benefits of a college education; and exposure to college educated people who have benefitted from college as external driving forces. Internal driving forces included academic skills, motivation to succeed and persist, interest in gaining a college education, career aspirations, enjoyment of learning, self-confidence, values that recognize the importance of a college education, and identification with college educated people who have functioned as positive role models.

In contrast to driving forces, Anderson (1989) also managed to identify a number of negative external and internal forces that were thought to impede an individual's drive to attend and persist in college. External negative forces included lack of money, accessibility of college, social demands, rejection by family, discrimination (gender and racial), and family obligations. Internal negative forces involved procrastination, loneliness, inability to assert needs and seek help, self-doubt, fear of failure, fear of success, fear of rejection, value conflicts, career indecision and lack of enthusiasm.

Like Anderson, Trent (1970) believed that the intent to go to college resulted from a complicated interaction of positive and negative internal and external forces. Although they may vary in intensity from student to student, there is a clear pattern of external and internal forces at work when one decides to attend a college. When driving forces (external and internal) are greater than those forces that impede, attending college is likely. However, if one or more external or internal negative forces are greater than or equal to those forces that produce drive, college attendance is highly unlikely.

In summary, motivation is the consequence of emotions, self-perception, and the interaction of personality with the environment. Simply put, the more drive one is able to acquire, the more likely he or she will be able to overcome barriers. In relationship to this study, it appears that early adolescents who have favorable conditions at home and at school are more likely to act on their aspirations, and those without these advantages are prone not to aspire or aspire but have their goals thwarted. The question then becomes: can precollege interventions, such as the one in this study, help children overcome unfavorable conditions that reduce drive and aspirations for a college education?

Early Adolescence and Aspiration for College

Early adolescence is considered to be a time that marks transition and major changes in one's attitude and behavior (Ingels, 1990). According to the Task Force on Education of Early Adolescents for the Carnegie Council on Adolescent Development (1989), early adolescence is a time when students must examine opportunities and choose a path toward a productive and fulfilling life. For some, it represents the "last best chance to avoid a diminished future" (Carnegie Council on Adolescent Development, 1989, p. 8).

Because this is a critical time for physical, emotional, social, and intellectual change, working with early adolescence is a challenge (Peppard and Rottier, 1990). Physical change is characterized by uneven growth patterns, aggressiveness, hormonal changes, and development of primary and secondary sexual characteristics. Emotional change includes mood changes, concern with oneself, emotional dependence, and idealism. Social change consists of focus on peer acceptance, insecurity with physical changes, new social roles, search for independence and self-identity, and fixation with personal destiny. Although the frequency of short attention spans increases, early adolescence is also a time for intellectual skill development such as reflecting, hypothesizing, and organizing. With so many development changes occurring, many early adolescents tend to harbor feelings of inferiority and to lack self-confidence. Many of them are so preoccupied with the fear of failing in front of others that they tend to underestimate their own abilities or talents (Peppard & Rottier, 1990).

Cogen (1992) wrote that adolescents have a tendency to be negative, sensitive and defensive and spend more time alone in their rooms. Cogen also felt that early adolescence is also a time of maturation in the thinking process. In middle school, an early adolescent begins to consider hypothetical problems that begin with a "What if" mode of thinking and permits the child to move from one item into many possibilities. Unfortunately, adolescence is also characterized as an age where one is preoccupied with thoughts of personal growth and peer relations. There is a tendency to value education less, especially if there is little relevancy between school learning and their lives outside the classroom (Cogen, 1992).

It is felt that by the age of 15, an early adolescent should be an intellectually reflective person, a person in route to a lifetime of meaningful work, a good citizen, a caring and ethical individual, and a healthy person (Carnegie Council on Adolescent Development, 1989). Colleges

and universities, according to the Carnegie Council (1989) should work more collaboratively with middle schools to give early adolescents a clearer understanding of the advantages of postsecondary education and to prepare them for the 21st century. Peppard and Rottier (1990) believe that, at early adolescence, one should become an active participant in one's future growth.

However, research in the late 1980's by the National Education Longitudinal Study of 1988 (NELS: 88) discovered an apparent lack of preparedness in early adolescence (Office of Educational Research and Improvement, 1990; Hafner et al., 1990; Ingels, 1990). Randomly selected from throughout the United States, 26,000 eighth-grade students were used in the NELS: 88 study to determine the impact of tracking and program choice in the middle years on subsequent educational and occupational outcomes (Ingels, 1990). Although the eighth grade represents a significant transition point for children and their families to begin considering a number of critical educational decisions (Ingels, 1990; Nora & Cabrera, 1993; Rock, 1994; Mau, 1995), most NELS: 88 respondents indicated little discussion of future choices and plans with their parents, teachers, guidance personnel or others (Hafner et al., 1990; Ingels, 1990). In discussing high school program choice with adults, respondents in the NELS: 88 study claimed no discussions with their fathers (26 %), teachers (54 %), and guidance counselors (64 %) (Hafner et al., 1990; Ingels, 1990). Of the respondents planning to take a college preparatory program, only 47 percent were actually enrolled in algebra or mathematics courses. A later follow-up study of these same respondents in 1994 revealed that many of them were still lacking in math and science courses at high school graduation (Rock, 1994).

Early adolescents need assistance in planning and preparing for the future. Shill (1987) feels that children in this age group need precollege counseling that develops aspiration, sustains motivation, promotes effective study skills, clarifies values, differentiates among programs and courses, discusses graduation requirements, introduces guidance resources, and suggests the possibility of college and the availability of financial aid. According to Toepfer (1994), career education should be a major preparation focus in the middle school where early adolescents explore careers, develop attitudes, and understand work and employability skills. Fouad (1995) agrees and adds that preparation should include an understanding of how math and science courses relate to success. Furthermore, Fouad (1995) writes that the goal of education should be focused on increasing, at an early age, a student's career knowledge, self-esteem, math and science achievement, and high school course selection.

Aspiration and Precollege Interventions

In 1986, the Commission on Precollege Guidance and Counseling and the National College Counseling Project recommended that schools “broaden the frontiers for possibility” (Shill, 1987). The Commission and Project recommended that colleges and community resources work together in providing collaborative activities for children in the early and middle years, especially underserved students. Collaborative activities could include academic counseling; tutoring, mentoring, and skills building; campus tours; parent involvement programs, and summer remedial or precollege programs. Some critics, however, have questioned whether money, time and effort required to initiate and perpetuate these programs could be used more effectively elsewhere (Ascher and Schwartz, 1989).

Nora and Carera (1993) believed that precollege interventions are worth the expense and time. Without interaction between middle school students and institutions of higher learning, students will continue not to take college-preparatory courses (Hossler, 1985), and the need for precollege interventions that provide support and assistance to disadvantaged students will grow, not decrease (Franklin, 1985). Precollege interventions must help students to attain high educational expectations by providing factual information on educational and career planning in the eighth grade (Mau, 1995).

Many feel that programs designed to improve student attitudes, career planning skills, study habits, and self-concept are critical to increasing the likelihood for college attendance (Angelo, 1993, Schmitt, 1991; Kiley, 1989). The Nation at Risk study in 1983 and the Symposium on Early Awareness of Post Secondary Education in 1989 came to similar conclusions in their studies (Hinton, 1991). These study groups felt that early awareness college programs, especially those focusing on at-risk groups, were fulfilling important functions by introducing high school freshmen and junior high school students to the idea of college and challenging them to commit themselves to attend college (Hinton, 1991).

One of the most well known college awareness programs is Upward Bound, a federally funded program under Title IV that is nationwide. Intended to increase college entry among minority and disadvantaged students, Upward Bound recruits high school participants from low income areas who are thought to have the potential to complete a postsecondary program but do not meet the conventional criteria for admission to such programs. Upward Bound is limited to

students whose family's taxable income is below 150 percent of the poverty level and/or whose parents do not have a baccalaureate degree. The program consists of a 30-week supplementary after-school support program to enhance students' regular academic coursework. Services provided include tutoring, group and individual counseling, structure courses in math, writing and science, academic advising, career counseling, and summer programs on college campuses. Several comparative studies of Upward Bound participants and nonparticipants have led to claims that the program improved educational aspirations, college entry, and persistence (Burkheimer & Graham, 1979; Faulcon, 1994; Okuwa, 1994; Tanara, 1990).

Another federally funded program involved in developing early aspiration for college among disadvantaged students is the Talent Search program. Like Upward Bound, Talent Search offers teenagers (including early adolescents) academic, financial and personal counseling, tutoring, career exploration, information on postsecondary education and financial aid, and many other services. In contrast to Upward Bound, Talent Search is intended to be an open-door program. While two-thirds of the participants must be from low-income families with parents who do not have a college education, the remaining third is open to any student who wants to participate, regardless of income and parental levels of education. Talent Search is much less intense than Upward Bound and offers an annual average of 14 hours of contact time with senior high students and average of 33 hours for junior high students. In a study of Talent Search outcomes conducted by the National Council of Educational Opportunity Associations (1991), it was estimated that 78 percent of 1990/91 Talent Search participants enrolled in four-year college or community college after graduation.

In 1979, Burkheimer and Graham reported that the ability of Upward Bound to provide skills and improve motivation was unclear. In recent years, there is still hesitation among many supporters that participation in either federal program is directly linked to greater aspirations, expectations, and postsecondary entry rates (Angelo, 1993; Branch, 1993; Nora & Cabrera, 1993). The National Council of Educational Opportunity Associations (1991) has called for more "continued examination of student, staff, and program characteristics as well as more in-depth studies of these interventions--particularly studies designed to improve the quality of these programs" (pp. 18-19).

Another criticism of Talent Search and Upward Bound programs is that there are not enough programs to serve everyone (Franklin, 1985). For example, the Talent Search program in

West Virginia serves only 40 of the 55 counties (Central Office, State Colleges and Universities, West Virginia, 1990). Because federal grants are very competitive and awarded only to areas that can demonstrate a severe cumulative need (according to per capita income, first-generation college, minority and disadvantaged students in the service region), opportunity to be served by these and other federal programs is limited.

To serve the potential need nationwide, precollege intervention programs have been developed and funded through state, local, and private funds. Some of these programs include; the Career Linking Intervention, the Broadening Horizon Project, The College Board/Aetna Foundation Partnership, and the College Reach-Out Program. Career Linking is a six-week intervention designed to improve minority student awareness and preparation for math and science careers (Fouad, 1995). As a partnership between public schools and the University of Wisconsin-Milwaukee, the program offers eighth-grade students career awareness, field trips, speakers, job shadowing to improve participant career knowledge, self-esteem, math and science achievement, and high school course selection in math and science. The program has been found to be successful in improving career knowledge with moderate to weak success in improving achievement, self-esteem, and math and science course selection (Fouad, 1995).

The Broadening Horizon Project, a joint venture between the Arizona Department of Education and Arizona State University, is designed to expand eighth-grade female, minority, and handicapped students to pursue careers involving mathematics and science (Okey, Snyder & Hackett, 1993). The program involves the development of a curriculum that was administered in the schools through program facilitators and computers. Working in pairs on computers, participants are taken through several lessons that required the use of mathematical and science skills to solve everyday problems. According to survey analysis, the curriculum was deemed successful in increasing student confidence and aspiration for careers in mathematics and science (Okey, Snyder & Hackett, 1993).

In 1987, the College Board and the Aetna Foundation combined efforts to boost a college-readiness, motivation, and access program for middle school, minority students from urban school districts of Washington, DC and Fort Worth, Texas (Kiley, 1989). The objective of the program was to overcome poor academic preparation and low educational goals among students in urban schools. Designed to reach upper elementary and middle school students in need of motivation and information about college, the program targeted students identified with the ability to go to college.

By staying on a college campus, students gained a sense of what college was like and a sense of what they would miss if they did not attend. Kiley (1989) felt that program was a huge success because prior to the program many of these students had never been on a college campus and many of them were unaware of qualifications for college entry.

Finding little literature on aspiration and rural students, Medina and Drummond (1993) pioneered a model for rural Floridians who were in critical need of career development and self-awareness. Rural Floridians were found to be especially in need of a clearer understanding of school; its relevance with their future career choices; and knowledge of how to investigate and take various high school courses needed to accomplish their career objectives. Using a collaborative venture between two community colleges and an university, the College Reach-Out Program (CROP) was created and designed to motivate and promote students in grades 7 through 12 to complete high school and enroll in a postsecondary institution. CROP, funded by the Florida legislature, reported success in developing career aspiration for rural, underachieving students in Florida (Medina & Drummond, 1993).

Summary

This chapter reviewed the development of aspiration for college. Aspiration for college is considered to be a value that begins in early adolescence or at the predisposition phase of the college choice theory. Among the factors with a strong association to college entry are ability/achievement, academic track, parental levels of education, and student aspirations. Because of geography, economic, social, and cultural factors, the West Virginia going-to-college rate is very low compared to national rates. Though early adolescence is a critical time for college planning, the NELS: 88 study found few adolescents preparing themselves for the future. Underachievers were especially at risk of not fulfilling their aspirations.

In addition to aspiration, a review of early adolescent development as it relates to motivation, career development, self-concept, and academic success was presented. Motivation for college is the consequence of emotions, self-perception, and the interaction of personality with the environment. Career readiness is critical to college planning because one needs to have some understanding of occupational information and self-awareness (interests, values, abilities, etc.) in order to develop and act on aspirations. Precollege intervention models that bring children to college campuses and involve them in direct contact with adults (such as college students, faculty

members, and other career professionals) can increase self-esteem among participants through emulation and role modeling. Finally, though improved study skills may not increase ability, it is believed that better study habits can enable one to excel as a learner and have more quality experiences in school.

The chapter concluded with a discussion of several precollege interventions currently being used with many of the elements mentioned above. Programs reviewed included Upward Bound, Talent Search, the Career Linking Intervention, the Broadening Horizon Project, The College Board/Aetna Foundation Partnership, and the College Reach-Out Program. Many of the characteristics in these programs are similar to those being used with the Junior High Washington Gateway Academy.

Chapter 3

Method

The purpose of this study was to examine the impact of the Junior High Washington Gateway Academy (JHWGA) on early adolescent aspiration and motivation to pursue a college education. Research questions were a) to determine if early adolescents who participated in JHWGA differed from comparable students who did not attend JHWGA on career readiness, self-concept, study habits, aspiration, and motivation; b) to determine how much of the variation in aspiration and motivation toward pursuing a college degree is explained by differences in study habits, self-esteem, and career readiness.

Survey research, post-test only model, was used to gather data on 301 subjects divided into two groups, participant and comparison. Data were collected using two mailings of a questionnaire and one follow-up telephone survey. Additional data from application forms in the researcher's files were also used. After the survey, data collected from returned questionnaires and application forms were coded and entered into the computer for analysis.

Subjects

Subjects in the study included all 301 early adolescents, approximate ages 13 to 14, that applied to JHWGA program during the Spring of 1996. The participant group was formed from the 111 applicants who attended the academy during the summer of 1996, and the comparison group was formed from the remaining 190 adolescents who applied but were not selected or were selected but did not attend the 1996 JHWGA program. Beginning in March 1996, all middle and junior high schools in West Virginia were invited to nominate applicants. The program was open to any student in Grade 7 who was successfully progressing to Grade 8, was no more than age 14 before July 1996, had average to good grades, was in need of motivation as supported by recommendation letters, and had limited travel experiences away from home. These qualifications were included in an information packet sent to each school during March of that year. Schools were permitted to nominate an unlimited number of students.

Initially, eligible students were identified by the school counselor or principal and encouraged to complete an application (Appendix D) that was included in the information packet. Applicants were required to complete the first three pages of the application and have their parents sign the permission section. Two teacher recommendations were also required. The counselor or principal collected applications, reported the applicant's grades, added (optional) supporting comments, and mailed applications to JHWGA. As applications were received, they were reviewed and checked for qualifications by the director of JHWGA who is also the researcher. Applicants who were too old (age 15 and older), had failing grades (earning D's and lower), or did not provide all application information were disqualified from further consideration.

To ensure state wide representation, no less than two students from every county and at least one applicant from every school that nominated a student were selected to attend JHWGA. Counties and schools having more applicants than the required quota number were further screened. The researcher selected applicants who tended to hover in the middle performance range (C to A- grade range) and had limited travel experience. Written comments by applicants explaining why they felt they needed JHWGA and supporting statements from their counselor or principal were also considered. In addition to these criteria, an equal number of males and females and students of color were recruited for the program. After 150 nominees were selected, all applicants were notified of selections in May 1996.

The 111 members of the participant group were the applicants who were invited to, present at, and completed the JHWGA program in July 1996. The 190 members of the comparison group are the applicants who did not attend JHWGA. The comparison group included applicants who were selected but decided to cancel their invitation; who were selected but did not show; who were selected but left the program before completing all activities; or who were not invited to attend the 1996 program.

Instrument

The instrument used in this study was a questionnaire. Items for the questionnaire came from the literature in the field of college planning and from previous studies used to measure aspiration, motivation, self-concept, study habits and career planning. The questionnaire was constructed in accordance with guidelines by Wersma (1991), Backstrom and Hursh-César (1981), and Berdie and Anderson (1974).

Being that subjects were scattered throughout West Virginia, a self-reporting questionnaire was selected as the principle instrument to acquire data for this study. Because the accuracy of self-reported data is controversial and questionable, a substantial amount of literature has been generated concerning validity and reliability of data collected with self-reporting instruments (Kaufman & Rasinski, 1991; Wentland & Smith, 1993). Studies of self-reported data, however, generally conclude that students are relatively good sources of information, and that self-report accuracy is affected more by the way questions are asked, the specific information sought, and the characteristics of the students in the study (Kaufman & Rasinski, 1991). In a meta-analysis of 245 survey questions, Wentland and Smith (1993) found evidence to support these conclusions. They stated that respondents generally desire to be truthful, and inaccuracy is due more to item construction and item characteristics than respondent motive.

To ensure that items were valid and reliable, the researcher used items from previously used questionnaires (Schmitt, 1991; Spencer et al., 1990; Kaufman & Rasinski, 1991; Hafner et al., 1990; Ingels, 1990; Spraberry and King, 1992; Turner, 1990). The principal source of items came from the NELS: 88 study (Spencer et al., 1990; Kaufman & Rasinski, 1991; Hafner et al., 1990; Ingels, 1990). Of the 52 items used in the questionnaire (Appendix B), 54 percent are from the NELS: 88 study.

