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An Analysis of Selected Factors Related to Predicting the Academic Success of Black Students Attending Predominantly White Colleges

John Hair
Western Michigan University

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AN ANALYSIS OF SELECTED FACTORS RELATED TO PREDICTING
THE ACADEMIC SUCCESS OF BLACK STUDENTS ATTENDING
PREDOMINANTLY WHITE COLLEGES

by

John Hair

A Dissertation
Submitted to the
Faculty of the Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
Department of Educational Leadership

Western Michigan University
Kalamazoo, Michigan
December 1986
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Hair, John

AN ANALYSIS OF SELECTED FACTORS RELATED TO PREDICTING THE ACADEMIC SUCCESS OF BLACK STUDENTS ATTENDING PREDOMINANTLY WHITE COLLEGES

Western Michigan University

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My sincere appreciation is extended to Dr. Charles Warfield without whose direction and guidance this paper could not have been completed. Also, thanks go to Dr. LeRoi Ray and Dr. David Cowden for their invaluable recommendations and advice. Finally, a very special "thank you" must go to Billie Jean, my wife and best friend, who gave me all of her support and kept the faith.

John Hair
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CHAPTER I

INTRODUCTION

Statement of the Problem

In this post baby boom era of declining student enrollment in primary and secondary educational institutions, most institutions of higher education have felt or will eventually feel the economic effects of declining enrollment.

Hodgkinson (1982) states that:

In 1900, ten percent of the youth population graduated from high school. In 1950, we had it up to 25 percent of the population of black young people and 56 percent of the whites. In 1978, we had it up to 75 percent for blacks and 85 percent for whites . . . . For Michigan institutions of higher education in 1947, out of 1,000 fifth graders, you could assume a pool of 28 percent of that group would be eligible for college at an appropriate time later. By 1970, however, of a pool of 1,000 fifth graders in Michigan, 43 percent of that group could enter college. We had not only a baby boom, which is an increase in numbers in the cohort, we had an increasing percentage of that cohort that could go to college. College does not guarantee wealth, it does not guarantee fame, but it does guarantee more control over your life. If you are a college graduate, you can make more decisions about your life than a non-college graduate. In America, this is a terribly important virtue. (p. 7)

According to the 1980 U.S. Census, 72 percent of Michigan high school students graduate. The Michigan Department of Education 1984 School Racial Ethnic Census,
indicates that, in 1983, there were 13,791 blacks graduating from Michigan public and private high schools (10.9 percent of all high school graduates) (Table 1).

However, 7,007 (50 percent) indicated (self-reported) that they were not planning to enroll in a post secondary institution for further study. Each year this group is a potential recruitment pool for Michigan colleges.

Evidence of the increased high school graduation of blacks and their lack of motivation to enroll in post secondary institutions in Michigan between 1976-1983 can be seen in Table 1.

Michigan by the year 1990 will experience a 30 percent decline in the total number of high school graduates, but there will be an increase in minorities among the college eligible cohort (Hodgkinson, 1985). College enrollments will fall drastically unless Michigan colleges plan now to attract and retain the "new" student.

According to Hodgkinson (1985) one out of eight "highly able" high school graduates chooses not to attend college. Twenty-nine percent more blacks graduated from high school in 1982 than in 1975, but black college enrollment dropped eleven percent during that period. The high school graduation rate for Hispanics increased thirty-eight percent during the 1975 to 1982 period, while Hispanic college enrollment declined sixteen percent. The researcher went on to say:
## TABLE 1

**MICHIGAN HIGH SCHOOL GRADUATES, BY RACIAL/ETHNIC BACKGROUND, 1976-1983**

<table>
<thead>
<tr>
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<td>NUMBER %</td>
<td>NUMBER %</td>
<td>NUMBER %</td>
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<tr>
<td>White</td>
<td>130,567</td>
<td>129,935</td>
<td>125,730</td>
<td>123,615</td>
<td>119,852</td>
<td>119,733</td>
<td>115,848</td>
<td>107,404</td>
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<tr>
<td>Block</td>
<td>13,019</td>
<td>13,669</td>
<td>14,057</td>
<td>13,721</td>
<td>13,064</td>
<td>12,950</td>
<td>13,247</td>
<td>13,791</td>
</tr>
<tr>
<td>nat. Amer.</td>
<td>654</td>
<td>8.91</td>
<td>13,019</td>
<td>13,669</td>
<td>14,057</td>
<td>13,721</td>
<td>13,064</td>
<td>12,950</td>
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<tr>
<td>Asian Amer.</td>
<td>282</td>
<td>1.05</td>
<td>425</td>
<td>465</td>
<td>488</td>
<td>586</td>
<td>588</td>
<td>588</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1,535</td>
<td>1.05</td>
<td>1,450</td>
<td>1,655</td>
<td>1,499</td>
<td>1,581</td>
<td>1,630</td>
<td>1,716</td>
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<tr>
<td>MINORITY</td>
<td>15,490</td>
<td>1.05</td>
<td>18,035</td>
<td>18,760</td>
<td>19,728</td>
<td>17,124</td>
<td>16,396</td>
<td>16,796</td>
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<tr>
<td>TOTAL</td>
<td>146,057</td>
<td>147,970</td>
<td>144,490</td>
<td>142,739</td>
<td>136,104</td>
<td>136,129</td>
<td>132,644</td>
<td>125,666</td>
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### PLANNING TO ENROLL IN COLLEGE STUDY (Self-Reported)

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<tr>
<td>White</td>
<td>56,604</td>
<td>55,537</td>
<td>54,423</td>
<td>56,078</td>
<td>56,088</td>
<td>56,737</td>
<td>56,285</td>
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<td>5,117</td>
<td>5,665</td>
<td>5,501</td>
<td>5,782</td>
<td>5,690</td>
<td>5,673</td>
<td>5,738</td>
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<tr>
<td>nat. Amer.</td>
<td>197</td>
<td>1,055</td>
<td>980</td>
<td>1,358</td>
<td>407</td>
<td>386</td>
<td>523</td>
<td>753</td>
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<tr>
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<td>270</td>
<td>285</td>
<td>304</td>
<td>364</td>
<td>394</td>
<td>493</td>
<td>537</td>
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<tr>
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<td>468</td>
<td>509</td>
<td>467</td>
<td>591</td>
<td>626</td>
<td>553</td>
<td>646</td>
</tr>
<tr>
<td>TOTAL</td>
<td>63,519</td>
<td>62,447</td>
<td>61,862</td>
<td>61,708</td>
<td>63,122</td>
<td>63,833</td>
<td>63,551</td>
<td>59,917</td>
</tr>
</tbody>
</table>

### NOT PLANNING TO ENROLL FOR FURTHER STUDY (Self-Reported)

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<td>NUMBER %</td>
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<tr>
<td>White</td>
<td>68,358</td>
<td>69,090</td>
<td>66,438</td>
<td>64,956</td>
<td>58,685</td>
<td>58,111</td>
<td>54,023</td>
<td>49,859</td>
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<td>6,087</td>
<td>7,021</td>
<td>7,625</td>
<td>7,199</td>
<td>6,275</td>
<td>6,306</td>
<td>6,502</td>
<td>7,007</td>
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<tr>
<td>nat. Amer.</td>
<td>411</td>
<td>1,335</td>
<td>1,492</td>
<td>1,961</td>
<td>481</td>
<td>808</td>
<td>507</td>
<td>1,114</td>
</tr>
<tr>
<td>Asian Amer.</td>
<td>66</td>
<td>161</td>
<td>169</td>
<td>179</td>
<td>199</td>
<td>178</td>
<td>239</td>
<td>296</td>
</tr>
<tr>
<td>Hispanic</td>
<td>869</td>
<td>907</td>
<td>970</td>
<td>970</td>
<td>904</td>
<td>935</td>
<td>1,074</td>
<td>922</td>
</tr>
<tr>
<td>TOTAL</td>
<td>75,791</td>
<td>79,395</td>
<td>76,792</td>
<td>75,265</td>
<td>66,543</td>
<td>66,338</td>
<td>62,345</td>
<td>59,439</td>
</tr>
</tbody>
</table>

