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Low African-American Student Enrollment in the Post Secondary Vocational Education Step II Program: A Study of Motivational Factors

Victor Goldstein
Wright State University

**LOW AFRICAN-AMERICAN STUDENT ENROLLMENT IN THE POST
SECONDARY VOCATIONAL EDUCATION STEP II PROGRAM: A
STUDY OF MOTIVATIONAL FACTORS**

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of the requirements for the degree of
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By

Victor Goldstein
B.A., Capital University, 2001

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Wright State University

WRIGHT STATE UNIVERSITY

SCHOOL OF GRADUATE STUDIES

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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY <u>Victor Goldstein</u> ENTITLED <u>Low African-American Student Enrollment in the Post Secondary Vocational Education STEP II Program: A Study of Motivational Factors</u> BE ACCEPTED IN PARTIAL FULFILLMENTS OF THE REQUIREMENTS FOR THE DEGREE OF <u>Master of Arts</u>

Colleen Finegan, Ph. D.
Thesis Director

Scott Graham, Ph.D.
Chair, Educational Leadership

Committee on
Final Examination

Colleen Finegan, Ph. D.

Charlotte Harris, Ph. D.

Charles Ryan, Ph. D.

Joseph F. Thomas, Ph. D.
Dean, School of Graduate Studies

ABSTRACT

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A purposive literature review was used in this study to develop a knowledge base on

motivational factors impacting enrollment of African-American students in post-

secondary vocational education program specifically in the STEP II program. This study

examined books, articles, reports, and data from student interviews to understand what

motivational factors influence decisions. It was found that low enrollment of African-

American students in post-secondary vocational education is not only dependent on

motivational factors emanating from the students themselves, but also stem from the

institutions that offer training programs.

ACKNOWLEDGMENTS

Many people helped me accomplish my educational goals.

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CHAPTER 1

INTRODUCTION TO THE STUDY

"There is no way to penetrate the surface of life but by attacking it earnestly at a particular point."
Charles Horton Cooley (1864–1929), U.S. sociologist. *Human Nature and the Social Order,* ch. 4 (1902). (Andrews, 1993).

General Background

Vocational education in the United States is an organized educational program in a school setting which prepares individuals for skilled employment by teaching specialized occupational expertise which can secure well-compensated livelihoods. This research-based paper grew out of inquisitiveness as to factors impeding enrollment of African-Americans in vocational education, specifically the STEP II training program.

After four years of teaching post secondary vocational education students in the STEP II training program, an intensive machine training program offered by the local community college in cooperation with the Dayton Tooling and Manufacturing Association, this researcher noted that the classes over a period of three years contained only a few African-American students. This number was assumed to be somewhat low, but at the time there weren't enough data to determine why. The low numbers were notable because, often, when local manufacturers needed skilled students, there weren't always enough students graduating from various manufacturing programs to satisfy demand. This problem prompted this researcher to explore motivational factors among post-secondary African-American vocational education students already participating in the STEP II program to learn of influences that could possibly hold back potential

students from enrolling in the program. This study was conducted at Sinclair Community College (SCC) where multiple vocational education programs are offered.

The Community College

The community college movement in the United States began in the early 1900's due to the rapid development of the United States' social, ethical, technological, and economical complexity (Ratcliff, 1994). This rapid social progress necessitated the development of an educational system which could meet the needs of citizens in the United States and also the needs of industrial progress.

In 1936, a president of a junior college in Pennsylvania, according to Gleazer (1994), stressed that the junior college "should serve to promote a greater social and civic intelligence…provide educational, recreational, and vocational opportunities for young people… and the work of the community college [this was one of the earliest uses of this term] should be closely integrated with the work of high schools and other community institutions" (p. 18). Hence the drive for social equality through education, combined with the need for trained workers for the growing industrial needs of the nation, contributed to the rise of the community college (Cohen & Brawer, 2003).

SCC, with its open door policy, has been promoting social equality in the community by offering a variety of career paths to students since 1887. Career programs in this local community college prepares students for employment opportunities in a variety of fields, such as architecture, automotive, civil construction, industrial design, graphic technology, electronics, electromechanical technology, aviation, environmental engineering, fire science, industrial manufacturing, mechanical engineering, plastics and

composites, quality engineering, risk management, and tooling and machining technologies. Many of the career programs in SCC are transferable to four year colleges or universities where students can apply their community college studies and experiences toward Baccalaureate degrees in many fields.

The Engineering and Industrial Technologies division at SCC supports student recruiting activities throughout the year in the greater Montgomery County area high schools. Each February, the Engineers' Day event is held on campus to provide an opportunity for students to see classrooms and laboratories, and hear about different career paths they may follow.

Students who may not be able to invest 106 credit hours in a program have other options. Among them, for example, is the Tooling and Machining Project STEP II program – a nine month intensive machine training program - which requires 54 credit hours to complete. This program, offered with the cooperation of the local Tooling and Manufacturing Association, Inc., prepares students for employment in the tool and die industry (Sinclair Course Catalog, 2007). After graduation, the student may pursue a well paying career in the manufacturing industry.

Definition of Terms

The following key terms used in this study are defined as follows:

Vocational Education - training for a specific vocation in industry or agriculture or trade

Technical Education - Vocational education (or Vocational Education and Training (VET)) prepares learners for careers or professions that are traditionally non-academic and directly related to a trade, occupation or 'vocation' in which the learner participates.

Machine Trades – This major category includes occupations concerned with the operation of machines that cut, bore, mill, abrade, print, and similarly work such materials as metal, paper, wood, plastics, and stone. A worker's relationship to the machine is of primary importance. In other jobs eye and hand coordination may be the most significant factor. Includes occupations concerned with installation, repair, and maintenance of machines and mechanical equipment.

Apprenticeship - A system of training a new generation of skilled crafts practitioners. Apprentices (or in early modern usage "prentices") build their careers from apprenticeships. Most of their training is done on the job while working for an employer who helps the apprentices learn their trade. Often some informal, theoretical education is also involved.

Socioeconomic – Relating to, or involving a combination of social and economic factors

Status – A position in relation to others

Motor skill – A skill that regards the ability of an organism to utilize skeletal muscles effectively. Most motor skills are learned in early childhood. There are two types of motor skills: gross motor skills (lifting one's head, rolling over), and fine motor skills (include the ability to manipulate small objects, and various hand-eye co ordinations).

Statement of the Problem

It is this researcher's experience that vocational education as a manual training program may be an excellent solution for many students who excel at making things with their hands, but lack the concentration of those students who possess cognitive study skills. Manual training programs may also benefit students with low socioeconomic backgrounds who are closely tied to choosing vocational education because investing in

such education is comparatively inexpensive when contrasted to four-year college education. In addition, financial returns for those who enroll in vocational education are also quicker. Observation of current trends specifically in the Project STEP II program shows that, proportionally, the African-American population in the STEP II program is vastly lower than the African-American population of Dayton, Ohio. The purpose of this study was to identify motivational factors that impact entry of African-American students into the STEP II program. This researcher understands that social-cognitive environments differ among cultures and this may possibly influence motivation, which in turn may influence career decisions.

Statistical Trends

Community college enrollment statistics provided by the Office of Institutional Planning and Research of SCC for the Fall Quarter of 2005 indicates that between the years 2002 – 2005 the student population, based on self-identification, consisted of 74.2% White/Caucasian students and 16.5% Black/African-American students (Table 3). The percentage of students, who identified themselves as African-American in the engineering department which includes the machining classes, was lower at 11.9%.

Data analysis of the U.S. Census Bureau for the year 2000 for the city of Dayton, OH (Table 1) shows a population composition of 43.1% African-Americans and 53.4% Caucasians (Population Overview, 2000). These numbers illustrate that the roughly 10% African-American student representation, is considerably less than the overall African-American population which is at 43% in the city and 20% in the county.

