

# CAREER MATURITY OF GENERAL EDUCATION DEVELOPMENT STUDENTS

by

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(Under the Direction of MYRA N. WOMBLE)

## ABSTRACT

Data regarding the career development and career maturity of GED students is limited. However, career maturity measures are recommended for identifying various attitudes, knowledge, and accomplishments that individuals need to develop their careers and to evaluate career development interventions (Crites, 1978; Thompson & Lindeman, 1981). Limited information of this type about GED students led to an examination of the four major aspects of career maturity. Students enrolled at two postsecondary schools ( $N = 93$ ) were surveyed using the four subscales of the Career Development Inventory (CDI) developed by Super & et al. (1981). One-way ANOVAs were used to determine if there were differences in the students' scores of career exploration, career planning, career decision making, and world of work information at the .05 alpha level based on the individuals' age, race, gender, parents' level of education and socioeconomic status.

Findings showed that GED students scored highest in the career planning aspect of career maturity, and statistically significant differences were found in their world of work responses based on age, race, parents' highest level of education and socioeconomic status.

INDEX WORDS: Career Maturity, Career Development, Career Development Inventory,  
GED Students, Vocational Maturity, Career Planning, Career Exploration,  
Career Decision Making, World of Work Information

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by

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## CHAPTER I

### INTRODUCTION

At risk students are typically characterized by low career maturity levels, poor academic achievement, low self-esteem and behavior problems in the classroom (Fouad & Keeley, 1992; McLaughlin & Vacha, 1992). From an educational standpoint, General Education Development (GED) diploma recipients, approximately 19,000 per year in Georgia (GDTAE, 2004), possess at-risk characteristics as noted in related literature (Nelson, 1985; Boesel, Alsalam, Smith, 1998).

At some point they have dropped out of the traditional K-12 school with the possible belief that that they possess too many problems to successfully complete their education. They may have had family problems such as death, divorce, other family members that have dropped out, or attendance may have been a problem (Nelson, 1985). National data for 1996 revealed dropout rates among 16-24 year olds as of 7.3% for whites; 13.0% for Blacks; and 29.4% for Hispanics (Department of Education, 1998). The decision to dropout is related to family history and family income level (Schwartz, 1995). The dropout rate of students whose parents did not complete high school, drop out at a rate double those whose parents completed high school. Youth from low-income families drop out at a rate double those in middle-income families and almost nine times the rate of those in high-income families (Carl Vinson Institute of Government, 2004).

Although GED students have returned to an alternative classroom, from an educational standpoint, they may remain at risk of school failure (Boesel, 1998). These at-risk students are ultimately less likely to recognize their future vocational aspirations (Fouad & Keeley, 1992; McLaughlin & Vacha, 1992). Also, Brown (2000) stated that employment skills of GED

recipients are not equivalent to those of high school graduates, and GED recipients lack in-depth scholarly knowledge.

The dropout phenomena suggested a need to examine career maturity of individuals pursuing GED credentials. Career maturity has been defined as an individual's ability to make appropriate career choices, including awareness of what is required to make a career decision, and the degree to which one's choices are both realistic and consistent over time (Crites, 1978; King, 1989).

Savickas (1984) believed that career maturity was one of the most widely researched aspects of career development. People who possess relatively high levels of career maturity are likely to obtain successful and satisfying careers because they display more awareness of the career-decision making process and often think about alternative careers, relate their present behavior to future goals, possess high levels of self-reliance in making career decisions, are committed to making career choices, and are willing to acknowledge and concede to the demands of reality (Savickas, 1990). Naidoo (1998) believed career maturity was influenced by age, race, ethnicity, locus of control, socioeconomic status, work salience, and gender. He said the interaction of these factors affected an individual's readiness to succeed in mastering the tasks appropriate to various stages of career development.

Based on theory, self-concept allows individuals to make career choices compatible with their strengths and weaknesses, as well as their abilities and limitations. Self-development is the result of the interaction between growth processes and personal-social development, which is the interaction of the individual with his/her environment. As the individual takes on roles in his/her daily life and identifies with his/her role models, some of the associated traits are internalized, and the individual's concept of self develops (Super, 1957, 1990).

There are likely many reasons why an individual decides to drop out of high school and later pursue a GED. According to theory, career choice is a form of self-expression and how individuals view themselves and their situations. Consequently, if the student's environment (i.e., parents, peers, community) does not value the traditional route to education, the student is likely to develop a similar set of values (Super, 1957).

There is limited information regarding career development for those who choose the GED option. Initially, the General Educational Development (GED) Tests were developed for the U.S during World War II. At that time, the Roosevelt administration favored federal support for the college education of returning veterans, but many service members lacked the high school diplomas necessary to enter college. The granting of diplomas for wartime service had been tried after World War I, but colleges and universities came to oppose this practice. As an alternative, the American Council for Education (ACE) proposed testing veterans to determine competence for college. In 1942, test experts working for the Army selected five tests from the Iowa Test of Educational Development to form the first General Educational Development Test. The tests reflected the emphasis of progressive educators on learning related to everyday life rather than on formal academics (Boesel, Alsalam & Smith., 1998).

The American Council for Education's GED Testing Service produces and administers the tests, and its Commission on Educational Credit and Credentials sets the minimum passing standards, which have been modified over the years. Above the minimums, states are free to set their own conditions for passing the GED and awarding credentials. All five-subject areas covered test candidates' higher-level or critical thinking skills. These include knowledge, comprehension, application, analysis, synthesis, and evaluation, which are assessed by testing for the student's grasp of both content and concepts (GED Testing Service, 2004).

## Rationale

Boesel (1998) argued that while the GED process certifies basic cognitive skills, it usually does not generate them. Nor does it generate or certify non-cognitive human capital, such as good work habits, perseverance, and the ability to function well in organizations. Also, if the GED enables its recipients employability and post-secondary education opportunities equal to that of traditional high school diploma recipients, are this group's career maturity levels also equal based on variables such as age, gender, race, parents' highest level of education and socio-economic status?

Data regarding the career development and career maturity of GED students is limited. However, career maturity measures are recommended for identifying various attitudes, knowledge, and accomplishments that individuals need to develop their careers and to evaluate career development interventions (Crites, 1978; Thompson & Lindeman, 1981). Therefore, an examination of career maturity measures may provide useful information to students and educators in understanding the differences among GED students' scores in their career exploration, career planning, career decision making, and knowledge of world of work information

## Purpose of the Study

The purpose of this study was to examine four major aspects of career maturity of GED students enrolled in two 2-year postsecondary schools located in northeast Georgia. The Career Development Inventory (CDI), developed by Super, et al.(1981), was used to collect data along with a self report data sheet developed by the researcher. The CDI has four subscales: Career Exploration, Career Planning, Decision-Making, and World of Work Information. The differences in GED students' career exploration, career planning, career decision-making, and

world of work information were examined. The data sheet assessed students' age, race, gender, parents' level of education and students' socioeconomic status

### Research Questions

This study sought to provide answers to the following research questions:

1. What are the career maturity scores for GED students enrolled in two 2-year postsecondary schools located in northeast Georgia using the four subscales of the CDI (career exploration, career planning, decision making, world of work information)?
2. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, career decision-making and world of work information) based on Age?
3. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, career decision-making and world of work information) based on Gender?
4. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, career decision-making and world of work information) based on Race?
5. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, career decision-making and world of work information) based on Parents' Highest Level of Education?
6. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, career decision-making and world of work information) based on Socioeconomic Status?

## Theoretical Framework

Self-concept, which is how individuals view themselves and their situation, is at the core of Super's developmental theory. Basic to Super's theory is the assumption that psychological aspects such as genetic predisposition, along with geographic aspects (such as country of origin) have an impact on aspects of career development. These aspects include the development of psychological characteristics (needs, interests, intelligence, ability, special aptitudes) which lead to the development of the personality of an individual and to his or her accomplishments, while social-economic factors (one's community, school, family, peer groups, state of the economy and labor market) influence the job structure and the employment practices outside the individual with which he or she must interact. The combination of psychological and social economic factors results in the development of self (Sharf, 1997; Super, 1990).

According to theory, if members of a students' environment (i.e., parents, peers, community) do not value the traditional route to education, the student will not as well. Career choice is a form of self-expression and how individuals view themselves and their situations (Super, 1990). GED students have chosen to drop out of the traditional education system. Therefore, Super's Theory of Career Development, with the self-concept construct being a major part of the theory, is the most relevant theory to guide this study.

Super (1957) proposed five distinct life stages, noting that each stage has unique developmental tasks. These life stages, discussed in detail in Chapter 2, include growth (birth to age 14), which involves the beginning of self-concept development. The second stage, exploration (ages 15-24) is a tentative stage during which choices are narrowed but not finalized. The establishment stage (ages 24-44); stage three, is a stage in which individuals actually engage in work experience. Stage four, the maintenance stage (ages 45-64), involves a



continuous adjustment process to improve one's position. This is the time in which a person builds on the establishment stage. The fifth and final stage, disengagement (over age 64), involves pre-retirement considerations and eventual retirement. Individuals typically progress through these five stages although, Super noted that not everyone progresses through these stages in the same manner or at fixed ages. Even though Super originally presented the stages and tasks in a sequential manner, he later added that we cycle and recycle throughout our life span as we adapt to changes in ourselves as well as to trends in the work place (Johnson, 2001).

Within each stage, Super proposed characteristic developmental tasks. Successful mastery of these tasks allows individuals to function effectively in their life roles within that stage and prepares them for the next task. Super (1957) introduced career maturity as a means to ascertain the place a person has reached on a continuum of vocational development. In 1957, Super and his students defined career development as the process of growth and learning that results in increases and modifications of a person's repertoire for vocational behavior. Super found that conceptualizing career development was easier than measuring those concepts. He defined a person's developmental progress in two different ways Career Maturity 1 (CMI) and Career Maturity 2 (CM2). Career Maturity I is assessed by determining which developmental tasks a person is encountering and then comparing the actual degree of progress along the continuum of vocational development with the degree expected, based on the individual's chronological age. CM2 deals with task coping. Coping with career development tasks denotes the behaviors instrumental to satisfactorily responding to these social expectations. The appraisal of CM2, however, consists of behaviors of a group coping with the same task. As a person progresses along a circumscribed portion of the CM1 continuum (for example, the

Exploration stage), the vocational task coping behaviors used to address the tasks within that stage should become more independent, realistic, and purposeful.

### Significance of Study

This study examined four major aspects of career maturity of GED recipients: Career Exploration, Career Planning, Decision Making, and World of Work Information. A study such as this will make an impact in education and the workforce by bringing awareness of a void in career maturity information of a vastly under represented educational group.

To date there is very little research available which focuses on career maturity of GED recipients. Because of this lack of research and the increased number of individuals that choose the GED as an alternative option, it is reasonable to examine the differences and the extent of the individual's ability to explore various careers, to plan careers, decide on a career, and their knowledge of information regarding the world of work. Furthermore, knowing more about GED recipients' career maturity based on the select variables of age, gender, race, parents' highest level of education obtained and socioeconomic status can assist administrators in both the traditional high school and GED programs to develop potentially useful interventions that could successfully treat or enhance the career development of individuals who choose or consider choosing the GED option.

## CHAPTER II

### REVIEW OF LITERATURE

This chapter presents a review of the literature related to the present study. The review begins with an overview of career development theories and additional learning theories followed by a discussion of career maturity, the evolution of the General Education Development Diploma, a description of career maturity instruments, and a description of GED programs at the two 2-year postsecondary schools located in northeast Georgia.

#### Career Development Theories

##### Donald Super' Lifespan Development Theory

Donald Super's Lifespan Development theory, which guides this study, views career development as a process rather than an event and incorporates developmental concepts into the process. Basic to the theory is the assumption that psychological aspects such as genetic predisposition, along with geographic aspects (such as country of origin) have an impact on other aspects of career development. These aspects include the development of psychological characteristics (needs, interests, intelligence, ability, special aptitudes) that lead to the development of the personality of an individual and to his or her accomplishments, while social-economic factors (one's community, school, family, peer groups, state of the economy and labor market) influence the job structure and the employment practices outside the individual with which he or she must interact (Sharf, 1997; Super, 1990, 1994). The combination of psychological and social economic factors results in the development of self (Maduakolam, 2000).

Self-concept is at the core of Super's developmental theory which is how individuals view themselves and their situation. In contrast to trait and factor theory which emphasize objective or outside measures of the self (e.g., interest inventory and aptitude tests), self-concept refers to individuals' views of themselves and society and is subjective. Processes such as differentiation, role-playing, exploration, and reality testing lead the development of self-concept. Super (1957) proposed five distinct life stages, noting that each stage had unique developmental tasks. The five life stages or "maxi-cycles" are growth (birth to age 14) involves the beginning of self-concept development. Self-concept development occurs through identifying with key figures in one's family, school, and environment. Abilities, interests, attitudes, and needs begin to develop. There are three sub-stages to this stage: fantasy (both role playing and fantasy are important activities engaged in), interest (likes are developing and determining goals and activities), and capacity (abilities are important and considered as the person begins thinking about job training requirements).