We are just entering an era in which youth will be in short supply in America. Fast food restaurants are one indicator of the future—virtually everyone has a "now hiring" sign in front. If a new 19 year-old employee doesn't work out, fire him/her and get another; if a freshman doesn't work out, replace him/her with another; if the army recruit doesn't adapt, replace him/her, etc. For the next fifteen years at least, we will have to work harder with the limited number of young people we have to work with, whether we are in higher education, business, or the military. If a young person fails the first time, we may have to help him/her succeed the second time rather than summarily replacing them. They will be scarce for a long time—as long as we live, there will be more people over sixty-five than teen-agers in America. (p. 6)

According to Hoffman (1980) the number of 18 year-olds reached its peak in 1977 and will decline by about twenty-two percent in 1990. The majority of these students are white and represent a substantial decline in the number of "traditional" (white) student enrollment in college. In contrast to this decline is the enrollment pattern of "nontraditional" (black) students, Brown (1985) reports that the racial and ethnic composition of the American college-going population is undergoing changes that will become dramatic within the next quarter of a century. These changes reflect the varying rates of growth of different population groups in our society. According to one projection, the nation's population will grow from 238 to 260 million in the next thirty-five years, and nearly all of the increase will be in minority groups because the birth rate of the majority has fallen
below the replacement level.

Gurin and Epps (1975) indicate that, less than forty years ago, over ninety percent of black students (approximately 100,000 in 1950) were educated in black schools. Fleming (1984) states that between sixty and seventy-five percent of all black students today are enrolled in predominantly white institutions.

Although the majority of black students in this country are now attending white colleges, they are experiencing what some educators call the "revolving door effect," and most drop out of college during their first year. Sowell (1972) points to notable academic failure, demonstrations, and revolts as indications of considerable dissatisfaction of black students. However, despite the problems, black students are on white campuses to stay and it is necessary to identify positive institutional policies which may enhance black students' academic success. Centra (1980) states that the Carnegie Council has placed institutions into two broad categories: (a) institutions likely to do relatively well with their enrollments, financial condition, and reputation—public community colleges, universities, and more highly selective liberal arts colleges; and (b) those institutions likely to do less well, given the same amount of effort, with their enrollments, financial condition, and reputation—comprehensive colleges and universities (particularly the
private ones), less selective liberal arts colleges, and private two year colleges. Therefore, the 1980s must be a time for reassessing traditional approaches to recruiting and retaining students.

Specific Objectives

1. To determine significant predictors of academic success for black students enrolled at Davenport College in Grand Rapids, Grand Rapids Junior College and Western Michigan University.

2. To predict which students will be academically successful.

3. To predict which students will not be academically successful.

Research Question

To what extent and in what manner can cognitive and demographic factors predict whether black students will be academically successful at Davenport College, Grand Rapids Junior College and Western Michigan University?

Description of Terms Used in the Study

Cognitive Factors

Cognitive factors were Davenport College's in-house mathematics test and Nelson Denny verbal scores, Western Michigan University's American College Test assessment
scores, and high school GPA.

Demographic Factors

Sex, curriculum, residential experience, high school location, remedial course(s) taken, and type of college.

Academic Success

A student with a 2.0 or above cumulative average on a 4.0 scale.

Limitations

1. The Socioeconomic Status (SES) (i.e., the ratio between number in the family and annual income) of a student indicates the overall economic class status of the student's family. This class status is also indicative of the level of parental education and the father's type of occupation. The literature clearly points to the conclusion that low family income has a high correlation with low academic success, and that high family income has a high correlation with academic success. However, limitations in data collection for this study required that the students' SES variable be omitted. Therefore, the exclusion of the SES variable is an acknowledged limitation of this research study.

2. Because some students had not claimed a specific major, this study attempted to categorize students
according to the general curriculum of courses taken. Therefore, the specific major of some students is not indicated; and they are all grouped under the broad headings of either liberal arts, business, education, or health.

3. This study focused specifically on data representing students' in-school performance and does not report on drop-outs.

4. The analysis is confined to the 266 students in the sample of 284 for whom complete information was available.
The review of the literature includes the following sections: (a) Black Student Enrollment in White Institutions, (b) Cognitive Predictors of Academic Success, (c) Demographic Predictors of Academic Success, (d) Private Business Colleges, and (e) Community Colleges and Four Year Public Colleges.

Black Enrollment in White Institutions

Specific Court Cases

It is difficult to state the exact year that was the clear turning point in the admissions of substantial numbers of black students to white colleges and universities. However, the murder of Dr. Martin Luther King, Jr., in 1968, comes closest to establishing a starting point. Gamson, Blackburn, and Peterson (1978) suggest that King's death led to active minority recruitment by white colleges and universities and to the development of a range of new academic and non-academic programs as a result of pressure from black students. Because his death also represented an end to an era, this section will begin with a review of specific court cases leading up to 1968.
The Supreme Court decision of May 1954 in Brown vs. Board of Education of Topeka 347 U.S. 483 (1954) finally ended legal segregation in public elementary and secondary schools. This case ended the separate but equal doctrine established in the Plessy vs. Ferguson decision 163 U.S. 537 (1896) by the Supreme Court in 1896.

Before the Brown Case, during the thirties, The National Association for the Advancement of Colored People (NAACP) attacked the separate but equal doctrine in numerous court cases focusing on graduate and professional education. Between the depression years and through World War II, court decisions started to take a new direction. In 1935, the Murray vs. Maryland 182 A 590 (1935) case attacked segregation by the University of Maryland Law School, to which Murray was eventually admitted. In 1938, the Missouri ex. rel. Gaines vs. Canada 305 U.S. 337 (1938) case attacked segregation at the University of Missouri, and the Supreme Court ruled that the state of Missouri either had to provide blacks with equal law school facilities or admit them to the University of Missouri Law School.

Later, the Sweatt vs. Painter 339 U.S. 629 (1950) case resulted in a ruling by the U.S. Supreme Court that a black be admitted to the University of Texas Law School because the law school at Black Texas Southern University did not afford equal facilities. Other important
desegregation rulings were Sipuel vs. Board of Regents of University of Oklahoma 322 U.S. 631 (1948), and McLaurin vs. Oklahoma State Regents 339 U.S. 637 (1950). Between 1948 and 1961, legal efforts finally opened white colleges and universities to blacks in all southern states except Alabama, Mississippi, and South Carolina (Bowles & DeCosta, 1971).

Civil Rights

The Brown vs. Board of Education ruling of 1954 set the tone for what was to become the theme of the civil rights movement during the 1950s and 60s. The theme was that separate but equal was not equal and that equality could only be reached through full integration of facilities and institutions.

In the South, whites reacted with hostility toward blacks who had found legitimacy for what was to become a new kind of activism. Martin Luther King, Jr. emerged as the dominant civil rights leader, and was able to form an alliance between blacks and liberal northern whites. Gamson et al. (1978) state that whites gave support through dollars, provided the cadres, and, to some extent, were responsible for the attention to civil rights issues in the press and on television.