Table 1

Population Overview 2000, Dayton, Ohio

	Number	Percent
White/Caucasian	88,676	53.4
Black/African-American	71,668	43.1

S*ources: U.S. Census Bureau, 2000; ePodunk.*

The data in Table 1 shows a ten percent difference between the Black and White populations in Dayton. When this proportion is compared to STEP II enrollment of African-American students at SCC, a discrepancy of Black and White student enrollments is obvious.

The result shows, for example, that if there are 12 White students enrolled in a course, the proportional representation of Black students would be 9.7, with all other things being equal. It was Samuel Johnson who said: "We do not always find visible happiness in proportion to visible virtue (Proportion, 2007). In addition, Table 2 shows that the population in the surrounding county consists of 20% African-Americans.

Table 2

Population Overview Year 2000 Montgomery County, Ohio

	Number	Percent
White/Caucasian	428,084	76.6
Black/African-American	111,030	19.9

Source*: U.S. Census Bureau, 2000; ePodunk.*

Another interesting trend is noted in Table 3 which indicates that, for a period of fourteen years, there was a gradual 2.7% increase of African-American students in the community college while the Caucasian student population decreased by 11.2%. This researcher believes that this slight increase of African-American students in the local community college is encouraging and more study is needed to discover whether or not this is a trend that may forecast the future increase of African-American students at SCC.

Table 3

Fourteen Years of Community College Enrollment by Race/Ethnicity

	Fall Quarters			
	Caucasian/White		African-American/Black	
Fall Quarter	Number	Pct/Total	Number	Pct/Total
1991	16,957	83.1	2,826	13.8
1992	17,147	82.4	2,987	14.4
1993	17,164	81.9	3,102	14.8
1994	16,171	80.6	3,183	15.9
1995	15,964	80.6	3,171	16.0
1996	15,503	80.1	3,168	16.4
1997	15,732	79.2	3,437	17.3
1998	15,721	78.6	3,555	17.8
1999	16,194	78.2	3,657	17.7
2000	16,774	78.6	3,713	17.4
2001	17,576	79.0	3,796	17.1
2002	17,704	77.3	3,794	16.6
2003	17,616	74.7	3,817	16.2

| 2004 | 16,924 | 72.8 | 3,840 | 16.5 |
| 2005 | 16,217 | 71.9 | 3,713 | 16.5 |

Source: Community College Office of Institutional Research.

This researcher interprets the statistical data in Table 3 as indicating a slow, gradual movement toward equilibrium of Black/White student population at SCC.

Lev Vygotsky's theory of learning suggests that "children's cognitive development is advanced through social interaction with skilled individuals and intertwined within a socio-cultural environment" (Elliott, Kratochwill, Cook, & Travers, 2000, p.52). Vygotsky's theory suggests that if people from one group or culture interact with people from another group or culture, both groups will benefit as a result of the positive social and cognitive development that takes place from such interaction. On the other hand, the theory can indirectly suggest that if groups prevent interaction with one another due to social or ethnic differences, neither group will benefit socially or cognitively.

Table 4 reports divisional majors in SCC which is presented in order to compare the ratio of Black to White students in other divisions at the local community college.

Table 4

Community College Student Characteristic by Divisional Major - Fall Quarter 2005

	Allied Health		Business Tech.		Human Services		Engineering Tech.	
White	3,553	72.9%	2,965	70.4%	851	69.4%	1,621	73.7%
Black	859	17.6%	757	18.0%	276	22.5%	289	13.1%

Source*: Community College Office of Institutional Research.*

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Table 4 indicates Black and White student distribution in four popular divisions of SCC. The percentages on the right indicate that African-American students patronize the engineering division least, which may also be closely related to low African-American student enrollment in the STEP II program.

Research Questions

This researcher believed that there is a logical explanation for the low enrollment of African-American students in the STEP II program. To attempt an explanation for the principles behind the reasoning this researcher developed the following questions to guide this qualitative case study:

1. What is an adequate representation of African-American students in the STEP II program when compared with the Caucasian group?

2. What impact do negative racial attitudes of the past have on enrollment in industry and post-secondary vocational education programs?

3. What are the effects of negative racial attitudes on socioeconomic status and cognitive development?

4. What impact do parents have on the career choice of their children?

These questions are the core of this study and answering them will provide information for program planning.

Scope and Limitations

The results of this study are limited due to the low numbers of African-American students who participated in the interviews and, therefore, generalizations should not be drawn from this sample for other vocational programs; program planners and the

literature review may provide information that may have been overlooked in the interviews.

<u>Summary</u>

Vocational education programs are manual training programs which can greatly benefit students of low socioeconomic status or students who lack the concentration of those students who possess cognitive study skills. Vocational education students can utilize their motor skills to earn respectful incomes and develop successful careers specifically in the manufacturing sector. Since not all ethnic groups are represented equally in a nine month intensive STEP II machining program offered in cooperation with the Dayton Tooling and Manufacturing Association, this researcher took upon himself the task to study and understand consequences that may impede African-American post-secondary vocational education students from joining the program. In this regard, this researcher believes that motivational factors, or lack thereof, or perhaps something altogether different may be the reason for holding back potential students who otherwise can greatly benefit from vocational education.

CHAPTER 2

REVIEW OF RELATED LITERATURE

"Literature is where I go to explore the highest and lowest places in human society and in the human spirit, where I hope to find not absolute truth but the truth of the tale, of the imagination and of the heart."

Salman Rushdie Indian-born British author. Quoted in: Observer (London, 19 Feb. 1989) (Andrews, 1993)

This literature review will provide insight into vocational education which began, according to Gray and Herr (1998) long before the industrial development in the United States where students in early times learned skills from master craftsmen who would mentor them as apprentices. This review will likewise provide significant insight into environmental and social issues that may impact the development of African-American children.

The first formalized vocational education arrangements, according to Gray and Herr (1998) were the apprenticeship agreements of colonial times (1700's) where people, who cared for orphans, poor children, and so called troublemakers, bound these individuals by a contract into the service of apprenticeship. A few centuries later, in 1905 – the year Albert Einstein proposed the Theory of Relativity – a teacher in the U.S. by the name of H. F. Rusch in Oklahoma City started the first manual training program in a public school. His school principal filled his classes with the school's worst misfits, those who were unable to adjust to their environment or circumstances and considered to be disturbingly different from others (American H. D., 1992). As all good teachers and motivators do, or should do, Rusch turned the "lemons" he received into lemonade; his manual training program became a great success which was regarded with envy by students, parents, and teachers

alike (*A selected chronology of the history of vocational education in the United States in general*, 2005).

Vocational Education in the United States

In spite of the long evolution of vocational education in the United States, a stigma still may be attached to it despite the fact that independent studies by Wonacott (1980) show that vocational education students in the United States are more likely to find jobs after graduation and earn a larger income than the typical four-year college graduate. It seems to this researcher that the stereotypical image of vocational education is nothing more than a myth, but "myth is what drives behavior," said D. Easterling (personal communication December 15, 2006).

Academic Success among Immigrants

Decades of war, oppression, and poverty in Third World countries motivated many people to leave their homeland and settle in the U.S. (Kellogg, 1988). The immigrants took advantage of this freedom and seized the opportunity. Many of them willingly attended schools, colleges and universities not available to them in their motherlands.

Pre-college school performance of immigrant groups in the U.S. was studied by Gibson (1991) who found that voluntary immigrant minorities remain in school longer and have greater degrees of academic success than nonimmigrant minority groups with similar social class and backgrounds in the United States. Asian-American immigrants, for example, came to the U.S. with college degrees (Patel, 1988) and achieved success in one generation, which is two to three times more than earlier European immigrants.

Asian-American parents typically emphasize the importance of education and hard work to their children and expect them to finish school (Woo, 1995).