The exploration stage (ages 15-24) (Super, 1957) is a tentative phase during which choices are narrowed but not finalized. Individuals usually are engaging in self-examination and occupational exploration through activities such as participating in part-time jobs. There are three sub-stages to this stage. These include tentativeness (tentative decisions are considered based on one's needs, interests, opportunities, and values), transition (reality factors take on more importance), and trial (choice has been made and a first job is tried out).

The establishment stage (ages 24-44) is a phase in which individuals actually engage in work experience (Super). During this phase, a person is trying to solidify a permanent position within his or her work field. There are two sub-stages in this stage: trial and stabilization. The trial substage is a period where a suitable work opportunity is not found and an individual

continues to try out various professions. Everyone does not go through this stage. The second substage, stabilization is where efforts are made to establish a stable position in a chosen profession.

The maintenance stage (ages 45-64) (Super) involves a continual adjustment process to improve one's position. This is the time in which a person builds on the establishment phase. Not much new happens during this stage. The last stage disengagement (over age 64) involves pre-retirement considerations and eventual retirement. Work demands lessen. Often leisure activities increase. An individual's work-related capacities usually decrease.

Individuals typically progress through these five stages, although Super noted that not everyone progresses through these stages in the same manner or at fixed ages. Although, Super originally presented the stages and tasks in a sequential manner, he later added that we cycle and recycle throughout our life span as we adapt to changes in ourselves as well as to the trends in the work place (Johnson, 2001).

### Ginzberg's General Theory of Occupational Choice

Ginzberg, Ginzberg, Axelrad, and Herma (1951) published the first comprehensive theory of occupational behavior that resulted from an empirical study in which interviews were conducted on sixty-four students at Horace Mann-Lincoln School and Columbia University, both in New York City. Based on a cross-sectional sampling method, Ginzberg et al., selected a group they felt had maximum freedom in choosing an occupation. The researchers' purpose was to establish generalizations about the types of occupational choice young people make before and after college. Based on their findings, they concluded that the process of occupational decision-making could be analyzed in terms of three developmental stages that can be

differentiated by the way an individual translates his or her impulses and needs into an occupational choice.

Ginzberg et al. (1951) conceptualized occupational choice as an irreversible process that represents a compromise between a person's interests, capacities, opportunities, and values throughout three developmental periods. The process was divided into the fantasy, tentative, and a variety of adult situations by playing make-believe work roles. Because the child makes multiple choices without knowing the barriers likely to stand in his or her way, the term fantasy was chosen by Ginzberg to express the nature of choices at this age (ages Birth to 10). The outstanding characteristic of the fantasy period is that the choices are arbitrary and are made without reference to reality, abilities, and potentials—"the three most important ingredients which Ginzberg identified in the occupational choice process (Baily & Stadt, 1973).

The second stage, the tentative period (ages 11 to 17), marks increasing concern about the conditions of reality. This period is characterized by the recognition of the problems involved in deciding on a future occupation, selection of activities primarily in terms of likes and interests, evaluation of one's ability to function in areas of interest, awareness of factors that have to be taken into account in making an occupational choice, and a shift from subjective factors—interest, capacities, and values—to reality conditions. According to Ginzberg et al., (1951), the transition stage is a pivotal point in the individual's development and it corresponds to the end of high school.

The final stage, the realistic period (ages 18 and above), which is divided into exploration, crystallization, and specification, is characterized by acquisition of the experiences and education the individual needs to resolve occupational choice; the ability to synthesize the many forces, internal and external, that have relevance for one's decision, and specialization and

planning within one's area of choice. The person becomes aware that he or she compromise between his or her desires and the existing opportunities in the real world (Maduakolam, 2000).

The theory suggests that occupational choice is not a single decision, but a developmental process which takes place over a period of ten or more years which suggests a narrowing of vocational choices as an individual matures (Gergely, 1978). So, during the years leading up to choice, the individual tries to achieve balance between a series of subjective elements—interests, capacities, values-and the opportunities and limitations in the real world (Maduakolam, 2000).

#### Tiedman's Developmental Theory

Tiedman and O'Hara (1963) viewed career development as a function of the developing self, becoming increasingly different and comprehensive. The ingredients of this emerging self included situational and social factors as well as biological factors. The self was seen as an entity which was always either expanding or contracting and for which important decisions occur at points of discontinuity with the past, for example, graduation from high school and/or college; marriage; and taking one's first full-time position.

The decision-making process involves anticipation, implementation, and adjustment. The system describes anticipation in terms of the following sequence of events: exploration, crystallization, choice, clarification, induction, reformation, and incubation. The entire sequence is characterized at first by somewhat disorganized thinking by the individual about occupational fields, followed by the development of clearer distinctions among fields, accompanied by judgments about their advantages, disadvantages, and relative values (Tiedman and O'Hara, 1963).

Tiedman and O'Hara (1963) also believed that on the basis of this process of evaluation, some preliminary decision-making occurs, followed by a period, in which the individual has an

opportunity to express doubts regarding the choice and to further elaborate the decision. Following this, the individual is “inducted” into a group during which time it is possible to identify closely with the purposes of this new group. Later, the individual begins to question those same purposes and may try to change the group somewhat (reformation period). The final stage, integration, involves a process by which the individual resolves the conflicts of individuality with the group’s demands and in some way manages to integrate the two.

Osipow (1983) mentioned that Tiedman and O’Hara’s work in some way stand as a bridge between the developmental formulations of Ginzberg and his group and the work of Super. He argued that all of these writers share the view that career development is an aspect of general development in that self-concept interact with the career decision-making. In addition, it appears to be assumed that individuals with inaccurate self-evaluations are more prone to make inappropriate or inadequate career decisions than those with accurate self-evaluations. Osipow (1983) also noted that all the writers seem to assume that the ability and motivation to evaluate one’s self realistically can be enhanced through education and counseling.

Super’s (1990) criticism of other theories, especially that of Ginzberg, was that they failed to take into account the continuity of the development preferences in the stages of choice, entry, and adjustment. According to Super (1957, 1990), a career development theory should explain the processes through which interests, capacities, values, and opportunities are compromised. Super (1957, 1983) believed that a person strives to implement his or her self-concept by choosing an occupation that permits self-expression—a person selects an occupation whose requirements to provide a role consistent with his or her self-image. Super (1957) defined a person’s developmental progress in two different ways, Career Maturity I (CM1) and Career Maturity (CM2).



Career Maturity I is assessed by determining which developmental tasks a person is encountering and then comparing the actual degree of progress along the continuum of vocational development with the degree expected, based on the individual's chronological age. CM2 deals with task coping. Coping with career development tasks denotes the behaviors instrumental to satisfactorily responding to these social expectations. The appraisal of CM2, however, consists of behaviors of a group coping with the same task. As a person progresses along a circumscribed portion of the CM1 continuum (for example, the Exploration stage), the vocational task coping behaviors used to address the tasks within that stage should become more independent, realistic, and purposeful (Super, 1957, 1990).

Osipow (1983) summarized Super's concept of career maturity as it allows the observer to assess the rate and level of an individual's development with respect to career matters. It is to be expected that vocationally mature behavior will assume different shapes depending upon the context provided by an individual's life stage. In view of the fluid nature of vocational maturity, Super (1957) defined the concept normatively, in terms of the congruence between an individual's vocational behavior and the expected vocational behavior at that age. The closer the correspondence between the two, the greater the individual's vocational maturity

### Career Maturity Theories

#### Social Cognitive Theory

Super's Career Development Theory guided this study, however it should be noted that traditional career development theories were normed almost entirely upon Caucasian, male samples from middle and upper-middle class backgrounds, so their applicability to women, people of color, and other socioeconomic groups is questionable. Therefore, there is limited generalizability in this theory as it relates to the group (GED students) being studied. In addition,

an individual's environmental situation in regards to career choices also need to be considered to recognize the constraints faced by certain groups (Kerka, 1998).

Kerka (1998) discussed Social Cognitive Theory which may be looked at as a means to further understand students' behaviors in terms of interaction between personal attributes, environmental influences and behavioral aspects in career choice. If an individual believes in their ability to undertake an endeavor and have an expectation of the outcome of that effort, they will behave in a way that will help them achieve their goal. However, Sharf (1997) notes that discrimination or self-efficacy should also be considered when determining outcome behavior meaning that individuals may disregard certain careers they feel are not open to them.

### Social Learning Theory

Human behavior was explained in this theory in terms of interaction between cognitive, behavioral, and environmental influences. Social learning theory described an observer's behavior changes after viewing the behavior of another. The observer's behavior can be affected by both positive and negative consequences. Basically people can learn by observing the behavior of others and the outcomes of those behaviors. Shippensburg University's website (1998) discussed the modeling process in Bandura's Theory as involving certain steps:

1. Attention - Observers learn by paying attention. Anything that takes from the individual's attention is going to decrease learning, as well as observational learning.
2. Retention – An individual must be able to remember what he/she has paid attention to so as to have the ability to bring it up at a later time.
3. Reproduction – You must be able to reproduce images or descriptions into the actual behavior.
4. Motivation – Observers will only perform if they have some motivation to do so.

As career development theories are tested and discussed to explain various behaviors, a complex picture emerges, which may suggest that career choice and development are influenced by multiple factors such as personality, self-concept, experiences of racism, sexism, socioeconomic status, etc. (Kerka, 1998)

### Career Maturity

Career maturity and its forerunner, vocational maturity, were originally proposed as explanatory constructs to account for individual differences in readiness to make career choices, to plan ahead, and to assume the role of worker (Vondracek, 1998). Super (1957) introduced vocational maturity as a means to ascertain the place a person has reached on a continuum of vocational development. He also believed that a vocational maturity quotient could be devised to indicate the age appropriateness of a person's progress in vocational development.

Super (1957) used the definitions of Career Maturity (CM1) and Career Maturity (CM2) in designing the Career Pattern Study (CPS), his monumental, longitudinal study of vocational behavior and career development. His conceptualization for the CPS rested on the assumption that most people deal with the developmental tasks of their chronological life stage by holding life stage (CM1) constant, so researchers can use methods for coping (CM2) as a more refined measure of career development. This assumption held true in the CPS segment that dealt with adolescence. Super selected a group of ninth-grade boys attending school in Middletown, New York and set out to follow their vocational development over a twenty year period, or until 1971. The Middletown sample was selected because the community and school systems had characteristics that led Super to conclude that they represented a large segment of American culture and thus would allow considerable generalization to be made from the findings. The final number of students (142) actually included in the study was small (Osipow, 1983). The

participants in the study shared a concern with the Exploration stage tasks of crystallizing field and level preferences and then specifying an occupational choice. Accordingly, the CPS was able to concentrate on individual differences between participants in how they coped with the crystallization and specification tasks. The CPS eventually identified the adaptive behavioral responses to the tasks along with the attitudes and competencies that structure the more effective behaviors.

Career maturity has been defined as the individual's ability to make appropriate career choices, including awareness of what is required to make a career decision, and the degree to which one's choices are both realistic and consistent over time (Crites, 1978; King, 1989). Career maturity also can be defined as the extent to which an individual has acquired the necessary knowledge and skills to make intelligent, realistic career choices. It is also the readiness of an individual to make informed age-appropriate career decisions and cope with appropriate career development tasks (Luzzo, 1993; Savickas, 1984).

Super (1983) described career maturity as consisting of five dimensions; planfulness, exploration, information gathering, decision making, and reality orientation. Each of these dimensions was examined by means of several indices. Dimension I, entitled orientation to vocational choice, was assessed by examining the degree to which the student showed concern for vocational problems and the effectiveness of his use of the resources available to him in coping with the decision-making task. Dimension II, information and planning about the preferred occupation, was assessed by studying the specificity of information possessed by the student about his preferred occupation, the degree of specificity of his planning for the occupation of his choice, and the extent to which the student was involved in planning activities of a vocational nature. Dimension III, consistency of vocational preferences, also has three

indices, which are the consistency of vocational preferences within fields, within levels, and within families (or fields and levels combined). Dimension IV, entitled crystallization of traits, has six indices. Two of these, interest maturity and patterning, were derived from Strong Vocational Interest Blank results. Liking for work, concern for work rewards, vocational independence, and acceptance of responsibility for educational-vocational planning were based on data from the interviews. The fifth and final dimension, wisdom of vocational preferences, consisting of indices reflecting the agreement between ability and preferences, compared measured interests with preferences, measured interests with fantasy preferences, occupational level of measured interests with the occupational level of preferences, and the socioeconomic accessibility of the preference of the student (Osipow, 1983).

Super (1963) found six of the indices of vocational maturity to be intercorrelated. The particular arrangement of these results suggested that two major factors were relevant to vocational maturity in ninth grade, namely orientation to choice tasks and the use of resources. While the other indices were not necessarily less important as a result of these findings, the relationships among them do not appear to have any systematic basis. Based on findings from the CPS Super (1963) concluded that vocational maturity is related to intelligence and that age is of less importance in vocational maturity, at least at the ninth-grade stage of development.

Powell and Luzzo (1998) conducted a study that evaluated career maturity and career decision-making attributional style of 253 high school students in an ethnically diverse, southeastern urban school system. Relatively little is known about these factors and their relationship to career maturity among high school populations. Also, the samples used in prior studies have been predominantly European American. The following hypotheses were tested: There is a significant, positive relationship between career maturity and an optimistic

attributional style for career decision-making; Young women, have higher levels of career maturity than young men; European American students have higher levels of career maturity than African American students; Seniors have higher levels of career maturity than juniors or sophomores; and students enrolled in college preparatory curriculum have higher levels of career maturity than their peers enrolled in standard (i.e., non-college preparatory curriculum) (Powell & Luzzo, 1998).