After the assassination of President Kennedy in 1963, President Johnson was able to get the Civil Rights Act of
1964 broadened to allow the Attorney General to start school desegregation suits and the federal government to withhold funds from segregated school districts. Title VI of the same act and Executive Order 11246 of 1965, which prohibits employment discrimination on the basis of race, color, religion, sex, or national origin by federal contractors and subcontractors, also applied to higher education.

Although the major civil rights action occurred in the South, the mass migration of blacks to northern cities during and after World War II developed a new underclass of blacks who lived in overcrowded, high crime neighborhoods that also bred welfare dependence and high rates of unemployment.

Urban rebellion was commonplace during the 1960s and the riots that followed Martin Luther King's assassination in 1968 were a culmination of the frustrations of many American blacks. As stated earlier, it was about this time that the increased emphasis on recruitment for and enrollment of black students in white colleges and universities occurred.

Peterson et al. (1978), in a University of Michigan study, found that a number of institutions initiated or accelerated their efforts to recruit black students in the months following the assassination of Dr. Martin Luther King, Jr. The study focused on institutional responses to
Increased black enrollment in thirteen predominantly white colleges of the North and Midwest during the 1968-1972 period, when these institutions were experiencing significant increases in black enrollment. The researchers report that:

Early success in recruiting black students and developing special programs to meet their needs depended on the interaction of a number of external and internal factors: access to a "convenient" source of black students; early involvement in such programs as Upward Bound, Talent Search, and function sponsored high school preparatory programs; aggressive leadership from institutional presidents and other administrators; contingents of liberal faculty; or contact and exchange programs with black colleges. Also, the Michigan study noted that increases in black enrollment often ran parallel to other major changes—declining white enrollments, shifts from private to public control, secularization of religious institutions, and transformation of an institution from a teachers college to a broader comprehensive university, which meant increases in offerings, staff, and definition of service region. All these changes tended to facilitate increased black enrollments in the institutions. . . Conflict was also an important factor, and most of the institutions in the Michigan study experienced at least one racial incident involving building takeovers, presentation of a list of demands, and/or other confrontation tactics. Initial institutional responses—often recruiting efforts and special support and academic programs—were usually criticized as being too little too late. Occupying of buildings and threats of violence sometimes followed, and so did additional institutional responses. While the perception of the role of confrontation varied within the institutions, the Michigan team of investigators concluded that conflict in most cases "was effective in keeping the institution's focus on their original commitments and was often influential in speeding up the rate of enrollment increase and program development." (p. 160)
Legislation

The growth of black enrollment in higher education, to a large extent, is attributable to the intervention of the federal government. Policy makers in the post-World War II period who were interested in increasing black student enrollment recognized the importance of financial aid as a critical resource. Bowles and DeCosta (1971) report that, in the 1950s, the National Scholarship Service and Fund for Negro Students (NSSFNS) recruited blacks from segregated high schools to attend white colleges. Later, the program was supplemented by the National Defense Student Loan Program in 1958 and the National Achievement Program in 1964. Both federal and state programs were a major stimulus to black enrollment as indicated by Mingle (1978) in his review of the literature:

The significant increase in black enrollment beginning in 1967 was preceded by the Higher Education Act of 1965, which greatly expanded available financial aid through the College Work Study Program, Educational Opportunity Grants, and the Guaranteed Student Loan Programs. These programs were followed by the Basic Educational Opportunity Grant Program (BEOG), established in 1972. BEOG provided grants, based on need, which students could carry to the institutions of their choice. BEOG's have had an extraordinary impact on levels of black enrollment in all colleges and universities. In 1976-77, 1.5 billion dollars in BEOG's were awarded nationwide to nearly two million students. In addition, approximately one billion dollars in other federal funds were provided through other need-based programs. . . . While federal government programs were a major stimulus for black
enrollment, state governments responded to the demands for increased access by greatly expanding the size and scope of public education in the 1960s. Much of this expansion occurred in the growth of the two-year college sector. In 1961, there were 593 two-year community colleges nationwide; but by 1976 the number of community colleges had grown to 1,147 with only sixteen of them being traditionally black institutions (Turner and Michael, 1978). Black students were attracted to two-year colleges because of their proximity, low tuition and open admission policies. By the Fall of 1976, black enrollment in two-year colleges totaled 429,293, which represented 41.5 percent of all black students enrolled in higher education at that time. Both blacks and other minorities are disproportionately represented in two-year colleges as opposed to four-year colleges and universities (Goodrich, Lagiotte and Wetch, 1973; Astin, 1977). (p. 22)

Cognitive Predictors of Academic Success

Academic Achievement

Davenport College in Grand Rapids, Michigan, is a private two year business college; Grand Rapids Junior College is a public two year community college; and Western Michigan University is a comprehensive undergraduate/graduate state university. Each school is predominantly white, but Davenport and GRJC have an open admissions policy that is extended to all students. However, meeting the needs of culturally "different" and sometimes poorly educated minorities poses unique student retention problems for a predominantly white college.

According to Anderson (1978):

Retention begins with an ethically conducted
recruitment program based upon documented characteristics of persisters. Recruitment practices and admission decisions must reflect the highest moral and ethical standards. Too often, equal opportunity programs have provided little more than the opportunity for nontraditional students to become discouraged, to experience yet another failure, and to drop out or be dropped out with ruined dreams and expectations. Recruiters have a moral obligation to tell students as candidly as possible the likelihood of their being admitted, obtaining financial aid, finding housing, and being victimized by discrimination. Recruiters also have an obligation to describe what students can expect from the program and what they will experience in classes. They should also indicate their likelihood of succeeding academically and their probability of graduating from the institution.

Admissions decisions should be based upon research into the characteristics of persisters at each institution. If we admit students who have needs and problems that our institutions cannot address and that our programs cannot solve, we should not be surprised if those students are spun out of our institutions through revolving doors which we have created. It is irresponsible—even unethical—to admit students to our institutions without being able to predict their achievement or persistence. Conversely, however, it is equally unethical to refuse admission to students simply because they do not meet arbitrary, traditional admission standards. (p. 38-39)

To begin with, it is important to remember that basic communication skills are essential prerequisites for student success in any college program. In speaking about this need, Roueche (1981) states that in several recent college studies to determine readability levels of texts and trade manuals, only one course in fifty has written materials below 12th grade reading levels. Any student who reads more than two grade levels below the actual reading requirements of a course will not succeed in that
course. Such students need a semester or more of basic skills development before they are ready for success in today's college courses. Strong placement practices are needed to enhance academic success. Earlier studies tend to support these findings.

According to Sedlacek and Webster (1978), many ethnic minority students leave school, apparently without achieving their desired educational goals, at a much higher rate than their white counterparts. Reed (1978) suggests that factors that contribute to high rates of attrition among ethnic minority groups include alienation and lack of academic preparation.

Because this study proposed to investigate cognitive variables, there was a need to review research that focused on different cognitive variables and the relationship between the cognitive variables and black student academic achievement. Black students' average academic aptitudes and performance, as measured by standardized tests, are considerably lower than the average for white students (Astin, 1969; Bayer & Boruch, 1969; Crossland, 1971; Kendrick, 1967). However, black students are attending white institutions of higher education in increasing numbers, bringing with them high expectations for success. Blackburn and Peterson (1976) indicate that, despite disparities between blacks and typical white students in academic preparation and financial security,
and a subsequent disillusionment among large numbers of black students with the actual college experience, black students persist in college to a surprising degree. On the other hand, some studies have focused on the difference in black student academic achievement on predominantly white campuses and predominantly black campuses.