Wilson (1980) and Gibson (1991) argued that African-American students are set up for failure in schools because they are projected to be less intelligent than the members of the dominant White group. Even Japan's Prime Minister Yasuhiro Nakasone remarked in 1986 that "the level of intelligence in the U.S is lowered by the large number of Blacks, Puerto Ricans, and Mexicans who live there" (Cho, 1995, p. 465).

The Effects of Domination on Self-Confidence

Independence and self confidence in African-American society, according to Wilson (1980), has been punished by White domination - control or power over another or others (The American Heritage Dictionary, 2000). Domination may still be alive and well in America today. A pizza chain in Dallas has been hit with death threats and hate mail after its owners offered to accept Mexican Pesos (Mexican currency) for goods (Carlton, 2007).

Wilson explains that Black children lack an essential element to follow through which was inherited from parents' powerlessness, negative experience, and low expectations of themselves and this, encouraged the children to embrace lack of interest and fear competitiveness. The end result was that Black children developed survival strategies which not always led to positive results (Wilson, 1980).

The domination of African-American citizens because of their socioeconomic or racial status by dominant White groups in the U.S. resulted in a long history of African-American neglect in school, work, and just about everywhere. In the 1940's anti-Black

strikes and riots broke out in many places where Blacks and Whites worked together according to Schuman, Steeh, and Bobo (1985). At that time, many Whites still believed that African-Americans were inferior people. More than half of the White population surveyed by the National Opinion Research Center in 1942 assumed that Blacks were less intelligent than Whites (Schuman et al., 1985).

Research by social psychologist Otto Klineberg, who highlighted cross-cultural comparisons in human behavior, dealt a severe blow, according to a key element of the "scientific" case for Black inferiority, by challenging IQ tests administered by the army in World War I (Sitkoff, 1971). Sitkoff (1971) explained that Klineberg demonstrated that more education, higher socioeconomic status, and exposure to other cultures improved the Black people's scores on these tests markedly. This supported the actual fact that the higher scores of the White participants were due to advantages experienced by their higher socioeconomic status and not by the color of their skin.

Negative Attitudes and Their Effect on Social Growth

African-American children's developmental paths, such as awareness of their rights, good health, education importance, and self sufficiency, were negatively affected by discrimination (Wilson, 1980). As children grow and interact with specific people who have negative attitudes, the encounters negatively influence the children's cognitive abilities and social growth (...movement beginning in the 1960s that blends traditional liberal concerns for social justice with an emphasis on economic growth (The American Heritage Dictionary, 2000)) and, consequently, their academic and social future. This results in a distorted, restrictive imagination which hinders the child's inventiveness from

flourishing. In sum, children's personalities may end up being permanently damaged. If children are overwhelmed by feelings of guilt and shame because of their ethnicity or race, they may begin to feel worthless, ashamed, powerless, inferior, rejected, confused, or full of guilt. They will begin to demonstrate an attitude of general inadequacy which seems to characterize many African-Americans today (Wilson, 1980).

This researcher believes that negative attitudes and their effect on the brain are proportionally the same as physical brain damage to the frontal lobes. A 25 year-old construction worker in Vermont, Phineas Gage, was a very efficient, capable person who had a sense of personal, social responsibility, and was ethical in his dealings. His old values influenced his decisions (Damasio, 1994). An explosion caused a steel bar to enter his left cheek, move upward and exit at the base of his skull, taking with it parts of his front physical brain. The accident did not kill him. After the accident, Gage no longer showed concern for his future and his previous values did not influence decisions anymore because the previous values were lost with the large part of his physical brain.

Some of the general functions of the frontal lobes of the brain include the formation of plans, regulation of attention, intentions of programs and behavior, and the frontal lobes are also responsible for regulating the rest of the brain and body. Conditions of poverty affect the process of socialization and produce specific patterns of motivation among culturally deprived people, and the loss of motivation may cause serious problems in cognitive-behavioral functioning (Wilson, 1980). Socioeconomic brain damage is done to the brain by depriving it from being stimulated by the necessary motivation for

the development of neural interrelations essential for successful mental functioning (Montagu, 1974).

Wilson further argued that White domination of African-Americans incapacitated Black parents' effort to raise children normally and such oppression contributed to children's propensity for self-doubt. Dr. Albert Einstein (1920) said the following about neglecting children which contributes to self-doubt: *"The inclination of the pupil for a particular profession must not be neglected especially [because] such inclination usually asserts itself to an early age, being occasioned by personal gifts, by example of other members of the family, and by various other circumstances.* (p. 38). Though Wilson's and other scholars' work are dated, this researcher believes that the negative attitudes of the past were not buried in the past.

Fathers and Their Influence on Healthy Development

Wilson (1980) also noted that the absence of fathers in many Black homes was likely to depress the development of the individual child and significantly increase the false diagnosis of mental retardation in Black families. There is sufficient evidence, he says, to support the claim that the presence of the father in the home is obviously helpful for the normal intellectual development of the child. For example, Deutsch and Brown (1964) found that children from homes where fathers were present had significantly higher IQ scores than children in homes without fathers. The IQ scores were based on the Lorge - Thorndike Level I, Primary Battery for first graders, and Level III for fifth graders. That study also concluded that as the social class level increased, race influence was clearly

obvious and that the African-American group showed a greater deprivation than the White group.

<u>Gangs and Social Love</u>

Customary approaches used for understanding personal growth, esteem, and self worth in all groups, including immigrants, are gained through employment and career opportunities (Dyson, 1995). Dyson argued that those traditional opportunities "have been closed to Black men who, as a substitute, find gangs a powerful alternative because the persistent reason for joining gangs is the sense of absolute belonging and unsurpassed social love that results from gang membership" (Dyson, 1995, p. 115).

Public racially-motivated murders, such as Malcolm X's, Dr. Martin Luther King's and other African-Americans, have scarred the psychological frame of mind of surviving African-Americans in the U.S. (Dyson, 1995). For an African-American, the public deaths of African-American men meant that no African-American in the U.S. is safe and, as a result, African-Americans in the U.S. could not afford the gift of vision. Ultimately, said Dyson, "Martin's death meant that all Black men in some way are perennially exposed to the threat of annihilation" (Dyson, 1995, p. 119). Dyson, like Wilson and Gibson, suggested that the plight of African-American men in the U. S. is a reflection of the problems that affect all African-Americans in the country.

Biacindo (1999) supports that idea when he argues that one student's development cannot be understood by a study of one individual because there are

many factors that need to be examined such as the external social world in which the student acquired knowledge. An early study by Vygotsky (1933) recommended social surroundings in which more competent children would pair up with less competent ones so that one can elevate the competence of the other. The researcher assumes that Vygotsky (1933) refers to "incompetence" as only temporary recessions in development, which can be overcome by sustained achievement and thereby produce cognitive growth. Vygotsky proposed that even though adults are responsible for guiding students into adulthood, their peers in a social setting also influence individuals as they construct meaning.

Cognitive Development in the Early Years

Cognitive growth in the early years of childhood does not develop in all children equally. Studies by Bayley (1965) have shown that psychomotor development in children for at least the first two years of life is significantly more advanced in Black children than White children. The test results, therefore established that the Black child is mentally above or equal to, but not less than, his or her White counterpart.

Papalia and Olds (1975) found that socioeconomic status does not appear to be related to infant's mental or motor development, but it is a good predictor of the direction the developmental quotient will take from infancy to preschool age. In other words, due to low socioeconomic status, a child may develop differently mentally between infancy and preschool age when compared with a child from a higher socioeconomic status because a child from low socioeconomic status does not have the variety of options, such as toys, books, etc., with which she or he can facilitate better mental development.

Large Classrooms for the Poor

Five years ago, Wonacott (2002) claimed that one out of two students in urban

schools will not graduate from high school when attending schools with multiple risk

factors such as large schools, large classes, and high poverty. This researcher believes

that appropriate guidance by counselors and teachers can reduce multiple risk factors and

many students of low socioeconomic status in urban schools can graduate from high

school. When students of low socioeconomic status are given a fair opportunity, only

then they may narrow – if not close – the socioeconomic gap and rise above the poverty

level through jobs, earning power, and acquired status.