Participants filled out a demographic questionnaire and provided information about sex, age, current class standing, ethnic background, type of diploma sought, career goal, and grade point average and completed the Assessment of Attributions for Career Decision Making (Luzzo & Jenkins-Smith, 1998) and the revised Career Maturity Inventory (Crites & Savickas, 1995).

Results of this investigation revealed the absence of career maturity differences on the basis of such demographic factors as ethnic background, sex, class standing, and type of diploma/curriculum. Furthermore, career maturity was not significantly correlated with age or GPA of participants, two factors that had been traditionally associated with high school and college students' attitudes toward career decision making and their knowledge of career decision-making principles. The lack of ethnic differences in career maturity may be explained in several ways, each of which requires further investigation. Findings also revealed the absence of a relationship between the age of participants and levels of career maturity as well as the absence of career maturity differences on the basis of class standing. As believed by Crites (1971, 1976), the career maturity of high school students should increase as they get older and progress through the education system. Although the students in this study were career mature relative to national norms, there was no expected progression related to age or class standing.

As expected, analyses revealed several significant correlations between participants' career maturity and their attributional style for career decision-making. Locus of Causality, Controllability, and Stability correlated significantly with CMI Attitude Scale scores. Such a finding substantiated the claim that an individual's attributional style is related to her or his attitudes toward the career decision-making process. It is no surprise that individuals who believed that they had personal control over and responsibility for career decisions in their lives also had more positive attitudes in general toward career decision-making. On the other hand, only the Locus of Causality dimension significantly correlated with CMI Competence Scale scores, indicating that the stronger one's belief that internal factors are the cause of career-related outcomes the more knowledgeable the individual tended to be about career decision-making principles (Powell & Luzzo, 1998).

Westbrook and Sanford (1991) investigated the validity of five attitudinal measures of career maturity among African American and Caucasian high school students. The counseling form of the Career Maturity Inventory (CMI) Attitude Scale and a measure of appropriateness of career choices (Crites, 1978) were administered to provide measures of Decisiveness, Involvement, Independence, Orientation, and Compromise in Career Decision Making. The participants in this study were ninth graders enrolled in social studies classes in an urban high school in North Carolina. Full sets of test scores were obtained for 322 of the 375 participants.

Students came from all socioeconomic levels, but mostly middle class. Of the 322 students with complete sets of data, 83 were African American and 239 were Caucasian; 45 percent of the African American students were young men and 46 percent of the Caucasian students were young women.

The results of the Westbrook & Sanford 1991 study showed that Caucasian students scored significantly higher than African American students on Involvement, Independence and Compromise in Career Decision Making and on Appropriateness of Career Choices. If these four variables are valid measures of career maturity, then one might conclude that Caucasian students, compared to African American students, are more actively participating in the process of making a career choice, are less dependent on others in the choice of an occupation, are more willing to compromise between needs and reality, and are making more appropriate career choices. The validity of these inferences, however, is weakened by the low to borderline reliability coefficient for the three CMI Attitude Scale subscales (Involvement, Independence, and Compromise), and by the lack of a relationship between the CMI Attitude scale subscales and the measure of appropriateness of career choices.

The results of the Westbrook & Sanford 1991 study suggest that there was a relationship between CMI compromise and appropriateness of career choices of Caucasian ninth-grade students, but we cannot say that there is such a relationship among African American ninth-grade students. The results of this study agreed with other studies (Westbrook, Sanford & Donnelly, 1990) that failed to find a relationship between career maturity test scores and other indicators of career maturity among African American ninth grade students. It is possible that different results might be obtained with different criterion measures.

Career maturity has been associated with realistic self-appraisal, environmental experience, family cohesion, and several personal characteristics such as intelligence, locus of control, and self-esteem (Bernardelli, DeStefano, & Dumont, 1983; King, 1989; Ohler, Levinson, & Edwards, 1995). To emphasize this association, a variety of studies in the past 30 years have evaluated the relationships between career maturity and various demographic variables, such as



sex, age, class standing, ethnicity, and grade point average (GPA). For example, recent research has revealed that young women have significantly higher levels of career maturity than young men (Luzzo, 1995; Rojewski, Wicklein, & Schell, 1995). Researchers also have argued that career maturity is strongly associated with students' intellectual capacity (Lawrence & Brown, 1976; Westbrook, Sanford, & Donnelly, 1990) influenced by IQ, socioeconomic differences or general knowledge of career choices. Evaluating the relationship between career maturity and the type of curriculum in which students are enrolled (standard vs. advanced/college preparation) may help clarify this issue (Luzzo & Jenkins-Smith 1998).

#### General Education Development Diploma

The General Educational Development (GED) Tests were developed for the U.S during World War II. At that time, the Roosevelt administration favored federal support for the college education of returning veterans, but many service members lacked the high school diplomas necessary to enter college. The granting of diplomas for wartime service had been tried after World War I, but colleges and universities came to oppose this practice. As an alternative, the American Council for Education (ACE) proposed testing veterans to determine competence for college. In 1942, test experts working for the Army selected five tests from the Iowa Test of Educational Development to form the first General Educational Development Tests. The tests reflected the emphasis of progressive educators on learning related to everyday life rather than on formal academics (Boesel et al., 1998).

In the 1940s, GED test takers were mainly veterans and service members and the test results were used mainly for college admissions. After the war, however, the tests also were administered to civilians, and states began to award high school credentials for passing the tests.

By 1959, civilian test takers outnumbered veterans and service members (Boesel, Alsalam & Smith, 1998).

From the beginning, the GED test battery has contained five different exams – writing, interpretation of literature, math, social studies, and science. The content of the tests has changed in order to keep up with the changes in high school curricula. As a rule, the tests present written passages and multiple-choice questions about the passages. They also provide additional information needed to answer the questions, such as mathematical formulas. Thus there is a premium on the ability to read and understand the passages. Most, but not all, of the factual knowledge needed to answer the questions is in the passages or in supplementary sections. In 1988, a requirement for a short written essay was added, an exception to the multiple-choice rule (Boesel, 1998).

In the years during and immediately after War II, the overwhelming majority of veterans who took the GED passed it. For the mostly civilian examinees who took the test between 1974 and 1995, the median yearly pass rate was 71.5 percent. However, the eventual pass rate for a cohort of initial test takers is probably somewhat higher, because candidates can usually retake tests that they fail or do not complete (Boesel, et. al, 1998).

The American Council for Education's GED Testing Service produces and administers the tests, and the ACE Commission on Educational Credit and Credentials sets the minimum passing standards which have been modified over the years. Above the minimums, states are free to set their own conditions for passing the GED and awarding credentials. All five-subject areas covered test candidates in their higher-level or critical thinking skills. These include knowledge, comprehension, application, analysis, synthesis, and evaluation, which are assessed by testing for the student's grasp of both content and concepts (GED Testing Service, 2004).

Passing the GED test and earning a high school equivalency diploma enables people who did not finish high school to qualify for more jobs and opportunities (Brown, 2000). However, the greatest benefit of obtaining a GED is the potential it offers for continuing education and training. Many postsecondary education and training programs are denied to un-credentialed dropouts, but open to GED holders (Tyler, 1998). Today, people without a high school diploma or its equivalency are relegated to low-wage jobs or unemployment. Even the earnings of high school graduates decrease each year in relation to those who have college degrees. The road out of poverty and to economic security is definitely linked to continuing education (Brown, 2000).

### Post Secondary Opportunities

Postsecondary institutions usually accept the GED, but many require additional evidence of the ability to perform in college (Schwartz, 1995). In this respect, admission requirements for GEDs are similar to those for high school graduates, who often have to provide evidence, beyond a diploma, of their ability to perform well at the postsecondary level. ACE's Commission on Educational Credit and Credentials recommends that if a college or university has additional requirements beyond a high school diploma, they should apply to GED recipients as well as to high school graduates.

In 1979, ACE surveyed 3,300 2-year and 4-year institutions, receiving responses from 2,236 (Spillar, 1982). Almost all of the responding institutions (95 percent) admitted non-high school graduates, including GEDs and those with other alternative forms of certification. Some 90 percent admitted GED recipients. Of those accepting GEDs, 51 percent required additional information, such as scores from the Scholastic Aptitude Test (SAT), The American College Testing Program (ACT), or the College Level Examination Program (CLEP), demonstrating

competency to undertake college coursework, and 15 percent required GED scores above the state minimum (Boesel, et al. 1998).

Hexter and Anderson (1986) reported that ACE surveyed postsecondary institutions again in 1986, receiving 391 responses from its sample of 487 institutions. The findings were similar to those of the earlier survey. The great majority of institutions (92 percent) had policies permitting students to matriculate without a traditional high school. Of those, 91 percent (84 percent of the total) accepted the GED credential. In addition, many colleges and universities required scores from other tests, such as the SAT, the ACT, and the CLEP. The proportion of institutions survey, just under half of those accepting the GED credential also had minimum GED score requirements. There may also have been other requirements not covered by the survey (Boesel, et al., 1998).

#### Employer Acceptance

Boesel, et al., 1998 found that in local survey data from 1977 through 1995, the great majority of employers accepted the GED as a substitute for a high school diploma, and most of them explicitly regarded it as equivalent to a diploma. A majority of those responding to two surveys thought that GED recipients performed their works as well as high school graduates. Thiele and Sloan (1984) found that 59 percent of their survey respondents in Illinois considered their GED employees generally successful or very successful in their work, and only 0.8 percent considered GEDs less successful than high school graduates. Similarly, 56 percent of the Florida employers responding to Grise and Klein's (1987) survey thought GED recipients performed as well as high school graduates; 4 percent said the GEDs performed better; and 12 percent said they did not perform as well. Their data also indicated that employers thought GEDs performed better; and 12 percent said they did not perform as well. Their data also indicated that employers

thought GED recipients did reasonably well in promotions, retention, and dismissals, though not always as well as high school graduates.

### Military

The fact that employers generally accept the GED as equivalent to a high school diploma does not necessarily mean that their impressions are accurate. The military accepted the GED as an equivalency certificate until research showed that GED recipients had much higher attrition rates than high school graduates. Each of the services strictly limit the number of high school dropouts (which includes GED holders) who can enlist each year. This is because years of military enlistment statistics have shown that this category of enlistees fail to complete their entire first term of military service at about twice the rate of those with a high school diploma or those with college credits. The Air Force is the most strict on this matter. The Air Force allows less than one percent of annual enlistments to be recruits without a high school diploma. The Marines have the next highest standards. No more than five percent of Marine recruits can be GED-holders. The Army allows no more than ten percent each year, and the Navy limits GED enlistments to no more than five to ten percent each year. There are always many, many more GED-holders who want to enlist than there are available slots, so -- even to be considered -- a GED holder must score much higher on the ASVAB, than a high school diploma recruit. However, if a recruit has 15 or more college credits, he/she is in the exact same enlistment category as a high school diploma holder (Department of Education, 1998).

In the civilian labor market, the results of systematic research on outcomes of the GED must be reviewed to see whether GED certification is systematically related to such things as hiring and wages after other factors are controlled (Boesel, et al, 1998).

### GED Graduates' Characteristics

Willis (1995) described a 1991 follow-up study of GED graduates conducted by the Georgia Department of Technical and Adult Education, Office of Adult Literacy Programs. The study was designed to determine effects passing the GED tests had on GED graduates at that time, especially with regard to employment, further education, personal satisfaction, and family well being:

In 1989, 17,840 persons took the GED tests in Georgia. Of this group 10,761 earned scores sufficient to qualify for an equivalency certificate. Data were analyzed by grade completion, race or ethnic identification, age, and gender. The range of years of schooling completed by respondents was from 7<sup>th</sup> to 12<sup>th</sup> grade. Ninety-nine respondents (33%) completed the 10<sup>th</sup> grade, 85 respondents (28.3%) completed the 11<sup>th</sup> grade, and 14 respondents (4.7%) completed the 12<sup>th</sup> grade. The mean grade completion level for the group was 10.5. the racial or ethnic identification characteristics of respondents were: 67% white, 26.7% Black, 0.7% Oriental, and 5% Spanish/Hispanic. Of those responding by age, 27% listed their age within the 24-29 years range, 24% within the 30-35 range, 20% within the 18-23 range, and 5% above 48 years of age. There were 205 (68.3%) female and 95 (31.7%) male respondents.

Gardner (2001) completed a GED study based on an annual report profiling GED test-takers from 1958 to 2001. The report stated that GED candidates tended to be young. The 1980 survey reported that 78 percent of those who earned credentials were under age 29. At that time, as many as 50 percent of candidates were age 21 or younger. In information gathered in the 1989 survey, 62 percent of GED candidates were 25 years and younger and 29 percent were ages 18 or 19. among 1980 candidates, 79 percent were white, 18 percent were black and 3 percent were members of other races. About 25 percent of candidates' aged 17 and younger (26 percent) were minorities in 1980. the proportion of candidates aged 18 to 44 who were members of a minority group increased to 31 percent. Currently, the number of minority candidates is increasing. In the 1989 survey, race seemed to make a difference in the number of school grades completed.