Studies by the Institute for the Study of Educational Policy (1976) and Fleming (1984) have shown that black college students' retention is much higher at predominantly black colleges. The national attrition rate for black students at white colleges has been reported as high as 70 percent (Carey, 1976; Griffin, 1975; Willie & McCord, 1973). Therefore, there was a need to look at research about retention models to determine if any retention models had been successfully used with black students on predominantly white campuses.

Retention models have been developed to enhance the academic achievement of minority and low income students (Anderson, 1978; Goodrich, 1979; Roueche, 1977; Taylor, 1983) and can be seen in Table 2. Retention models tend to be centralized (courses are separate from the sequential design of departmental offerings) or decentralized (courses fit into the sequential design of departmental offerings).
Table 2

Minority Student Retention Models: Centralized or Decentralized Designs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Characteristics</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Driven Minority Student Retention Model</td>
<td>Decentralized</td>
<td>Different divisions and departments coordinate retention efforts through various committee decisions based on data system analysis.</td>
<td>Andrew Goodrich</td>
</tr>
<tr>
<td>Taylor Minority Student Retention Model</td>
<td>Centralized or Decentralized</td>
<td>Campus administrators spell out clear objectives and expectations as students move through different components.</td>
<td>Charles Taylor</td>
</tr>
<tr>
<td>Developmental Studies Retention Model</td>
<td>Centralized</td>
<td>Establishes a total (holistic) program of recruitment, counseling, instruction, evaluation; and the program includes one director for all components.</td>
<td>John and Suanne Roueche</td>
</tr>
<tr>
<td>Anderson Minority/Low Income Student Retention Model</td>
<td>Centralized</td>
<td>(Same as Roueche Model)</td>
<td>Edward &quot;Chip&quot; Anderson</td>
</tr>
</tbody>
</table>
Summary

The reported studies focused primarily on black student academic achievement in public college settings. Therefore, the need for a study that focuses on the relationship between the differences in cognitive and demographic variables and black student academic achievement on different types of college campuses is supported. It is important to remember that (a) Davenport College is a private two year college, (b) Grand Rapids Junior College is a public two year college, and (c) Western Michigan University is a comprehensive undergraduate/graduate university. Also, each is a predominantly white college. However, none of the reported studies was conducted in the unique combination of environments as this study.

High School GPA

As already cited, there have been studies on academic achievement using cognitive predictors of achievement. However, the researchers reviewed have conflicting findings on the relationship between grades in high school and achievement.

Panos and Astin (1968) reported that high school grade average was related to completing four or more years of college whereas Sedlacek and Brooks (1976) report studies that show no relationship, or perhaps a negative relationship, between traditional predictors (high school
grades and test scores) and college grades for blacks. On the other hand, Bennett (1978) found that students with higher high school grades were more likely to get a college degree. However, at Kent State University, Herman (1978) did not find a significant relationship between high school achievement and persistence.

In contrast, Cope and Hannah (1975) report that high school grade-point average (GPA) and high school class rank are the best predictors of persistence and attrition. The correlations of high school record with persistence have ranged from 0.25 to 0.50. Astin (1977a), in a multi-college four-year study, shows a correlation of 0.29 out of a multiple correlation of 0.42 for all freshman characteristics used.

In another study, focusing on predominantly white and black institutions and race, Astin, King, and Richardson (1976) state that:

Both black men and women attending white institutions had higher average high school grades than those attending predominantly black institutions. For example, about eight percent of black men and sixteen percent of black women attending white institutions had a grade average of A- or better, compared with four percent of the men and nine percent of the women attending black institutions. Among both blacks and whites, women entering college made better grades in high school than did men. At white institutions, the proportions of white men with A- or better grades was twenty-five percent, compared with eight percent of the black men. (p. 32)

The aforementioned studies tend to indicate that
high school grades and test scores are good predictors of academic success for some students and poor predictors of academic success for other students. However, the major goal for most college students is to complete the requirements for graduation. Therefore, there was a need to look at research studies dealing with students who persist to graduation.

Some studies have found a relationship between precollege admission data and persistence. Irvine (1966) found high school grade point average to be the best single predictor of persistence; it correlated .34 with graduation from the University of Georgia, thus explaining almost twelve percent of the total variation.

In a similar study, Mehra (1973) at the University of Alberta could account for less than ten percent of the variance using high school grade point average. However, using more variables he found that the high school grade point average of voluntary withdrawals was significantly higher than that of those persisting to graduation.

Although persistence is important, the student selection or admissions process and academic placement are of major importance. As a result, other studies focusing on enrollment and academic placement were reviewed.

Cope and Hannah (1975) reviewed the open admissions program at the City University of New York and found that the retention rate was comparable to the national norm for
student retention over four years (Eagle, 1973; Lavin, 1974). The researchers further state that:

As long as high schools, colleges, students, and grading systems remain as variable as they are—and hopefully, will continue to be—little reliance can be placed on performance in high school as a predictor of graduation. (p. 12)

In another study, Ervin and Hogrebe (1984) compared Scholastic Aptitude Test (SAT) scores, high school grade-point average (GPA), and freshman-year GPA earned in regular university classes by developmental studies students and regular college students. The researchers report that high school GPA and SAT scores were negatively related for the developmental studies students. Also, high school and freshman GPA were more highly related than were SAT scores and freshman GPA for both groups of students. According to the researchers:

Multiple regression analysis revealed that high school GPA and SAT scores accounted for thirty-four percent of the variance in freshman GPA for the regular students and thirteen percent of the variance in freshman GPA for the developmental students. (p. 326)

Summary

The literature is conflicting with regards to the use of high school grades for predicting academic success in college. However, both black men and women attending white colleges tend to have higher average high school grades than those attending predominantly black colleges. The high admission standards at many predominantly white
colleges may reflect the need for all students to have higher average high school grades and would, therefore, explain the higher average high school grades of enrolled blacks.

Although the literature seems to suggest a cautious use of high school grades for predicting academic success, it, when used with other selected variables, can be an important reference when assessing student academic competency and deficiency needs. High school grades are simply one more piece of information that can be used to effectively place a student into the right academic curriculum.

Assessment Tests

Numerous studies of assessment (standardized) tests have been reported in the literature and have had varying results in the areas of college access, persistence, and predicting academic achievement.

Osegard (1969) found that there is a significant difference between persisters and nonpersisters regarding rank in class, but no significance with respect to ACT scores. A conflicting study by Tweddale (1975) compared the ability measures for persisters and nonpersisters at Grand Valley State College in Michigan; and the results were that persisters have higher ACT scores than nonpersisters, indicating that the persisters are more
academically college-orientated than nonpersisters. Pedrini and Pedrini (1977) determined that attrition/retention and American College Test (ACT) assessment scores are the significant multiple variates in the prediction of grade point average.