In its final report to congress in 2004, the National Assessment of Vocational

Education (NAVE) study found that nearly half of all high school students and roughly

one third of college students are involved in vocational programs as a major part of their

study (Silverberg, Warner, Fong, & Goodwin, 2004). NAVE also suggested in its report

that vocational education has significant earning benefits for secondary and post-

secondary students, and best of all, the benefits extend to the economically

disadvantaged. NAVE concluded in the report that vocational education could have

important implications for the nation's workforce and America's place in the world

economy.

Intelligence and Information Processing

In its simplest form, intelligence is the ability to search out and apply knowledge.

Hockenbury and Hockenbury (2003) define intelligence as a global capacity to think

rationally, act purposefully, and deal effectively with the environment. Psychologists

don't unanimously agree on a definition of intelligence perhaps because intelligence may be a multitude of mental abilities, with the inclusion of information processing, which follows a sequence of stages, and each stage performs a different operation. "Human intelligence is thought to be a component of human intellect that interacts with the processing of information" (Solso, 2001, p. 470). Solso (2001) suggests that this is the way intelligence is recognized by cognitive psychologists who endorse the information processing of cognition. Information processing, according to Schunk (1991), concentrates on how people pay attention to environmental events and how they code information to be learned in their brain, specifically, how they relate new information to knowledge already in their memory, which, in its simplest form, is creativity.

Earl Hunt's (1978) work on intelligence and artificial intelligence within the context of cognitive psychology added to human understanding of short and long term memories. Hunt and his associates studied how information processing differed in high and low ability students. They assembled two groups of high and low ability students for the evaluation. Students were asked questions which required searching for common information in their long-term memory. The test Hunt used was developed by Michael Posner (1969) which gave subjects the option to decide whether two letters such as X-x, or X-X matched physically. Hunt measured the subject's reaction times when they matched the letters and the speed with which the subjects retrieved the information from their memory. Hunt assumed that the physical matches were made up of a series of functions related to the encoding and comparison of visual patterns in the brain. From the point of

view of information processing, matching the letters only required the subjects to move the letters into short-term memory – called the active stage of memory – and make decisions based on the information they assimilated. Short-term memory stores information for about thirty seconds and is often referred to as the working memory because imagining, remembering, and problem solving take place in short-term memory (Solso, 2001).

When Hunt (1978) compared the average information retrieval time (in milliseconds) from short-term memory and the ability to make correct decisions between low and high verbal ability students, he found that it took more time for low verbal ability students to make correct decisions. Hunt concluded, therefore, that the measurement of verbal ability depends on the speed with which people retrieve information from long term memory. Wilson (1980) argued that the mental development of the Black child begins to fall behind that of the White child "at the point where language begins to influence significantly the personality structure" (Wilson, 1980, p. 61).

Intelligence and Inheritance

In his book, *A Question of Intelligence,* Daniel Seligman (1994) suggested that people receive mental abilities by genetic transmission from their parents. He also argued that people who have lower mental abilities have fewer options in life than people with greater abilities. At the same time, he noted that intelligence is acquired through learning and expectation. The reason for hostility to intelligence quotient (IQ) testing in America today, he claims, "is the country's commitment to the idea of equality" (Seligman, 1994, p.35). IQ scores, according to Seligman, convey the message that democratic America does not want to hear, that people are unequal in mental ability.

John Ogbu (1978) introduced findings which described IQ differences as being the result of different cognitive requirements under the American caste system: A classification or structure in which a social class is separated from the others by distinctions of hereditary class, profession, or fortune. Ogbu reasoned that Black Americans as a pariah caste (e.g. social outcast or a member of the low caste) were excluded from participating fully in American technology, economy, and other institutions, and this exclusion prevented them from developing cognitive and intellectual skills and abilities which would have likely improved their technological and economic opportunities that were open to White Americans. Ogbu supported his exclusion hypothesis with J.K. Posner's (1982) study of two West African communities where Posner established that mathematical skills are more common and valued in a society whose economy is based on commerce rather than subsistence farming. In summarizing, had Black Americans been included in learning American technology, economy, etc., they would have established the same foundation for development as Whites.

Arthur Jensen (1972), an educational psychologist, reported to a U.S. Senate Committee that African Americans – unlike other ethnic groups – had not reached their expected representation in occupations long associated with the intellectual skills of the White middle class. Jensen explained that African Americans lack adequate genetic gifts for mental abilities useful in such occupations as architecture, college professorship, and engineering. Jensen's controversial work provoked extensive debates. Many Americans, including the American Anthropological Association, proposed that the offending issue of the 1969 *Harvard Educational Review,* in which Jensen's work appeared, be burned

because Jensen's conclusions were not based on scientific evidence. Interestingly enough, Jensen's work also noted that that brain wave patterns in African-American newborn infants show greater maturity than is usually found in European newborns. The significance of this finding shows that there is a strong relationship between mature brain waves and intelligence. Wilson (1980) also mentioned in his work that up to at least the first two years, Black children are significantly more advanced psychomotor developmentally (muscular activity associated with mental processes (The American Heritage Dictionary, 2000)) than are White children (Wilson, 1980). Hence, according to overwhelming evidence, the African-American newborn is actually born more mature and intelligent than the European counterpart.

Intelligence, says Wilson (1980), does not express the limits of intellectual capacity rather; it expresses the means by which that capacity is expressed. He goes on to reason that an individual from a lower class is not necessarily less intelligent than a middle class individual, but rather, the cognitive style by which a person from a lower class expresses their intelligence reflects their adaptation to this lower class.

Achievement Motivation

African-American students in the 1960's and 1970's were perceived by Whites as lacking in achievement motivation and, as a result, school programs were developed for them to help them improve motivation (Maehr & Yamaguchi, 2001). The efforts made by the students to improve were not good enough when considered by White standards, argued Wilson (1980), who also claimed that that the low level of educational activity

among Blacks in general was paralleled by an equally low level of cognitive and creative ability and almost non existent initiatives.

African-Americans, according to Wilson, have been led to believe that they do not have a major intellectual role to play in American life and their children were socialized and conditioned accordingly by repetitively imposing negative self-concepts in their minds. This type of children-taming, said Wilson, deterred successful development and cognitive abilities. The children were confused by their perception of their own personal identity, and when personal identity is confused, according to Solso (2001), the consciousness is impaired and this affects the awareness of environmental and internal cognitive events. The rising African-American middle class now leans toward law, medicine and science for their children, not sociology or vocational education

Rosen and D'Andrade (1959) investigated parents' interaction with their children and they found that contrary to parents with low achievement motivation who don't expect much from their children, parents with high achievement motivation traits interact more with their children, give the children rewards as well as punishment when necessary. Many Black parents in the United States cannot maintain control over their children due to their powerlessness and helplessness (Wilson, 1980), not to mention interest and control over their children's destiny. Weak parents do not know how to instill a sense of control in their children over their own destiny and this encourages dependency in the children. Wilson calls this type of upbringing a learned helplessness.

Many African-American males are increasingly uneducated, unemployed, and therefore not as likely to be engaged in mainstream society (Mong, 2006). Nevertheless,

an article by the National Association of School Psychologists claims that even though it seems that African-American students graduate from high school at a lower rate than Whites, when compared socioeconomically, their school completion rate is comparable (Hale, ND).

Clarence Page's commentary in the *Dayton Daily News* on February 23rd, 2006, added yet another perspective on Black youths' failure to achieve:

> *…More troubling to me are those black youths, influenced by*
>
> *a misguided sense of black pride, who believe that traditional*
>
> *English or academic pursuits are somehow selling out,*
>
> *making them modern day "Uncle Toms" for "talking white"*
>
> *or "acting white…"* (p. A 14).