Fewer white candidates (68 percent) than Asian/Pacific Islanders (87 percent) or Blacks (79 percent) completed tenth grade or higher.

### Reasons for Pursuing a GED

Avoiding poverty and the ramifications of unemployment may be the prime motivator for GED pursuit, as most GED recipients (60.5 percent) move on to some form of continuing education (Dean, 1998). Technical programs, non-degree training programs, 2-year associate degree programs, and on-the-job training programs are some of the options these GED holders pursue (Brown, 2000).

Research has demonstrated that low self-esteem is associated with an array of negative outcomes (St. Pierre, Swartz, Murray, Langhorst & Nickel, 1994). People with low self-esteem, especially when linked with low socioeconomic status, are more likely than others to do poorly in school and the labor market and have problems with the law. Breaking out of the cycle of low self-esteem and poor performance can be extremely difficult. However, many adult educators believe that passing the GED can help break this cycle by building self-confidence. In so doing, the tests may provide a first step toward improving one's condition. Additional steps may include enrolling in higher education and seeking a better job (Boesel, Alsalam & Smith, 1998).

Malley and Charuhas (1977) found that 88 percent of the GED recipients they surveyed in Illinois said they felt better about themselves as a result of passing the GED. (Only 1 percent said they did not, while 11 percent did not answer the question) Similarly, Darkenwald and Valentine (1985) reported that 94 percent of the respondents to a follow-survey in New Jersey said that feeling better about themselves was one benefit of the tests. In a survey of GED graduates conducted by the Iowa Department of Education (1992), 77 percent said that passing

the GED increased their self-esteem “very much” and an additional 18 percent said it increased their self-esteem to some extent.

### Career Maturity Instruments

There are numerous survey instruments designed to assess career maturity. The available choices range from those instruments that measure a small number of broad interests which are self-administered and hand-scored to those that report hundreds of scores and are more efficiently scored by use of computer. For the purpose of this study three survey measures that could be acceptable for use with the population of interest for this study are described in this section. The Career Maturity Inventory (CMI) developed by Crites, the Cognitive Vocational Maturity Test (CVMT) developed by Westbrook and the Career Development Inventory (CDI) developed by Super, Thompson, Lindeman Jordaan, and Meyers. The CMI, formally called the Vocational Development Inventory and developed in 1978, was designed to measure the attitudes and skills a person has for making career decisions. The CMI follows a true-false format consisting of 50 statements; 25 for the Attitude scale, and 25 for the Competence test and takes about 45 minutes to complete. The CMI was revised in 1995. The 1978 version for the Attitude scale and Competence test consisted of five subscales each. The 1995 version sought to improve reliability by dropping subscales, however they are still represented on the CMI by five questions per subscale. This form of measurement has been used effectively in evaluations utilizing a pre-test and post-test, however the developers concede that while the construct validity has been well established for the 1978 version, more evidence is needed to prove construct validity of the newest version (Norris & Zunker, 1998).

The CVMT uses six subtests to evaluate fields of work, job selection, work conditions, educational requirement, attribute requirement and duties. The normative data in this survey is



for the sixth to ninth grade population, however the reading level is below third grade (Westbrook & Mastie, 1974, p. 48). For the purposes of this study the CDI is the most applicable survey because it is a unique resource for surveying large groups of individuals regarding their career development needs, it is the product of over 40 years of adolescent career decision-making readiness, development, and maturity research, and it represents the operational definition of Donald Super's model of career maturity.

The Career Development Inventory consists of two forms (S and CU). Form S is intended for students in grades 8-12; Form CU is designed for college and university students. The latter form was produced through minor word and occupational group modifications to achieve greater congruence with college-level context and occupational choices.

Both CDI forms are composed of 120 items that produce eight scales: Career Planning (CP); Career Exploration (CE); Career Decision Making (DM); World of Work Information (WW); Knowledge of Preferred Occupation (PO); Career Development Attitudes (CDA); Career Development Knowledge (CDK); and Career Orientation Total (COT). The instrument is divided into two parts. Part I, Career Orientation, consists of four 20-item scales (CP, CE, DM, and WW). The Career Development Attitudes (CDA) scale is considered a conative scale, and is formed through the combination of the CP and CE scales. The Career Development Knowledge scale, which is considered a cognitive scale, is similarly formed through combination of the DM and WW scales. The four basic scales of Part I are combined to form the Career Orientation Total (COT) scale, which represents Super's career maturity construct. Even though this score is useful as a single measure of career maturity, the developers of the instrument make it clear that not all dimensions of vocational maturity are measured. Part II consists of the 40 items comprising the Knowledge of Preferred Occupation (PO) scale, which is selected by the student

after responding to occupations of interest across 20 groups of 5 representative occupations each. Since the present study is interested in examining career maturity levels of GED recipients, Part I of the school form will be used.

Consistent with Super's developmental model, the manual suggests that when using Form S, the PO scale should be used only with students in grades 11-12 given the advanced terms, ideas, and maturity requisite for occupational development and choice (Sundre, 2002). Based on this information and the reading levels of some of the participants in the study, the four subscales of Part I Form S is sufficient for this study. The School Form User Manual (Thompson & Lindeman, 1981) provided internal consistency and standard error of measurement (SEM) estimates for grades 9-12 total groups and by gender. In general, these reliabilities have been found to be sufficient with the exception of the two cognitive scales, Career Decision Making (DM) and Preferred Occupation (PO) scales. These two scales are both problematic, particularly for females. The manual points out this problem but it has not been addressed. The authors reported that the Cronbach alphas for the PO scale improved for the 11<sup>th</sup> and 12<sup>th</sup> grades over those observed for the 9<sup>th</sup> and 10<sup>th</sup> grades. The reliabilities also appeared to improve a bit for boys from 9<sup>th</sup> to 12<sup>th</sup> grades with estimates of .61, .55, .64, and .71 respectively. However, the Cronbach alphas reported for females across the same grades were .53, .53, .67, and .57 respectively. The SEMs of course follow a similar patten and were larger for the DM and PO scales than the other scales. The uneven scale reliabilities have been noted many times by many reviewers. The manual provided excellent guidance for interpretation and application of the SEMs, and cautioned users about use of particular scale scores with individuals.

Test-retest reliability findings reported in the Technical Manual (Thompson & Lindeman, 1984) appeared fairly unstable for the Decision Making (DM), World of Work (WW), and the

Preferred Occupation (PO) scales even over a relatively brief three-week period. All other scales produced adequate test-retest reliabilities over the same time period. Parallel findings were observed with the CU form. The fact that many researchers have observed low reliabilities for these scales suggest the problem resides with the scales. The general consensus among reviewers and researchers seems to be caution with use of the individual scales and a recommendation for use of composite scales CDA, CDK, and TOT for sufficient reliability.

Construct validity was explored via factor analysis and investigation of subgroup differences (gender, grade, and academic program) thought to be consistent with theoretical expectations. Evidence for the School form consisted of the observation of a general absence of gender differences, which was considered theoretically consistent. In the 11<sup>th</sup> and 12<sup>th</sup> grades, females begin to outperform males on the cognitive scales, and the authors assert this result is also expected because both forms S and CU rely on past research and continued explication of Super's model of career maturity. An observed general pattern of increasing total and scale scores over grades was also considered positive validity evidence, though the increases were slight. However, it should be noted that the data show almost as large career development differences within each grade as between grades. Curricular program differences were also tested and, though they were generally small, they were in the expected directions. Results for the College and University form followed the same general design; however score increases by years in college were certainly not large. It should be noted that most college classes are much more heterogeneous than high school classes, and changes over class years might be legitimately muted. However, the difference observed over the four-year-period amounted to about a half of a standard deviation. Females scoring higher on the cognitive scales was considered as positive construct validity evidence; however those differences were quite small, less than one SEM.

Differences expressed by major fields were quite large for some scales, and these results were consistent with theoretical expectations. The widespread continued use of the CDI is likely. Despite the flawed reliabilities of the cognitive scales, the measure has much to recommend it (Sundre, 2002).

The Career Development Inventory was chosen to measure career maturity levels of GED recipients because it's a unique resource for surveying large groups of individuals regarding their career development needs and a great deal of research (over 40 years) has been conducted on the CDI subsequent to publication of the manual and technical bulletin. This work provides continued support for the CDI as an operational definition of Super's model, its predictive and concurrent validity, and the growing number of successful international adaptations (Savickas, 1994). Sundre (2002) contends that the instrument can be used for three major purposes: individual counseling, group assessment, and program evaluation and planning. The manual provides sound guidance concerning interpretations of the various scales for determining readiness for choice, diagnostics, understanding profiles and planning individual and group guidance programs (Sundre, 2002).

#### Two 2-year Postsecondary Schools

The accessible research sample will be students enrolled in the Adult Basic/GED Instruction Program at two 2-year postsecondary schools which are a unit of the Georgia Department of Technical and Adult Education. Both postsecondary schools are accredited institutions of higher education that provides affordable and flexible learning opportunities in an environment for all levels of adult students. They are open door, multi-campus, two-year technical colleges that prepare individuals for successful employment and fulfilling careers through technical education and training.

The schools offer traditional and web-based educational options that include individual courses, certificates, diplomas and associate degrees, Adult Literacy and GED services, and customized training through partnerships with business and industry in four counties. The schools' high quality programs and services are determined by incorporating student needs, industry standards and job requirements, and are designed to maximize student success.

A wide array of programs of study are offered that lead to an Associate of Applied Technology Degree, a Diploma, a Technical Certificate of Credit as well as a GED. Both schools were established to serve a multi-county area, and are both a statewide network of area postsecondary technical colleges. At both schools adult literacy services were designed for students 18 and over, but at ages 16 and 17 students may enroll with a withdrawal form from their last school attended and with written permission from their parents or guardian. School A was located in Dekalb County which is closer to the Atlanta Ga. Metropolitan area. Department of Labor statistics (2005) reports that as of 2004 Dekalb Co. had a population of 565,865, 17% of the labor force had not completed high school, 21% were high school graduates, 29% had some college, 21% completed college. Dekalb's 2003 per capita income was \$34,745, median household income was \$49,117. It was interesting that 54% of population was African American, 36% Caucasian and 8% Hispanic. 10.8% of Dekalb County is below United States poverty level. School B was located in Hall County. Department of Labor statistics (2005) reports that as of 2004 Hall County had a population of 139,277, 32% of the labor force had not completed high school, 28% were high school graduates, 22% had some college, and 11% completed college. Hall's 2003 per capita income was \$25,138, median household income was \$44,908. It is important to note that 80% of the

population was Caucasian, 7% were African American and 19% were Hispanic. 12% of population in Hall County is below the United States poverty level.

The Adult Basic/GED Instructional Program has two sections: Basic literacy and GED preparation. All students in the program must take the Test of Adult Basic Education (TABE) which determines their level of achievement. Students who have reading, writing, or math achievement at the eighth grade level or lower are enrolled in Basic Literacy. An individual study plan is developed for each basic literacy student, and goals are set ranging from learning how to read to advancing on the job, or preparing to enter GED training. Students who score at the ninth grade level or higher are primarily involved in preparation to take the General Education Development (GED) Test. When the student receives the results of his or her TABE, the instructor points out the student's strengths and weaknesses. The instructor then shares recommendations with the student concerning remedial studies in areas where there are weaknesses. If the student decides to accept the recommendations of the instructor, the instructor has the student to fill out and sign a contract of attendance which contains the schedule the student has agreed to honor (R. Bates, personal communication, October 31, 2005).

While the student is studying for the GED exam, tests are given to indicate whether or not the student has mastered the material being studied. After the student has completed the recommended remedial study, he or she is offered the opportunity to take the official GED Practice Test. This test is in the GED format and contains samples of the types of questions the student is likely to find on the actual GED exam. This test also projects an actual GED performance level. It has been shown to be accurate within a range of twenty-five points above or below their performance. The student may decide to take the GED exam at any point after he or she has finished the TABE evaluation. Some decide to take it without the recommended

preparation; most accept the opportunity to study before testing. The final decision always rests with the student (R. Bates, personal communication, October 31, 2005)

## CHAPTER III

### METHOD

In addition to summarizing the purpose of the study and research questions, this chapter presents the research design, a description of the population and sample selection, instrumentation including instrument reliability and validity (internal consistency coefficients, reliability coefficients, test-retest reliability coefficients, content and construct validity), procedures, and data collection. Data analysis is also presented.

#### Purpose of the Study

The purpose of this study was to examine four major aspects of career maturity of GED students enrolled in two 2-year postsecondary schools located in northeast Georgia. The Career Development Inventory (CDI), developed by Super, et al.(1981), was used to collect data along with a self report data sheet developed by the researcher. The CDI has four subscales: Career Exploration, Career Planning, Decision-Making, and World of Work Information. The differences in GED students' career exploration, career planning, career decision-making, and world of work information were examined. The data sheet assessed students' age, race, gender, parents' highest level of education and students' socioeconomic status.

#### Research Questions

This study sought to provide answers to the following research questions:

1. What are the career maturity scores for GED students enrolled in two 2-year postsecondary schools located in northeast Georgia using the four subscales of the (career exploration, career planning, decision making, world of work information)?



2. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on Age?
3. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on Gender?
4. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on Race?
5. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on Parents' Highest Level of Education?
6. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on Socioeconomic Status?

#### Variables of Interest

The study was accomplished by examining the differences in scores on the four major aspects of career maturity (career exploration, career planning, decision-making and world of work information) of GED students based on age, race, gender, parents' level of education and socioeconomic status. The major emphasis of the study was to determine if significant differences existed among these variables of interests with regard to GED students. The variable age was chosen for this study based on relevance to career maturity as noted in Super's Career Pattern Study (1957). Age was grouped based on three of Super's (1957,1990) life stages of

development. The three life stages are Exploration ages 15-24, Establishment ages 24-44, and Maintenance ages 45-64. The variables race, gender, and socioeconomic status were of importance to this particular study based on the fact that prevailing or traditional career development theories were based almost entirely upon Caucasian, male samples from middle and upper-middle class backgrounds, so their applicability to women, people of color, and other socioeconomic groups is questionable (Cheatham, 1990; Luzzo 1995; Super & Overstreet, 1960). Consequently, it is also important to note that people of color are additionally burdened with developmental tasks related to dealing with internal and external challenges such as historical practices of racial prejudice and discrimination in job hiring, promotion (Carter & Cook, 1992; Thomas & Alderfer, 1989) and limited career information and opportunities (Constantine et al., 1998). To understand career maturity of such under represented groups we need to move beyond a model that portrays them as being deficient in their career maturity, to one that examines social and cultural factors associated with their career maturity. Therefore, the psychological construct of career maturity is important in examining career development (Rojewski, 1994; Schnorr & Ware, 2001).

Parents' highest level of education was included as a variable based on related literature stating that parents are among the most important people influencing adolescents' career development, especially in areas such as expectations for achievement and teaching about the world of work through their own occupations (Lankard, 1998; Santrock, 1993; Womble et al., 1995). Grouping for parents' education level will be: No high school, High school graduate or GED, Some college and College graduate. Grouping for socioeconomic status was based on groupings of household income of the United States 1990 Census: Less than \$10,000, \$10,000 to \$14,999, \$15,000 to \$24,999, \$25,000 to \$34,999, Greater than \$50,000.

## Research Design

A causal comparative research design was used to examine differences among GED students with regard to their scores on the four major aspects of career maturity (career exploration, career planning, decision-making, world of work information) and the independent variables; age, gender, race, parents' level of education, and socioeconomic status. Causal comparative research is a type of non-experimental investigation in which researchers seek to identify cause and affect relationships by forming groups of individuals in whom the independent variable is present or absent at several levels and then determining whether the groups differ on the dependent variable (Mertler & Charles, 2005). In causal comparative research the independent variable is measured in the form of categories. The categories can form a nominal scale (e.g., male versus female; American versus Asian versus European citizenship) or ordinal scale (e.g., non-employed versus employed part-time versus employed full-time. However, this relationship is more suggestive than proven as the researcher does not have complete control over the independent variable. Causal-comparative designs are used for two reasons: forming groups to measure the independent variable often is more consistent with how practitioners and other education stakeholders think about the world; and statistical results typically are easy to comprehend and interpret (Gall, Gall & Borg, 2003).

The basic objective of a causal comparative research study is to select a group that reflects the independent variable and then select another group of subjects that do not have the independent variable. The two groups are then compared on the dependent variable. One of the problems with causal comparative research is that it is impossible to randomly assign subjects to various groups. This means that there are several extraneous variables that are not controlled or eliminated in the study. Any variables not controlled remain possible explanations for the

dependent variable outcomes. This is why causal comparative research can only determine possible cause and effect relationships and not actual ones. In experimental research it can be assumed that these other variables cancel out among the groups by the process of randomization (Wasson, Beare & Wasson, 1990).

### Participants

The participant pool for this study included all students enrolled in GED programs at two 2-year postsecondary schools located in northeast Georgia from Spring 2005 through Summer, 2005. The approximate combined average GED enrollment at these two schools in 2004 was 587. These schools were chosen because they both had viable GED programs and were located in geographical areas convenient to the researcher. All students in attendance at both postsecondary schools who volunteered in either day or evening classes, full-time or part-time during the test administration period were included in the sample resulting in a total of 121 sets of data being collected. Therefore no attempt was made to control the number or composition of GED students used in the study. However, 26 cases were eliminated from the research sample due to missing or incomplete data. Elimination of missing data resulted in 93 participants (See Table 1).

Table 1  
Participants' Demographics

Descriptor	N	Percent
Age		
16-24	41	44
25-44	25	27
45-64	27	29
Race		
African American	60	65
Caucasian	19	20
Hispanic	10	11
Other	4	4
Gender		
Male	29	31

Descriptor	N	Percent
Female	64	69
Parents' highest level of education		
Mother		
Did not graduate	49	53
Graduated high school or GED	21	23
Some college	11	12
Graduated college	12	12
Father		
Did not graduate	38	41
Graduated high school or GED	29	31
Some college	13	14
Graduated college	13	14
Socioeconomic status		
Less than \$10,000	20	22
\$10,000 to \$14,999	15	16
\$15,000 to \$24,999	24	26
\$25,000 to \$34,999	18	19
Greater than \$50,000	16	17

Students ranged in age from 16-64+ years, with the majority of students falling within the 16-24 age group. Students' race was recorded in four categories and those who chose other constituted the smallest racial group (4%). Of the 93 students, a greater proportion (69%) was female. Parents' (mother and father) highest level of education was recorded in four categories. Interestingly 53% of students' mothers did not graduate high school and 41% of students' fathers did not graduate high school. Student participants' socioeconomic status was based on self-reported annual income. Participants selected one category from five with 64% of students socioeconomic status reported as below \$25,000.

The first postsecondary school was located in Dekalb County. Department of Labor (2005) statistics reports that as of 2004 Dekalb County. had a population of 565,865, 17% of the labor force had not completed high school, 21% were high school graduates, 29% had some college, 21% completed college. Dekalb's 2003 per capita income was \$34,745, median household income was \$49,117. It was interesting that 54% of population was African

American, 36% Caucasian and 8% Hispanic. 10.8% of Dekalb County is below United States poverty level. The second postsecondary school was located in Hall County. Department of Labor statistics (2005) reports that as of 2004 Hall County had a population of 139,277, 32% of the labor force had not completed high school, 28% were high school graduates, 22% had some college, and 11% completed college. Hall's 2003 per capita income was \$25,138, median household income was \$44,908. It is important to note that 80% of the population was Caucasian, 7% were African American and 19% were Hispanic. Twelve percent of the population in Hall County is below the United States poverty level.

The GED programs at both schools are a unit of the Georgia Department of Technical and Adult Education. These schools are accredited institutions of higher education that provide affordable and flexible learning opportunities in an environment for all levels of adult students. They are both open door, multi-campus, 2-year technical colleges that prepare individuals for successful employment and fulfilling careers through technical education and training (GADTAE, 2004).

A wide array of programs of study are offered at both schools that lead to an Associate of Applied Technology Degree, a Diploma, and a Technical Certificate of Credit. Adult literacy services were designed for students 18 and over, but at ages 16 and 17 students may enroll with a withdrawal form from their last school attended and with written permission from their parents or guardian. GED programs at both postsecondary schools oldest students have been in their 70s (GADTAE, 2004).

The Adult Basic/GED Instructional Program has two sections: Basic literacy and GED preparation. All students in the program must take the Test of Adult Basic Education (TABE) which determines their level of achievement. Students who have reading, writing, or math

achievement at the eighth grade level or lower are enrolled in Basic Literacy. The student and the instructor mutually agree to an attendance schedule between the hours of 8:00 a.m. until 8:00 p.m. Monday - Thursday, and Saturday from 8:00 a.m.- 1:00 p.m. When the student receives the results of his or her TABE, the instructor points out the student's strengths and weaknesses. The instructor then shares recommendations with the student concerning remedial studies in areas where there are weaknesses. If the student decides to accept the recommendations of the instructor, the instructor has the student to fill out and sign a contract of attendance which contains the schedule the student has agreed to honor. While the student is studying for the GED exam, tests are given to indicate whether or not the student has mastered the material being studied. After the student has completed the recommended remedial study, he or she is offered the opportunity to take the official GED Practice Test. This test is in the GED format and contains samples of the types of questions the student is likely to find on the actual GED exam. This test also projects an actual GED performance level. It has been shown to be accurate within a range of twenty-five points above or below their performance. The student may decide to take the GED exam at any point after he or she has finished the TABE evaluation. Some decide to take it without the recommended preparation; most accept the opportunity to study before testing. The final decision always rests with the student (R. Bates, personal communication, October 31, 2005).

#### Instrumentation

A self report data sheet and the Career Development Inventory (Super, Thompson, Lindeman, Jordaan, & Myers, 1981) was used to collect data for this study. The Career Development Inventory is available online, however a copy is not included in this study due to copyright regulations. The demographic information includes age,

gender, race, parents' highest level of education and socioeconomic status (household income). The Career Development Inventory is an online instrument. However, due to copyright issues it is not made available for viewing in the appendix of this study.

The Career Development Inventory (CDI) School Form (Super, Thompson, Lindeman, Jordaan, & Myers, 1981) was used in this study as a measure of career maturity and career development and is based on more than 40 years of research. The CDI consists of two forms; the school form (which will be used in the present study) and the university form. The CDI's school form targets the high school population (Grades 8-12) and will be used in this study because the instrument's reading level is comparable to that of the study's participants. The school form has two parts and consists of 120 items. Part 1 contains four subtests that measure four important aspects of career maturity. A five-point Likert-type scale is used in each of the four subsets of the instrument. Career planning (Scale 1), Career exploration (Scale II), Decision making (Scale III), and World of work information (Scale IV). Part 1 can be given to students in Grades 7th through 10th, but part II may not be suitable for high school students in Grade 10 or lower due to the complex nature of the reading and vocabulary. Part II is constructed to assess the student's knowledge of a preferred occupational group, therefore, this part will not be used in this study. Eight scaled scores can be obtained from this instrument: four from Part I, one from Part II, and three from combining several subtest scores (career development attitudes, career development knowledge, and career orientation total (Levinson & Ohler, 1998). The CDI was normed on a sample that included over 5,000 high schools and over 1,800 college students. Unfortunately, the sample of high school students used for the norm groups was not racially representative. However, development of local norms has been encouraged. Internal consistency coefficients, for the secondary school level, ranged from .75 to .90. (Super et al., 1981). The internal



consistencies of each scale ranged from .81 to .89 with a median of .87. At all levels, the reliabilities of the Career Development Attitude Scale and the Career Development Knowledge Scale have been higher than .75, whereas the Career Orientation Total reliability coefficients were .85 and higher (Super et al.). For the eight scales on the School Form, test-retest reliability coefficients ranged from .36 to .90. For the Career Development Attitudes, Career Development Knowledge, and Career Orientation scales, test-retest reliability coefficients ranged from .74 to .84 (Levinson & Ohler, 1998). Construct validity was explored via factor analysis and investigation of subgroup differences (gender, grade, and academic program) thought to be consistent with theoretical expectations. Evidence for the School form consisted of the observation of a general absence of gender differences, which was considered theoretically consistent. In the 11 and 12 grades, females begin to outperform males on the cognitive scales, and the authors assert this result is also expected because both forms (school and college/university) rely on past research and continued explication of Super's model of career maturity. An observed general pattern of increasing total and scale scores over grades was also considered positive validity evidence, though the increases were slight. However, it should be noted that the data show career development differences are almost as large within each grade as between grades. Curricular program differences were also tested and, though they were generally small, they were in the expected directions. Results for the College and University form followed the same general design; however score increases by years in college were certainly not large. It should be noted that most college classes are much more heterogeneous than high school classes, and changes over class years might be legitimately muted. However, the difference observed over the 4 year-period amounted to about a half of a standard deviation. Females scoring higher on the cognitive scales was considered as positive construct validity

evidence; however those differences were quite small, less than one SEM. Differences expressed by major fields were quite large for some scales, and these results were consistent with theoretical expectations. The widespread continued use of the CDI is likely (Sundre, 2002).

Range, mean and standard deviations scores on the school form of the CDI used in this study are Career planning (20-100, 63.8, 14.7), Career exploration (60-240, 153.7, 27.1), Decision making (0-20, 11.0, 3.95), and World of work information (0-20, 13.3, 5.1).

#### Data Collection Procedures

The following procedures were utilized to conduct the study. After approval of the prospectus of this study, an application to conduct research was submitted to the Institutional Review Board (IRB) for Human Subjects at the University of Georgia. Approval from the IRB took 6 to 8 weeks, after which the consent (see Appendix A) form was distributed to students enrolled in the GED program at the two 2-year postsecondary schools located in northeast Georgia. Data was collected Spring 2005 to Summer 2005. A cover letter (Appendix B) describing the study and its purpose along with the instructions for accessing the online instrument was provided to each student. A self-report data sheet to gather demographic data (see Appendix C) was also required. In addition a letter from Dekalb Technical College (see Appendix D), Lanier Technical College (see Appendix E) and IRB approval (see Appendix F) is provided in the appendix section of this study.