The use of standardized tests as measures of ability for blacks has come under increasing attack and has been demonstrated to reflect cultural assimilation as well as economic advantage (Taylor, 1980). The study suggests that standardized tests are geared toward white middle class students and discriminate against most blacks who have different cultural and economic backgrounds and do not comprehend the white middle class symbolism expressed in most standardized tests. In an earlier supportive study, Jencks et al. (1972) noted that about a quarter of the correlation between test scores and educational access and achievement is explained by the fact that students with high test scores generally come from families that are economically successful. Similarly, the College Entrance Examination Board (CEEB, 1974) reported that the average family income for students who scored between 750-800 points on the SAT was $24,124 while students in the lowest SAT score range (200-249) had a mean family income of $8,639. In a contrasting study, Portes and Wilson (1976) reported that when controlling for family economic status (SES) and test performance, a higher...
percentage of blacks enter college than whites.

Contrary to the above findings, McClelland (1976) argues that the SAT is a prime predictor of academic success. Also, Dallon and Dawes (1981) found that the ACT is a "reasonably good" predictor of graduation. On the other hand, Bailey (1978) argued that standardized tests are often used as a screening device to control admissions to higher education and to preserve the white education hierarchy.

However, Hawes (1966) noted that the personal qualities and characteristics of students are factors that the highly selective institutions also take into consideration when evaluating applicants.

Additional studies found no relationship between assessment test scores and academic achievement. Crouse (1985) conducted a longitudinal study on 2,470 persons who had taken the SAT and attended a four year college. He found, for this sample, if college admission was based on a predicted freshman grade-point average of 2.5, predictions based on SAT scores and high school rank would result in 2.7 more correct admission forecasts and 0.1 more correct forecasts of college completion out of each hundred students tested than would predictions based on high school rank alone. The researcher concluded that most colleges could ignore applicants' SAT scores without appreciably altering the accuracy of their admission.
decisions. In a similar study, it was reported that high school academic course grades were better predictors of graduation from a commuter-type college than SAT scores (White, Nylin, & Esser, 1985). Owen (1985) challenges the adequacy of multiple-choice tests, disputes the claim that SAT scores are impervious to coaching, disputes the idea that the SAT measures intelligence, and finds SAT scores of little use in college admission decisions. Ravitch (1983) also concluded that because standardized tests measure only a narrow spectrum of abilities and do not concern themselves with content, overreliance on standardized testing in college admissions process may be dangerous to the integrity of the high school curriculum.

In a Washington College study, the above findings were supported when the SAT scores and high school GPA scores were used to predict freshmen GPA and the findings indicated that SAT had little predictive efficiency (Trusheim and Crouse, 1984).

Other studies reviewed performance based on gender (Clark & Grandy, 1984; Hand & Prather, 1985; Hiss, Woodcock & McGrath, 1985). Hiss et al. (1984) observed that academic rating was a better predictor of college performance for the women than for the men whereas the average of all achievement tests was a better predictor for men than for women. In contrast, Clark and Grandy (1984) indicate that although background characteristics
of SAT test-takers have changed over the past fifteen (15) years and overall scores have generally declined more for women than men, SAT scores remain relatively good predictors of first-year college grades, especially for women. Hand and Prather (1985) report that because high school average had the strongest impact on GPA overall, the black men students' lower weight on this variable appeared to be a more decisive factor than their lowered weight on the SAT verbal variable.

Summary

When tests are used to "screen out" specific students, there are negative racial implications and the participating college loses the potential cultural enrichment that the excluded student might have brought to the campus.

Enrollment of traditional (white) students is declining in this country and the focus of this study is on what variables contribute significantly to the academic achievement of the potential pool of nontraditional (black) students whose retention rate must be increased to sustain our present system of higher education.

The literature in this section indicates that in some studies standardized tests were found to be significant predictors of academic success and in other studies they were not. Also, it was reported that a student's gender,
cultural background, and economic background can have some effect on his/her actual test score. However, the test score by itself may or may not predict the student's academic success.

Remedial Courses

Students emerging from economically deprived backgrounds have identifiable developmental lag. Many students are found to be deficient in range and precision of language and grammar. Articulation and communication are seriously defective. Retention and recall are rooted in the limited experiences of the individual. Students are impoverished in such language-related knowledge as number concepts, self-identity information, and understanding of the physical, geometric, and geographical environments (White, 1984).

A study of colleges and universities providing remedial assistance to students discovered that programs and persons in developmental areas are making positive impacts on heretofore unsuccessful students (Roueche & Snow, 1977). They state that:

The definitions of success are as varied as the definitions of remedial education (the most offered courses were remedial English, remedial reading, and remedial mathematics). The primary underlying goal must be to allow the student to persist in school; in effect, it is to help the student persist so that he/she might have the advantages unavailable to him/her were there outside potential sources of help. The research on student persistence rate is normally reported
in terms of improvements in grade point average, high persistence rate, and the ability to make the transition from remedial to regular academic work without a loss of academic achievement. (p. 39)

This statement of definitions and goals correlates with the underlying argument in the present researcher's study. The argument is that predominantly white colleges need to enroll and retain more black students. The demographics as earlier stated are overwhelming. There are simply more black child births than white child births and the potential pool of black college students outnumbers that of whites. Therefore, this researcher wants to identify and assess variables that positively impact black student academic achievement to enhance the retention of the new pool of black students on white campuses.

Tinto (1975) criticizes intervention programs in higher education and refers to their "Complacent Programming." He concludes that: "Whatever the diagnosis, the means employed to keep the "disadvantaged" in college are quite similar from program to program" (p. 39).

In contrast, Roueche (1977) observed that few colleges reported a clear sense of purpose guiding their programming efforts. "The primary purpose espoused by these institutions was the attempt to remedy a student's academic skill deficiencies and to improve his self-concept" (p. 10).

Historically, remedial courses were non-credit
courses, and students protested spending time in a course for which no credit was allowed. The trend now is to introduce remedial courses with full institutional credit (Monroe, 1972). However, it must be noted that the credit received by a student enrolled in remedial courses is that of institutional credit and is non-transferable unless the two colleges in question have an articulation agreement which states that one institution will accept remedial courses as transfer credit from the other institution. Cross (1976) supports the practice of offering institutional credit for remedial courses and reported:

The major "reward" that education has to offer these students is college credit. Ultimately, all students may come to appreciate the personal satisfaction of learning; until then, new students, more than other students, need the immediate and tangible reward of credit. . . . While college credit for below college-level work may threaten institutional egos, it should not threaten the egos of "educators" whose task it is to help students learn. In any event the trend is toward credit and most of the literature advocates granting credit for remedial or developmental courses. In 1970, less than one-third of the community colleges were granting degree credit for remedial courses; by 1974, 53 percent were granting degree and 32 percent were granting non-degree credit. (p. 44)

Some studies have focused on the relationship between remediation courses and student academic achievement. Behrman, Dark, and Paul (1984) indicated that entering freshmen who completed an eleven (11) week learning-skills course during the Fall 1979 quarter showed a greater improvement by the Spring 1980 quarter than did a control
group in actual cumulative GPA over GPA predicted from academic data at entry. Head and Lindsey (1984) reported that students who passed remedial math before attempting college algebra were more successful. The findings of Abrams and Jernigan (1984) indicate the enrollment in a reading and study skills assistance program and number of tutoring contacts were positively associated with and the best predictors of first-semester college GPA.

Contrary to the above findings Roueche, Baker and Roueche (1985) report that successful completion of developmental courses could not be identified as a factor in subsequent success in regular college courses. The researchers further report that in the two independent studies of community colleges, students were required to do more reading, writing, and computation in developmental basic skills courses than in regular college coursework. Roueche, Baker, and Roueche (1985) noted: "If community colleges are going to be part of the solution to the burgeoning illiteracy problem, more rigorous instruction needs to be implemented across the entire curriculum" (p. 9).