Because NELS: 88 included parents in their survey, NELS: 88 researchers were able to compare parent and student responses on identical items to determine validity coefficients. These researchers reported a range of .41 to .85 on background characteristics (Kaufman & Rasinski, 1991). Although some items (father's and mother's educational expectations) were found to have low validity coefficients of .41 and .43 respectively, NELS: 88 researchers reasoned that low validity was most likely due to parents not having discussed college expectations with their children at time of the survey (Kaufman & Rasinski, 1991). NELS: 88 items used with this questionnaire (Appendix B) included motivation (items 24 through 35), aspiration (items 42, 43, & 46), career readiness (items 11 & 48), demographics (items 36, 37, 38, 39, 44, 45, & 49), and self-concept (items 13, 14, 15, 16, & 19).

In addition to NELS: 88, several items came from various other studies. Items 1, 4, 6, 7, 8, 9, 13, & 47 were used in a college choice study of 3,110 Indiana youth conducted by Schmitt in 1991. Schmitt's items were tested on a pilot group for face validity. Additional aspiration and career planning items (2, 3, & 10) were used in a 1992 study of rural Mississippi 9th graders by

Spraberry and King. Spraberry and King tested their study for reliability and found a test-retest reliability correlation of .81, internal consistency at .64 and split half at .58. Turner's research in 1990 provided study habit items 18, 20, 21, 22, & 23. The remaining items (11 & 12) were developed by the researcher from the literature.

The first 35 items in the questionnaire used a Likert Scale of five choices. These items were grouped under four variables or scales: career readiness, self-concept/esteem, study habits, and aspiration. A fifth variable/scale, motivation, used three choices. In addition to scale data, several categorical items were used to provide nominal information. Scales and items are shown in Tables 1 through 6.

The items in Table 3.1 pertain to the career readiness variable. The purpose of these items was to determine the respondent's level of awareness and knowledge of careers, an awareness of personal interests and abilities, a tentative selection of preferred job clusters, and a tentative plan for college. Career readiness represents a sense of understanding of possible career options and maturity to plan and act on these values. Five items (2, 5, 10, 11, & 12) formed the career readiness scale. For each of these items, the respondent circled one of five responses ranging from "Agree Strongly" to "Disagree Strongly." These items were then summed and computed to give an average scale score. A lower score indicates more career readiness.

Table 3.1. Career Readiness Variable

<u>Career Readiness Items</u>	
2.	I want a good job when I graduate.
5.	Making a decision about my career is very important.
10.	I plan to take algebra and geometry before I graduate from high school.
11.	I have gathered information on jobs and careers that may be of interest to me after high school.
12.	I have looked into the education needed for at least one career field.
48.	In which of the following types of programs do you expect to enroll in high school?
50.	What have you done to find out about careers that might interest you?

Item 48 was grouped with career readiness because it implies an understanding of what preparation is needed to pursue college. This item provides a range of categorical choices to indicate what high school curriculum the respondent plans to enter. An “I don’t know” response choice is provided for those respondents who have no choices, and an “Other” option is provided with a write-in section for any program option not listed. Item 50 is an open-ended question intended to determine what the respondent has done to find out about careers of interest.

The self-concept scale used items 14, 15, 16, 17, and 19 (Table 3.2). This scale is intended to permit the respondent to evaluate self-perception. These same items were used in the High School and Beyond Study in 1980 and expanded for NELS: 88 study (Kaufman & Rasinski, 1991). Reliability for these items was computed using Cronbach’s Alpha and found to be at .79. The original scale included seven items. A factor analysis was conducted on data from the High School and Beyond Study, and it was determined that two factors explained .46 percent of the variance. The five items used in this questionnaire came from the first factor which alone explained .37 of the variance. As with the other scales, the respondent circled one of five responses ranging from “Agree Strongly” to “Disagree Strongly.” These items were then summed and computed to give an average self-concept scale score. A lower score indicates more positive self-concept.

Table 3.2. Self-Concept Variable

<u>Self-Concept Items</u>	
14.	I feel good about myself.
15.	I feel I am a person of worth.
16.	I am able to do things as well as others.
17.	On the whole, I am satisfied with myself.
19.	I certainly feel useless at times.

Study habit items (18, 20, 21, 22, & 23) in Table 3.3 are from a questionnaire used by Turner (1990). These items were selected according to the reading, note-taking, test-taking, and study behaviors taught at JHWGA. Each item required the respondent to circle one of five responses ranging from “Agree Strongly” to “Disagree Strongly.” A lower score indicates good use of study skills/habits.

Table 3.3. Study Habits Variable

<u>Study Habit Items</u>
18. I study at home in a regular place away from disturbances like TV.
20. You are able to remember information if you study over several days rather than in one crash session.
21. I know how to take lecture notes and put them into short statements.
22. I review the whole exam before starting.
23. I have been taught how to outline, summarize, and find main ideas from my readings in classes this year.

Aspiration items were intended to measure the level of desire, value, and importance of attending college at early adolescence. Eight items (1, 3, 4, 6, 7, 8, 9, & 13) in Table 3.4 were used for the aspiration variable and computed into an aspiration scale. For each of these items, the respondent was requested to circle one of five responses ranging from “Agree Strongly” to “Disagree Strongly.” These items were then summed and computed to give an average scale score. Formulas were written to inverse six items (4, 6, 7, 8, 9, & 13) so that in the final analysis, a lower score meant more aspiration. In addition to scale data, four categorical items (42, 43, 46, & 47) were used to elicit supporting nominal information related to aspiration.

Table 3.4. Aspiration Variable

<u>Aspiration Items</u>	
1.	I think a great deal about what I will be doing after high school.
3.	I want to go to college.
4.	I do not think I need more than a high school education.
6.	I am not sure that I will be able to get into college or vocational school.
7.	I may want to work/enter the military immediately after high school
8.	I cannot afford to continue my education.
9.	I do not think I have the ability to go to college.
13.	I am tired of school and do not want to continue.
42.	How far in school do you think your father wants you to go?
43.	How far in school do you think your mother wants you to go?
46.	As things stand now, how far in school do you think you will get?
47.	When did you first start thinking seriously about your plans after high school?

Items used for the motivation variable are in Table 3.5. The purpose of these items was to determine how active the respondent was in investigating and acquiring information on high school, career information, and academic work. The respondent was asked to assess the number of times that he or she had sought and discussed these topics with parents, teachers, counselors, and other adults. The respondent had three choices ranging from “Not-at-all”, “Once-or-twice” or “Three- or-more-times.” These items were then summed and computed to give an average scale score. The higher score indicated the more times the respondent sought out and spoke with a counselor, teacher, parent, or other adult.

The last group of items consisted of demographical information. These items (Table 3.6) are included to validate characteristics of respondents. Items 36 through 41 were used to determine if the respondent perceived his/her academically performance at the level of his/her potential ability level. Although gender and other characteristics are provided on the respondent’s JHWGA application, ethnic data was unknown, and therefore, requested in item 50. Finally items 51 and 52 were used to validate that the subject was the person completing the questionnaire.

Table 3.5. Motivation Variable

<u>Motivation Items</u>		
To get information about high school programs:	24.	Counselor
	25.	Teacher
	26.	Parents
	27.	Other Adult
To get information about jobs and careers that you might be interested in after finishing school:	28.	Counselor
	29.	Teacher
	30.	Parents
	31.	Other Adult
To help improve your academic work in school right now:	35.	Counselor
	36.	Teacher
	37.	Parents
	38.	Other Adult

Table 3.6. Demographic Variable

<u>Demographical Items</u>	
36.	English grades from sixth grade up till now.
37.	Mathematics grades from sixth grade up till now.
38.	Science grades from sixth grade up till now.
39.	Social studies grades from sixth grade up till now.
40.	Are you satisfied with your grades?
41.	Do you feel you are capable of better grades?
44.	How far in school did your father/male guardian go?
45.	How far in school did your mother/female guardian go?
49.	Statement that best describes the person completing this questionnaire?
51.	How old were you on last birthday?
52.	What grade are you in now?

Procedures

Prior to data collection, a pilot study was conducted at a local middle school in Shepherdstown, West Virginia. The study enable the researcher to ascertain face validity of the instrument prior to sending it to all subjects. The collection of data for the main study shortly followed and was conducted in three phases. The first phase included a personalized letter (Appendix C), a questionnaire (Appendix B), a return postage-paid envelope, an informed consent form, and a gift pen. The contents of this package were sent to each subject requesting his/her participation in the survey. Two weeks following the first mailing, a second mailing was sent to all nonrespondents. This mailing included a color coded questionnaire, a personalized letter, another return envelope, and an informed letter of consent. Included in this mailing was a form asking subjects who preferred not to participate in the study to return the short form with their reason. Two weeks after the second mailing, a final phone survey was conducted on all nonrespondents to encourage more response and to determine reasons for nonresponse. Data gathered from college planning questionnaire were entered into the computer as it was collected. Data from JHWGA applications (Appendix D) were also gathered and entered into computer for analysis.

Data Analysis

The JMP 3.1.5 statistical package (SAS Institute, 1995) was used to organize, manage, and analyze data collected. Data were entered into the statistical package using 52 columns for each of the items on the questionnaire, and 301 rows for the study population. Five additional columns were created for aspiration, motivation, career readiness, self-concept, and study habits scales. Each scale was summed and then averaged to provide a scale score. Several items were inverted and recoded after the data was entered to establish item consistency within scales.

For the first research question, t-tests and chi square were used to compare differences between comparison and participant group on items, scales, and application information. Data for these analyses were gathered from returned college planning questionnaires (Appendix B) and JHWGA applications (Appendix D) completed at the time of application. The second question required testing the relationship of variables. Multiple regression was used to develop a prediction equation in order to determine what percentage of variance in aspiration and motivation could be explained by career readiness, self-concept, and study habits scales.

Chapter 4

Results

The results from the application (Appendix D) and the college planning questionnaire (Appendix B) are in this chapter. The research question was to determine if early adolescents who participated in the Junior High Washington Gateway Academy (JHWGA) differed from a comparison group of similar students who did not participate in JHWGA according to career readiness, self-concept, study habits, aspiration and motivation for college. A second question was to determine how much of the variation in aspiration and motivation toward pursuing a college degree was explained by differences in study habits, self-esteem, and career readiness of early adolescents. An alpha level of .05 was used for all statistical tests. As data were collected, they were analyzed using JMP (a statistical discovery software, version 3.1.5). To explain differences between the groups, analyses (t-tests, chi square, and frequency) were conducted on data from previously collected application information and completed college planning questionnaires. The results of these analyses are provided in Tables 7 through 21.

Demographic Profile of Respondents

Response Rate

Of the 301 subjects surveyed, 265 (88%) responded by completing a college planning questionnaire. As shown in Table 4.1, the participant group accounted for 104 of these responses or 94 percent of the 111 participant members surveyed. The comparison group response amounted to 161 or 85 percent of the 190 total possible comparison members.

Sixty-four percent of the total subjects responded to the first mailing with comparison and participant groups attaining 64 percent each of their respective total subjects. A second mailing was sent to all nonrespondents two weeks following the first mailing. In the second mailing, subjects who opted not to participate in the survey were requested to give their reason on a return form included with the second mailing. Only one subject returned this form indicating no interest in the study. Another subject was eliminated from the study because her mailing packet was returned marked “undeliverable address.” The second mailing, however, did increase the response rate by

19 percentage points (17 % for the comparison group and 22 % for the participant group).

Finally, two weeks following the second mailing, a third and final survey of nonrespondents was conducted by telephone. The researcher personally called the remaining 50 subjects who had not responded to either the first or second mailings. The phone survey results were divided into no contact and contact groups. The no contact group consisted of nine subjects without a phone and seven subjects who did not answer their phone or failed to return a phone message after repeated tries. The contact group consisted of 34 subjects reached by phone.

Table 4.1. Survey Response Rate for Questionnaire

	N	%	Respondents						Total	
			N	First Mailing		Second Mailing		Phone Survey		
			N	%	N	%	N	%		
Participants in JHWGA	111		71	63.9%	25	22.5%	8	7.2%	104	93.7%
Comparison Group	<u>190</u>		<u>121</u>	<u>63.7%</u>	<u>32</u>	<u>16.8%</u>	<u>8</u>	<u>4.2%</u>	<u>161</u>	<u>84.7%</u>
Total	301		193	64.1%	56	18.6%	16	5%	265	88.0%

N = number; % = percent of N Surveyed

In each contact, the researcher asked the subject or the parent if a return of the mailed questionnaire could be expected. If the answer was affirmative, the researcher asked the family member to immediately return the questionnaire and consent form. If the answer was negative, the researcher asked the family member to give a reason for their nonparticipation.

Of those contacted, only seven subjects refused to participate in the survey. Reasons given included not interested (4) and too busy (2). One family member hung up without giving any reason. Twenty-seven subjects indicated that their questionnaires would be sent, and 16 of these promises (8 comparison group and 8 participant group members) were actually received. Their responses added another 4 percent return rate to the comparison group and 7 percent to the participant group.

Because of the high rate of return (88%) in this survey, nonrespondent bias is not an issue. Of the 36 subjects who did not participate in the study, only nine or less than 3 percent of the total subjects refused to participate, 11 or less than 4 percent of the total subjects failed to return their questionnaires after indicating by phone that they would, and 17 or 6 percent of the total subjects could not be reached due to no address or phone connection. The number of subjects that could not be contacted was very low, and their potential bias is considered minimal in light of the high rate of return and the general attitude of subjects that were personally contacted.

All of the nonrespondents contacted during the phone survey were generally positive and for the most part, willing to help with the study. This was true for all of the seven subjects who refused to participate. When these subjects were contacted by phone, the child or his/her parent was usually attentive and cooperative. Those who refused to participate did so politely, and usually indicated that because of conflicting interests (after school activities), they neither had the time nor the interest to devote to this study.

Profile of Participant and Comparison Groups

This study involved subjects who were not randomly selected. Instead these subjects comprised the entire application pool of candidates for the 1996 JHWGA program. The participant group was comprised of candidates who were selected and participated in the academy. The comparison group consisted of the remaining candidates who were not selected or were selected but did not attend JHWGA in 1996. For study purposes, it was imperative that subjects forming these two groups be comparable. To determine similarity between members of both groups, analyses were conducted on a number of characteristic/demographic items that were on the initial application and on the college planning questionnaire. Results of these analyses are in Tables 8 through 12.

Analysis of data revealed no significant differences between the comparison and participant groups on ethnicity [$\chi^2(4, N = 262) = 5.30, p = .26$], gender [$\chi^2(1, N = 265) = 3.81, p = .051$], hometown size [$\chi^2(4, N = 265) = 7.07, p = .13$], father's educational level [$\chi^2(8, N = 261) = 5.62, p = .69$], mother's educational level [$\chi^2(8, N = 264) = 4.08, p = .85$], grade level [$\chi^2(1, N = 265) = .99, p = .32$], age [$\chi^2(4, N = 265) = 5.56, p = .23$], opportunity to visit

Washington, D.C. [$\chi^2(1, N = 264) = .97, p = .32$], opportunity to visit Baltimore, Md. [$\chi^2(1, N = 262) = .08, p = .77$], opportunity to visit the Eastern Panhandle of West Virginia [$\chi^2(1, N = 262) = .11, p = .74$], discussion of college before JHWG [$\chi^2(1, N = 263) = 2.11, p = .15$], social studies grades since sixth grade [$\chi^2(1, N = 263) = 2.69, p = .61$], satisfaction with grades since the sixth grade [$\chi^2(1, N = 260) = 3.52, p = .06$], and belief in the capability of getting better grades [$\chi^2(1, N = 260) = .22, p = .64$].

Despite significant differences between groups for first overnight experience and grades, subjects in both groups were similar in all characteristics. As Table 4.2 shows, the respondents were primarily white (94%) and either age 14 (61%) or 13 (33%). Except for one comparison group member who claimed he was in the ninth grade, all respondents were finishing the eighth grade at the time of the survey. Eighty percent of the entire study group came from West Virginia towns with participant group (34%), 29 percent of the total study sample had never previously populations of less than 5,000, and half (51%) came from towns of less than 1,000. The majority of the study group had never visited Washington, DC (61%), Baltimore, Maryland (81%), or the Eastern Panhandle of West Virginia (69%). Although there were more subjects who had not discussed college with anyone in the participant group (34%), 29 percent of the total study sample had never previously discussed the possibility of college prior to JHWGA.

The participant group had a smaller proportion of females (Table 4.2) than the comparison group due to the JHWGA selection process. Although more females (61%) applied than males, the academy attempted to achieve and maintain gender equity among participants. As a result, only slightly more than half of the participant group was female. Gender distribution in the comparison group, therefore, tended to have more female applicants while the participant group reflected a near equal balance in gender. These differences, however, were not found to be significant ($p < .05$).

Significant differences, however, were discovered between the comparison and participant groups on first camp experience [$\chi^2(1, N = 264) = 4.75, p < .05$]. A higher proportion (74 %) of participant members tended to have had more overnight (away-from-home) experience than comparison group members (61 %). This anomaly was attributed to the selection process and

Table 4.2. Subject Response Characteristics - from Application and Questionnaire

	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
Sex							3.81	.05
Females	106	66%	55	54%	161	61%		
Males	56	35%	48	46%	104	39%		
Hometown Population							7.07	.13
< 1,000	81	50%	54	52%	135	51%		
1,001-5,000	42	26%	34	33%	76	29%		
5,001-10,000	5	03%	6	06%	11	04%		
10,001-25,000	18	11%	6	06%	24	09%		
> 25,001	15	09%	4	04%	19	07%		
Visited the following?								
Washington, DC							.97	.32
No	95	59%	66	65%	161	61%		
Yes	66	41%	36	35%	103	39%		
Baltimore, MD							.08	.77
No	130	81%	83	82%	213	81%		
Yes	31	19%	18	18%	49	19%		
WV Panhandle							.11	.74
No	110	68%	71	70%	181	69%		
Yes	51	32%	30	30%	81	31%		
First Camp?							4.75	.03*
No	98	61%	76	74%	174	66%		
Yes	63	39%	27	26%	90	34%		
College ever discussed?							2.11	.15
No	41	26%	35	34%	76	29%		
Yes	119	74%	68	66%	187	71%		
Ethnic Background							5.30	.26
Asian/Pacific Islander	1	01%	0	00%	1	>1%		
Hispanic regardless of race	0	00%	2	02%	2	01%		
Black	5	03%	5	05%	10	04%		
White	151	95%	95	92%	246	94%		
Amer. Indian/Alaskan	2	01%	1	01%	3	01%		
Age							5.56	.23
twelve	1	01%	3	03%	4	02%		
thirteen	48	30%	40	38%	88	33%		
fourteen	104	65%	57	55%	161	61%		
fifteen	7	04%	4	04%	11	04%		
sixteen	1	01%	0	00	1	>1%		

Note. N = number of subjects; % = percent; χ^2 = chi square statistic; *p < .05.