The researcher administered the self-report data sheet to each student consenting to participate. Before allowing students to begin completing the instrument, the researcher read the directions and specified a timeframe of approximately 45 minutes for completion. Since the CDI portion of the data collection process required students to respond to an online instrument, for tracking purposes, a space to record an identification number was listed on each self-report data

sheet. This identification number was automatically generated in the results section of the completed instrument. At the end of 45 minutes, the researcher checked to see if students listed their identification number on the self-report data sheet then collected all forms. The online data was scored by the publisher all raw data was then returned by email to the researcher.

Once all data was collected and checked for accuracy, it was prepared in a readable format to conform to the University of Georgia Academic Computing Center specifications for data analysis.

### Data Analysis

Data was analyzed using the Statistical Program (SAS). Descriptive measures and a series of one-way analysis of variance (ANOVAs) were used to determine if there were statistically significant differences between the independent and dependent variables.

Descriptive measures that was used are means and standard deviations. Table 2 outlines the data analysis to be used for each research question.

Table 2  
Summary of Data Analysis for Research Questions Posed by this Study

Research Questions	Independent Variable	Dependent Variable	Data Analysis
1. What are the career maturity scores, based on COT, for GED students enrolled in two 2-year postsecondary schools located in Northeast Georgia?		1. Career Exploration 2. Career Planning 3. Decision Making 4. World of Work Information	One-way ANOVA p-Value Post Hoc Effect Size
2. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity based on age?	Age	1. Career Exploration 2. Career Planning 3. Decision Making 4. World of Work Information	One-way ANOVA p-Value Post Hoc Effect Size
3. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity based on race?	Race	1. Career Exploration 2. Career Planning 3. Decision Making 4. World of Work Information	One-way ANOVA p-Value Post Hoc Effect Size
4. Is there a statistically significant difference in GED students' scores on the four major aspects of career	Gender	1. Career Exploration 2. Career Planning 3. Decision Making 4. World of Work Information	One-way ANOVA p-Value Post Hoc

Research Questions	Independent Variable	Dependent Variable	Data Analysis
maturity based on gender?			Effect Size
5. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity based on parents' level of education?	Parents' highest level of education	1. Career Exploration 2. Career Planning 3. Decision Making 4. World of Work Information	One-way ANOVA p-Value Post Hoc Effect Size
6. Is there a statistically significant difference in GED students' scores on the four major aspects of career maturity based on socio-economic status?	Socioeconomic status	1. Career Exploration 2. Career Planning 3. Decision Making 4. World of Work Information	One-way ANOVA p-Value Post-Hoc Effect Size

### One-Way Analysis of Variance.

Moore (2000) described analysis of variance (ANOVA) as comparing the variation due to specific sources with the variation among individuals who should be similar. In particular, ANOVA tests whether several populations have the same mean by comparing how far apart the sample means are with how much variation there is within the samples. Comparing several means is the simplest form of analysis of variance (ANOVA) called one-way ANOVA. It is called one-way because there is only one grouping of the observations into categories.

In a one-way ANOVA, the means of two or more groups that differ in some way (for example, the experimental condition in which they were tested) are compared. The basic aim is to test the null hypothesis that the samples come from populations with the same means and that any difference among obtained means is due to chance. If variability among the means of the groups is large in comparison to the variability within the groups, we are likely to reject the null hypothesis; if it is small, we are likely to retain the null hypothesis (Spence, Cotton, Underwood, & Duncan, 1990).

To assess the magnitude of differences in the groups, four factors were taken into consideration as described by Olejnik (1984) including criteria for significance level, type of data

analysis, statistical power, desired effect size, and an alpha ( $\alpha$ ) level of .05 for significance was used for this study. Gall et al. (2003) indicate that  $p$  value  $< 0.05$  is commonly used in educational research. This is widely accepted throughout the research community because it reduces the chance of a Type I error (Olejnik, 1984). A Type I error would occur by rejecting the null hypotheses when it is indeed true.

The number of participants needed for an adequate test of a hypothesis is determined by the type of data analysis procedure chosen. The type of data analysis procedure chosen depends on the research question of interest, the research design, and the type of variables used. General analysis strategies, which take into consideration more information about the subjects, tend to require a smaller amount of subjects. Gall et al. (2003) explained that fewer participants are needed to reject the null hypothesis at the .05 level than at the .10 level as the sample size is increased; the level of statistical power is increased. Statistical power supports the rejection of the null hypothesis when it is false. For this study I estimated a level of practical significance with an effect size set at a medium level. I made this estimation because of the limits of an accessible sample. According to Olejnik (1984), the sample size in this study met the minimal total sample size necessary for a .05 significance and a statistical power set at the .5 level.

In order to control the familywise error rate for all of the post-hoc tests Tukey's HSD test, which is the most widely used post hoc test in psychology, was used to determine if significant differences exist between variables of interest. This test is a versatile, easily calculated technique that gives answers to just about any follow up questions concerning the ANOVA (University of New England, 2000). Effect size is another factor which will affect the likelihood of rejecting the null hypothesis when it is actually true. Effect size is an estimate of the magnitude of the difference, relationship, or effect in the populations being studied. Effect size offers an

explanation to the extent of the change in the dependent variable as a result of the treatment. (Cohen, 1992). The effect size of the Post Hoc results of each significant difference found in the study was determined by Cohen's  $d$ . Cohen (1988) defined  $d$  as the difference between means,  $M1 - M2$ , divided by the pooled standard deviation  $\sigma$ . Cohen (1988) suggested the following guidelines for evaluating effect size: a small effect size is .20, a medium effect size is .50, and a large effect size is .80.

## CHAPTER IV

### FINDINGS

The purpose of this study was to examine four major aspects of career maturity of GED students enrolled in two 2-year postsecondary schools located in northeast Georgia. The Career Development Inventory (CDI), developed by Super et al. (1981), was used to collect data. The CDI has four subscales: Career Exploration (CE), Career Planning (CP), Decision-Making (DM), and World of Work Information (WW). The differences in GED students' career exploration, career planning, career decision-making, and world of work information were examined.

Data were analyzed using the statistical program, Statistical Analysis System (SAS). Descriptive measures, means and standard deviations, were computed. In addition, a series of one-way analysis of variance (ANOVA) was used to determine if there was a statistically significant difference between the independent variables (age, race, gender, parents' highest level of education and socioeconomic status) and dependent variables (career exploration, career planning, decision making and world of work information). In those instances where statistically significant differences were found, Tukey's HSD post hoc analysis was used to control for the familywise error rate for all of the post-hoc tests. Tukey's HSD was used also to determine where significant differences existed between the variables of interest (University of New England, 2000). Cohen's  $d$  was calculated to determine effect size. Effect size is an estimate of the magnitude of the difference, relationship, or effect in the populations being studied. Effect size offers an explanation to the extent of the change in the dependent variable as a result of the treatment. Cohen (1988) defined  $d$  as the difference between means,  $M1 - M2$ , divided by

standard deviation  $\sigma$ , of either group. Cohen (1988) suggested the following guidelines for evaluating effect size: a small effect size is .20, a medium effect size is .50, and a large effect size is .80. Effect sizes are standard scores created from a ratio derived from the mean scores of the experimental and control group in reference to the standard deviations of the control group (Hittleman & Simon, 1992). Because of the amount of data, and to avoid confusion, each of the six research questions is discussed separately.

### Research Questions

The research questions provide the foundation for the presentation of findings in this chapter. Descriptive measures such as means and standard deviations were computed. One-way ANOVAs based on age, race, gender, parents' highest level of education (mother and father) and socioeconomic status were calculated with the level of significance established at .05.

#### Research Question One

Research question one asked "What are the career maturity scores of GED students enrolled in two 2-year postsecondary schools located in northeast Georgia using the four subscales of the CDI (career exploration, career planning, decision making, world of work information)?" The means and standard deviations of total career exploration, total career planning, total decision making and total world of work information are presented in Table 3. Mean scores for these GED students enrolled in the two 2-year postsecondary school programs were highest (39.24) in the career planning aspect of career maturity. The mean score equivalent provided in the CDI manual for the career planning aspect is 63.8 illustrating a large difference in the mean of these GED students and those students on which norms were based. Interestingly, the mean scores for these GED students were lowest (11.40) in the decision making aspect of career maturity and almost identical to the mean scores (11.0) of those students



on which the norms were based. The large variations between means and standard deviations could be a result of outliers. While large, they are not unusually so, in that the standard deviations for GED students on which the norms were based are also large.

Table 3

Descriptive Statistics for Career Maturity Scores of GED Students (n = 93)

Dependent Variables	M	SD
Total Career Exploration	36.00	28.065
Total Career Planning	39.24	29.723
Total Decision Making	11.40	13.000
Total World of Work	22.33	19.253

### Research Question Two

Research question two asked “Was there a statistically significant difference in GED students’ scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on age?” There were no significant differences found in the GED students’ scores on the career exploration aspect of career maturity based on age ( $\alpha = .05$ ,  $F(2,90) = 2.42$ ,  $p < 0.095$ ). There also were no statistically significant differences found in GED students’ scores on the career planning aspect of career maturity based on age ( $\alpha = .05$ ,  $F(2,90) = 1.85$ ,  $p < 0.163$ ), nor on the decision making aspect of career maturity based on age ( $\alpha = .05$ ,  $F(2,90) = 0.05$ ,  $p < 0.952$ ). However, there were statistically significant differences found in the GED students’ scores on the world of work information aspect of career maturity based on age ( $\alpha = .05$ ,  $F(2,90) = 8.31$ ,  $p < 0.001$ ). These data are presented in Table 4.

Table 4

Summary of ANOVA Results

Independent Variable	Dependent Variable	F	Numerator DF	Denominator DF	P-value
Age	CE	2.42	2	90	0.157
	CP	1.85	2	90	0.952
	DM	0.05	2	90	0.906
	WW	8.31	2	90	0.085*
Race	CE	1.95	4	88	0.183
	CP	0.61	4	88	0.792

Independent Variable	Dependent Variable	F	Numerator DF	Denominator DF	P-value
Gender	DM	0.66	4	88	0.989
	WW	5.52	4	88	0.747*
	CE	0.14	1	91	0.034
	CP	0.04	1	91	0.326
Mothers' Education	DM	0.00	1	91	0.589
	WW	2.81	1	91	0.589
	CE	3.16	3	89	0.000*
	CP	2.73	3	89	0.591
Fathers' Education	DM	2.37	3	89	0.030*
	WW	3.30	3	89	0.142
	CE	0.11	3	87	0.371
	CP	2.02	3	87	0.466
SES	DM	1.09	3	87	0.573
	WW	3.31	3	87	0.047*
	CE	0.27	4	82	0.941
	CP	1.54	4	82	0.518
	DM	1.45	4	82	0.303
	WW	3.47	4	82	0.148

\* $p < .05$

Post hoc analysis revealed that specific differences existed between the GED students' in the 16-24 age group and those in the 25-44 age group on their responses to the world of work information aspect of career maturity (see Table 5). Based on Cohen's (1998) guidelines for determining practical significance, the effect size for this treatment ( $d = 0.674$ ) indicated that the magnitude of this difference was one of medium to large practical importance. There also was a statistically significant difference between GED students' in the 16-24 years of age group and the 45-64 age group on the world of work information aspect of career maturity. Based on Cohen's (1998) guidelines for determining practical significance, the effect size for this treatment was ( $d = 0.962$ ) which indicated a large degree of practical significance.

Table 5  
Summary of Tukey's Post Hoc Analysis

Independent Variable	Levels of Contrast	Dependent Variable
Age	16-24 vs 25-44	Total World of Work*
	16-24 vs 45-64	Total World of Work*
Race	African American vs Hispanic	Total World of Work*
	Caucasian vs Hispanic	Total World of Work*
Mother's education	Graduated high school or GED	Total Career Planning*
	vs graduated college	Total World of Work*
Father's education	No high school vs graduated college	Total World of Work*
	No high school vs graduated college	Total World of Work*
Socioeconomic status	Less than \$10,000 vs \$25,000-\$34,000	Total World of Work*
	\$15,000 vs \$25,000-\$34,000	Total World of Work*

\*Significant difference

### Research Question Three

Research question three asked "Was there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on gender?" There were no significant differences in GED students' scores on the career exploration (aspect of career maturity) based on gender ( $\alpha = .05$ ,  $F(1,91) = 0.14$ ,  $p < 0.710$ ). There were also no statistically significant differences found in GED students' scores on the career planning (aspect of career maturity) based on gender ( $\alpha = .05$ ,  $F(1,91) = 0.04$ ,  $p < 0.845$ , nor on the decision making (aspect of career maturity) based on gender ( $\alpha = .05$ ,  $F(1,91) = 0.00$ ,  $p < 0.993$ ). In addition, there were no statistically significant differences found in GED students' scores on the world of work information (aspect of career maturity) ( $\alpha = .05$ ,  $F(1,91) = 2.81$ ,  $p < 0.097$ ) based on gender.