This commentary can be paralleled with Franklin Frazier's (1962) view of the culture clash in America. Frazier argues that because the Black middle class in America is trying to succeed according to White principles, it is trapped in a serious quandary which further separates them from their Black culture, and some African-Americans understand the White middle class as if it is an essential part in the legitimate confirmation of their own existence, and this perception negatively impacts their consciousness.

Uri Bronfenbrenner (1974) noted that strain and ineffectiveness in a family arise, not from the circumstances in which the family is in, but from the way life forces act on the family. Bronfenbrenner claims that harsh circumstances can undermine relationships of trust and emotional security between family

members, making it difficult for parent(s) to care for, educate, or enjoy the children. When parents have no support for their parental role, says Bronfenbrenner, the time they spend with their children means frustration and as a result, the development of the children is adversely affected.

Robert LeVine (1966) suggested that the presence of abundant natural resources or even skilled manpower in a society does not necessarily guarantee its people high need for achievement. Rather, he says, high need for achievement depends largely on psychological and other motivational factors. He hypothesizes that differences in achievement motivation do not necessarily have to be linked to child training or inheritance because, according to him, many children grow up without guidance and despite the absence of the guidance they still can develop accurate perceptions of the environment and they grow in it successfully.

LeVine (1966) reasons that growing children receive information about opportunities for social mobility in their environment from various individuals which include older members of the family, religious instructors, books, mass media, or school teachers. Even though LeVine concludes that children increasingly form an accurate and stable vision of the status mobility system as they approach adolescence, the images may determine the type of achievement/behavior motivation they will be inclined to exhibit:

> *With entry into the adult economic and political institutions which*
> *confer status so early in life, it is not surprising that parents and*
> *other socializing agents would attempt to train children according*
> *to what they see as promoting their successful rise in society. In*
> *psychological terms, the early induction of children into adult*

institutions favors the parental perception of stimulus equivalence

between the behavior of children and the behavior of adults in roles

which could lead to social success or failure. From this perspective

it is not at all fanciful to assume that a parent's concept of the ideal

successful man would influence the manner in which he trained his

children (LeVine, 1966, p. 20).

Hockenbury and Hockenbury (2003) observed: "When it is broadly defined as the "' desire for excellence,'" **achievement motivation is found in many, if not all, cultures'"** (p. 342),

Wilson's "Contemporary Social-Economic Context"

Sixteen years ago a point of view by Wilson (1991) on the socioeconomic veracity (as he saw it), pointed out that the African-American adolescent's world was changing rapidly and is considerably different from that of their parents and especially their grandparents. However, at the same period of time, Wilson noticed that the inner-city Black adolescents were surrounded by some of the following characteristics:

- High levels of adult and adolescent unemployment.

- Inadequate preschool, primary and secondary school education and job-training.

- Information processing becoming the basic American industry in contrast to factory, labor-intensive environment, where poorly educated, unskilled persons and school dropouts could find employment. This safety net, argues Wilson, no longer exists.

- An urban, national and international market which provides little room for Black manufacturing.

<u>Vocational Education Revolution in China</u>

Vocational education in China is directly responsible for the expansion and growth of the current Chinese economy. Already the second biggest economy in the world after the United States and outselling the U.S. with electronics and computers, China is training its students for the coming centuries because its government believes that there will be plenty of need for skilled employees. Chinese educators claim that in Shanghai and its vicinity alone there are more than four hundred vocational schools and the participating students "know right from the start that their learned skills will meet the required demands of the job market once they graduate" (Learning to Survive, 1998). Recall the Chinese adage which says: "Teach a man how to fish and you feed him for a lifetime"?

According to the Ministry of Education of the People's Republic of China's website, Vocational Education Law of the People's Republic of China (1996) stimulates certain provisions in the law to specifically promote vocational education as the solution to many problems. Article 1, Chapter 1, focuses on the implementation of a strategy to rejuvenate China through science education by developing vocational education to "enhance" the quality of workers lives (Vocational Education Law, 1996). Article 7 states that measures should be adopted to develop vocational education and support for the minority regions and poverty-stricken areas. Article 10 declares that the state "shall

give rewards to organizations and individuals who have made remarkable achievements in the word of vocational education."

Summary

This literature review provided insight into proportional concerns: the importance of vocational education to a society, the environmental and social issues that may impact the further development of U.S. society, and the emergence of China as a result of vocational education. At the same time as White domination in the U.S. punished independence and self confidence in African-American society, Black inferiority has been proven to be a myth by Klineberg (Sitkoff, 1971). Even so, African-American children's developmental paths were negatively affected by discrimination and by the absence of fathers in many homes. In view of the fact that personal growth and career opportunities were closed to many Black men, a number of them found solace in gangs which were a powerful alternative because gangs provided a feeling of absolute belonging and unmatched social love, which otherwise could have been established through Vygotsky's social surrounding theory.

Even though the psychomotor development in many Black children was more advanced for at least the first two years of the child's life, the socioeconomic status in which the child lived, predicted the direction of the developmental quotient the child was going to take from infancy to preschool age. Short and long term memories were likewise unconstructively affected by the negative environment in which many Black children grew up. Wilson (1980) argued that the mental development of the Black child

begins to fall behind that of the White child's at the point where language begins to influence the personality structure.

Although Jensen's controversial work never claimed that African-Americans were less intelligent than White's, he claimed that the brain wave patterns in African-American newborn infants showed a greater maturity than is usually found in European newborns. Finally, this review cannot ignore the strong Chinese economy and its vast establishments of vocational education. As long as the U.S. society is preoccupied with negative attitudes, and the inherent implication that vocational-technical education is for individuals with less cognitive ability, it may soon wake up surrounded with China's dust.

CHAPTER 3

METHODS AND DESIGN

Introduction

This qualitative study of factors impeding the movement of African-American students through the STEP II vocational education program at SCC began in 2005. It was noticeable to this researcher at that time that post-secondary African-American students were enrolled in small numbers in the machine education classes and, therefore, the principle behind this study was to understand the reasons for such low enrollments. This provoked the query of proportionality between African-American students and the African-American population in the community. The impact of negative racial attitudes of the past on current enrollment was also studied. The effects of racial bias on socioeconomic status and cognitive development as a factor in enrollment were also identified. In addition, it was important to know if parents had any influence on career choice of their children.

Due to the low number of African-American students who participated in the STEP II program, a total of six African-American STEP II students (over a period of three years) were questioned for this study. The interviews were informal, and carried out spontaneously by this researcher with the students who were already enrolled in the STEP II program.

Literature, Interviews, and Data Analysis

The literature review and student interviews in this search had several objectives:

- To secure knowledge of the African-American culture in the Dayton region.

- To calculate the demographic racial proportions in the Dayton community.

- To interview African-American students already participating in the Project STEP II program for their views on how it met career goals.

Search for relevant literature on this topic was conducted in college libraries, the Internet, and this researcher's personal materials on the subject of abused children, child development, consequences of growing up poor, critical issues in education, dealing with diversity, cognitive psychology, educational psychology, motivating human behavior, learning disabilities, motivational explanation of behavior, personal growth, racial attitudes in the U.S., social classes, social problems, racial inequality, underachieving, essays on vocational education, and workforce education, brought to light valuable information which expanded this search. A total of ten periodicals, twenty nine books, and twelve research reports were reviewed for trends and findings on the topic. The library search for specific books related to this topic, brought to light additional books relevant to this report but, it was Wilson's (1980) work *The Developmental Psychology of the Black Child* that lent power to this thesis.

Student interviews were developed around motivational and parental factors and conducted in a classroom atmosphere. The limited numbers of African-American students in the Project STEP II program resulted in low numbers for this study. The interview questions used to guide the study were:

Question 1: Why did you choose the machine trades?

   2: How long have you known about this trade and where did you learn about it?

   3: Did you ever discuss your goals with your parents?