In support of the above findings, Taylor (1983) reports that a holistic approach is regarded as being more encompassing and more effective than remedial type programs. However, developmental/remedial efforts reflect a continuum of organizational structures. Roueche and Snow
(1977) conducted a national survey of developmental/remedial programs and describe the continuum as follows:

1. The addition of isolated developmental courses in disciplined curricula; that is, adding developmental reading to the list of approved courses in English. Community colleges = 34%; senior college = 32%

2. Working with an interdisciplinary group of instructors who remain attached to their disciplines organizationally, and who coordinate with instructors from other disciplines and with counselors assigned to compensatory students. Community colleges = 18%; senior colleges = 11%

3. Establishment of a division or department of developmental studies which plans, coordinates, and allocates funds for instruction, counseling and other support services. Community colleges = 30%; senior colleges = 24%.

4. Others. Community colleges = 30%; senior colleges = 24%. Those organizational structures listed under the category of "other" included: (1) a combination of the three types, (2) development of core disciplinary courses in the occupational and continuing education framework, (3) decentralization of the developmental/remedial courses to fit into sequential design of the departmental offerings, and (4) the offer of tutoring and individual help to all students through a learning assistance center. (p. 21)

Hodgkinson (1985) reports that eighty percent (80% of all colleges now report offering "remediation" courses and programs for entry level students.

Summary

Remediation programs with courses in reading, English, mathematics, and personal development have been offered at colleges across most of this country. These
programs have been extensively documented and most have been extremely successful in improving the academic success of black students on white campuses. However, there still seems to be much inconsistency and confusion about which models work best and in what settings.

Models that emphasize what is most effective for the individual student seem to reoccur throughout the literature. These models tend to stress the need to have top institutional administrative and faculty support. Also, there must be a clear understanding and open communication about the purposes and goals of the program throughout the institution.

Demographic Predictors of Academic Success

Sex

Sex differences have been used as a predictor of academic success in previous studies. Fleming (1984) found that black males in white colleges display academic demotivation and think less of their abilities. Fleming (1984) also found that black women in white schools are able to get more out of the academic experience than their black male counterparts. On the other hand, Sueizle and Bradly (1978) concluded that race and sex differences are insignificant among high achievers. A study about the selection of students with and without regard to race and sex concluded that if traditional predictors are employed,
optimum validity is achieved by separate equations or cutoff scores for each race-sex subgroup. Pedrini and Pedrini (1973) also found that a person's sex is a criterion for predicting academic success. There seems to be a strong (although unsubstantiated in many instances) belief that black females tend to be more academically successful than black males in college. Therefore, the following study is of importance to any serious review of black male and female academic success.

Gurin and Epps (1975) challenged accepted views about a black female advantage over black males. They reported that the relative and absolute disadvantage of females was consistent in the following ways:

1. Women's goals were lower on all measures of educational and occupational aspirations.

2. Males were more likely to be influenced in their goals and aspirations by the college they attend.

3. Women were more likely to aspire to jobs in the "female sector" of the economy, jobs that required less ability and effort while providing lower prestige.

4. Males were three times more likely to plan to pursue the Ph.D. degree.

Other studies support the academic hypothesis that black males have an advantage over black females.

Smith and Allen (1984) reported that analysis of a national sample of over 700 undergraduate students
revealed that black males were more likely than black females to have both high aspirations and good grades. Also, when black males and black females with comparable achievement levels were compared, the males consistently reported higher post-graduate aspirations. A recent study by Thomas (1984a) showed gender to be the strongest predictor of college major choice for black students in white colleges and black public colleges. Black males on black campuses, who have high occupational aspirations, tended to major in the biological, technical and natural sciences. However, black students on white campuses, regardless of gender, were significantly less likely to major in the biological, technical and natural sciences.

Other studies conclude that males drop out more early in their studies and females drop out more at later periods. A report by Ramist (1981) indicates that:

Men are more likely to drop out during their undergraduate years, but are more likely to return and eventually graduate. Therefore, studies of dropouts during the freshman year are more likely to show that males have higher dropout rates, and long-term follow-up studies are more likely to show that females have higher dropout rates. In the College Board's Admissions Testing Program Summary Reporting Service (ATP-SRS), colleges that identify which of their enrolling freshmen persist through the freshman year receive profiles that can be used to examine the characteristics of freshman-year dropouts. In the approximately 300 colleges receiving this information, males consistently have a higher freshman-year dropout rate by about two percentage points, even after controlling for academic ability of the students and size and academic level of the colleges. Also, in the ten year follow-up study reported
in El-Khawas and Bisconti (1974), females show a much higher four-year graduation rate, by about ten percentage points. However, ten years after college entry, males have a higher graduation rate by about five percentage points! (p. 8)

On the other hand, females in four-year colleges are more likely to transfer to another college (Bayer, Royer & Webb, 1973; Cope & Hannah, 1975; Timmons, 1978). Therefore, studies of dropouts from individual colleges that count transfers as dropouts are likely to show a higher dropout rate for females than studies that do not count transfers as dropouts. In addition, men are more likely to transfer from a two-year college to a four-year college (Bayer et al., 1973).

Women tend to leave for nonscholastic reasons, and men are more likely to be academic dropouts (Pantages & Creedon, 1978; Spady, 1970; Tinto, 1975). Therefore, studies that focus only on voluntary withdrawals show women with higher dropout rates than studies that make no distribution between voluntary and involuntary withdrawals. According to Astin (1975), men are more likely to dropout of large, nonselective universities and women are more likely to dropout when the ratio of men to women is high (Astin, 1977; Cope, Pailthrop, Trapp, Skaling & Hewitt, 1971).

Summary

The literature is conflicting about whether black
females drop out more or black males drop out more. What seems to be clear is that black females and black males tend to drop out for different reasons. Black females tend to drop out for such reasons as marriage, college transfer, and childbirth; whereas, black males tend to drop out for academic reasons.

Although some studies report that black females are more academically successful during the first year of college, the research indicates that black males, over the long term, tend to persist in college more than black females.

On the other hand, one needs only to observe the countless examples of sexual discrimination experienced by females in a country that is dominated by men to understand why men tend to persist more than women. Black males mirror the dominant cultural values of male supremacy in this country. Therefore, it is no wonder that entry level college females tend to have higher academic and career aspirations than those held by females at and near college graduation who have undergone continual discrimination and become discouraged.

Major

There is an opinion concerning college major which indicates that different races have different predispositions toward different disciplines. This view may give
some insight to the relationship between race and college major. According to Young (1983):

In higher education, the fact that white culture emphasizes intellectualism and the scientific disciplines, while blacks are predisposed toward the humanities, works against blacks' success in science and other technical fields that the present society values. In order to increase black participation in these areas, colleges must focus on (1) selecting black students who can adjust to the college's social system, (2) developing goal-oriented behaviors among blacks that stress scientific and intellectual pursuits, (3) emphasizing that minority and dominant value systems can coexist, (4) providing social and psychological support for blacks, and (5) allowing for differences in students' learning styles. (p. 5)

This trend is supported by Williams and Kent (1982) in a nine-year study that investigated four disadvantaged minority/ethnic groups. Researchers reported a significant number of the students who enrolled and completed four year and graduate degrees to have majored in the humanities and education.