### Research Question Four

Research question four asked "Was there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on race?" There were no significant differences found in GED students' scores on the career exploration (aspect of career maturity)

( $\alpha = .05$ ,  $F(3,89) = 1.95$ ,  $p < 0.128$ ), There also were no statistically significant differences found in GED students' scores on the career planning (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 0.61$ ,  $p < 0.610$ ), nor on the decision making (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 0.66$ ,  $p < 0.577$ ) based on race. However, there were statistically significant differences found in the GED students' scores on the world of work information (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 5.52$ ,  $p < 0.002$ ) based on race. Post hoc analysis revealed that specific differences existed between the GED students' in the Hispanic group and those in the Caucasian group on their responses to the world of work information (aspect of career maturity). Based on Cohen's (1998) guidelines for determining practical significance, the effect size for this treatment ( $d = 1.143$ ) indicated that the magnitude of this difference was one of large practical importance. There was also a statistically significant difference between GED students' in the African American group and the Caucasian group on the world of work information (aspect of career maturity). Based on Cohen's (1998) guidelines for determining practical significance, the effect size for this treatment was ( $d = 1.028$ ) which indicated a large degree of practical significance.

#### Research Question Five

Research question five asked "Was there a statistically significant difference in GED students' scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on parents highest level of education?" The highest level of education for the mother and father was recorded in four categories: No high school, Graduated high school or GED, Some College, Graduated college.

Mother's highest level of education. There were statistically significant differences found in GED students' scores on the career exploration (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 3.16$ ,  $p < 0.029$ ). There were also statistically significant differences found in GED students'

scores on the career planning (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 2.73$ ,  $p < 0.049$ ). In addition, there were statistically significant differences found in GED students' scores on the world of work information (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 3.30$ ,  $p < 0.024$ ). However, there were no statistically significant differences found in GED students' scores on the decision making (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,89) = 2.37$ ,  $p < 0.076$ ). Post hoc analysis revealed statistically significant differences existed between the GED students' in the graduated high school or GED group and those in the graduated college group on their responses to the career planning (aspect of career maturity). The effect size for this treatment ( $d = 1.022$ ) indicated a large effect of practical significance. There was also a statistically significant difference between GED students in the did not graduate high school group and the graduated college group on the world of work information (aspect of career maturity). The effect size for this difference ( $d = 0.982$ ) indicated a large degree of practical importance.

Father's highest level of education. There were statistically significant differences found in GED students' scores on the world of work information (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,87) = 3.31$ ,  $p < 0.024$ ). However, there were no statistically significant differences found in GED students' scores on the career planning (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,87) = 2.02$ ,  $p < 0.117$ ). There were also no statistically significant differences found on the decision making (aspect of career maturity) ( $\alpha = .05$ ,  $F(3,87) = 1.09$ ,  $p < 0.358$ ), nor on the career exploration (aspect of career maturity) ( $F(3,87) = 0.11$ ,  $p < 0.954$ ). Post hoc analysis revealed statistically significant differences existed between the GED students' in the did not graduate high school group and those in the graduated college group on their responses to the world of work information (aspect of career maturity). The effect size for this treatment ( $d = 1.043$ ) indicated a large effect of practical significance.

### Research Question Six

Research question six asked “Was there a statistically significant difference in GED students’ scores on the four major aspects of career maturity (career exploration, career planning, decision making, world of work information) based on socioeconomic status?” Students’ socioeconomic status was based on income and recorded in five categories: Less than \$10,000, \$10,000 to \$14,999, \$15,000 to \$24,999, \$25,000 to \$34,999, Greater than \$50,000. There were no significant differences found in GED students’ scores on the career exploration (aspect of career maturity) ( $\alpha = .05$ ,  $F(4,82) = 0.27$ ,  $p < 0.896$ ), There were also no statistically significant differences found on the career planning (aspect of career maturity) ( $\alpha = .05$ ,  $F(4,82) = 1.54$ ,  $p < .0197$ ), nor on the decision making (aspect of career maturity) ( $\alpha = .05$ ,  $F(4,82) = 1.45$ ,  $p < 0.224$ ). However, there were statistically significant differences found in GED students’ scores on the world of work information (aspect of career maturity) ( $\alpha = .05$ ,  $F(4,82) = 3.47$ ,  $p < 0.011$ ). Post hoc analysis revealed that specific differences existed between the GED students’ in the Less than \$10,000 group and those in the Some college group on their responses to the world of work information aspect of career maturity. Based on Cohen’s (1998) guidelines for determining practical significance, the effect size for this treatment ( $d = 0.981$ ) indicated that the magnitude of this difference was one of large practical importance. There was also a statistically significant difference between GED students’ in the \$15,000 to \$24,999 group and the \$25,000 to \$34,999 group on the world of work information aspect of career maturity. Based on Cohen’s (1998) guidelines for determining practical significance, the effect size for this treatment was ( $d = 0.904$ ) which indicated a large degree of practical significance.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

Data regarding the career development and career maturity of GED diploma recipients is limited. However, career maturity measures are recommended for identifying various attitudes, knowledge, and accomplishments that individuals need to develop their careers and to evaluate career development interventions (Crites, 1978, Thompson & Lindeman, 1981). Therefore, an examination of this GED group's career maturity measures may provide useful information to students and educators in understanding the differences among GED students in their career exploration, career planning, career decision making, and knowledge of the world of work information.

#### Purpose

The purpose of this study was to examine four major aspects of career maturity of GED students enrolled in two 2-year postsecondary schools located in northeast Georgia. The Career Development Inventory (CDI), developed by Donald Super, et al. (1981), was used to collect data. The CDI has four subscales: Career Exploration (CE), Career Planning (CP), Decision-Making (DM), and World of Work Information (WW). Each subscale was composed of 20 statements using a Likert-type scoring scale. The differences in GED students' career exploration, career planning, career decision-making, and world of work information were examined. The variables of interest were: age, race, gender, parents' highest level of education and socioeconomic status.

## Summary of Findings

### Research Question One

Results from this study showed the highest mean score (39.24) for these GED students was in the career planning aspect of career maturity, while the lowest mean score (11.40) for these GED students was found in the decision making aspect of career maturity. High scores on the career planning scale indicate the individual has actively engaged in career planning activities and behavior, indicating they have an appropriate awareness of occupational decisions that need attention, as well as a heightened sense of curiosity with regard to their place in the world of work. As a result, high career planning scores indicate a readiness to narrow choices and focus on advanced exploration in a few occupational fields (Super et al., 1981). However, the fact that most of these students' scores are well below the maximum possible scores (see Chapter 3 Instrumentation), suggests a need for exposure to career planning aspects such as developing career goals and interests. Similar findings were made with regard to the career exploration and world of work information aspects of these GED students' career maturity.

### Research Question Two

Findings showed a statistically significant difference in GED students' scores based on age. The post hoc analysis revealed that specific differences existed between GED students' in the 16-24 age group and those in the 25-44 age group based on their responses to the world of work information aspect of career maturity. The effect size for this treatment (0.674) indicated that this difference was of medium practical importance. One explanation for this finding is that the amount of knowledge held by both of these age groups with regard to world of work information is limited. The mean scores for the two groups (16-24,  $m = 14.10$ ; 25-44,  $m = 26.16$ ) support this conclusion and suggest a need for more exposure to world of work



information such as experiences to give them the knowledge of the range of occupations open to them and available for exploration in greater depth. There was also a statistically significant difference between GED students in the 16-24 years age group and the 45-64 age group on the world of work information aspect of career maturity. The effect size for this difference (0.962) indicated a large degree of practical importance. This finding may be explained by the fairly large age difference of these two groups. For example, the mean score for the 16-24 age group is 14.10, the mean score for the 25-44 age group is 31.30. Although, the mean score of both groups was low, the older participants score higher on the world of work information aspect of career maturity. It is possible that the older participants scored higher than the 16-24 age group due simply to greater life experiences in the world of work.

### Research Question Three

No significant differences were found in GED students' scores for career exploration, career planning, decision making, and world of work information based on gender. This finding of no significant difference on any aspect of career maturity is interesting because it implies less of a gender gap regarding career maturity. However, the literature provides conflicting results. Some of the literature shows no differences, while research shows significant differences (Naidoo, 1998; Luzzo, 1995; Rojewski et al., 1995). As more research about career maturity is conducted, a definitive answer to this research question may be found. Of interest to this study, however, the means for females were higher than the males on the career planning and decision making aspects of career maturity. The fact that males scored lower on these two aspects of career maturity could be attributed to a greater need for women to enter the workplace.

#### Research Question Four

Findings showed a statistically significant difference in GED students' scores based on race. However, post hoc analysis revealed that specific differences existed between GED students in the Hispanic group and those in the Caucasian group on their responses to the world of work information aspect of career maturity. The effect size for this treatment (1.143) indicated that this difference was large and of practical importance. There was also a statistically significant difference between GED students in the African American group and the Caucasian group on the world of work information aspect of career maturity. The effect size for this difference (1.028) indicated a large degree of practical importance. This large difference may be based on the fact that people of color are additionally burdened with developmental tasks dealing with internal and external challenges such as historical practices of racial prejudice and discrimination in job hiring, promotion (Carter & Cook, 1992; Thomas & Alderfer, 1989) and limited career information and opportunities (Constantine et al., 1998). To understand career maturity of such under-represented groups, we need to move beyond a model that portrays them as being deficient in career maturity, to one that examines social and cultural factors associated with career maturity. Therefore, the psychological construct of career maturity is important in examining career development (Schnorr & Ware, 2001; Rojewski et al., 1995).

#### Results Question Five

Findings showed a statistically significant difference in GED students' career maturity scores based on mothers' highest level of education. Post hoc analysis revealed that specific differences existed between GED students in the mother graduated high school or GED group and those in the mother graduated college group on their responses to the career planning aspect of career maturity. The effect size for this treatment (1.022) indicated that this difference was of

large practical importance. GED students whose mothers graduated college had a higher mean score ( $m = 57.5$ ) than students whose mothers had graduated high school or GED ( $m = 27.95$ ). These findings may suggest that students' mothers may have played a key role in helping them understand the importance of looking ahead and making tentative plans. These GED students' mothers may have also contributed in some way to their ability to use and obtain information for the development of careers.

There was also a statistically significant difference between GED students in mother did not graduate high school group and those in the mother graduated college group on the world of work information aspect of career maturity. The effect size for this difference (0.982) indicated a large degree of practical importance. An interesting finding was that based on the world of work information, GED students whose mothers did not graduate high school had a higher mean score ( $m = 26.90$ ) than students whose mothers graduated college ( $m = 8.67$ ). Although, the mean score of both groups was low, it is possible that students whose mothers went right into the workforce instead of completing high school or pursuing a postsecondary education had more of an influence on these students' world of work information than students mothers who had graduated college. Many parents that do not take advantage of certain opportunities (i.e. knowledge of careers, postsecondary education) in their younger years may attempt to instill in their children, the importance of such opportunities.

Findings showed statistically significant difference in GED students' scores based on the fathers' highest level of education. Post hoc analysis revealed that specific differences existed in scores between GED students whose fathers had no high school and those whose fathers had graduated college on their responses to the world of work information aspect of career maturity. The effect size for this treatment (1.043) indicated a large degree of practical importance. An

interesting finding was that based on the world of work information, students whose fathers had not completed high school had a higher mean score ( $m = 27.32$ ) than GED students whose fathers graduated college ( $m = 8.00$ ). Although, the mean score of both groups was low, this finding may also be explained by a father's need to see his children succeed in ways that he did not. Therefore, it is possible that students whose fathers went right into the workforce, instead of pursuing a postsecondary education, had more of an influence on their children's world of work information than fathers who had graduated college.

#### Research Question Six

Findings showed a statistically significant difference in GED students' scores based on socioeconomic status. Post hoc analysis revealed that specific differences existed between GED students' in the Less than \$10,000 group and those in the \$25,000 to \$34,999 group on their responses to the world of work information aspect of career maturity. The effect size for this treatment (0.981) indicated that this difference is of large practical importance. There was also a statistically significant difference between GED students in the \$15,000 to \$24,999 group and \$25,000 to \$34,999 group. The effect size for this treatment (0.904) indicated that this difference was of large practical importance. These findings are in line with Rojewski's (1994) findings that adolescents from low-income backgrounds score lower on career maturity measures. He attributed these low scores to lack of access to occupational information, role models, and the perceived lack of employment opportunities. All of which influence career choice. However, other influences may include the fact that low income youth often have low aspirations. In addition, low income students often come from families where parental expectations are low, and lack of financial security often translates into societal barriers that prohibit development of a positive self-concept (Naidoo, 1998; Womble et al., 1995).

## Discussions and Implications

Planning for a place in the world of work is an important task for most individuals. This planning process involves learning about one's talents, career values, and vocational interests as well as developing an awareness of career opportunities. In order for GED students to be successful in their career development, educators and administrators in both high school and GED programs must actively influence this process. Knowledge about the factors which impact career development must be expanded. This study has examined some of these factors, and the information gathered provides several directions which deserve the attention of students and administrators.

All too often, GED programs focus on the development of the five areas included in the GED exam (Mathematics, Reading, Writing, Social Studies and Science) rather than attending to the personal and future planning needs of students. Instruction focused solely on the GED will likely fail to meet the career development needs of GED students, especially if comments made by, and interactions with, the GED instructors and students at the research sites are truly representative. Similarly, observations, interactions, and other clues aside from administering the CDI suggest that more than GED preparation is needed for GED students. Students' career development could be addressed through seminars designed to acquaint GED students with a variety of career opportunities. It would also be helpful to provide GED students with career counselors who have expertise in dealing with their unique problems and concerns.