Table 4.3. Subject's Parent Educational Levels - from the Questionnaire

	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
Father							5.64	.69
Less than high school	31	20%	15	15%	46	18%		
High school graduate	52	33%	35	34%	87	33%		
Vocational, trade school	23	14%	8	08%	31	12%		
Less than 2 yrs college	7	04%	8	08%	15	06%		
2 yr college graduate	10	07%	7	07%	17	07%		
4 yr college graduate	13	08%	11	11%	24	09%		
Master degree	12	08%	9	09%	21	08%		
Advanced degree	6	04%	4	04%	10	04%		
Don't know	5	03%	5	05%	10	04%		
Total Fathers	159	61%	102	39%	261	100%		
Mother							4.08	.85
Less than high school	18	11%	10	10%	28	11%		
High school graduate	57	36%	38	37%	95	36%		
Vocational, trade school	23	14%	9	09%	32	12%		
Less than 2 yrs college	10	06%	11	11%	21	08%		
2 yr college graduate	13	08%	11	11%	24	09%		
4 yr college graduate	17	11%	12	12%	29	11%		
Master degree	14	09%	9	09%	23	09%		
Advanced degree	4	03%	2	02%	6	02%		
Don't know	4	03%	2	02%	6	02%		
Total Mothers	160	61%	104	39%	264	100%		

Note. N = number of subjects; % = percent; χ^2 = chi square statistic.

problems experienced with being homesick. In prior JHWGA years, a number of participants experiencing their first-time away from home became homesick. For many of these students, being homesick was compounded by the distance away from home and the extended stay at the academy. Some of these participants tended to call their parents and leave the academy before it concluded. Being homesick not only was difficult for the individuals who experience it, but also to the remaining participants and staff members who did everything they could to make the stay for homesick participants enjoyable. To minimize the number of participants leaving due to being homesick and the disruption to JHWGA caused by their leaving, after the first program, candidates were selected having JHWGA qualifications with some overnight experience away from home. The extent to which these candidates were favored was not evident until data were analyzed. As a result, the comparison group had a higher proportion (39%) of first time campers (those who checked 'yes' to first-time camp on application form) than the participant group (26%).

In Table 4.3, parental educational levels are displayed for both groups. According to the literature, parent educational levels are strongly correlated to aspiration for college (Coopersmith, Braxton, & Hossler, 1989). Parent educational levels for comparison and participant groups, however, were not significantly different. Parents of both groups tended to have less than high school diploma, were a high school graduate, or had some vocational/trade school education (63% for fathers and 59% for mothers).

Significant differences were discovered between the comparison and participant groups on school reported grades [$\chi^2(4, N = 265) = 13.13, p < .05$], for self-reported grades in English [$\chi^2(4, N = 265) = 13.12, p < .01$], in mathematics [$\chi^2(4, N = 265) = 14.07, p < .01$], and in science [$\chi^2(4, N = 265) = 9.82, p < .01$] (see Tables 4 - 4 & 4 - 5). School reported grades were reported as an estimate by the school counselor at the time of application (see application forms Appendix D). The comparison group had significantly better school reported grades than the participant group [$M = 3.28, v. M = 2.99, t(259) = 3.58, p < .01$].

A similar pattern was discovered for grades reported by respondents on the questionnaire (Table 4.5). With standard deviations ranging from .69 for comparison and .91 for participant subjects, members in the comparison group ($M = 3.48$) reported significantly higher English grades than subjects in the participant group [$M = 3.22, t(263) = 2.60, p < .01$]. This was also true for mathematics and science as well. In mathematics, self-reported grades for the comparison

Table 4.4. School Grades Reported for Subjects

SCHOOL REPORTED GRADES	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		t	p-value
	<u>M</u>	<u>sd</u>	<u>M</u>	<u>sd</u>	<u>M</u>	<u>sd</u>		
	3.28	.61	2.99	.69	2.90	.75	3.58	.0004*

FREQUENCY	N	%	N	%	N	%	χ^2	p-value
A (4.0)	42	27%	10	10%	52	20%	13.13	.0106*
B (3.0)	82	52%	58	56%	140	54%		
C (2.0)	31	20%	29	28%	60	23%		
D (1.0)	3	02%	6	06%	9	03%		

Note. N = number of subjects; % = percent; χ^2 = chi square statistic; M = mean average; sd = standard deviation; t = t test statistic. * $p < .05$.

^a These grades were reported by school counselors or principals on the JHWGA application form (Appendix D)

group ($\bar{M} = 3.34$) were significantly higher than grades reported by members of the participant group [$\bar{M} = 2.98$, $t(263) = 3.26$, $p < .01$]. Comparison group science grades ($\bar{M} = 3.48$) were discovered to be significantly higher than grades reported by participant members [$\bar{M} = 3.25$, $t(263) = 2.44$, $p < .01$].

Unlike differences noted in English, mathematics, and science, no significant difference was discovered for social studies grades (Table 4.5). Eighty-eight percent of the entire study sample reported achieving grades of A or B in social studies since the sixth grade. Likewise, no differences were found for being satisfied with grades [$\chi^2 (1, N = 260) = 3.52$, $p = .06$] and beliefs in capability of doing better academically [$\chi^2 (1, N = 260) = .22$, $p = .64$] (see Table 4 - 6). Although 64 percent of the total study sample were satisfied with their grades, subjects in the participant group were slightly less satisfied with grades than subjects in the comparison group (57% vs 68%). Ninety-nine percent of the total sample believed that they were capable of better grades.

Table 4.5. Self-Reported Grades for Subjects

SELF- REPORTED GRADES	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		t	p-value
	M	sd	M	sd	M	sd		
English	3.48	.69	3.22	.91	3.38	.79	2.60	.01*
Mathematics	3.34	.76	2.98	1.04	3.20	.90	3.26	.01*
Science	3.48	.76	3.25	.77	3.39	.77	2.44	.01*
Social Studies	3.52	.71	3.42	.84	3.48	.76	0.99	.32

Frequency

Subject	N	%	N	%	N	%	χ^2	p-value
<u>English</u>								
As (90 - 100)	92	57%	51	49%	143	54%	13.12	.01*
Bs (80 - 89)	57	35%	30	29%	87	33%		
Cs (70 - 79)	9	06%	19	18%	28	11%		
Ds (60 - 69)	3	02%	3	02%	6	02%		
Below Ds	0	00%	1	01%	1	>1%		
<u>Mathematics</u>								
As (90 - 100)	81	50%	39	38%	120	45%	14.07	.01*
Bs (80 - 89)	56	35%	37	36%	93	35%		
Cs (70 - 79)	22	14%	18	17%	40	15%		
Ds (60 - 69)	2	01%	7	07%	9	03%		
Below Ds	0	00%	3	03%	3	01%		
<u>Science</u>								
As (90 - 100)	101	63%	46	44%	147	55%	9.82	.02*
Bs (80 - 89)	40	25%	39	38%	79	30%		
Cs (70 - 79)	17	11%	18	17%	35	13%		
Ds (60 - 69)	3	02%	1	01%	4	02%		
Below Ds	0	00%	0	00%	0	00%		
<u>Social Studies</u>								
As (90 - 100)	101	63%	63	61%	164	62%	2.69	.61
Bs (80 - 89)	43	27%	26	25%	69	26%		
Cs (70 - 79)	14	08%	12	12%	26	10%		
Ds (60 - 69)	2	01%	2	02%	4	02%		
Below Ds	0	00%	1	01%	4	01%		

Note. N = number of subjects; % = percent; χ^2 = chi square statistic; M = mean average; sd = standard deviation; t = t test statistic. *p < .05.

Table 4.6. Subject's Self-Reported Feelings Toward Grades

Response	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
Satisfied With Grades:							3.52	.06
No	50	32%	44	43%	94	36%		
Yes	108	68%	58	57%	166	64%		
Capable of doing better:							.22	.64
No	14	09%	11	11%	25	10%		
Yes	143	91%	92	89%	235	90%		

Note. N = number of subjects; % = percent; χ^2 = chi square statistic.

In summary, groups were found to be comparably similar on all characteristics except for first camp experience and grade differences. Significant grade differences between groups may be attributed to the JHWGA selection process. As was displayed in the frequency section of Table 4.4, more middle-performing students were in the participant group, and only 10 percent of the participant group compared to 27 percent in the comparison group had grades in the high performance range (grade A). Middle performing students with grades of B and C amounted to 84 percent of the participant group compared to 72 percent of the comparison group. It seems, therefore, that the selection process favored middle performing students who were in most need of the pre-college intervention and consequently had lower grade point averages for school and self-reported grades than comparison group members.

Results for Participant and Comparison Groups

For the first research question, early adolescents who participated in the Junior High Washington Gateway Academy (JHWGA) were compared with a similar group of students who applied but did not participate in JHWGA. Groups were compared according to career readiness, self-concept, study habits, aspiration, and motivation for college. A series of t-test analyses were

conducted on several items comprising the five variables and scales. Chi square analyses were also performed on these items to further explore differences and to cross validate t-test results between the two groups. Results of these analyses are presented in following Tables.

Table 4.7 shows the results for career readiness, self-concept, study habits, aspiration, and motivation for college scales, and items used in the construction of these scales. Each scale was derived from the sum total and average of the grouped items within that scale. Analyses of scales revealed no significant differences between groups. The participant group appeared to have slightly more career readiness ($\underline{M} = 1.54$ vs. $\underline{M} = 1.58$) and better study habits ($\underline{M} = 2.28$ vs. $\underline{M} = 2.40$). Scale results showed a tendency for the comparison group ($\underline{M} = 1.69$) to have slightly better feelings of self-esteem than the participant group ($\underline{M} = 1.82$). Members of the comparison group ($\underline{M} = 1.63$) tended to also have slightly more aspiration for college than the participant group ($\underline{M} = 1.77$), but the participant group tended to have higher motivation by having more meetings with their counselors, teachers, parents, and other adults ($\underline{M} = 1.97$ vs $\underline{M} = 1.93$). Because no significant differences were found between groups on questionnaire scales, analyses were conducted on the items that comprised each scale to determine if any significant differences existed for individual items. Results of these analyses are presented and grouped with their respective variable.

Career Readiness

As a whole, the study sample tended to average between $\underline{M} = 1.19$ to $\underline{M} = 1.91$ on four of the five career readiness items and $\underline{M} = 2.14$ on one item concerning the gathering of information for careers (Table 4.8). No significant differences were detected between groups on any of the career readiness items in Table 4.8. Although the participant group did have higher career readiness scores on three of the five career readiness items, mean differences were very slight, and the largest difference between means of the two groups in Table 4.8 was only .22 (Item 12). In addition to career readiness scale items, a categorical question also measured the intent to enter a high school program (Table 4.9). With over two-thirds of both groups (64%) aiming for college preparation courses, no significant difference between groups on high school plans was found [$\chi^2(5, N = 263) = 4.46, p < .49$]. Seventy-two percent of the comparison group planned to enter a college or community college/technical preparatory program compared to 65 percent for the participant group. More of the comparison members (40 %) felt that they had started to think about plans after high school at the eighth grade [$\chi^2(3, N = 263) = 4.70, p < .20$] in contrast to the

Table 4.7. Variables Organized as Scales

Scale	R ²	Group	N	M	SD	t test	p-value
<u>Career Readiness^a</u>							
(Σ Items 2, 5, 10, 11, & 12)	.01	Total	261	1.56	.57	0.55	.58
		C	158	1.58	.56		
		P	103	1.54	.58		
<u>Self-Concept^a</u>							
(Σ Items 14, 15, 16, 17, & 19*)	.08	Total	261	1.74	.66	-1.49	.14
		C	158	1.69	.61		
		P	103	1.82	.73		
<u>Study Habits^a</u>							
(Σ Items 18, 20, 21, 22, & 23)	.01	Total	264	2.35	.80	1.12	.27
		C	161	2.40	.82		
		P	103	2.28	.77		
<u>Aspiration^a</u>							
(Σ Items 1, 3, 4,* 6,* 7, * 8,* 9,* & 13*)	.01	Total	257	1.69	.58	-1.80	.07
		C	156	1.63	.57		
		P	101	1.77	.59		
<u>Motivation^b</u>							
(Σ Items 24 to 35)	.003	Total	261	1.95	.33	-0.94	.35
		C	157	1.93	.32		
		P	104	1.97	.35		

Note. R² = coefficient of determination based on group structure; Group = C for comparison and P for participant groups; N = number of subjects that answered the item; M = mean average for subjects on all items indicated; sd = standard deviation for each total scale and group; t = t-test statistic for scale.

^a Scale scores for career readiness, self-concept, study habits, and aspiration ranged from 1 = high to 5 = low, i.e. lower score for aspiration scale means more aspiration. Formula for scale score = \sum of items in scale ÷ total number of items in scale. *Items 4, 6, 8, 9, 13, & 19 were recoded before scale computation with 1 = 5, 2 = 4, 3 = 3, 4 = 2, and 5 = 1.

^b Scale score for motivation ranged from 1 = no discussions to 3 = three or more discussions, i.e. low score meant little discussion with parents, counselor, teachers, or other adults.

Table 4.8. Item Results on Career Readiness Scale - Questionnaire

	Comparison Group (N=161)			Participant Group (N=104)			Total Sample (N=265)			t	p
	N	<u>M</u>	<u>sd</u>	N	<u>M</u>	<u>sd</u>	N	<u>M</u>	<u>sd</u>		
<u>Item 2:</u> I want a good job when I graduate.	160	1.33	.78	104	1.35	.84	264	1.33	.81	-0.21	.84
<u>Item 5:</u> Making a decision about my future is very important to me.	161	1.19	.55	104	1.18	.55	265	1.19	.55	0.14	.89
<u>Item 10:</u> I plan to take algebra and geometry before I graduate from high school.	161	1.24	.69	103	1.30	.80	264	1.26	.74	-0.70	.49
<u>Item 11:</u> I have gathered information on jobs and careers.	159	2.18	1.21	104	2.08	1.21	263	2.14	1.21	0.65	.52
<u>Item 12:</u> I have looked into the education needed for at least one career field.	161	1.99	1.20	104	1.77	1.12	265	1.91	1.17	1.53	.13

Note. N = number of subjects that answered the item; M = mean average for total subjects and group ; sd = standard deviation total subjects and group; t = t-test.

Career readiness scores ranged from 1 = high to 5 = low, i.e. lower score meant more career maturity in considering and preparing for college.

The formula for computing a scale score for each subject was the \sum Items 2, 5, 10, 11, & 12 \div 5 = Career Readiness Scale Score.

participant group (32 %).

Table 4.9. Educational Expectations: Planning for the Future

	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
Which type of program do you expect to enroll in high school?								
							4.46	.49
College preparation	108	68%	61	59%	169	64%		
Two-year college	7	04%	6	06%	13	05%		
Vocational (trade)	11	07%	6	06%	17	06%		
General	5	03%	8	08%	13	05%		
Other	6	04%	3	03%	9	03%		
Don't know	23	14%	19	18%	42	16%		

Note. N = number of subjects; P = percent; χ^2 = chi square statistic.

Information concerning career activities was also gathered through the use of an open-ended question (item 50). This question asked all subjects to report what they had done to find out about careers that might interest them. At least 243 or 92 percent of the survey subjects indicated they had taken some initiative to find out about careers that might interest them. Their responses were organized into 24 response categories and listed according to participant and comparison groups in Table 15. Almost two fifths (38%) of the respondents said that they had read about or researched careers. The next most mentioned categories were: talked with people (21%), talked with a counselor (20%), requested information (17%), and talked with a teacher (17%). The remaining 19 categories were mentioned by less than 13 percent of the respondents. The only significant difference between groups dealt with use of computers [χ^2 (1, N = 30) = 5.95, $p < .05$]. Of the 11 percent who said they had used a computer to gather career information, almost two-thirds were from the participant group.

Self-Concept

On the whole, the study sample scored high on self-confidence items. T-tests for the self-esteem variable (Table 4.11) did not uncover any significant differences between groups. Although

Table 4.10. Responses to What Have You Done to Find Out About Careers.

	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
read/researched	60	.59	41	.41	101	.38	0.12	.72
talked with people	30	.55	25	.45	55	.21	1.11	.29
talked with a counselor	31	.60	21	.40	52	.20	0.04	.85
requested information	26	.58	19	.42	45	.17	0.20	.65
talked with a teacher	26	.59	18	.41	44	.17	0.06	.80
talked with parent	19	.59	13	.41	32	.12	0.03	.86
used a computer	12	.40	18	.60	30	.11	5.95	.01**
did class reports	15	.54	13	.46	28	.11	0.67	.41
took a test	15	.57	12	.44	27	.10	0.34	.56
researched colleges	13	.54	11	.46	24	.09	0.47	.49
cited a career field	13	.54	11	.46	24	.09	0.47	.49
attended career day/fair	16	.73	6	.27	22	.08	1.51	.22
did job shadowing	14	.67	7	.33	21	.08	0.34	.56
had a career class	13	.72	5	.28	18	.07	1.11	.29
did volunteer service	12	.67	6	.33	18	.07	0.29	.59
went on a field trip	10	.83	2	.17	12	.05	3.02	.08
talked with relatives	6	.50	6	.50	12	.05	0.60	.44
attend JHWGA	0	.00	11	1.00	11	.04	21.32	.01*
went to a library	4	.40	6	.60	10	.04	1.82	.18
visited colleges	6	.60	4	.40	10	.04	0.01	.96
watched a video/movie	9	1.00	0	.00	9	.03	9.17	.01*
planned courses	2	.25	6	.75	8	.03	4.35	.04*
visited a career center	4	.67	2	.33	6	.02	0.09	.76
did school-to-work	5	.83	1	.17	6	.02	1.48	.22
Total responses	147	.60	96	.40	243	.92	0.08	.78
No response	14	.64	8	.36	22	.08		

Note. N = number of subjects; % = column percents; χ^2 = chi square statistic; **p < .05; *Although significant at p < .05, N are too small to have any confidence in p-values.

the comparison group had slightly higher scores on all self-concept items, the largest difference in means between the two groups was no more than .14 (items 15 and 19).