   4: Do you have employment opportunity concerns in the machine trades?

The information was analyzed for career plans, parental influence, school staff influence, and peer group interactions. Significant trends across the interview data for 6 subjects were compared for critical impact variable on career decision making.

Summary

The qualitative study of factors impeding the enrollment of African-American students in the Project STEP II program is limited by the small size of the sample, which included only six students who responded to questions. Accordingly, conclusions should not be drawn from this sample even though the results may attract some attention from other vocational-technical programs. The literature review, on the other hand, was composed of a variety of manuscripts. One book lead to another just as one Internet link showed the way to many other relevant links. On the whole, it was Wilson's (1980) work *The Developmental Psychology of the Black Child* that eventually transformed this paper. In sum, the private study yielded useful information for program planning, but must be expanded to include a more representative number of subjects.

CHAPTER 4

RESEARCH RESULTS

<u>Introduction</u>

The purpose of this study was to investigate representation of African-American students in post secondary vocational education specifically, students in Project STEP II program – a nine-month intensive training program in the machine trades. Low African-American student enrollments suggested that, among other things, motivational factors may be involved which may impede the movement of African-American students into the program. This researcher believed that literature study of African-American culture in the United States, in addition to student interviews may cause some understanding to originate from the combination.

<u>Results</u>

Results of this study for each of the four research questions examined are presented.

Research Question 1: What is an adequate representation of African-American post-secondary vocational education students in the Project STEP II program when compared with the Caucasian group?

An adequate representation of African-American students in post-secondary Project STEP II vocational education program ought to be equal to the proportion of the Black/White population within the County. If, for example, using a sample of 10 Caucasians in the STEP II program, the African-American sample should equal 8.1.

The following enrollment data for the STEP II program over a three year period are

represented in Figure 1.

STEP II Student enrollment		Ethnicity		
Sept. 2005 - Jan. 2007	# Students	White	Black	
September 2005	51	48	3	5.88%
September 2006	23	20	3	13.04%
January 2007	14	11	3	21.43%
Total Students	**88**	**79**	**9**	**10.23%**

Figure 1

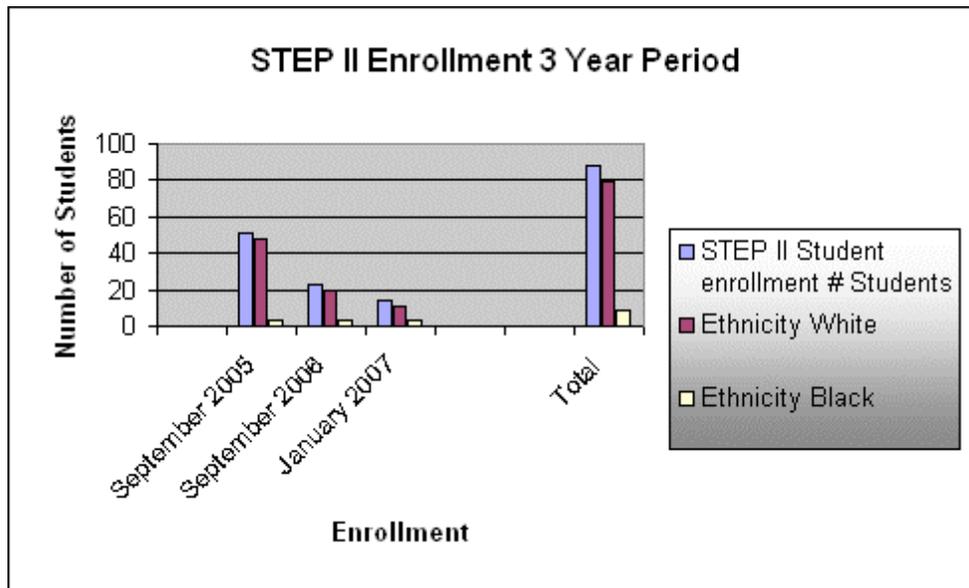The information in Figure 1clearly shows a decline in student enrollment in the Project

STEP II program over a period of three years. Also visible is the ratio of 3 Black

students to 48 White students in 2005, and 3 Black students to 20 White students in 2006.

 The complexity of the ratio scale should be noted because it includes all the

characteristics of three other scales, of the nominal (least complex used for

classification), ordinal (has characteristics of nominal in addition to rank and order), and interval scales (has the characteristics of the former and latter scales in addition to equal difference between scale units). The ratio scale can also contain a true zero, which can mean a total absence of what is being measured (Graham, Dillehay, and Diamantes, 2001). According to Figure 1, the representation of African-American students in the STEP II program is not proportional to the Caucasian group.

Research Question 2: What impact do negative racial attitudes of the past have on enrollment in industry and post-secondary vocational education programs?

The anti-Black strikes and riots that broke out in the 1940's in many places where Blacks and Whites worked together (Schuman et al. 1985) occurred at that time when many Whites believed that African-Americans were inferior people. The sentiments of the past may have not remained in the past and therefore may have an impact on enrollment in post-secondary vocational education which directly impacts the participation of African-Americans in relevant industries. The interaction of African-American children with specific people with negative racial attitudes negatively influenced the children's cognitive abilities and social growth and this restricted the imagination of the children and hindered the child's inventiveness from flourishing. "When it comes to damage," says Andrew Vachss (1994), "there is no real difference between physical, sexual, or emotional abuse. All that distinguishes one from the other is the abuser's choice of weapons" (Vachss, 1994, p. 4). Emotional abuse is just as painful as physical assault with a pain that can last a lifetime, which leaves no visible marks but it scars the heart and damages the soul, says Vachss.

In March of 2005, a fifteen-year old African-American enrolled in machine trades in the Dayton Public Schools explained to this researcher that he was taking machine trades because he liked to make things with his hands. When he was asked what he thought of employment opportunities in the machine trades in the community, he replied that there are no machine shops on his side of town. He added, "Machine trades are not for Black people; machine shops are predominantly for white people." When asked why he was taking machine trades, he explained that he likes to make things and feels very proud when, in showing his completed work to his father, is encouraged by his father. He expressed his willingness to study architectural engineering in the future.

Another student, a middle-aged African-American who retired after working thirty years in industry is retooling and learning the skill of machining because he does not want to stay retired. This researcher asked the opinion of this non-traditional student as to why he thought that the African-American enrollment was so small in the machining trades. This student responded that the reason the machining classes lack an accurate representation of African-American students was because the students lacked good mathematical skills. He believes that the school system is responsible for this oversight because the teachers do not emphasize enough the importance of mathematical and scientific skills in the real world.

The issues related to entitlement vs. tolerance, hold many Black people back from pursuing careers. He added, "no one wants to work where they are not welcome." When asked to explain "entitlement vs. tolerance," this returning student said that he views "entitlement" as a birthright to belong to a certain class, a right for working in the family

business, for example." He used the word "tolerance" to refer to people who tolerate other people because their jobs depended on it. As an example, he said, "White teachers tolerate Black students because their jobs depend on it. He noted that such teachers will never go out of their way to share their "extra" knowledge with Black students. Black students will not expect a White teacher to show them anything." When I was young," the student continued, "I would walk into a library and feel that I was not welcome." About his employment in a machine shop he felt that "White machine shop owners don't want to change their ideas about diversity because they already have a pre-established opinion of Black people which may have been inherited from their parents."

Research Question 3: What are the effects of negative racial attitudes on socioeconomic status and cognitive development?

The effects of negative racial attitudes on socioeconomic status and cognitive development produced unfavorable conditions of poverty and depression. African-American neglect in school, work and just about everywhere negatively influenced the process of socialization for many African-Americans and socioeconomic brain damage occurred due to the obstruction of development of neural interrelations in the brain. Furthermore, people with low socioeconomic status rarely if ever enjoyed social surroundings recommended by Vygotsky in which a child's competence can be elevated by interacting with other children from other cultures. Even though socioeconomic status is not related to infant's mental or motor development, the status is a good predictor of the direction the developmental quotient will take from infancy to preschool age (Papalia and Olds, 1975).