In relation to this particular study, many of the variables of interests showed significant differences in the world of work information aspect of career maturity. The results on the world of work information scale indicate that the students may need more information about, and inquiry into, occupational fields and career development tasks before making important career

decisions and occupational choices. Students may benefit from learning more about one's tentative preferences, how people get jobs in those occupations, and how they adjust to those jobs. Finding high scores on the world of work information scale or no significant difference indicate that students may have a broad fund of information to support their career decision making. However, one still may need to gather more information about the specific occupations he/she is considering before committing to a particular choice (Super et al., 1981).

For these GED students, statistical significance was found most often on the world of work aspect of career maturity. This finding led me to review nationally based norms identified through the CDI (Super, et al., 1981). When compared to nationally based norms of more than 5000 high school students from grades 9 through grade 12, GED students scored above nationally based norms on the Career Exploration subscale (44%) and 56% scored below nationally based norms. On the Career Planning Subscale 47% scored above nationally based norms and 53% scored below nationally based norms. Interestingly, on the Decision Making Subscale only 2% scored above nationally based norms and 98% scored below nationally based norms. While these students scored below national norms on Career Exploration and Career Planning, the extreme gap between these students and the national norms with regard to Decision Making may explain the difficulty that I noticed the students had in completing this section of the survey. In the World of Work Subscale, 23% of the GED students scored above nationally based norms and 77% scored below the nationally based norm. Again, this large difference suggests career development interventions such as decision making and information about the world of work are definitely areas that need to be addressed by and for GED students.

Several limitations to this study must be acknowledged. Specifically, the use of self-report measures and reliance on a convenience sample do limit the degree that results can be

generalized to all GED students. In addition, while other variables also influence career maturity (e.g., self-efficacy, work salience), they were not addressed in this study. The Career Development Inventory was lengthy, consisting of 80 questions which may have contributed to the 26 CDIs that were incomplete. The survey was only accessible online and many of the students were not computer literate.

According to Super (1957, 1990) individuals typically progress through five life stages (growth, exploration, establishment, maintenance and disengagement). In some of his later work (1990) he noted that not everyone progresses through these stages in the same manner or at fixed ages. This holds true for GED students. Although, Super originally presented the stages and tasks in a sequential manner, he later added that we cycle and recycle throughout our life span as we adapt to changes in ourselves as well as to the trends in the work place (Johnson, 2001). It was evident through informal discussions I had with the GED students after they completed the CDI that many of them continue to recycle through the various stages of life as defined by Super, for various reasons. I suggest that self concept played a major role in their original decision to leave high school. Self-concept is at the core of Super's developmental theory and is how individuals view themselves and their situation. However, this study does not directly examine self-concept of these GED students. Interestingly, many of the students, when asked why they were working on a General Education Development Diploma said they were back in school to ensure themselves of a more profitable and satisfying life. Statements such as these are why I believe self-concept played a role in students' decision to leave high school as well as to return and pursue a GED.

In Conclusion, based on low scores of GED students compared to the CDI national norms, the four subscales may not accurately represent the career maturity of GED students. If

choosing a career is a form of self expression (Super, 1957, 1990) and there is minimal knowledge of students' social and cultural backgrounds, how do we know how these particular students conceptualize career maturity? This question supports Rojewski (1994) statement that it is difficult to measure the construct of career maturity. Therefore, we must look at the psychological aspect of career maturity of diverse populations instead of focusing on deficiencies on the four traditional subscales on the CDI. The subscales on the CDI were developed based on a traditional process of choosing.

#### Recommendations for Research

This study suggests the need for additional research in the following areas:

1. A more comprehensive replication of this study needs to be conducted which would include GED students from a broader geographical area.
2. Experimental research to study the effects of various career development interventions on the four aspects of career maturity (career exploration, career planning, decision-making and the world of work information) of GED students should be conducted.
3. A study is needed to determine what relationship, if any, exists between GED students' level of career maturity and such variables as geographical location (i.e. rural, urban), marital status, work experience, and variables that relate positively and negatively to career maturity.
4. Research, of a longitudinal nature, is needed to examine how the four aspects of career maturity change after completion of career development interventions while studying for the GED.



5. Findings in this study suggest that the four aspects of career maturity examined in this study may not accurately represent the career maturity of GED students. Therefore, an instrument that will account for the characteristics and demographics of GED students should be developed and tested to determine the aspects of career maturity specific to this population.

#### Recommendations for Practice

1. Career education is important at every level today, however, secondary school teachers and administrators should be especially diligent in providing career development education and interventions across the curriculum and throughout the secondary school experience.
2. Teachers and administrators of GED programs should provide career development education and interventions systematically throughout the GED experience.
3. Since 69% of the participants in this study were female, a percentage that is also representative of the state's population, it may be prudent for teachers and parents to increase their efforts to encourage boys who are high school dropouts to pursue the GED.

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## APPENDICES

## APPENDIX A

### PARENT/GUARDIAN STUDENT CONSENT FORM

## PARENT/GUARDIAN STUDENT CONSENT FORM

I \_\_\_\_\_ agree to take part in a study titled, “An Examination of the Career Maturity of GED Students”, which is being conducted by Laveda Pullens, from the Department of Occupational Studies at the University of Georgia. I do not have to participate in this study if I do not want to. I can stop taking part at any time without giving any reason, and without penalty. I can ask to have the information about me returned to me, removed from the research records, or destroyed.

- Knowing more about GED recipients’ career maturity may help GED programs to develop potentially useful interventions that could successfully treat or enhance the career development of individuals who choose or consider choosing the GED option.
- If I participate, I will be asked to complete two anonymous surveys during class time. If I do not want to participate then I will be allowed to perform my usual classroom routine.
- The research is not expected to cause any harm or discomfort. I can quit at any time. My participation in the GED program will not be effected if I decide to stop taking part.
- Any information collected about me will not have my name on it.
- Mrs. Pullens will answer any questions about the research and can be reached by telephone at 678-462-6890. You may also contact the professor supervising the research, Dr. Myra Womble, Occupational Studies Department, at 706-542-4091.
- I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to take part in this study. I have been given a copy of this form to keep.

\_\_\_\_\_  
Signature of Researcher                      Date

\_\_\_\_\_  
Signature of Student                      Date

**PLEASE SIGN BOTH COIES OF THIS FORM. KEEP ONE AND RETURN THE OTHER TO THE RESEARCHER.**

Research at The University of Georgia which involves human participants is overseen buy the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Institutional Review Board; Office of V. P. for Research; The University of Georgia; 604A Graduate Studies Research Center; Athens, Ga. 30602-7411; Telephone (706) 542-6514

APPENDIX B  
MEMORANDUM

## MEMORANDUM

DATE: April 2005

TO: GED Students

FROM: Laveda Davis-Pullens, Doctoral Candidate

RE: Participation in Research Study

Thank you for agreeing to participate in the current research study. To date, half a million individuals complete the GED each year however, there is limited information regarding career development for those who choose the GED option. The purpose of this research study will be to examine the career maturity of GED students enrolled in the GED program at Dekalb Technical College in Clarkston, Georgia. Career maturity will be examined by using the Career Development Inventory (CDI) developed by Donald E. Super.

To collect data necessary to complete this research study, students will be asked to complete two surveys: a paper [self-report data sheet] and the CDI which is to be completed online. Each participant will be given 15 minutes to complete the self-report data sheet. Once the self-report data sheet is completed, students will be given 45 minutes to complete the online CDI instrument. The online CDI instrument will be accessed by keying in the web address: [www.vocopher.com](http://www.vocopher.com). Once on the Vocopher site a user name and password will be required.

Follow the steps listed below:

- 1) Go to <http://www.vocopher.com/>
  - 2) Click Register
  - 3) Fill out the form and enter the access code in the first box: UnivGeorgia
  - 4) Click Register
  - 5) Write down your username and password
  - 6) Click Continue, this will take you back to the login screen
  - 7) Use the username and password you just created to login.
  - 8) Select Career Tests)
- Under Career Development Inventory (CDI): **High School Form Section:**
- 9) Select Career Development Inventory Part 1
  - 10) Select Grade Level as 12<sup>th</sup>
  - 11) Read directions then select best option.

Although there may be no direct benefits, understanding the career maturity differences of GED students will help high school administrators and GED program developers to create potentially useful career development interventions. Once again thank you for participating in this research study.

LDP

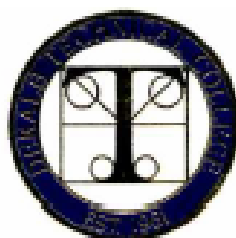


APPENDIX C  
SELF-REPORT DATA SHEET

## SELF-REPORT DATA SHEET

1. Please write your Record ID# here \_\_\_\_\_
2. How old are you? \_\_\_\_\_
2. What is your race? Check one.
  - ☐ Caucasian
  - ☐ African American
  - ☐ Hispanic
  - ☐ Other
3. What is your gender? Check one.
  - ☐ Male
  - ☐ Female
4. How much education does your mother have? Check one.
  - ☐ No high school
  - ☐ Graduated high school or GED
  - ☐ Some college
  - ☐ Graduated College
5. How much education does your father have? Check one.
  - ☐ No high school
  - ☐ Graduated high school or GED
  - ☐ Some college
  - ☐ Graduated College
6. What is the total income in your household? Check one.
  - ☐ Less than \$10,000
  - ☐ \$10,000 to \$14,999
  - ☐ \$15,000 to \$24,999
  - ☐ \$25,000 to \$34,999
  - ☐ Greater than \$50,000
7. Why are you enrolled in the General Education Diploma (GED) program?

APPENDIX D  
DEKALB PERMISSION LETTER



January 26, 2005

Ms. Lavoda Pullens  
3122 Sweetbriar Walk  
Snellville, Ga. 30039

Dear Ms. Pullens,

This letter is to provide you with approval to conduct your research to perform the Career Maturity Study on DeKalb Technical College's GED students as outlined in your e-mail to Debby Milledge, Lead Instructor Adult Literacy Services.

I am sure you understand that each individual student will determine if they would or would not like to participate.

I wish you luck with your research and please share your findings with us.

Sincerely,

Dr. Martha Coursey  
Director, Adult Literacy Services  
DeKalb Technical College

DEKALB TECHNICAL COLLEGE

APPENDIX E  
LANIER PERMISSION LETTER

***Brenda Thomas*****Lanier Technical College**

Office of Adult Literacy

4 1/2 Stallworth Street

Gainesville, GA 30501

Phone: (770) 531-6363 Fax: (770) 531-6406

e-mail address: bthomas@laniertech.edu

June 3, 2005

To Whom It May Concern:

I give my permission for Laveda Pullens, a doctoral student at the University of Georgia to conduct a Career Maturity Study of GED students at the Hall County Adult Learning Center under the supervision of Robert Bates, the Lead Instructor.

Ms. Pullens has described the purpose of her research and the process that she will be utilizing.

We are delighted to assist her.

If you need further information, do not hesitate to contact me at 770-531-6363.

Sincerely,

Brenda Thomas

Lanier Technical College

Director, Adult Literacy Program

APPENDIX F  
IRB APPROVAL LETTER



Office of The Vice President for Research  
DHHS Assurance ID No.: FWA000001901

Institutional Review Board  
Human Subjects Off  
612 Boyd GS  
Athens, Georgia 30602-74  
(706) 542-31  
Fax: (706) 542-56  
www.aspr.uga.edu

### APPROVAL FORM

Date Proposal Received: 2005-01-25

Project Number: 2005-10471-0

Name	Title	Dept/Phone	Address	Email
Ms. Laverda Pullen	PI	Occupational Studies Rivers Crossing +4809	3122 Sweetbriar Walk Snellville, GA 30079 770-979-5826	lps9126@bellsouth.net
Dr. Myra N. Wanibele	CO	Occupational Studies 207 Rivers Crossing +4809 706-542-4091		mwanibele@uga.edu

Title of Study: Career Maturity of General Education Development Students.

45 CFR 46 Category: Expedite ?

Change(s) Required for Approval and Date Completed: 2005-02-18

Parameters:

Revised Consent Document(s):

None;

Approved : 2005-02-07 Begin date : 2005-02-07 Expiration date : 2006-02-06

*NOTE: Any research conducted before the approval date or after the end date collection date shown above is not covered by IRB approval, and cannot be retrospectively approved.*

Number Assigned by Sponsored Programs:

Funding Agency:

Form 310 Provided: No

Your human subjects study has been approved.

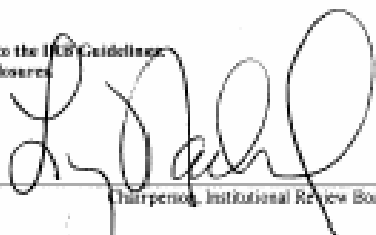
Please be aware that it is your responsibility to inform the IRB:

- ... of any adverse events or unanticipated risks to the subjects or others within 24 to 72 hours;
- ... of any significant changes or additions to your study and obtain approval of them before they are put into effect;
- ... that you need to extend the approval period beyond the expiration date shown above;
- ... that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For additional information regarding your responsibilities as an investigator refer to the IRB Guidelines.

Use the attached Researcher Request Form for requesting renewals, changes, or closures.

Keep this original approval form for your records.

  
Chairperson, Institutional Review Board