Study Habits

As a group, average mean scores for the five study habits ranged from 1.80 to 2.99. T-tests revealed no significant differences for any of the five study habit items (Table 4.12). The participant group did appear to use better study practices by having slightly higher mean scores. No study habit item, however, had more than .14 difference between group means.

Aspiration

Although no significant values were discovered, members of the comparison group tended to have slightly higher aspiration on many of the aspiration items. On five-choices ranging from agree to disagree, comparison members tended to have more agreement with six out of the eight items on the aspiration scale (Table 4.13). The comparison group had higher aspiration for thinking a great deal about what they would do after high school ($\underline{M} = 1.48$ vs. 1.52), wanting to attend college ($\underline{M} = 1.22$ vs. 1.30), believing that they will be able to enter college or vocational school ($\underline{M} = 3.83$ vs. 3.56), declining work or the military as an option immediately after high school ($\underline{M} = 3.96$ vs. 3.82), believing that they could afford continuing their education ($\underline{M} = 3.91$ vs. 3.71), believing that they have the ability to go to college ($\underline{M} = 4.43$ vs. 4.32), and being less weary of school ($\underline{M} = 4.71$ vs. 4.50). Participant group members had more agreement with the belief that one needs more than a high school education ($\underline{M} = 4.75$ vs. 4.65). However, it should be noted that the largest difference between means for comparison and participant groups on any aspiration item (Table 18) was no more than .27 (Item 6).

No significant differences were detected between groups on educational expectations for the child by fathers [χ^2 (6, $\underline{N} = 261$) = 3.14, $p < .79$], mothers [χ^2 (6, $\underline{N} = 265$) = 5.01, $p < .54$] or the child [χ^2 (5, $\underline{N} = 265$) = 3.68, $p < .60$] (Table 4.14). College expectations were nearly the same with 84 percent of comparison fathers and 83 percent of participant fathers expecting that their child would continue school beyond high school. Likewise, college expectations by mothers were also nearly identical, with 92 percent participant mothers and 91 percent of comparison mothers expecting more than high school. In both cases, more mothers than fathers had

Table 4.11. Item Results on Self-Concept Scale - Questionnaire

	Comparison Group (N=161)			Participant Group (N=104)			Total Sample (N=265)			t	p
	<u>N</u>	<u>M</u>	<u>sd</u>	<u>N</u>	<u>M</u>	<u>sd</u>	<u>N</u>	<u>M</u>	<u>sd</u>		
<u>Item 14:</u> I feel good about myself.	160	1.33	.78	104	1.35	.84	264	1.33	.81	-1.89	.06
<u>Item 15:</u> I feel I am a person of worth, the equal of other people.	160	1.35	.71	104	1.49	.82	264	1.41	.76	-1.47	.14
<u>Item 16:</u> I am able to do things as well as most other people.	161	1.44	.71	104	1.51	.82	265	1.47	.76	-0.72	.47
<u>Item 17:</u> On the whole, I am satisfied with myself.	161	1.55	.83	104	1.59	.87	265	1.57	.84	-0.32	.75
<u>*Item 19:</u> I certainly feel useless at times.	160	3.35	1.24	104	3.21	1.33	264	3.30	1.28	0.86	.39

Note. N = number of subjects that answered the item; M = mean average for total subjects and group ; sd = standard deviation total subjects and group; t = t-test.

Self-concept items (14 thru 17) ranged from 1 = high to 5 = low, i.e. lower score meant more positive self-concept.

*Item 19 is the opposite with 1 = low to 5 = high.

In computing scale score, each subject's score was the \sum Items 14, 15, 16, 17, & 19 \div 5 = Self-Concept Scale Score
For scale computation, item 19 was recoded at 1 = 5, 2 = 4, 3 = 3, 2 = 4 , and 5 = 1.

Table 4.12. Items Results on Study Habits Scale - Questionnaire

	Comparison Group (N=161)			Participant Group (N=104)			Total Sample (N=265)			t	p
	N	M	sd	N	M	sd	N	M	sd		
<u>Item 18:</u> I study at home in a regular place away from disturbances like TV.	161	2.54	1.21	104	2.51	1.20	265	2.53	1.20	0.20	.84
<u>Item 20:</u> I am able to remember more information if I study over time.	161	2.30	1.50	104	2.17	1.31	265	2.25	1.43	0.73	.47
<u>Item 21:</u> I know how to take lecture notes and put them into short statements.	161	2.25	1.21	104	2.11	1.13	265	2.20	1.18	1.00	.32
<u>Item 22:</u> I review the whole exam before starting.	161	3.04	1.32	104	2.91	1.38	265	2.99	1.35	0.77	.44
<u>Item 23:</u> I have been taught how to outline, summarize, and find main ideas.	161	1.84	1.08	104	1.73	1.07	265	1.80	1.07	0.81	.42

Note. N = number of subjects that answered the item; M = mean average for total subjects and group ; sd = standard deviation total subjects and group; t = t-test. Study habit items (18, 20 thru 23) ranged from 1 = high to 5 = low, i.e. lower score meant more awareness of study skills. The formula for computing the study habits scale score for each subject was the \sum Items 18, 20, 21, 22, & 23 \div 5 = Study Habits Scale Score

expectations beyond college. College expectations according to the child were also nearly similar. Around 93 percent of participant group wanted to attend or beyond college compared to 92 percent of the comparison group. Comparison members, however, appeared to have loftier expectations. Thirty percent of the comparison group wanted to go beyond a college education compared to only 23 percent of the participant group.

Another categorical item (item 47) asked respondents to indicate when aspiration for the future first began for them (Table 4.15). Although not significant, slightly more members of the participant group tended to aspire at a early age. Thirty-eight percent believed they started thinking about future plans in the 6th and 7th grades compared to 29 percent for the comparison group.

Motivation.

For the motivation variable, subjects were asked how many times they had met with a counselor, a teacher, a parent, or another adult concerning information on high school programs, a job or career field, or academic work (Table 4.16). Subjects were requested to indicate the number of meetings from one (no discussions) to three (three or more discussions). No significant differences were found between the means of the participant and comparison groups for any of the information gathering questions. When seeking information on high school programs, the participant group appeared to have had more discussions with their counselor ($\underline{M} = 2.13$) and other adult ($\underline{M} = 1.55$), and the comparison group tended to have had more discussion with their parents ($\underline{M} = 2.23$) and their teachers for this information ($\underline{M} = 2.08$).

As for seeking information about jobs or careers and academic work, the participant group again had a slender edge in more meetings with their counselor, teacher, parents, and other adults. Concerning discussions on careers, the participant group reported more conferences with their counselor ($\underline{M} = 1.92$), teachers ($\underline{M} = 1.98$), parents ($\underline{M} = 2.37$), and other adults ($\underline{M} = 1.73$). In seeking help with academic work, the participant group had more meetings than the comparison group with their counselor ($\underline{M} = 1.63$), teacher ($\underline{M} = 2.38$), parent ($\underline{M} = 2.40$), and other adults ($\underline{M} = 1.57$). Although participant members tended to have more academic meetings with their counselor ($\underline{M} = 1.63$) $t(257) = 1.73$, $p = .09$), no motivation items were found to be significantly different between groups, and no item had more than a .17 difference between the means of both groups.

Table 4.13. Item Results on Aspiration Scale - Questionnaire

	Comparison Group (N=161)			Participant Group (N=104)			Total Sample (N=265)			t	p
	N	M	sd	N	M	sd	N	M	sd		
<u>Item 1:</u> I think a great deal about what I will be doing after high school	161	1.48	.76	103	1.52	.81	264	1.50	.78	-0.40	.69
<u>Item 3:</u> I want to go to college.	160	1.22	.68	104	1.30	.71	264	1.25	.69	-0.91	.36
* <u>Item 4:</u> I do not think I need more than a high school education	161	4.65	.98	104	4.75	.71	265	4.69	.88	-0.88	.38
* <u>Item 6:</u> I am not sure that I will be able to get into college/voc.	161	3.83	1.21	104	3.56	1.21	265	3.72	1.21	1.76	.08
* <u>Item 7:</u> I may want to work/enter the military after high school	160	3.96	1.30	104	3.82	1.32	264	3.90	1.31	0.88	.38
* <u>Item 8:</u> I cannot afford to continue my education.	161	3.91	1.21	104	3.71	1.24	265	3.83	1.22	1.31	.19
* <u>Item 9:</u> I do not think I have the ability to go to college.	159	4.43	1.09	104	4.32	1.13	263	4.38	1.11	0.79	.43
* <u>Item 13:</u> I am tired of school and do not want to continue	161	4.71	.83	103	4.50	.99	264	4.63	.90	1.89	.06

Note. N = number of subjects that answered the item; M = mean average for total subjects and group ; sd = standard deviation total subjects and group; t = t-test. *Items 4, 6, 7, 8, 9, 13 ranged from 1 = low and 5 = high on aspiration. Items 1 & 3 ranged from 1 = high to 5 = low, i.e. lower score meant more aspiration for college. In the formula for computing the aspiration scale score, *items 4, 6, 7, 8, 9, 13 were recoded at 1 = 5, 2 = 4, 3 = 3, 2 = 4 , and 5 = 1, and the scale score for each subject was the \sum Items 1, 3, 4, 6, 7, 8, 9& 13 \div 8 = Aspiration Scale Score.

Table 4.14. Educational Expectations for Child by Father, Mother, and Child

	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
Father							3.14	.79
Less than high school	2	01%	2	02%	4	02%		
High school graduate	2	01%	1	01%	3	01%		
Vocational, trade school	5	03%	2	01%	7	03%		
Attend college	8	05%	2	02%	10	04%		
College graduate	78	49%	56	55%	134	51%		
Go beyond college	48	30%	27	26%	75	29%		
Don't know	16	10%	12	12%	28	11%		
Total	159	61%	102	39%	261	100%		
Mother							5.01	.54
Less than high school	1	01%	2	02%	3	01%		
High school graduate	2	01%	1	01%	3	01%		
Vocational, trade school	4	02%	1	01%	5	02%		
Attend college	7	04%	2	02%	9	03%		
Graduate from college	76	47%	59	57%	135	51%		
Go beyond college	64	40%	34	33%	98	37%		
Don't Know	7	04%	5	05%	12	05%		
Total	161	61%	104	39%	265	100%		
Child							3.68	.60
Less than high school	1	01%	0	00%	1	>1%		
High school graduate	3	02%	3	03%	6	02%		
Vocational, trade school	9	06%	5	05%	14	05%		
Attend college	14	09%	13	13%	27	10%		
Graduate from college	85	53%	59	57%	144	54%		
Go beyond college	49	30%	24	23%	73	28%		
Total	161	61%	104	39%	265	100%		

Note: N = number of subjects; % = percent; χ^2 = chi square statistic.

Table 4.15. When Did Aspiration Begin?

	Comparison Group (N=161)		Participant Group (N=104)		Total Sample (N=265)		χ^2	p
	N	%	N	%	N	%		
Haven't started.	8	05%	4	04%	12	05%	4.70	.19
In the 8th grade.	65	40%	33	32%	98	37%		
In the 6th and 7th grade	42	26%	40	38%	82	31%		
Always known	46	29%	27	26%	73	28%		

Note. N = number of subjects; P = percent; χ^2 = chi square statistic.

Frequency Distribution.

Further analysis of frequency data for each item indicated that an assumption of variance and equal distribution may have been violated. Despite having five choices (1 to 5) that ranged from agree to disagree on 23 items of the career planning questionnaire, responses tended to be heavily skewed to either right or left with little distribution for middle choices. As presented in Table 4.17, answer one on the Likert scale was circled by 66 percent in item one, 81 percent in item two, 85 percent in item three, 85 percent in item five, 86 percent in item ten, 81 percent in item fourteen, 72 percent in item fifteen, 65 percent in item sixteen, 60 percent in item seventeen, and 54 percent in item twenty-four. The last choice (5) was circled by 86 percent in item four. Some distribution was discovered in remaining items (items 6, 7, 11, 12, 18, 19, 20, 21, and 22), but the distribution was again heavily skewed to either the right or the left for each item. Although items 24 through 35 had only three possible answers, motivation responses were not evenly distributed and were largely skewed as well.

These conclusions were further supported by a test for normality conducted on each item. A Shapiro-Wilk W test was conducted on all aspiration, motivation, career readiness, study habit, and self-esteem items (Table 4.17). The test indicated that probability for normal distribution was less than one in 1000 for all items. College planning questionnaire items, therefore, lacked normal distribution and variance necessary for correlation. In light of these findings, items and scales were not found to be reliable in explaining variance and differences among variables.

Table 4.16. Item Results on Motivation Scale - Questionnaire

	Comparison Group (N=161)			Participant Group (N=104)			Total Sample (N=265)			t	p
	N	M	sd	N	M	sd	N	M	sd		
To Get Information About High School Programs:											
Counselor	159	2.08	.74	102	2.13	.83	261	2.10	.78	-0.53	.60
Teacher	160	2.08	.68	104	2.04	.70	264	2.07	.68	0.57	.57
Parent	159	2.23	.66	103	2.10	.76	262	2.18	.71	1.45	.15
Other Adult	158	1.49	.64	102	1.55	.68	260	1.52	.65	-0.67	.51
To Get Information About Jobs or Careers:											
Counselor	159	1.77	.82	102	1.92	.84	261	1.82	.82	-1.29	.20
Teacher	159	1.95	.78	103	1.98	.78	262	1.96	.78	-0.31	.75
Parent	160	2.33	.70	104	2.37	.72	264	2.33	.70	-0.06	.95
Other Adult	158	1.68	.76	102	1.73	.76	260	1.70	.76	-0.50	.62
To Help Improve Your Academic Work in School:											
Counselor	158	1.47	.72	101	1.63	.80	259	1.53	.75	-1.73	.09
Teacher	160	2.28	.71	103	2.38	.76	263	2.32	.73	-1.06	.29
Parent	159	2.39	.66	104	2.40	.78	262	2.39	.71	-0.09	.93
Other Adult	158	1.49	.74	99	1.57	.69	257	1.52	.72	-0.78	.44

Note. N = number of subjects that answered the item; M = mean average for total subjects and group ; sd = standard deviation total subjects and group; t = t-test.

Motivation mean ranged from 1 = no discussions to 3 = three or more discussions, i.e. low score meant little discussion with parents, counselor, teachers, or other adults.

In computing scale score for each subject, the formula was the \sum discussions with Counselor, Teacher, Parents & Other Adult for all three questions \div 12 = Motivation Scale Score.

Table 4.17. Item Frequency and Response Distribution for Questionnaire

Items	Item Frequency Response Percent					N	W	p-value
	1	2	3	4	5			
<u>Aspiration:</u>								
Item 1	.66	.21	.12	.01	.00	264	.66	< .001*
Item 3	.85	.09	.04	.01	.01	264	.42	< .001*
Item 4	.04	.01	.03	.07	.86	265	.40	< .001*
Item 6	.05	.14	.22	.23	.36	262	.84	< .001*
Item 7	.08	.08	.18	.17	.49	264	.76	< .001*
Item 8	.05	.09	.26	.17	.43	265	.80	< .001*
Item 9	.02	.09	.08	.09	.71	263	.60	< .001*
Item 13	.03	.01	.06	.10	.81	262	.47	< .001*
<u>Career Readiness</u>								
Item 2	.81	.09	.06	.02	.02	264	.47	< .001*
Item 5	.85	.09	.04	.01	.01	265	.40	< .001*
Item 10	.86	.07	.05	.01	.02	264	.41	< .001*
Item 11	.41	.26	.18	.10	.05	263	.81	< .001*
Item 12	.52	.22	.15	.06	.05	265	.74	< .001*
<u>Self Esteem</u>								
Item 14	.81	.09	.06	.02	.02	265	.70	< .001*
Item 15	.72	.19	.08	.01	.01	264	.59	< .001*
Item 16	.65	.26	.06	.02	.01	265	.65	< .001*
Item 17	.60	.28	.08	.03	.01	265	.68	< .001*
Item 19	.08	.21	.29	.17	.25	264	.87	< .001*
<u>Study Habits</u>								
Item 18	.25	.25	.31	.11	.08	265	.87	< .001*
Item 20	.46	.17	.14	.10	.12	265	.77	< .001*
Item 21	.35	.30	.20	.09	.06	265	.83	< .001*
Item 22	.20	.14	.27	.23	.15	265	.87	< .001*
Item 24	.54	.24	.14	.04	.04	264	.73	< .001*
<u>Motivational</u>								
Item 24	.26	.39	.35			261	.77	< .001*
Item 25	.20	.53	.27			264	.78	< .001*
Item 26	.18	.47	.35			262	.77	< .001*
Item 27	.57	.34	.09			260	.70	< .001*
Item 28	.44	.29	.26			261	.74	< .001*
Item 29	.32	.40	.28			262	.77	< .001*
Item 30	.14	.39	.47			264	.74	< .001*
Item 31	.48	.33	.18			260	.74	< .001*
Item 32	.63	.21	.16			259	.66	< .001*
Item 33	.16	.37	.48			263	.74	< .001*
Item 34	.13	.35	.52			262	.73	< .001*
Item 35	.61	.26	.13			257	.67	< .001*

Note. N = number of responses for each item; W = Shapiro Wilk W test for normal distribution; ^a = Motivation variable only had three choices. * $p < .05$.

Relationships Among Variables

The second research question was to determine what percentage of variance in aspiration and motivation could be explained by the differences in study habits, self-esteem, and career readiness. Scale data from the college planning questionnaire were used in analysis. The scales included aspiration and motivation as the dependent variables, and career readiness, study habits, and self-concept scales as the independent scales. A fourth independent variable, group, was used to account for any variance due to participant or comparison group membership. Scale data were initially screened for normality, linearity, homoscedasticity of residuals, missing data, and outliers. For some variables, scale data were transformed to improve normality and minimize the number of outliers. Separate multiple regressions (stepwise) were performed for each dependent variable (aspiration and motivation) using JMP 3.1.5. Six models (four for aspiration and two for motivation) are presented and compared.

Aspiration

Normality, Linearity, and Homoscedasticity. As noted earlier with item frequency distributions, item data was found to be lacking in variance and normal distribution. The Shapiro Wilk test found each scale to also be positively skewed and lacking in normal distribution. Normality test results were as follows: aspiration ($W = .88, p = .001$), study habits ($W = .95, p = .001$), self-esteem ($W = .88, p = .001$), and career readiness ($W = .86, p = .001$). Lack of normality was also observed on scale scatterplots. Residual scatterplots for all scales were discovered to be positively skewed, and visual inspection of scatterplots did not suggest linear relationships. As a result, robustness and multivariate normality of data were suspect.