In addition, negative racial attitudes suppress cognitive development. According to Vygotsky, cognitive development is advanced through interaction with skilled individuals. If there is no cultural interaction between groups due to racial differences and negative racial attitudes, ethnic groups will not benefit from positive social and cognitive development (Elliott et al. 2000). When students with low socioeconomic status are given a fair opportunity, only then they will narrow- if not close – the socioeconomic gap and rise above the poverty level through jobs, earning power and acquired status.

Research Question 4: What impact do parents have on the career choice of their children?

Under advantageous circumstances, parents may have bigger influence on their children's career decisions than parents under unfavorable circumstances. Under adverse circumstances, parent powerlessness, negative experience, and low expectation from themselves will not positively indicate to the child that such parent can have a positive impact on their career.

Three out of seven African-American students interviewed in the STEP II program replied that they heard about the program from their parents. The interview data provided the following information on parental impact:

- Two out of six students learned of the program from their mother.
- Four out of six students learned of the program from outside sources (friends, organizations, etc.).
- Only three out of six students spoke with their parents about their future.

<u>Summary</u>

This case study was carried out at SCC where a total of six students (over a period of two years) responded to questions. This search found that student enrollment in the STEP II program is proportionally low when compared to the population demographics in the county. Negative racial attitudes of the past did not stay in the past, however. There was no explanation for example why African-American students already participating in the STEP II program did not know about the program while in high school.

Domination of African-American citizens in the U.S. because of their socioeconomic status resulted in a long history of African-American neglect just about everywhere. Parents' powerlessness negatively influenced the participation of many African-American parents in the decision making process of their children's career. Recent student interviews, however, indicate that under favorable circumstances African-American parents are actively involved in their children's career decisions.

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS, AND SUMMARY

<u>Introduction</u>

The purpose of this study was to investigate reasons for low African-American student enrollment in an intensive nine-month machine trades training program at public community college. Studies and theories selected for this work attempted to clarify harmful ways in which a dominant society can negatively affect the cognitive growth of another in schools and elsewhere. This search found that, indeed, when compared with the Caucasian group, African-American students seem to be misrepresented in the STEP II intensive training program when proportionally compared to the population demographics in the area. Second, the impact of negative racial attitudes of the past seems to be running out of steam. Some business owners in the machining industry are beginning to realize that the future of their businesses depends on skilled employees regardless of their skin color. Third, as the negative racial attitudes subside and students with low socioeconomic status are able to find work as a result of training, the quality of workers lives will improve and so will cognitive development. Finally, as soon as the proportion of the local demographics is better represented not only in school but every place else, and socioeconomic status improves as a result, more and more parents will be able to impact the careers of their children.

<u>Conclusions</u>

This research based paper served as a tool to consolidate thought and strengthen understanding of motivational factors behind low enrollment of African-Americans in post-secondary vocational education specifically in the Project STEP II program at SCC. The studies and theories selected for this case study sought to understand the negative effects a dominant society, or group, can have on the cognitive development of a specific minority group.

Many African-American children in the U.S. were, at one point or another, victims of tyrannical oppression since early age in schools and society. They were tamed by the dominant society by means of distressful negative conditions which damaged their mental psyche – and all this just because of their socioeconomic or racial status. The mental scars of such emotional abuse are the same as physical and sexual abuse. *"When your self-concept has been shredded, when you have been deeply injured and made to feel that the injury was all your fault, when you look for approval to those who cannot or will not provide it – you play the role assigned to you by your abusers"* (Vachss, 1994, p. 5).

This study has shown the negative consequences and their effects on children who are overwhelmed by feelings of guilt, shame, rejection, or hatred. White domination of African-Americans in the U.S. should have never punished the independence and self-confidence of the African-American society, nor other minorities' right to exercise the freedom to which every free American is entitled to in the United States. Ethnic groups

in the United States do not understand that the reason children join gangs for the sense of absolute belonging and unsurpassed social love.

This study also found that the African-American students, who were questioned for this study, did not consider vocational education as a career option while in high school because this option was not mentioned to them. More than half of the students questioned for this search indicated that they chose the STEP II program after getting the advice from their parents who read advertisements in the local newspaper.

SCC with its open door policy has been promoting social equality in the community through education since 1887. Despite this reality, Mong (2006) reported that many African-American males are uneducated and unemployed and will not be as likely to engage in mainstream society as a result, unless they change their status.

LeVine (1966) suggested that high need for achievement depends largely on psychological and other factors. He hypothesized that differences in achievement motivation do not necessarily have to be linked to child training or inheritance because many children grow up without guidance and despite the absence of the guidance, they can still develop accurate perceptions of the environment, which will enable them to grow in it successfully.

Finally, this researcher believes that there is a lesson to learn from China. The China Vocational Education Law (Vocational, 1966) mandates provision in the law to specifically promote vocational education as the solution to enhance the quality of workers lives. Furthermore, some articles in the laws suggest that measures need to be adapted to develop vocational education and support for **minority regions and poverty**

stricken areas. Another article declares that the state shall give rewards to organizations and individuals who have made remarkable achievements in the world of vocational education. These findings indicate that vocational education in China is directly responsible for the expansion and growth of the Chinese economy which is second behind the U.S. and already outselling the U.S. with electronics and computers.

"Teach a man how to fish and you feed him for a lifetime." A priceless comment!

Recommendations

The product of this study is proportional in its value to the time spent researching the area and analyzing the data. Accordingly, several recommendations were generated for use by career and technical education administrators and program planners:

Recommendation 1: Parents, teachers, and academic advisors need to encourage students to think about careers at an early age. The earlier children start thinking about the careers they would enjoy, the better off they would be when the actual time comes to start the career.

Recommendation 2: Whether a student chooses college or technical school for their future, parents need to make sure that their children acquire a high school diploma.

Recommendation 3: Manufacturing is technologically driven process. Without the ability to solve basic mathematical or scientific problems, it may be very difficult for today's worker to achieve any status. Parents and teachers should encourage students to take as many courses in mathematics and science as possible starting in middle school. Without understanding these subjects it will be difficult or next to impossible to perform any problem solving.

Recommendation 4: Parents and teachers should promote writing and speaking skills as courses their children should take.

Recommendation 5: Community colleges must promote all training programs in the Dayton region.

Recommendation 6: Faculty and advisors must inform students of the earning potential in a variety of occupations in manufacturing.

Summary

This study attempted to review motivational factors and how they materialize. The studies and theories in this work explored understanding of cognitive development. The lessons learned from China, specifically from the way the Chinese leadership views the importance of education as an essential part for the advancement of its people, is beyond price. Most of all, this study positively impacted the thinking of this researcher.

REFERENCES

A selected chronology of the history of vocational education in the United States in general (2005). Retrieved November 5, 2005, from http://www.ockareertech. org./history/index.htm

Andrews, R. (1993). *The Columbia Dictionary of Quotations.* Irvington, New York: Columbia University Press

Bayley, N. (1965, June). Comparisons of Mental and Motor Test Scores for Age 1- 15 months by Sex, Birth Order, Race, Geographic Location, and Education of Parents. *Child Development.* 36, 379 - 411.

Biancido, K. (1999). *Perspectives: Educational psychology.* Boulder: Coursewise Publishing, Inc.

Calaprice, A. (Ed). (1996). *The Quotable Einstein.* Princeton, New Jersey: Princeton University Press

Carlton, J. (2007, January 12). Southwest Pizza Chain under Fire for Accepting Mexican Currency. *Dayton Daily News* p.A12

Cho, S. K. (1995). Korean-Americans vs. African-Americans: Conflict and Construction. In M. L. Andersen & P. H. Collins (Eds.), *Race, Class, and Gender: An Anthology* (2nd ed.) pp. 461 – 470. New York: Wadsworth Publishing Company

Crain, W. (2000). *Theories of development: Concept and applications*. (4th ed.). Upper Saddle   River, NJ: Prentice Hall.