Other researchers report that vocational interest inventories often reveal stronger preference among blacks for social "people-oriented" occupations (Doughtie, et al., 1976; Hager & Elton, 1971; Kimball, Sedlacek, & Brooks, 1973). Bayer and Boruch (1969) and El-Khawas & Bisconti (1974) also report that black undergraduates more often major in social service and education and less often in natural science and engineering than do whites. On the other hand, Holland (1973) has shown that people choose careers in types of work that are compatible with their
personalities. Individuals with high personality needs for working with other people rather than things or ideas tend to select careers in social occupations. In contrast, individuals with a strong inclination to work with ideas often select careers in technical, non-people-oriented fields.

According to another view, individual career choices are often heavily influenced by extensive and/or intensive exposure to attractive and visible adult (career) role models (Sewell, Hailes & Ohlendorf, 1970; Wallace, 1976). The family is thus believed to play a major role in the vocational choice process (Grandy & Stahman, 1974). Research on whether offspring tend to enter the same occupations as their parents has generally been limited to father-son relationships and has failed to demonstrate strong associations (Crites, 1969). The research, however, does seem to indicate a stronger relationship between white father-son career choices than black father-son career choices. This conclusion may be due to the fact that there are more professional white male fathers than professional black male fathers. Therefore, when black sons aspire to complete college, they must of necessity select role models other than their nonprofessional black fathers.

Thomas (1984a) reports that sex-role orientation and early educational and occupational aspirations and
expectations play a very important role in the choice of a college major for black students. High school mathematics performance and enrollment in advanced high school mathematics were positively related to majoring in the natural and technical sciences for black women only. However, variables that have been found to be determinants of career choices of white students, such as parental and teacher influence, exposure to role models, parental income, or high school curriculum, were of little influence for black students.

In another study, Thomas (1984b) revealed that students' educational expectations, type of college attended, and their affinity for high school mathematics were important predictors of college major choice. However, major choice was unaffected by race, parental income, and student occupational expectations. This trend was not supported by Moore (1983) who found that black students who made a nontraditional career choice more often cited teachers, counselors, and family members as primary career influencers whereas the traditional students more often cited self.

Summary

The literature consistently indicates some relationships between race and type of career choice. Black students tend to major in people oriented type careers and
white students tend to major in technical and scientific type careers. In the opinion of this writer, black students should be encouraged to keep their people centered orientation and add to it scientific and technical knowledge. One of the major concerns expressed by business and industry leaders today is that too many of the new college graduates are heavy in technical skills and weak in communication and "people-oriented" skills.

On the other hand, the lack of a sufficient number of black professional role models strains the need for inward motivation while many young black males and females are attempting to relate with and choose a career that is appropriate for themselves.

Residential Experience

There are conflicting studies with respect to the relationship between residential experience and academic success. Stark (1965) compared male and female residence-hall and commuter freshman students and found that commuters had a significantly greater number of problems than residence-hall students and lower scores on the Cooperative English Test-Reading Comprehension (Coop): Vocabulary. Smith and Allen (1984) found that non Southern dwelling black students exhibited some increased tendency over all others to fall into the high-performing/high-aspiring group. In other words, the national survey
indicated that black students living on campus at predominantly white colleges in the north have higher academic success than black students living on campus at predominantly black colleges in the south. However, the results may reflect the added social life for southern blacks living on campus. The study does not address the possibility that blacks living on predominantly black campuses in the south may have a tendency to put less emphasis on academic achievement because they have more social involvement on campus than blacks in the north on predominantly white campuses. Contrary to these findings, Brothers and Hutch (1971) report that it is not possible to reach any firm conclusions about the effects of residence on academic performance. Hubbard (1974) found that participation in a residential college program has little or no effect upon academic achievement of college freshmen.

In a conflicting study, Pascarella (1984) reports that the on-campus students and the commuter students differed on all seven background characteristics that were examined: High school grades, involvement in high school extracurricular activities, gender, academic aptitude, parental education, degree aspirations, and institutional commitment. Students living on-campus were more likely to be women and to have higher ratings on the six other characteristics than the off-campus students.
Summerski's (1962) review of the literature and the report by Gurin, Newcomb, and Cape, (1968) indicate that withdrawals more frequently occur among students coming from rural areas or small towns and from smaller high schools. However, regarding distance to college, Iffert (1958) stated: "Location of a students' home in relation to college had no bearing on his/her chances of graduation" (p. 74). In contrast, Mehra (1973), and Wood (1963) found greater distance from college related to higher withdrawal rates. Students often gave as their reasons for transferring to another college a desire to be closer to home. Spady (1970) noted that students transferred back to public universities in their home communities because the person-environment fit was better and because they wanted to achieve better grades for the same amount of work.

Iffert (1958) and Astin (1975) also speak to the relationship between dropping out and living in college residence halls. They found that students residing on campus have significantly better persistence records than students who live with parents, relatives, friends, or in private residences. Chickering (1974), although he did not indicate the effect of commuting on college attendance, did find that the beneficial impact of college on the commuter was less than on the student living in a residence hall.
A more recent study by Hall (1985) indicates that residence was unrelated to persistence for low SES men, but for low SES women, dormitory residence was negatively related to persistence whereas residence with parents was positively related to persistence. However, in a study that compared 1,302 students who had lived in residence halls and 740 non-residence-hall students the residence-hall students had higher GPA's than did the non-residence-hall students (Nowack & Hanson, 1985). The researchers also indicated that within the residence halls, the men and women did not differ in GPA, but outside the residence halls, the women had higher GPA's than did the men.

In an earlier study, Astin (1975) concluded that living in a dormitory rather than at home is the most important environmental characteristic associated with college persistence during the freshman year.

Contrary to the above findings, Pugh and Chamberlain (1976) compared undergraduate residence-hall students, students living at fraternities and sororities, and students with off-campus housing and found no differences with respect to student achievement. Selby and Weston (1978) also found no significant difference in GPA when they compared freshmen living in residence halls with those living in university apartments. Closely related to this study, Dressel and Nisula (1966) and Herman (1978) did not find a significant relationship between residency
and attrition. According to Garni (1979), commuter students do not appear to be particularly vulnerable to academic attrition.

Summary

The literature is simply nonconclusive about the relationship between academic success and living on or off campus or the relationship between living near or far. Therefore, it could be assumed that the mix between the specific campus environment and specific student will determine what the relationship will be between the student, environment, and academic success.

Location of High School Attended

Moody (1985) reports that, in Michigan, most black public school students tend to cluster in relatively few of the state's 575 school districts and that ninety-four percent of all black students are enrolled in some thirty school districts. Although there is no specific research in the literature about predicting academic success by location of high school attended, one of the assumptions of this study is that there will be a significant correlation between high school attended and academic success.

Hodgkinson (1985) reports that almost everyone who works in education perceives it as a set of discrete institutions working in isolation from each other. He
assumes that if people could begin to see the educational system (kindergarten through graduate school) as a single entity through which people move, they might begin to behave as if all of education were related.

Therefore, the problems of transferring from an inadequate high school system to a two year or four year college/university result in the contradiction of the "high risk" student being treated as an "equal" (Green, 1969). A questionnaire revealed that out of 127 black Michigan State University students surveyed, forty-five percent felt that their high schools had not adequately prepared them for college while twenty-nine percent responded favorably (Green, 1969).

Since colleges must look toward the available pool of potential college students, it is important to know something about that potential pool.

According to the 1980 United States Census Report, the cities in the state of Michigan with the highest percentages of persons eighteen to twenty-four years old who are high school graduates are Ann Arbor 90 percent, Lansing 89.9 percent, Kalamazoo city 88.6 percent, and Southfield city 85.3 percent. Cities with the lowest percentages are Port Huron 73.1 percent, Benton Harbor 71.3 percent, Saginaw city 66.6 percent, and Pontiac city 64.7 percent.