Missing Data. Out of 265 cases examined, missing data were found on 17 questionnaires. Because JMP automatically deleted cases with missing data from analysis, subjects 5, 36, 45, and 182 were deleted from the career readiness scale; subjects 38, 98, 101 and 112 were deleted from the self-concept scale, subject 215 was deleted from the study habits scale; and subjects 74, 98, 111, 112, 159, 173, 232, and 234 were deleted from the aspiration scale. Two subjects (98 & 112) had missing data on both aspiration and self-concept scales, and one case (173) had missing data on both aspiration and motivation scales. Cases with missing data did not total more than 8 percent of the study sample.

To determine if missing data were randomly distributed, a dummy variable was constructed with two groups: missing data and nonmissing data. The means of these two groups were then compared on remaining scales to see if differences existed between groups. No significant differences were found between missing data and nonmissing data on career readiness $t(1, N = 245) = .83, p = .41$; self- concept $t(1, N = 244) = -0.99, p = .32$; study habits $t(1, N = 248) = .21, p = .84$; and motivation $t(1, N = 241) = .90, p = .37$. With no unique patterns revealed in the comparison, missing data, therefore, is believed to have been randomly distributed. According to Tabachnick and Fidell (1989), replacement of missing data with means or regression values is not recommended when data are heavily skewed and lacking in normal distribution. Replacement mean values, therefore, would only serve to anchor data skewness and add little to robustness. As a result, cases with missing data were not included in analysis where scales were used.

Outliers. Several univariate and multivariate outliers were discovered in this study. Univariate histograms and boxplots of scales discovered 21 possible outliers falling beyond the 1.5 interquartile range, eight of which were found on more than one scale. Twelve possible outliers were revealed for the career readiness scale, seven for the self-concept scale, seven for the study habits scale, and three for the aspiration scale (Appendix E). For multivariate outliers, Mahalanobis and Jackknife distance were computed for each case in relationship to the centroid (multivariate mean) to uncover additional hidden outliers. Seventeen possible multivariate outliers were discovered. Several of these cases were found to be both univariate and multivariate outliers (Appendix E).

The high number of outliers may have affected results for both comparison and participant groups. It was first suspected that many outliers were the result of subject carelessness. For example, a number of items are inversely related to each other, and a high aspiration score, therefore, would have required an “Agree” for item 3 and a “Disagree” for item 4. Similar responses to both items would have indicated inconsistency. Visual inspection of questionnaires, however, revealed no cases where inconsistency appeared to be a problem. Additional analyses were conducted to determine outlier relationship with the general study sample. A dummy variable was formed to compare suspected outliers with the remaining subjects who were not identified as a possible univariate or multivariate outliers on each of the five scales (career readiness, self-concept, study habits, aspiration, & motivation). Data results of these comparisons are displayed in Appendix F.

Analyses of results indicate that suspected univariate outliers were significantly different from the remaining sample on most scales. The twelve career readiness outliers had significantly less positive self-esteem [$t(1) = -2.20, p < .01$], less use of study habits [$t(1) = -4.32, p < .01$], and less aspiration [$t(1) = -6.83, p < .01$]. The seven self-concept outliers were found to have significantly less career readiness [$t(1) = -3.22, p < .01$], less understanding of study habits [$t(1) = -2.64, p < .01$], and less aspiration [$t(1) = -5.02, p < .01$]. Outliers for study habits were found to be significantly less career ready [$t(1) = -5.40, p < .01$], less positive about themselves [$t(1) = -3.92, p < .01$], and less aspiring [$t(1) = -6.75, p < .01$]. Finally, the aspiration outliers were found to be significantly less career ready [$t(1) = -7.39, p < .01$], to have less positive self-concept [$t(1) = -5.53, p < .01$], and to use less study skills [$t(1) = -4.09, p < .01$].

Significant differences were also found between multivariate outliers and the remaining 248 subjects in the study sample (Appendix G). Subjects suspected of being multivariate outliers indicated less career readiness than members of the general study population [$t(1) = -6.39, p < .01$], less positive self-concept [$t(1) = -4.55, p < .01$], less use of study habits [$t(1) = -5.82, p < .01$], and less aspiration [$t(1) = -5.90, p < .01$]. Based on these analyses, the researcher concluded that univariate and multivariate cases were indeed outliers. Although analyses point to these cases as being outliers, no valid reason was determined for why these subjects were outliers. It was suspected, however, that some of these outliers may have been due to the lack of data variability and extreme skewness observed on several items and scales. As a result, other options were explored (transformation) to reduce the number of outliers.

Transformation of Scales. To reduce skewness and the number of outliers, and to improve normality, linearity, and homoscedasticity of residuals, transformation of scale data was attempted prior to regression. Each of the three independent scales (study habits, self-concept, and career readiness) were entered into a bivariate regression with aspiration (dependent variable). Residual error for each of these regressions was converted by five transformations (logarithm, square root, square, reciprocal, and exponential) and then evaluated according to normality, skewness, kurtosis, regression fit, and r^2 . Transformation appeared to improve only two scales (study habits and career readiness). Exponential transformation was found to improve r^2 for study habits from 17 to 28 percent; normal distribution from $\underline{W} = .96, p < .0001$ to $\underline{W} = .98, p = .59$; skewness from .92 to -0.07; and kurtosis from 1.83 to .78. Exponential transformation of the career readiness scale revealed a rotated but straighter regression line compared to nontransformed scale. Transformation also raised r^2 from 22 to 70 percent; reduced skewness from 1.10 to .08;

slightly improved normal distribution from $\underline{W} = .94$, $p < .0001$ to $\underline{W} = .97$, $p = .02$; and moved the kurtosis peak closer to one (from 2.58 to .55). Because transformation appeared to add little to the shape of self-concept data, it was left untransformed. Though transformation did improve normality of the study habits and the career readiness scales, correlation between these variables increased to $r = .68$. Also, the high number of multivariate outliers were not reduced by transformation.

Multiple Regression Analysis for Aspiration. To learn if the variance in aspiration for college by middle school children could be explained by differences in career readiness, self-concept, and study habits, stepwise multiple regression was employed. In addition to the career readiness, self-concept, and study habits, group (participant and comparison) was added as a demographic variable to the equation to help explain variability. Due to variability, skewness, outliers, and possible collinearity, four models are presented. These models include untransformed data with and without outliers and transformed data with and without outliers. Data with and without outliers were compared because of variability problems associated with this study. It was not clear whether any of the multivariate and univariate outliers would have been outliers had the distribution and variance been normal. Also, because of possible collinearity between the transformed scales of study habits and career readiness, both transformed and untransformed information was compared and contrasted.

Table 4.18 displays data results for models 1 and 2, and shows the correlations between the variables, the unstandardized regression coefficients (\underline{B}) and intercept, the standardized regression coefficients ($\underline{\beta}$), the semipartial correlations (\underline{sr}^2), and \underline{R}^2 , adjusted \underline{R}^2 after entry of all independent variables. In the first model, data were left untransformed and no outliers were removed from the equation, $\underline{N} = 250$. All regressors in this model were found to be significantly different from zero when entered into the equation, After step 4, with all independent variables entered into the equation, $\underline{R}^2 = .34$ [$F(4, 245) = 4.98$, $p < .05$].

After step 1, with career readiness in the equation, $\underline{R}^2 = .19$, [$F(1, 248) = 24.80$, $p < .001$]. After step 2, with self-concept added to the prediction of aspiration by career readiness, \underline{R}^2 was raised to .30, [$F(1, 247) = 23.98$, $p < .001$]. In step 3, the study habits scale was successfully entered into the prediction of aspiration for college by career readiness and self-concept [$\underline{R}^2 = .32$, $F(1, 246) = 9.76$, $p < .01$]. Finally in step 4, with group added to the

prediction of aspiration for college by career readiness, self-concept, and study habits, \underline{R}^2 was increased to .34 (adjusted $\underline{R}^2 = .32$) [$F(1, 245) = 4.98, p < .01$].

For model 2, data was again left untransformed but with all multivariate and many univariate outliers removed, $N = 234$. Multivariate outliers removed included those identified by the Mahalanobis and Jackknife methods in JMP. Only univariate outliers that were also identified as multivariate outliers were removed. All other univariate outliers were left in the equation. Not all model 2 regressors, however, were found to be significantly different from zero at the end of each step. Study habits scale was not found to be significant ($p = .07$). After step 4, with three of four independent variables entered in the equation, $\underline{R}^2 = .20$ (adjusted $\underline{R}^2 = .19$) [$F(4, 229) = 4.07, p < .05$].

As in model 1, career readiness entered model 2 first at $\underline{R}^2 = .10$ [$F(1, 232) = 13.27, p < .001$]. After step 2, with self-concept added to prediction of aspiration for college by career readiness, \underline{R}^2 was increased to .18 [$F(1, 231) = 15.84, p < .001$]. Group added to the prediction of aspiration for college by career readiness and self-concept by increasing \underline{R}^2 to .19, [$F(1, 230) = 4.07, p < .05$]. In step 4, study habits was only able to add .01 to the prediction of aspiration for college by career readiness and self-concept by increasing \underline{R}^2 to .19, [$F(1, 230) = 4.07, p < .05$]. In step 4, study habits was only able to add .01 to the prediction of aspiration for college by career readiness, self-concept, and group to $\underline{R}^2 = .20$ but was not found to be a significant increase [$F(1, 229) = 3.35, p = .06$].

Models 3 and 4 (Table 4.19) differed from the first two models because they included exponential transformations of the study habits and career readiness scales. Model 3 used transformed data of these two scales with all cases in the study, while model 4 used transformed data but with selected outliers removed from the equation. Table 4 - 20 displays the correlations between the variables, the unstandardized regression coefficients (\underline{B}) and intercept, the standardized regression coefficients ($\underline{\beta}$), the semipartial correlations (\underline{sr}^2), and \underline{R}^2 , adjusted \underline{R}^2 after entry of all independent variables for model 3 and 4.

In model 3, group did not successfully enter the equation ($p = .47$), and the equation was comprised of the three remaining independent variables at $\underline{R}^2 = .57$ (adjusted $\underline{R}^2 = .56$) [$F(4, 245) = 25.22, p < .001$]. In step 1, with study habits entered into the equation, \underline{R}^2 was .42, [$F(1, 248)$

Table 4.18. Stepwise Multiple Regression of Career Readiness, Study Habits, Self-Concept, and Group on Aspiration for College (Untransformed Data With and Without Outliers).

Model 1: Untransformed Data With Outliers (N = 250).

Variables	Aspiration (DV)	Career Readiness	Self- Esteem	Study Habits	B	β	sr^2
Career Readiness	.44				.30	.30	.19
Self-Concept	.41	.21			.24	.27	.10
Study Habits	.42	.48	.34		.11	.19	.02
Group	-.11	.04	-.06		.08	.12	.01
					intercept = 1.38		
Mean	=	1.68					
R ²	=	.34*					
Adjusted R ²	=	.32					

Model 2: Untransformed Data and Without Outliers (N =234).

Variables	Aspiration (DV)	Career Readiness	Self- Esteem	Study Habits	B	β	sr^2
Career Readiness	.32				.24	.24	.10
Self-Concept	.32	.15			.20	.24	.08
Study Habits	.29	.45	.28		.08	.12	.01
Group	-.10	-.10	-.05		.08	-1.15	.01
					intercept = .82		
Mean	=	1.64					
R ²	=	.20					
Adjusted R ²	=	.19					

Note: N for Model 1 = 265 subjects - 15 cases with missing data = 250 subjects; N for Model 2 = 265 - 15 cases with missing data - 16 cases identified as multivariate and univariate outliers = 234 subjects.

*R² and sr² totals may not agree to the exact amount because values were rounded off in all models to the nearest tenth. For example, in Model 1, sr² = career readiness (.1943) + self-concept (.1041) + study habits (.0233) + group (.0135) = R² = .3352

Table 4.19. Stepwise Multiple Regression of Career Readiness, Study Habits, Self-Concept, and Group on Aspiration for College (Transformed Data With and Without Outliers).

Model 3: Transformed Data With Outliers Included (N =250).

Variables	Aspiration (DV)	Career Readiness	Self- Esteem	Study Habits	B	β	sr^2
*Career Readiness	.61				.33	.27	.04
Self-Concept	.41	.22			.23	.29	.10
*Study Habits	.65	.62	.14		.13	.45	.42
Group	-.11	-.14	-.14	-.18	-.07	.03	.00
				intercept =	1.28		
Mean	=	1.68					
R ²	=	.57					
Adjusted R ²	=	.56					

Model 4: Transformed Data Without Outliers (N = 234).

Variables	Aspiration (DV)	Career Readiness	Self- Esteem	Study Habits	B	β	sr^2
*Career Readiness	.66				.26	.30	.05
Self-Concept	.39	.24			.18	.24	.07
*Study Habits	.70	.66	.18		.42	.46	.47
Group	.13	-.07	-.07	-.20	.03	.29	.00
				intercept =	1.36		
Mean	=	1.68					
R ²	=	.59					
Adjusted R ²	=	.58					

Note: N for Model 3 = 265 subjects - 15 cases with missing data = 250 subjects; N for Model 4 = 265 - 15 cases with missing data - 16 cases identified as multivariate and univariate outliers = 234 subjects.

*Data for career readiness and study habits variables were transformed exponentially.

= 69.61, $p < .001$]. After step 2, with self-concept added to predict aspiration for college by study habits, R^2 was increased to .53 [$F(1, 247) = 44.71$, $p < .001$]. After step 3, with career readiness added to prediction of aspiration for college by study habits and self-concept, $R^2 = .57$ (adjusted $R^2 = .56$) [$F(1, 246) = 25.22$, $p < .001$]. The addition of group did not reliably improve R^2 .

The method used for the removal of outliers in model 2 was also employed in model 4, ($N = 234$). Again group was removed as a regressor ($p = .42$). After step 4, with group removed, the equation consisted of the three remaining independent variables at $R^2 = .59$ (adjusted $R^2 = .58$) [$F(4, 229) = 26.84$, $p < .001$]. In step 1, after study habits was entered first, R^2 was .47 [$F(1, 232) = 67.20$, $p < .001$]. After step 2, with career readiness added to prediction of aspiration for college by study habits, $R^2 = .54$, $F(1, 231) = 27.49$, $p < .001$. The addition of career readiness to the equation resulted in a significant increment in R^2 . After step 3, with self-concept added to prediction of aspiration for college by study habits and career readiness, R^2 was increased to .59 [$F(1, 230) = 26.84$, $p < .001$].

Motivation

Normality, Linearity, and Homoscedasticity. Compared to the distributions of aspiration, career readiness, study habits, and self-concept, the test for normality (Shapiro Wilk) found the motivation scale to be near normal in distribution ($W = .98$, $p = .06$).

Missing Data. Out of 265 cases examined, missing data were found on 17 questionnaires. In addition to four subjects on the career readiness scale, the four subjects on the self-concept scale, and the one subject on the study habits scale that were previously reported, subjects 57, 74, 81, 114, 125, 173, 198, and 234 were also deleted from the motivation scale. The deletion of cases amounted to no more than 3 percent for motivation, 2 percent for career readiness and self-concept, and less than 1 percent for study habits scales.

As with the aspiration variable, a dummy variable was constructed with two groups: missing data on the motivation variable and nonmissing data to determine if missing data were randomly distributed. No significant differences were found between missing data and nonmissing data on career readiness $t(1, N = 245) = .30$, $p = .76$; self-concept $t(1, N = 245) = -0.82$, $p = .42$; study habits $t(1, N = 248) = .26$, $p = .79$; and aspiration $t(1, N = 241) = .60$, $p = .55$. As before,

with no unique patterns revealed in the comparison, missing data was believed to be randomly distributed. Although the data on the motivation scale were normally distributed, the three independent variables (study habits, career readiness, & self-concept) were positively skewed, and missing data, therefore, were not replaced with mean or regression values.

Outliers. As in the aspiration variable, several univariate and multivariate outliers were discovered on several dimensions of the motivation variable. According to univariate histograms and boxplots, approximately 27 cases were discovered as possible outliers falling beyond the 1.5 interquartile range. Along with the previously reported outliers, histograms and boxplots revealed three additional possible outliers for the motivation scale. Mahalanobis and Jackknife distance discovered 13 possible multivariate outliers, and 10 univariate cases were also identified as possible multivariate outliers (Appendix E).

Like aspiration, it is believed that the high number of outliers affected results for both comparison and participant groups. Therefore, additional analysis was used to determine outlier relationship with the general study population and to discover if any patterns in outlier response behavior could be identified. Dummy variables were constructed to compare suspected outliers with the remaining study population on each of the four scales (motivation, study habits, self-esteem, & career readiness).

Although the three suspected univariate outliers on the motivation scale were not found to be significantly different from the remaining sample (Appendix F), significant differences were discovered between the 14 suspected multivariate outliers on the motivation variable and remaining subjects on career readiness, self-concept, study habits, and aspiration. These outliers were found to be less career ready [$t(1) = -3.84, p < .01$], to have less positive self-concept [$t(1) = -4.38, p < .01$], to have less understanding of study skills [$t(1) = -3.72, p < .01$], and to be less aspiring to acquire a college education [$t(1) = -5.19, p < .01$]. Although these subjects were suspected of being multivariate outliers, they were not significantly different from the remaining motivation scale [$t(1) = 1.55, p = .12$].

Based on the analyses performed, the researcher concluded that the 24 univariate and multivariate cases were outliers and were significantly different from the study sample. However, their removal as a solution to the lack of variance and skewness of items and scales was questionable. Transformation of variables, therefore, was attempted prior to any removal of

outliers from the study.

Transformation of Scales. To reduce skewness, reduce the number of outliers, and improve normality, linearity, and homoscedasticity of residuals, transformation of scale data was attempted prior to multiple regression. Each of the three independent scales (study habits, self-concept, and career readiness) were entered into a bivariate regression equation with motivation, the dependent variable. The residual error for each of these regressions was then converted by five transformations (logarithm, square root, square, reciprocal, and exponential) and evaluated for normality, skewness, kurtosis, regression fit, and r^2 . Because no apparent advantages were observed, no transformation was used for motivation and its three independent variables.