Damasio, A. R. (1994). *Descartes' Error: Emotion, Reason, and the Human Brain.* New York: G. P. Putnam's Sons

Deutsch, M. & Brown, B.(1964). Social Influences in Negro-White Intelligence

    Differences. *Journal of Social Issues,* 20.

Dichter, E. (1971). Motivating Human Behavior. New York: McGraw-Hill Book

    Company

Dyson, M. (1995). The plight of Black men. In Andersen, M. & Collins, P.H. *Race, Class,*

    and Gender: An Anthology. (2nd ed.). New York: Wadsworth Publishing Company

Ed. D. Hale, L.F. (ND). School Dropout Prevention Information and Strategies for Parents.

    National association of School Psychologists. Retrieved March 4, 2006, from

    http://www.moreland.k12.ca.us/Discovery/NASP/dropout_rk.html

Elliott S. N., Kratochwill, T. R., Cook, J. L., Travers, J. F. (2000). Educational psychology:

    Effective teaching, effective learning. (3rd ed.) Boston: McGraw-Hill Companies,

    Inc.

Frazier, E. (1962). *Black bourgeoisie.* New York: Collier

Gibson, M.A., & Ogbu, J.U. (1991). *Minority Status and Schooling: A comparative study*

    of immigrant and involuntary minorities. New York: Garland Publishing, Inc.

Gleazer, E. J. Jr. (1994). Evolution of Junior Colleges into Community Colleges. In G.A.

    Baker III (Ed.). *A Handbook on the Community College in America: Its History,*

    Mission, and Management. Westport, Connecticut: Greenwood Press.

Graham, G. T., Dillehay, J. A., & Diamantes, T. (2001). *Basic Analysis for Research in*

    Education: "The B.A.R.E. Essentials." Dayton, Ohio: Wright State University

Gray, K. (1988). Vocationalism Revisited: The role of business and industry in the

    transformation of the schools. *Journal of Vocational Education Research,* 13:4, 15.

Gray, K. C. & Herr, E. L. (1998). Workforce Education: The Basics. Boston: Allyn and

    Bacon.

Hockenbury, D.H., & Hockenbury, S.E. (2003). *Psychology.* (3rd ed.). New York: Worth

    Publishers.

Hunt, E.B. (1978). Mechanics of verbal ability. *Psychological Review, 85,* 109 – 130.

Jensen A. (1969). How much can we boost IQ and scholastic achievement? *Harvard*

    Educational Review, 39

Jensen, A. R. (1972). Statement of Dr. Arthur R. Jensen, Senate Select Committee on

    Education. Unpublished manuscript.

Learning to survive . (1998). Princeton, N.J.: Films for the Humanities & Sciences

    Retrieved on September 21, 2005 from http://140.106.192.3/search/

    tLearning+to+survive/tlearning+to+survive/1%2C1%2C2%2CB/frameset&FF=tlearn

    ing+to+survive&1%2C%2C2

Kellogg, J.B (1988). Forces of Change. In L. W. Barnes (Ed), *Social Problems 91/92* (pp.

    38 - 43). Guilford, Connecticut: The Dushkin Publishing Group, Inc.

LeVine, R. A. (1966). *Dreams and needs: Achievement motivation in Nigeria.* Chicago:

    University of Chicago Press.

Maehr, M. L., & Yamaguchi, R. (2001). Cultural diversity student motivation and

    achievement. Salili, F., Chiu, C., Hong, Y. (Eds). *Student Motivation: The culture*

    and context of learning. New York: Kluwer Academic/Plenum Publishers.

Mong, C. (2006, April 2). Statistics paint grim picture for black males. *Dayton Daily News,*

    p. A1

Montagu, A. (Ed). (1974). *Culture and Human Development: Insights into Growing Human.* Englewood Cliffs, N.J.: Prentice-Hall

Ogbu, J. U. (1978). *Minority education and caste: The American system in cross cultural perspective.* New York: Academic Press Harcourt Brace Jovanovich, Publishers.

Page, C. (2006, February 23). 'Uncle Tom' deserves another look. Dayton *Daily News*, p. A12

Papalia, D., & Olds S. (1975). *A child's world: Infancy through adolescence.* New York: McGraw- Hill.

Patel, D. I. (1988). Asian Americans: A growing force. In Barnes L. W. (Ed.), *Social Problems* (pp. 44 - 49). Guilford, Connecticut: The Dushkin Publishing Group, Inc.

Posner, J.K. (1982). The development of mathematical knowledge in two West African societies. *Child Development,* 53, 200 – 208.

Proportion. (2007). Retrieved January 12, 2007, from http://www.thefreedictionary. com/proportion

Ratcliff, J. L. (1994). Seven streams in the historical development of the modern American community college. In G. A. Baker III (Ed). *A Handbook on the community college in America: Its history, mission, and management.* Westport, Connecticut: Greenwood Press.

Rosen, B., &D'Andrade, R. C. (1959). The psychological origins of achievement motivation. *Sociometry*, 22, 185 – 218.

Seligman, D. (1994). *A Question of Intelligence.* New York: A Citadel Press Book. Published by Carol Publishing Group.

Schuman, H., Steeh, C., and Bobo, L. (1985) *Racial Attitudes in America: Trends and Interpretations.* Cambridge, MA: Harvard University Press.

Schunk, D. H. (1991). *Learning theories: an educational perspective.* New York: Macmillan Publishing Company

Silverberg, M., Warner, E., Fong, M., Goodwin, D. (2004). National Assessment of Vocational Education: Final report to Congress, executive summary. *U.S. Department of Education Office of the Under Secretary Policy and Program Studies Service.* Washington, D.C.

Sitkoff, H. (1971). Harry Truman and the Election of 1948: The Coming of Age of Civil Rights in American Politics. *Journal of Southern History.* 37, 597 - 616

Solso, R. L. (2001). *Cognitive Psychology.* (6th ed.) Boston: Allyn and Bacon

Suarez-Orozco, M. M. (1989). *Psychological aspects of achievement motivation among recent Hispanic immigrants.* In *What do anthropologists have to say about dropouts?* (Ed) Henry T. Trueba, George and Louise Spindler, pp. 99 – 116. New York: Falmer Press.

The American Heritage Dictionary of the English Language (4th ed.). (2000). Boston: Houghton Mifflin. Retrieved February 17, 2007, from http://www.bartleby.com

Vachss, A. (1994). You Carry the Cure in Your Heart. *Dayton Daily News, Parade,* pp. 4 - 6.

Vocational Education in China. (ND). Ministry of Education of the People's Republic of China. Retrieved April 22, 2006 from http://www.moe.edu.cn/english/ vocational_v. htm

Vocational Education Law of the People's Republic of China (1996). Retrieved from the

Ministry of Education of the People's Republic of China's website on April 15,

2006 http://www.moe.edu.cn/english/laws_v.htm

Vygotsky, L. S. ([1933] 1978). In L.C. Moll (ed.) *Vygotsky and education: Instructional*

implications and applications of socio-historical psychology. New York, NY:

Cambridge University Press.

Wilson, N. A. (1980). *The developmental psychology of the Black child. New York:*

Africana Research Publications.

Wilson, N. A. (1991). *Understanding Black Adolescent Violence: Its remediation and*

Prevention. New York: Afrikan World Infosystems

Wonacott, M.E. (2000). *Benefits of Vocational Education.* Retrieved on September 23,

2005 from http://www.fape.org/idea/How_it_works/voced_myths_8.html

Wonacott, M.E. (2002). *Dropouts and career and technical education.* Retrieved on

January 3, 2006 from http://www.cete.org/acve/docs/mr00038.pdf