Multiple Regression Analysis for Motivation. To determine if the variance in motivation for college of middle school children could be explained by differences in study habits, self-esteem, and career readiness two models were employed and compared. Two models are presented because of data problems with variability, skewness, and outliers. The models include untransformed data with outliers and untransformed data without outliers. Data with and without outliers were compared because it was not clear whether many of the multivariate and univariate outliers would have been outliers had the distribution and variance been normal.

Table 4.20 displays data results for both motivation models, and shows the correlations between the variables, the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2), and R^2 and adjusted R^2 after entry of all independent variables. In the model 5, no outliers were removed from the equation, $N = 248$. Study habits was the only regressor found to be a significant predictor of motivation for college, $R^2 = .10$ (adjusted $R^2 = .09$) [$F(4, 246) = 25.00, p < .001$]. F probabilities for the remaining variables were as follows: career readiness [$F(1, 246) = .97, p = .33$], group [$F(1, 243) = .58, p = .45$], and self-concept [$F(1, 243) = .77, p = .38$]. Addition of these variables did not reliably improve R^2 .

In the model 2, data were again left untransformed but with multivariate and some univariate outliers removed, $N = 232$. Multivariate outliers were removed using Mahalanobis and Jackknife methods in JMP. Case 215 was also removed because it appeared as an outlier on more than one univariate histogram. All other univariate outliers were left in the equation. Study habits was found to be the only predictor of motivation for college, $R^2 = .14$ (adjusted $R^2 = .09$) [$F(4,$

Table 4.20. Stepwise Multiple Regression of Career Readiness, Study Habits, Self-Concept, and Group on Motivation for College (UnTransformed Data With and Without Outliers).

Model 5: With Outliers Included (N =248).

Variables	Motivation (DV)	Career Readiness	Self- Esteem	Study Habits	B	β	sr^2
Career Readiness	-.26				.04	-.07	.00
Self-Concept	-.07	.17			.03	.06	.00
Study Habits	-.38	.50	.34		-.12	-.28	.09
Group	-.10	.03	-.08		.07	-.03	.00
					intercept = 2.26		
Mean	=	1.95					
R ²	=	.10*					
Adjusted R ²	=	.09					

Model 6: Without Outliers (N = 232).

Variables	Motivation (DV)	Career Readiness	Self- Esteem	Study Habits	B	β	sr^2
Career Readiness	-.20				.07	.06	.01
Self-Concept	-.05	.21			.02	.04	.00
Study Habits	-.30	.50	.34		-.14	-.33	.14
Group	-.07	.03	-.08		.07	-.04	.00
					intercept = 2.37		
Mean	=	1.95					
R ²	=	.15					
Adjusted R ²	=	.14					

Note: N for Model 5 = 265 subjects - 17 cases with missing data = 248 subjects; N for Model 6 = 265 - 17 cases with missing data - 16 cases identified as multivariate and univariate outliers = 232 subjects.

*R² and sr² totals may not agree to the exact amount because values were rounded off in all models to the nearest tenth. With only the study habits regressor found significant in Model 5, sr² = .0922 study habits + .0084 shared by career readiness, self-concept & group = R² = .1006.

230) = 21.44, $p < .001$]. F probabilities for the remaining variables were career readiness [$F(1, 230) = 2.24$, $p = .14$], group [$F(1, 230) = 83$, $p = .36$], and self-concept [$F(1, 230) = .36$, $p = .55$]. Although career readiness added an increment of .87, the addition of career readiness, self-concept, and group did not reliably improve R^2 .

Summary of Aspiration and Motivation Models

To determine what percentage of variance in aspiration and motivation was explained by study habits, self-esteem, and career readiness, multiple regression analyses were performed. Six models with/without transformation of variables and with/without multivariate outliers were tested for aspiration and motivation. Several cases were removed from analysis for having missing data.

The patterns across the models for each dependent variable were fairly similar. Except for differences in magnitude, the pattern of coefficients is basically the same. In Models 1 and 2, the sr^2 for study habits variable is low due to high correlation with the career readiness variable.

In Models 3 and 4, R^2 is improved with transformation of study habits and career readiness. Although R^2 in Models 3 and 4 is improved with exponential transformation, a collinearity problem between the study habits and career readiness was magnified through transformation at $r = .62$ for Model 3 and $r = .66$ for Model 4. Model 4, with multivariate outliers removed ($N = 234$), appeared to explain more variance (59 percent) than other aspiration models.

In the motivation models, neither model was found to have significant regressors to explain variance in motivation. Only one regressor, study habits, was found to be significant at 10 percent in Model 5 and 15 percent in Model 6.

Additional Analyses

Middle Performance Analysis.

Because nearly 27 percent of the comparison group had school reported grades of “A” compared to only 10 percent for the participant group, a secondary analysis was performed on middle performance students in the sample. It was suspected that the high proportion of high

grades in the comparison group may have skewed results. To test whether JHWGA was more effective for middle performing participants, middle performing subjects in both groups were compared. Subjects with school-reported grades of “B” and “C” were thus extracted from the total sample. Remaining subjects with high grades of “A” and low grades “D” or below were removed. This sample amounted to 200 subjects, comprising of 113 middle performing subjects in the comparison group and 87 middle performing subjects the participant group (72% of total comparison subjects and 84% of total participant subjects). A series of t-tests were then conducted on all questionnaire items to determine if differences existed between middle performing subjects in the two groups.

Of the 35 items organized for the five variables, middle performers were found to differ significantly on only one item (Item 12) under the career readiness variable. Members of the participant middle performance group ($M = 1.71$) had significantly more experience in looking into what education was needed for at least one career field than members of the comparison group [$M = 2.07$] $t(198) = 2.13, p = .03$. However with significance discovered on only one item, it is most likely that this significant result was spurious.

Anecdotal Information

Since the JHWGA program in July 1996, a number of unsolicited letters, cards, and phone calls were received from participants, parents, and school counselors concerning their impression of the JHWGA program and its effect on past participants. Some of these letters were received unsolicited during and after data collection. In lieu of assumption violations in quantitative analysis and inconclusive results on the impact of this program, these letters served to put a perspective on the value of this study and what JHWGA has meant to some individuals and school officials throughout West Virginia. Names have been withheld to protect confidentiality.

The following letters were received shortly after the JHWGA program concluded in the summer of 1996. The first letter was written by a parent from Nicholas County:

. . . my husband and I did have reservations and felt extremely wary about leaving our son so far from home for an entire week, beyond our parental “protective” shield.

After [son’s name] registration, I immediately felt at ease with your friendly, courteous staff that assisted the campers with the setting into Thacher Hall. We left with the knowledge that he was

in capable hands.

Upon our arrival Saturday morning, it was obvious that my son was happy, relaxed, and of course tired from the week's activities. I was quite impressed with the camaraderie the counselors showed toward the campers, as well as the encouragement and support shown to each and every camper as he/she received an award.

Our five hour drive home was filled with conversation regarding the campus, the classes, and the field trips to the various historical and educational sites. [name] shared with us facts and stories of interest that he had experienced through the camp. Many of the stories were lessons to us! Of course, the entire five hours home were not entirely filled with conversation - there were moments of silence as [name] tried to recapture some of the sleep he lost. The minor inconvenience of reduced sleep was outweighed heavily by the enormous gains the camp offered him.

I would like to commend the program for its well-organized, action-packed week of activities. Once again, I would like to give my sincerest offer of gratitude for the professionalism of your staff and the educational opportunity you offered my son as result of attending this camp.

Thank you to all those involved for the hard work and dedication contributed to make this camp possible to students. What a wonderful experience it turned out to be.

A second letter was received from a participant in Putnam County. He had this to say about his experience:

Thanks for selecting me for the Gateway camp. I had fun and the counselors are cool and I liked meeting all the people. I would like to do it again but it is only for the seventh graders. I did learn some stuff though you need to give people more sleep.

Throughout the year following the 1996 JHWGA, the researcher received several letters and phone calls from counselors and school officials across the state. Discussions over the phone calls have occurred with school officials in Fayette, Pocahontas, Wood, and Upshur counties. Many of these calls praised the effect that JHWGA had on participants from their counties. In February 1997, counselors across the state were informed, as a courtesy, about the college planning survey. During the recruitment of candidates for the 1997 summer program, the following notes were received by the researcher:

We would like to relate to you the high esteem our faculty holds for your program. The aim, commitment and delivery is of the highest caliber. Please keep up the good work for it is of great

benefit to our students.

counselor, Hancock County

Your efforts with this program are greatly appreciated.

principal, junior high school
Greenbrier County

Best wishes for an exciting Gateway Academy!

counselor, Fayette County

Each of the applicants [names of 1997 candidates] . . . live in a low socio-economically depressed area. Any learning opportunities these students experience beyond what we have to offer them is greatly appreciated. Our previous students have returned and spoke highly of the Academy. Thank so much for this opportunity for them.

counselor, Webster County

. . . is one of those students [1997 candidate] who has tremendous potential but needs some extra guidance and encouragement. He has never been to Washington, DC, or Baltimore. These two trips alone can open his eyes to a whole new world.

counselor, Randolph County

I am trying to get some of our young students interested in your Gateway program. It sounds like a wonderful opportunity. I wish you the best with your study.

counselor/director of personnel,
Randolph County

During the survey, the following notes were attached to questionnaires. The first is from a Gateway participant in Logan County:

Thank you for all you have done for me. At school I have been doing very good. Now that I have went to the Washington Gateway at your nice college, I have made the honor roll two times this year. That is very good for me because I have not made the honor roll since 3rd grade. The Gateway program was the best educationable thing that I have ever did. Thank you very much.

A second note was written by another parent in Putnam County. This letter transcends many of the Washington Gateway goals:

I have long wanted to write Shepherd College a note. [name] attended the Washington Gateway last year and it was such a great

experience for him. We frankly didn't know what to expect. Also being from the more southern area [Putnam County], we had never visited that area of the state.

Shepherd College is beautiful, clean campus. The young adults who chaperoned these students were helpful and quite mannerly and mature. Shepherd College should be very proud of them.

[Name] had a great week - and even if you doubt the benefits of this program from time to time, let me assure you it has very positively affected [name]. We have seen him grow and mature . . . his grades have vastly improved (see latest report card) and he seems more directed and is even setting some academic and career goals for himself. We see Washington Gateway as a wonderful opportunity - what a unique opportunity.

[Name] needed some self-esteem building and a little direction. As parents, we constantly try to direct and guide but sometimes it's that outside influence that makes the difference.

We are so happy, as parents that [name] was able to be part of your fine campus for that week. Thank you, once again.

Summary of Results

Two mailings and one phone survey were used to achieve an 88 percent response rate for a college planning survey of early adolescents in West Virginia. T-tests and chi square analyses were performed to determine if any differences existed between members of participant and comparison groups according to demographics, aspiration, motivation, study habits, self-esteem, and career readiness. Although the participant and comparison groups were nearly identical on several characteristics, two significant demographic differences were discovered. The comparison group had higher school-reported and self-reported grades than the participant group. Members of the participant group had more overnight/away-from-home experience than the comparison group.

No significant differences between groups ($N = 265$) were found for any of the five scales measured nor for the individual items used to construct scales. Significant difference was discovered between comparison and participant responses to an open-ended question. More participant members than comparison members indicated use of computers in career research. Because data frequency was found to be extremely skewed on many items and scales, an assumption of equal distribution and variance was violated.

To determine what percentage of variance in aspiration and motivation was explained by

study habits, self-esteem, and career readiness, multiple regression analysis was employed. Six models with/without transformation of variables and with/without multivariate outliers were constructed and tested. Several cases were removed from analysis for having missing data. The fourth aspiration model, using transformed data with multivariate outliers removed ($N = 234$), was found to explain 59 percent of the variance in aspiration. However, improved R^2 through transformation may have created a more serious collinearity problem between the two transformed scales, study habits and career readiness. For the motivation models, only one regressor was found to be significant in explaining only 10 percent (Model 5) and 15 percent (Model 6) of the variance in motivation.

An analysis of middle performers ($n = 200$) was also conducted to determine if the unequal distribution of grades in the comparison group adversely affected results. Out of all scales and questionnaire items, groups were significantly different on only one item. Participant middle performers were discovered to have more experience in researching education for at least one career field.

In addition to the quantitative data collected for this study, data from several letters and phone calls from participants, parents, and school officials were presented. In spite of the lack of quantitative results, there is some evidence to indicate that the JHWGA program was valuable for some individuals.

Chapter 5

Summary

The purpose of this study was to examine the impact of a state supported precollege intervention program on early adolescents. Although the delivery of precollege interventions are numerous and diverse (Medina & Drummond, 1993; Kiley, 1989; Okey, Snyder & Hackett, 1993; Fouad, 1995; Angelo, 1995), the link between precollege interventions and expectations for a college education are not well known, especially in relationship to early adolescents in a rural and economically depressed state. The study problem was to determine if the JHWGA program was effective in developing aspiration and motivation to pursue a college education in early adolescents.

Review of Study

Literature Review

The literature review substantiated that aspiration for college begins in early adolescence (Stage & Hossler, 1988; Trent, 1970; Angelo, 1993; & others) and that Grade 8 is a critical time for the development of aspiration (Rock, 1994; Mau, 1995). Many early adolescents, however, are considered to be vocationally immature, incapable of assessing themselves, and lacking in knowledge to prepare for high school and college (Mau, 1995; Rock, 1994; Lee, 1993). Also, few early adolescents have meaningful discussions with their parents, teachers, guidance personnel or others concerning future critical choices (Ingels, 1990; Hafner et al., 1990). For these reasons, early adolescents living in a state with the one of the lowest college entry rates and parental education levels (Smith et al., 1996; Horner, 1994) were believed to be at a severe disadvantage in developing interest and preparing for a college education.

In addition to the many economic, cultural, and social factors that influence aspiration for college, it is believed that other variables such as career readiness, self-concept, study habits, aspiration, and motivation are correlated to the desire to go to college. Seeking identity and gaining knowledge of self are known to occur at early adolescence (Gerler, 1991). Having the career readiness or maturity to understand self in terms of possible careers enables one to aspire and make critical decisions necessary to prepare for the future. Identity seeking is related to what Super (1957, 1960, & 1974) called the process of understanding one's self-concept, translating one's self-concept into occupational terms, and testing one's career self-concept against occupational

realities. Having high self-esteem was not only related to career development but to better adjustment and higher achievement as well (Snow & Jackson, 1992). Students entering college with high self-esteem are believed to be more motivated and aspiring (Trent, 1970) and are more likely to achieve their academic potential (McCall, Evahn & Kratzer, 1992). Furthermore, poor study habits are not conducive to one academically performing at one's true ability level or to have positive self-concept (Trawick, 1992).

An aspiration is an individual's hope for the future (Schmitt, 1991), and fulfillment of an aspiration depends on the opportunity to have quality educational experiences (Hossler, 1985). Attainment of an aspiration requires sustaining commitment/drive or motivation, which enables one to attain one's goals (Trent, 1970). A planful approach that helps one encounter positive experiences is necessary for maintaining interest and providing building blocks for continued success (Atkinson & Raynor, 1978; Raynor, 1978). It was hypothesized, therefore, that an early adolescent who develops career readiness by exploring self in relationship to the world-of-work; who sees himself/herself in career possibilities (especially those that require postsecondary education); who encounters successful, quality experiences that lead to positive self-esteem; and who acquires the skills that enable him/her to perform at his/her maximum academic performance level will be able to develop and act on aspirations. With career readiness, positive self-concept, and good study habits, it is believed that an early adolescent can function at his/her academic potential, aspire for a college education, and develop intrinsic commitment and drive that will stimulate him/her toward a path for college.

The JHWGA intervention attempted to provide these elements in a pre-college environment where participants had the opportunity to explore careers, develop self-awareness, and improve study habits. The goals of this program were to teach relevancy of school subjects to a college education and careers, to engage in the development and implementation of an action plan that would prepare one for college, and to develop goal setting, aspiration and intrinsic motivation for a college education.

Research Questions and Design

To measure the effectiveness of this program, the study design attempted to: a) measure differences between a group of early adolescents who had participated in the JHWGA program with a similar group who had not participated in JHWGA on career readiness, self-concept, study habits, aspiration and motivation toward pursuing a college degree; and b) determine if the variance

in aspiration and motivation for college could be explained by the differences in career readiness, self-concept, and study habits in early adolescents.

To measure differences, former candidates for the 1996 JHWGA program were surveyed with a questionnaire constructed from items of previous college planning surveys. The questionnaire was sent to all candidates who either attended or applied to JHWGA in 1996. Data from these two groups were compared according to categorical items, demographical items, and scales (career readiness, self-concept, study habits, aspiration, and motivation). Several regression models were developed and compared. In addition to the three independent variables (career readiness, self-concept, and study habits), a fourth regressor (group) was included in the multiple regression equation to help explain variance due to group differences.

Results

As a whole the 265 members of the study sample were Grade 8 students. They were found to be primarily female (61%), predominantly white (94%), and age thirteen/fourteen (94%). Most subjects came from hometowns of less than 5,000 in population (80%) with 51 percent coming from towns with less than 1,000 in population. Fifty-one percent of the fathers and 47 percent of the mothers did not have any postsecondary education. Despite West Virginia's proximity to eastern cities, most subjects had not visited Washington, D.C. (61%) or Baltimore, Md.(81%). Also, few subjects had ever visited the Eastern Panhandle of West Virginia (69%). Sixty-six percent reported no prior overnight experiences with summer camps.

The majority of the subjects indicated high grades since sixth grade in English ($\underline{M} = 3.38$), mathematics ($\underline{M} = 3.20$), science ($\underline{M} = 3.39$), and social studies ($\underline{M} = 3.48$). Grade estimates reported by school officials prior to the study indicated a lower grade point average at 2.90. Sixty-four percent of the subjects reported being satisfied with their grades, and 90 percent felt they were capable of better grades.

Prior to the study, 71 percent reported discussing college with an adult. Results from the survey indicated that 82 percent of subjects wanted to graduate from college and 28 percent wanted to go beyond college. Sixty-four percent were planning to prepare for college in high school and only 16 percent did not know what high school plan to follow. The study sample was somewhat divided over when postsecondary aspirations began. Twenty-eight percent they always knew while

others believed aspiration began between the sixth and seventh grade (31%), or in the eighth grade (37%).

According to scales used in the study, the study sample appeared to have explored career possibilities ($\underline{M} = 1.56$), to have a good impression of themselves ($\underline{M} = 1.74$), and to be aspiring for a college education ($\underline{M} = 1.69$). They were also found to have had moderate use of good study habits ($M = 2.35$). Most subjects reported between no discussions to once or twice meetings ($\underline{M} = 1.95$) with their counselors, teachers, parents, and other adults concerning school work, career choices, and high school.

Although both groups were similar on several demographic items, groups were discovered to be significantly different on first camp experience, school estimated grades, and self-reported grades. A series of t-tests and chi square analyses were used to compare differences between groups on questionnaire items and scales, and no significant differences were discovered. In examining the frequency of data, it was suspected and later confirmed that a violation of normal distribution and a lack of variance had occurred. Answers to several items using five choices ranging from agree to disagree tended to be heavily skewed to the right or left with little distribution in the middle. Results from items and scales, therefore, were not found to be reliable in determining differences between groups and in explaining variance between variables.

The only significant difference discovered on the questionnaire (other than demographical differences) was in information volunteered by subjects on an open-ended question (item 50). Subjects were asked to report what they had done to find out about careers that might interest them, and two-thirds of the subjects who indicated that they had used computers in career research were members of the participant group ($\chi^2 (1, \underline{N} = 30) = 5.95, p < .05$).

For the second research question, six multiple regression models (four aspiration and two motivation) were developed. With no clear explanation for the large number of outliers, separate regression models were presented with and without outliers to compare outlier influence on results. Also in two of the aspiration models, study habits and career readiness scales were exponentially transformed to improve normality.

Only the last model for aspiration (Model 4) had the highest R^2 explaining 59 percent of variance. However, the use of transformation in the model highlighted a collinearity problem

between study habits and career readiness ($r = .66$). For all aspiration models, study habits or career readiness appeared to explain the largest portion of R^2 . However, when either of these variables were entered first into the equation, the other's contribution was greatly reduced due to the high correlation between the two. As a result, it was difficult to ascertain either variable's unique contribution across models.

Another observation of the aspiration regression is the validity for the instrument used. Items for the questionnaire were selected from several studies that had demonstrated validity and reliability; however, many of these items were designed for dichotomous responses. Although no reliability and validity tests were conducted, it is suspected that some validity may have been lost by converting these items to five-point Likert scales. This attempt at gaining variability in item responses was not successful, with an overwhelming majority of the students favoring the endpoints of the Likert scales.

Having only one regressor (study habits) found significant, motivation models were not helpful in explaining the variance of motivation according to differences in career readiness, self-concept, and study habits. It appears that further study is needed to determine if the items for the motivation variable had validity. Again due to the limitations of using an instrument with items from other studies, motivation items may not have had the content validity to find the information that was being asked.

Due to the collinearity problem, lack of normal data, and a large number of outliers, little could be concluded about the relationship of aspiration and motivation to career readiness, self-concept, and study habits. Because of these disappointing results, additional analyses were conducted on data. Results from an analysis of middle performing students in the two groups revealed only one significant item: researching what level of education was needed for at least one career field, $t(198) = 2.13$, $p = .03$. Although results indicated that middle performers in the participant groups were significantly more involved in researching career fields, the value of this analysis may be spurious considering that only one item out of 35 analyses was found to be significant.

Also included with these results are a number of unsolicited letters and phone calls from former participants, parents, and counselors. In light of a lack of statistically significant results, this information provides a different perspective on the value of the JHWGA intervention. It is

suspected, therefore, that this study was faulty because it either missed measuring what actually occurred or because some of its elements prevented fair comparison. The following section elaborates on some plausible reasons for why this study did not provide any useful comparisons.

Potential Reasons for Results

Essentially this study did not corroborate any meaningful impact for JHWGA participants in 1996. Finding no conclusive results and encountering assumption violations with data are very disappointing. In reviewing the study, the researcher offers the following plausible reasons for the results: a) the two groups were not matched for a comparison study; b) the JHWGA selection process may not be selecting students in most need of this program; c) the study lacked a pretest to measure variables prior to treatment; d) the instrument may not have been reliable and valid for the intended purpose; e) too much time was lost between the intervention and data collection causing a possible internal validity problem (maturation); g) finally, a potential confound existed with the School-to-Work initiative currently being administered in middle schools throughout the state.

Dissimilarities between Comparison and Participant Groups

Although the members of the comparison and participant groups were found to be very similar on several of the demographical items on the questionnaire and application form, there were significant differences between groups on first camp experience and grades (both self-reported on questionnaires and reported on application forms). These differences created unequal groups for comparison. As substantiated in the literature, higher achievement is strongly correlated to higher aspirations for a college education (Burkheimer & Jaffe, 1981; Hossler, 1984; Nora & Cabrera, 1993; Hossler, Braxton & Coopersmith, 1989; Stage & Hossler, 1988; and Trent, 1970). Students with higher achievement (grades) not only have loftier aspirations, but healthier self-esteem (Snow & Jackson, 1992; Guerin et al. 1994; Brewer, 1989; McCall, Evahn & Kratzer, 1992) and more career maturity than students with lower achievement (Crites, 1971; Tamminen & Miller, 1971; Burkheimer & Jaffe, 1981).

According to Table 4.4, 79 percent of the subjects in the comparison group had higher achievement (school reported grades of letter B and above) while only 66 percent of the participant group had grades of B or above. Furthermore, 27 percent of the comparison group had letter grades of A compared to only 10 percent in the participant group. Subjects in the comparison

group had significantly higher grades on three subjects (English, math, & science). More of the comparison group had A's and B's in these subjects than the participant group. Based on these grade differences and the relationship of achievement to aspiration for college, the comparison group had a greater advantage in developing expectations for college.

Given these circumstances, it is improbable to think that any meaningful difference between the two groups could have been found on relevant variables. On the other hand, finding no difference on outcome variables between unequal groups presents another interesting observation. Why were the means between groups nearly similar for many items on the questionnaire? There is a possibility that the JHWGA intervention could have helped the participant group, who had significantly lower grades, to attain the same level of aspiration with higher achieving subjects in the comparison group. There is also the nagging question as to why little difference was found between middle performers of both groups. These questions seemed to indicate the need for another study with better matched groups.

The JHWGA Selection Process

The intent of JHWGA was to recruit students having the potential for college but lacking in aspiration and motivation. However in reviewing applicants nominated for this program, it is suspected that many applicants were not lacking in aspiration and motivation for college and were performing well in school. These suspicions were confirmed after reviewing applications, reading references, and speaking with various school officials throughout the state. Despite JHWGA literature, a prevailing attitude in many schools is to send their best and brightest students to JHWGA; to permit students to compete for nominations; and to reward students with a nomination for good scholarship or deeds. With some exceptions, the use of these methods does not always ensure that JHWGA will get students who meet program criteria. After considering the data results in this study, the extent of this problem may be more serious than previously thought.

The high number of univariate and multivariate outliers identified in the regression analysis (Appendix E and F) may provide some clues to this phenomenon. Being that there is no apparent explanation for the high number of outliers in this study, it is plausible to assume that outliers may have been subjects in most need of this program. With data so skewed, it was possible for these subjects to become outliers by simply responding with a middle choice on the Likert scale. Frequency counts in Table 4.17 provide some evidence for this assertion. For example, 85 percent

of the total sample indicated that they that they wanted to go to college (item 3) by choosing a one on the Likert scale. Someone who was leaning toward college, but not 100 percent positive, could have answered with a two, which is a favorable response. However only 9 percent of the respondents chose a two, and only 4 percent selected a three. As outliers or middle-of-the-road students, they may have represented students in most need of this program.

Part of this problem lies with the JHWGA selection process. The reason for the competition is the fact that few openings exist for each school. When there is a selection process that picks less than half of the applicants who apply, competition stiffens, and this competition is not always favorable to the student in most need of the program. Added to this mix is the fact that the program is free and very popular across the state. The results in this study indicate to the researcher that alternative selection methods may be needed to make this program less competitive and more efficient in selecting students in most need of a precollege intervention.

Design and Instrumentation

Given the conditions in this study, a survey design with a questionnaire became the most efficient method to gather information from a known population located statewide. One of the weaknesses in this design was the researcher's inability to supervise the completion of questionnaires. Although the JHWGA application served to give some pre-survey information, there was no pretest. The lack of pretest data prevented the researcher from determining what gains were made in aspiration and motivation for college after treatment.

It is important that future researchers understand that there are more valid and reliable instruments available that could be used in a study of college aspiration. Several instruments, such as the Coopersmith Self-Esteem Survey, the Career Development Inventory, and the Career Maturity Inventory, were considered for this study. Although these instruments are widely used in dissertation research, none of them were found suitable for the conditions facing this researcher. With subjects located throughout West Virginia, the instrument selected had to be flexible enough to be mailed and completed in an unsupervised environment. In addition to being valid and reliable, the instrument selected had to be easy and simple for subjects to complete in a relatively short time (15 to 20 minutes) and to provide data for all the variables in the study. These conditions were necessary to ensure adequate response. Finding no proven instrument capable of handling all these conditions, a new questionnaire (Appendix B) was developed by the researcher.

Given the above constraints, the researcher was left to his own resources and had to attempt to develop a valid instrument by incorporating items from several studies (see Chapter 3). Many of these items previously used in research were designed for dichotomous responses. To create scales for the variables in this study, many of these items were converted from “yes” and “no” to a five point Likert scale.

Inaccuracy on self-reported instruments, according to Wentland and Smith (1993), is usually associated with item construction and item characteristics. Knowing that many early adolescents are inclined to value the need for postsecondary education regardless of whether they plan to go to college (Larter, 1982; Ingels, 1990; Hafner, 1990), there is some evidence to suggest that item construction and characteristics from previous studies did not account for this value factor and provide depth of feeling for each response. Even after conversion to scaled responses, questionnaire items (Appendix B) continued to imply “yes” or “no” answers. It is now suspected that many subjects were conditioned by the way the directions were stated, asking for a response from 1 = strongly agree to 5 = strongly disagree. Being so young, many of these subjects may have had little or no experience with questionnaires. Unfortunately for this study, this phenomenon did not reveal itself during pilot testing. A more likely change might be to include anchors for each value in the response scale such as labels of 1 = agree, 2 = agree somewhat, 3 = neutral or no opinion, 4 = disagree somewhat, and 5 = disagree.

Length of Treatment and Time Since Treatment

Although the intervention used an intensive schedule, it was only one week in duration. Concern had been expressed prior to this study that treatment was too short to produce any significant change in subjects. However, there are the unsolicited letters and notes in Chapter 4 that indicate that some effect did occur. As mentioned before, a suitable instrument/design has yet to be found that will measure the impact of these programs on participants. Upward Bound and Talent Search programs, which are longer in duration, are also under scrutiny as to how their worth can be measured (Branch, 1993; Angelo, 1993).

In addition to subject matching, subject selection, instrumentation and design, and shortness of the treatment period, too much time may have elapsed between participation in JHWGA and the survey. Originally, the researcher had scheduled data collection to commence in February 1997, approximately six months following JHWGA (July, 1996). Unfortunately, an

administrative delay postponed data collection and questionnaires were not mailed until early May, 1997.

As a consequence, nearly ten months passed before subjects could be surveyed. The passage of time most likely caused internal validity problems. For example, all JHWGA participants went through an extensive career planning exercise on SIGI PLUS, the computerized career planning program described in Chapter 1. However, when participants were asked to recall on item 50 what they had done to find out about careers that might interest them, only 18 of the total 104 respondents remembered that they had researched careers at JHWGA. A survey conducted closer to the Academy experience would certainly have prompted participants to have remembered that activity. Additionally, other things going on in the schools during that time impacted both participants and the comparison group. These are described in the following section.

Current Developments

Since the JHWGA program began in 1991, there have been several new developments in career planning across the nation and in West Virginia. Currently West Virginia middle schools are mandated to provide career testing in Grade 8. Testing, in conjunction with School-to-Work and an increase in Talent Search programs across the state, may have influenced indirectly data results by bringing students to a higher state of career awareness than was the case in early 1990. A look at the broad range of activities mentioned in Table 15 leads one to suspect that conditions described by The National Education Longitudinal Study (NELS: 88), the Carnegie Report released in 1989, and the West Virginia Education Fund may have changed since 1990. Subjects appeared to be involved with more career activities indicating a possible trend change toward postsecondary education from what Lyson (1977) described in the 1970s and the West Virginia Education Fund (Ridge & Valley Researchers, 1989) depicted in the 1980's. The extent to which these new developments have influenced aspiration in West Virginian youth is not well known, and therefore needs more research.

Implications and Recommendations

As for the JHWGA program at Shepherd College, the researcher has tried to give some understanding as to the inconclusive results and feels the effectiveness of JHWGA should not

prematurely evaluated based on these results. Instead, it is recommended that another study be initiated using the lessons learned in this study as a foundation. An additional study would need to be conducted immediately after another JHWGA, to include evenly matched subjects, and to have a design, possibly a Solomon Four-Group Design, that provides comparison with and without a pretest. The selection process would also need to be revised so that subjects under study are the type of students in most need of this program. Although this study did not find any significant impact, a good deal has been learned that has been directly applied to future JHWGAs. The literature on precollege interventions discussed in Chapter 2 led to improvements in the selection of participants, activities, publications, and procedures in 1997.

The researcher recommends that research continue on precollege interventions and aspiration for college. This research would be beneficial to institutions of higher education and secondary schools alike. By exploring and understanding the development of aspiration, higher education could work more collaboratively with secondary schools in creating and implementing precollege interventions that are effective in encouraging aspiration to and motivation for a college education. Students and their families, especially those in economically depressed areas would be better served by this collaboration.

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Appendix A

Junior High Washington Gateway Schedule

Sunday, July 21

2:30 pm	Check in Thacher Hall (Must check in by 5:00 pm)
5:00 pm	Dinner
6:00 pm	Opening Ceremony
7:00 pm	Group Activities/Games
	Tour of Campus/Town
9:00 pm	Camp Swim - Shepherd Pool
10:00 pm	In Residence Hall - Journal Entry

Monday, July 22

7:00 am	Breakfast - College Dining Hall
7:30 am	Morning Meeting with Camp Director - College Dining Hall, Pre-Test
8:00 am	Class Activity I (Math, Science, Social Studies, Study Skills, Career Planning or Bowling)
8:50 am	Class Activity II (Math, Science, Social Studies, Study Skills, Career Planning or Bowling)
9:30 am	Break
9:50 am	Class Activity III (Math, Science, Social Studies, Study Skills, Career Planning or Bowling)
10:40 am	Class Activity IV (Math, Science, Social Studies, Study Skills, Career Planning or Bowling)
11:30 am	Lunch - College Dining Hall
1:30 pm	Class Activity V (Math, Science, Social Studies, Study Skills, Career Planning or Bowling)
1:20 pm	Class Activity VI (Math, Science, Social Studies, Study Skills, Career Planning or Bowling)
2:10 pm	General Session - College Center Ballroom
2:30 pm	Harpers Ferry and John Brown
3:00 pm	Film: "John Brown"
4:30 pm	Dinner - College Dining Hall
6:00 pm	Bus Departure for Harpers Ferry, West Virginia
6:30 pm	Tour of Harpers Ferry Historical National Battlefield
8:30 pm	Guided Ghost Tour of Harpers Ferry
9:30 pm	Return to Shepherd College
10:00 pm	In Residence Halls - Journal Writing

Tuesday, July 23

Shepherd College	
7:00 am	Breakfast - College Dining Hall
8:00 am	Camp Meeting - College Dining Hall
8:30 am	Leave for Washington, D.C.
10:15 am	Meet with U. S. Congressman Wise
	Tour U. S. Capitol
	Bag Lunch on the Mall

	Tour Smithsonian Museums
	Tour National Archives
	Dinner - Sholl's Cafeteria
	Tour Memorials
8:00 pm	Return to Shepherd College
9:00 pm	Evening Swim at Shepherd Pool
10:00 pm	In Residence Hall - Journal Writing

Wednesday, July 24

7:00 am	Breakfast - College Dining Hall
7:30 am	Morning Meeting with Camp Director - College Dining Hall
8:00 am	Class Activity I (Same as Monday)
8:50 am	Class Activity II
9:30 am	Break
9:50 am	Class Activity III
10:40 am	Class Activity IV
11:30 am	Lunch - College Dining Hall
1:30 pm	Class Activity V
1:20 pm	Class Activity VI
2:10 pm	General Session- College Center Ballroom
2:30 pm	The Civil War
3:00 pm	Film: "Antietam Revisited"
3:30 pm	Living History Demonstration by Civil War Reenactors
5:00 pm	Dinner - College Dining Hall
6:00 pm	Bus Departure for Sharpsburg, Maryland
6:30 pm	Tour of Antietam National Battlefield
8:30 pm	Return to Shepherd College
9:00 pm	Evening Swim - Shepherd Pool
10:00 pm	In Residence Halls - Journal Writing

Thursday, July 25

7:00 am	Breakfast - College Dining Hall
7:30 am	Leave for Baltimore, Md
	Fort McHenry
	Bag Lunch - at the Fort
12:30 pm	Maryland Science Museum
	IMAX Film: "Special Effects"
3:00 pm	The National Aquarium
	"Dolphin Show"
5:30 pm	Dinner in Baltimore
8:00 pm	Return from Baltimore
9:00 pm	Evening Swim
10:00 pm	In Residence - Journal Writing

Friday, July 26

7:00 am	Breakfast - College Dining Hall
7:30 am	Morning Meeting with Camp Director - College Dining Hall
8:00 am	Class Activity I (Same as Monday and Wednesday)

8:50 am	Class Activity II
9:30 am	Break
9:50 am	Class Activity III
10:40 am	Class Activity IV
11:30 am	Lunch - College Dining Hall
1:30 pm	Class Activity V
1:20 pm	Class Activity VI
2:10 pm	General Session - Post-test
2:30 pm	Planning for College
3:00 pm	JHWGA Olympics
5:00 pm	Barbecue
7:00 pm	Evening Social and Fun Night
9:00 pm	Evening Swim - Shepherd Pool
10:00 pm	In Residence Halls - Journal Writing

Saturday July 27

7:00 am	Breakfast
8:00 am	Pack Up, Clean Room, and Check Out
9:00 am	Graduation Ceremony Presentation of Certificates
10:30 am	Junior High Washington Gateway Academy Ends

Appendix B

College Planning Questionnaire

Subject # _____

It will only take you between 10 and 15 minutes to complete these questions. Please follow the directions on each page. Your responses are confidential and will not be shared with anyone not connected with this research project. Thank you for your time.

Please answer how you feel about each statement by circling a number from 1 (agree strongly) to 5 (disagree strongly). Select one number that best describes your feelings:

	Agree Strongly	1	2	3	4	5	Disagree Strongly
1. I think a great deal about what I will be doing after high school.....	1	2	3	4	5		
2. I want a good job when I graduate.....	1	2	3	4	5		
3. I want to go to college.....	1	2	3	4	5		
4. I do not think I need more than a high school education.....	1	2	3	4	5		
5. Making a decision about my future is very important to me.....	1	2	3	4	5		
6. I am not sure that I will be able to get into college or vocational school	1	2	3	4	5		
7. I may want to work/enter the military immediately after high school.	1	2	3	4	5		
8. I cannot afford to continue my education.....	1	2	3	4	5		
9. I do not think I have the ability to go to college.....	1	2	3	4	5		
10. I plan to take algebra and geometry before I graduate from high school.	1	2	3	4	5		
11. I have gathered information on jobs and careers that may be of interest to me after high school.....	1	2	3	4	5		
12. I have looked into the education needed for at least one career field.....	1	2	3	4	5		
13. I am tired of school and do not want to continue.....	1	2	3	4	5		
14. I feel good about myself.....	1	2	3	4	5		
15. I feel I am a person of worth, the equal of other people.....	1	2	3	4	5		
16. I am able to do things as well as most other people.....	1	2	3	4	5		

College Planning Questionnaire, page 2

	Agree Strongly	1	2	3	4	5	Disagree Strongly
17.	On the whole, I am satisfied with myself.....	1	2	3	4	5	
18.	I study at home in a regular place away from disturbances like TV.....	1	2	3	4	5	
19.	I certainly feel useless at times.....	1	2	3	4	5	
20.	I am able to remember more information if I study over several days rather than in one crash session.....	1	2	3	4	5	
21.	I know how to take lecture notes and put them into short statements....	1	2	3	4	5	
22.	I review the whole exam before starting.....	1	2	3	4	5	
23.	I have been taught how to outline, summarize, and find main ideas from my readings in classes this year.....	1	2	3	4	5	

Since the beginning of this school year, how often have you talked with your parents, a counselor at your school, a teacher at your school, or another adult relative or adult friend (other than your parents), for any of the following reasons?

	Not at all 1	Once or twice 2	Three or more times 3	
(For each statement, enter one of the three numbers for each person) (24/35)				
Example: to get information on colleges	<u>3</u>	<u>2</u>	<u>2</u>	<u>1</u>
	Counselor	Teacher	Parents	Other Adult
To get information about high school programs:	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	Counselor	Teacher	Parents	Other Adult
To get information about jobs or careers that you might be interested in after finishing school:	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	Counselor	Teacher	Parents	Other Adult
To help improve your academic work in school right now:	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	Counselor	Teacher	Parents	Other Adult

For each of the school subjects listed below, place an X in the column that best describes your grades from sixth grade up till now. (36/39)

	Mostly As (90-100)	Mostly Bs (80-89)	Mostly Cs (70-79)	Mostly Ds (60-69)	Mostly below Ds (below 60)
Example: Bowling	_____	_____X_____	_____	_____	_____
English	_____	_____	_____	_____	_____
Mathematics	_____	_____	_____	_____	_____
Science	_____	_____	_____	_____	_____
Social Studies	_____	_____	_____	_____	_____

Circle a yes or a no for the next two questions: (40/41)

Are you satisfied with your grades?	Yes	No
Do you feel you are capable of better grades?	Yes	No

For the next two questions, please circle a number in Column A and Column B.

	A .	B .
	Father (or male guardian)	Mother (or female guardian)
How far in school do you think your parents/guardians want you to go ?		(42/43)
Less than high school graduation	1	1
Graduate from high school, but not go any further	2	2
Go to vocational, trade, or business school after high school	3	3
Attend one or two years of college	4	4
Graduate from college	5	5
Attend a higher level of school after graduating from college	6	6
Don't know	7	7

	Father (or male guardian)	Mother (or female guardian)
How far in school did your parents/guardians go?		(44/45)
Less than high school diploma	1	1
High school graduate.....	2	2
Vocational, trade, or business school	3	3
Less than two years of college	4	4
Two or more years of college (including a two year degree)	5	5
Finished college (four or five year degree)	6	6
Master's degree or equivalent	7	7
Ph.D., M. D., or other advanced professional degree	8	8
Don't Know	9	9

For each question, please circle one number.

(46/52)

As things stand now, how far in school do you think you will get? (Circle One)

- Won't finish high school 1
- Will graduate from high school, but won't go any farther 2
- Will go to vocational, trade, or business school after high school..... 3
- Will attend one or two years of college 4
- Will graduate from college 5
- Will attend a higher level of school after graduating from college 6

When did you first start thinking seriously about your plans after high school?

- I haven't started to think seriously about my plans 1
- In the 8th grade 2
- In 6th and 7th grade 3
- It seems that I have always known what I was going to do 4

In which of the following types of programs do you expect to enroll in high school?

- Academic or college preparatory 1
- Community college/technical (Tech Prep)..... 2
- Vocational (trade) 3
- General 4
- Other (Write In)..... 5
- I don't know 6

Which of the following statements best describes you?

- Asian or Pacific Islander..... 1
- Hispanic regardless of race..... 2
- Black, not of Hispanic origin..... 3
- White, not of Hispanic origin..... 4
- American Indian or Alaskan Native..... 5

What have you done to find out about careers that might interest you? _____

How old were you on your last birthday? ____ What grade are you in now? ____

Please circle your T-shirt size: M, L, XL

Thank you for completing these questions. To show our appreciation, we will send a free T-shirt. Please return your questionnaire/consent form in the envelope provided to: John Adams, 201 College Center, Shepherd College, Shepherdstown, West Virginia 25443.

Appendix C

Survey Letter

parents/guardians of
street
city/town/zip

Dear Mr./Mrs.(parents/guardian name):

(name) has been selected to participate in a statewide research project being sponsored by Shepherd College. I am asking for your permission to allow your child to participate in this survey. For completing and returning the enclosed questions, I will send (name) a free “Shepherd College” shirt. The survey form will take no more than 10 to 15 minutes to complete, and there are no further obligations (other than returning the survey/consent form) to receive the free shirt.

The purpose of this study is to help us learn more about middle school children and their postsecondary educational needs. Over 300 children/parents throughout West Virginia have been invited to participate in this project. All personal information collected will be held strictly confidential, and no individuals will be identified in any report.

Also enclosed is an Informed Consent for Participation. The form describes the study and requires your signature for your child to participate. Please sign and return with questionnaire. In return for your child’s participation, we are also prepared to send you information that will help with planning for college.

Your cooperation with this project is greatly appreciated. The enclosed pen is a free gift to you for your time and effort.

Sincerely,

John Adams
Director of the Career Development Center
Shepherd College

If you have further questions/concerns about this project, I may be reached at 304-876-5478 or you may write to me at this letterhead address.

Appendix D

Application for Junior High Washington Gateway at Shepherd College

Attention: Principal or Counselor

You may nominate as many students as you like. For each student nominated, please complete the following steps:

- 1. Have student and parents complete Section A.**
- 2. Each nominated student must have two teacher references. Please have two different teachers complete Section B.**
- 3. Finally, we will need you to complete Section C and return all forms to us by March 30, 1996.**

Please feel free to photocopy additional applications as needed.

Application for the Junior High Washington Gateway at Shepherd College

SECTION A

Student Information (please print)

Name: _____

Home Address: _____

Street

City

State

Zip

Home Phone: () _____

Name of School Attending: _____ County: _____

Grade: _____ Date of Birth: _____ Sex: Male Female

Name of Name Badge: _____ Shirt Size: **S M L XL**

Circle One

Parent/Guardian Information

Father's Name: _____

Address: _____

Phone: () _____

Mother's Name: _____

Address: _____

Phone: () _____

Parental Consent: If selected, my daughter/son will be allowed to participate in the Junior High Washington Gateway Camp at Shepherd College.

Parent/Guardian Signature

Date

SECTION A — Continued

Junior High Gateway at Shepherd College

General Information (If more space is needed, please attach additional sheets.)

Have you ever been to Washington, D.C.? Yes No

If yes, describe your visit. What did you see? _____

Have you ever been to Baltimore, Maryland? Yes No

If yes, describe your visit. What did you see? _____

Have you ever been in the Eastern Panhandle of West Virginia? Yes No

If yes, describe your visit. What did you see? _____

If selected, will this be your first time at an over-night camp? Yes No

Has anyone ever discussed attending college with you? Yes No

If yes, in a few brief sentences what was discussed. _____

SECTION A — Continued

Junior High Gateway at Shepherd College

In your own words, discuss how this camp could help you with school. Why do you want to attend this camp?

Tell us a little about yourself. Discuss your dreams, interests, hobbies, thoughts about school in general, etc.

SECTION B **Junior High Gateway at Shepherd College**

Application must have the endorsement of two teachers.

Teacher #1

Name: _____

School: _____

Comments: _____

Signature _____ Date _____

Teacher #2

Name: _____

School: _____

Comments: _____

Signature _____ Date _____

SECTION C

Junior High Gateway at Shepherd College

This section to be completed by guidance counselor and/or principal and return to Shepherd College prior to the deadline date.

Guidance Counselor/Principal

Name of School: _____

School Address: _____

Phone Number: _____

Name of Counselor/Principal: _____

Circle the grade that best describes this student:

A, A-, B+, B, B-, C+, C, C-, D+, D, D-

Are there any special circumstances that we will need to know?: _____

Comments on Nominee: (If more space is needed, please attach an additional sheet.)

Return application by March 30, 1996 to:

**Mr. John E. Adams
Director, Washington Gateway
Shepherd College
201 College Center
Shepherdstown, WV 25443**

Appendix E.
Outliers According to Scales

	N	Subjects
Univariate Outliers		
Career Readiness	12	40, 71, 93, 134, 146, 167, 199, 215, 223, 246, 263, & 265
Self-Concept	7	28, 89, 90, 190, 215, 233, & 263
Study Habit	7	29, 124, 134, 150, 196, 263, & 265
Aspiration	3	134, 215 & 263
Motivation	3	64, 144 & 154
Multivariate Outliers		
Aspiration Variable	17	28, 34, 50, 71, 80, 89, 124, 134, 150, 165, 196, 199, 208, 233, 246, 263, & 265
Motivation Variable	15	28, 71, 76, 89, 116, 134, 144, 150, 165, 196, 233, 263, & 265
Outliers Appearing as Univariate and Multivariate Outliers		
Aspiration Variable	12	28, 29, 40, 71, 89, 124, 134, 144, 150, 196, 199, 246, 263, & 265
Motivation Variable	9	28, 71, 89, 134, 144, 196, 233, 263, & 265

Appendix F

Univariate Outlier Analysis

<u>Outliers</u>	<u>Other Scales</u>	<u>NO</u>	<u>MO</u>	<u>SD</u>	<u>PN</u>	<u>PM</u>	<u>SD</u>	<u>t test</u>	<u>p-value</u>
<u>Career Readiness:</u>	on Self-Concept	12	2.15	1.16	248	1.72	.63	-2.20	.01*
	on Study Habits	12	3.35	.94	248	2.31	.77	-4.32	.01*
	on Aspiration	12	2.69	1.11	245	1.63	.48	-6.28	.01*
	on Motivation	12	1.77	.36	245	1.96	.33	1.92	.06
<u>Self-Concept:</u>	on Career Readiness	7	2.20	.51	253	1.54	1.24	-3.22	.01*
	on Study Habits	7	3.20	.93	253	2.34	.79	-2.64	.01*
	on Aspiration	7	2.69	1.19	253	1.65	.52	-5.02	.01*
	on Motivation	7	2.00	.19	250	1.95	.33	-0.42	.67
<u>Study Habits:</u>	on Career Readiness	7	2.60	1.21	253	1.53	.49	-5.40	.01*
	on Self-Concept	7	3.69	.62	253	1.72	.65	3.92	.01*
	on Aspiration	7	3.00	1.22	253	1.64	.50	-6.75	.01*
	on Motivation	7	1.83	.47	250	1.95	.33	0.93	.35
<u>Aspiration:</u>	on Career Readiness	3	3.67	.83	257	1.53	.49	-7.39	.01*
	on Self-Concept	3	3.73	1.30	257	1.72	.62	-5.53	.01*
	on Study Habits	3	3.67	.83	257	1.53	.49	-4.09	.01*
	on Motivation	3	1.92	.72	254	1.95	.33	0.16	.87
<u>Motivation:</u>	on Career Readiness	3	1.67	.42	257	1.55	.55	-0.34	.72
	on Self-Concept	3	1.80	.20	257	1.74	.67	-0.15	.88
	on Study Habits	3	2.35	1.11	257	2.60	.80	-0.52	.60
	on Aspiration	3	1.83	.39	257	1.68	.57	-0.47	.64

Note: NO = outlier number; MO = outlier mean; SD = standard deviation; PN = population number; PM = population mean; t = t-test statistic for scale; *p < .05.*

Appendix G

Multivariate Outlier Analysis

Multivariate Variable	Scale	Group	N	M	SD	t test	p-value
<u>Aspiration</u>							
Career Readiness		Multiv.Outliers	17	1.99	.70	-4.64	.01*
		Remaining Subjects	228	1.47	.42		
Self-Concept		Multiv.Outliers	17	2.40	1.01	-5.13	.01*
		Remaining Subjects	228	1.64	.54		
Study Habits		Multiv.Outliers	17	2.97	.70	-3.92	.01*
		Remaining Subjects	232	2.23	.77		
Aspiration		Multiv. Outliers	16	1.61	.60	-2.49	.01*
		Remaining Subjects	225	1.91	.45		
Motivation		Multiv.Outliers	17	1.14	.30	-4.72	.01*
		Remaining Subjects	224	1.98	.35		
<u>Motivation</u>							
Career Readiness		Multiv.Outliers	14	2.09	1.09	-3.84	.01*
		Remaining Subjects	247	1.53	.49		
Self-Concept		Multiv.Outliers	14	2.47	1.05	-4.38	.01*
		Remaining Subjects	247	1.70	.61		
Study Habits		Multiv.Outliers	14	3.11	1.27	-3.72	.01*
		Remaining Subjects	250	2.31	.75		
Aspiration		Multiv. Outliers	14	2.41	1.15	-5.19	.01*
		Remaining Subjects	243	1.63	.49		
Motivation		Multiv.Outliers	14	1.82	.55	1.55	.12
		Remaining Subjects	243	1.96	.31		

Note. Multivariate Variable = multivariate outliers for aspiration and motivation; Group = Multivariate Outliers vs study sample; N = number of subjects in each group; M = mean average for each group; SD = standard deviation for each group; t = t-test statistic measuring difference between groups; *p < .05.*

Vita: John E. Adams

P.O. Box 3046
Shepherdstown, WV 25443

(304) 876-5478
jadams@shepherd.wvnet.edu

EDUCATION:

Ph.D - Community College Education (Educational Administration and Counseling),
Virginia Polytechnic Institute and State University, 1997.
Postgraduate work (27 hours) West Virginia University, 1979-1993.
Master of Science - Student Personnel Administration/Counseling,
Shippensburg University, 1976
Bachelor of Arts - Secondary Education, Shepherd College, 1973
Bachelor of Arts - History and Geography, Shepherd College, 1971

CERTIFICATES/LICENSE:

Licensed Professional Counselor, West Virginia Board of Examiners in Counseling (1987)
Nationally Certified Counselor, National Board for Certified Counselors (1985)
Nationally Certified Career Counselor, National Board for Certified Counselors (1984)
First Nationally Certified Career Counselor in the State of West Virginia

PROFESSIONAL EXPERIENCE: Shepherd College, Shepherdstown, West Virginia:

Associate Dean of Student Affairs/Director of the Washington Gateway Program and
the Career Development Center (1991 to present):

Direct career development, cooperative education and Washington Gateway
activities
Assist the vice president for Student Affairs in general operation of Student
Affairs Division.
Serve on various campus governing/policy developing committees: the
Administrative Council, the Athletic Committee, the Strategic Planning
Committee, the Community and Technical College Strategic Planning
Committee, the Committee for the North Central Accreditation Visit,
Washington Gateway Committee (chair), Classified Employees Council
(chair, 1991-1993). and the President's Cabinet.

Other Positions Held at Shepherd College:

Associate Dean of Student Affairs/Director of Counseling and Career Services
(1985 to 1991)
Director of Career Planning Placement (1980 to 1985)
Program Specialist for Student Development (1978 to 1980)
Assistant Dean of Student Affairs/Director of Housing (1975 to 1978)
Resident Director/Admission Counselor (1971 to 1975)

PROFESSIONAL INVOLVEMENT/AFFILIATIONS:

West Virginia Association of Student Personnel Administrators:

- Received the "Innovative Program Award," 1993.
- President 1990-91.
- Chairperson (President-Elect) of Fall Conference, 1990.
- Steering Committee member for the Fall Conference, 1987-91.
- Presenter - "How to Create a Retention Study Program at a State Supported College," Fall Conference, 1991.
- "Precollege Interventions in West Virginia" Fall Conference, 1992.
- "Implementing Change in Student Services" Fall Conference, 1993.
- Chairperson of the Career Planning/Placement Committee, 1986.
- Organized workshop on "Marketing West Virginia Graduates" for career planning placement personnel, 1986.

The Alliance for Employee Growth and Development - AT&T Distribution Center, Martinsburg, WV, 1989:

- Awarded \$12,000 contract to present career planning course to employees.

Operation Native Talent Career Fairs, Charleston and Morgantown, WV, 1988-89:

- Served on steering committee that planned and implemented the first state-wide job fairs for college graduates.

Cumberland Valley Consortium, Hagerstown, MD, 1984-89:

- Sponsored annual job fair for college graduates of 10 regional colleges/universities.
- Chairperson, 1987-89.
- Chartered member, 1984.
- Treasurer, 1984.

West Virginia College Placement Association, 1989:

- Active participant in the creation of this association.

Mid-Atlantic Placement Association:

- Wrote "The CVC Experience" for the Monitor, November 1987.

Other past and current memberships:

West Virginia Community College Association
Kiwanis Club (President of Shepherdstown Club, 1982)
Phi Delta Kappa
National Association of Student Personnel Administrators
American Association for Counseling and Development
College Placement Council
Mid-Atlantic Association for School, College and University Staffing