In a recent draft (Cain, 1986) of the State of
Michigan, Department of Education School Racial-Ethnic Census (1974-1984), the following was reported:

1. Total students have decreased by 491,945 or 23.4 percent.

2. Black students have decreased by 8,044 or 2.7 percent.

3. Nearly four out of every ten minority students in Michigan attend a school which is predominantly minority (95 percent or greater).

4. Nine districts have buildings where black students comprise 95 percent or more of the population. In contrast, three of these same districts also have buildings where there are fewer than five percent black students.

5. In 1984-85, there were fourteen districts where the black student population exceeded fifty percent.

6. In terms of both number and percent of students lost or gained during the period from 1974 to 1984, the only gains were by American Indians who increased by 3,765 or 35.6, and Asian Americans who increased by 8,663 or 148.1 percent. Obviously, the influx of Asian immigrants into this country accounts for the large increase of that group in the student population. (p. 102)

According to Moody (1985), black students enrolled in public schools in Michigan are disproportionately over-represented in basic and low level classes. Conversely, they are disproportionately underrepresented in the advanced placement, accelerated, and classes for the gifted.

Summary

The majority of the black public high school students in Michigan are enrolled in thirty of the state's school
districts. From 1974 to 1984, the majority of black Michigan high school students attended a predominantly minority high school. The data seem to say that the state of Michigan has two different public school systems—one white and one black. Many of the districts that have large populations of black students have most of the black students housed in the same buildings. However, in the same districts most of the white students are housed in buildings that are predominantly white with only a few black students.

The Michigan Department of Education reported that the overall black public school enrollment decreased slightly; however, the number of black high school graduates increased. The literature reviewed seemed to suggest that although there is a significant annual pool of potential black college students, many may have problems adjusting to a predominantly white college environment. Therefore, this study is important because it focuses on variables that potentially can be used to enhance the academic success of black students enrolled at predominantly white colleges.

Socioeconomic

Ramist (1981) indicates that freshmen year dropout rates are about the same for all income levels except that the very lowest levels, below $9,000, exhibit somewhat
higher dropout rates. Astin (1975) in an earlier study reports similar results in that the four-year dropout rate decreases as income increases among all income levels. However, the researcher also reported that the inclusion of income in a regression analysis with parental education, student ability, and motivation failed to add anything over and above the contribution of the other variables.

Some studies have focused on parental education and/or father's occupation as socioeconomic variables. Pantages and Creedon (1978) concluded that parental education does not appear to be a major factor; however, the preponderance of evidence is that it is (Astin, 1975; Fetter, 1977). The researchers indicate that the student from an educated family is more likely to value higher education, even after controlling for the effects of other variables.

An earlier supportive study by Medsker (1968) looking at fathers' educational level and profession reports that some students give lower dropout rates for fathers with professional occupational levels. However, the dropout rate differences among occupational levels disappear when high school performance is controlled (Summerskill, 1962). The research tends to support the literature's emphasis on high school performance and academic achievement.

On the other hand, in a report by Astin and Cross
Parents' education and income are important correlates of a student's educational progress and attainment. To succeed, the student should receive both emotional and financial support from his/her parents. As is well known, underrepresented minorities are generally disadvantaged with respect to parents' formal education and income. For instance, in our sample, over forty percent of the fathers of black students had less than a high school education, while only about thirteen percent of the fathers of white students were not high school graduates. By the same token, about fifteen percent of the black students' fathers had a baccalaureate or higher degree, compared with about forty-five percent of the white students' fathers. There were, however, some interesting differences between blacks attending black institutions and those at white colleges in that the former tended to have somewhat better educated fathers than the latter. Although the fathers of white women had about the same education as the white men, black women tended to have somewhat less educated fathers than did black men. (p. 36)

The data with respect to mother's education were similar. The researchers further state:

The mothers of black women tended to be somewhat less educated than the mothers of black men. In addition, the mothers of black men and women attending black schools tended to be better educated than the mothers of blacks at white institutions. The mothers of both sexes were in general better educated than the fathers. . . . Black women tended to come from poorer families than did black men. The parental income level of blacks at black institutions, however, was similar to that of blacks at white institutions. For example, thirty-seven percent of black men in black institutions reported parental incomes of $6,000 or less and fourteen percent reported incomes of $20,000 or more. The comparable figures for black men at white colleges were thirty-six percent and fifteen percent respectively. (p. 38)
Contrary to the above findings, Donovan (1984) found that college experiences were more important than were background variables in determining persistence. Badu and Butler (1985) determined that variables such as parental education, income, and occupation did not predict student academic achievement. Blumberg (1984) also concluded that socioeconomic status had no effect and social support only a minor effect on academic achievement. Hoyt (1978) determined that the correlations were low when comparing academic achievement and SES and that the reasons for the correlations were unexplained.

**Summary**

The evidence does not seem to indicate that parental education is a major factor in predicting college academic success when high school performance is controlled. This does not mean that other family demographics are not significant. For instance, it is clear that as the family income decreases the student dropout rate tends to increase. Also, types of college attended may be associated with parental education.

Black students at predominantly black colleges tend to have parents with more formal education than do black students attending predominantly white colleges.

Overall, it may be concluded that SES has no more effect on black students than does high school performance.
Private Business Colleges

There are a limited number of predictor studies of academic success at private business colleges. However, Lein (1970) studied factors related to predicting academic success of students attending the National College of Business and found that high school grades were the best predictor of NCB GPA's. Karp (1966) studied the relationship of selected variable factors to the academic success of private business students and also reported that high school grades were the best predictor of academic success.

The study focused on all of the students enrolled at a large midwestern private business college from 1958 to 1964 and the significant findings are listed as follows:

1. The 1,250 students in this seven-year study came from approximately 208 high schools. Their average age was 19.67 years. Between 80 and 85 percent entered private business school directly upon graduation from high school.

2. Approximately three-fourths of the students in this study were enrolled in a non-business program in high school.

3. The mean grade reading level of entering students was the 12.46 grade level. About three-fourths of entering students were reading at or above the 12th grade.
level.

4. The intelligence quotients of the top quarter of the students in this study ranged from 113 to 143. The division by sex was nearly equal.

5. Fifteen percent of the students in this study had completed from one to eight semesters of college work. The most commonly completed term of college was two semesters.

6. The most important academic predictor in this study was high school rank. An $r$ of positive .5687 was derived when high school rank was correlated against first-year grade averages.

7. There was predictive value when seven selected independent variables were used to predict first-year academic success. With seven variables, a multiple correlation $r$ of positive .63 and an $r^2$ multiple coefficient of determination of 39.69 percent resulted.

8. There was nearly as much predictive value when the top three of the seven selected variables were used to predict first-year academic success. The three variables consisting of high school rank, Verbal Reasoning and Iowa Standard Reading scores yielded a multiple correlation of $r$ of positive .61 and an $r^2$ multiple coefficient of determination of 37 percent.

9. When the step-wise regression technique correlated all 14 variables against first-year average grades,
the top three predictors were high school rank, Verbal Reasoning, and Clerical Speed and Accuracy. These three variables yielded a multiple correlation \( r \) of positive .66 and an \( r^2 \) multiple coefficient of determination of 44 percent.

Schneider (1982) studied predictors of attrition at a private business college and reports a higher attrition rate among blacks than whites. The study indicates that black students at a private business college had a higher dropout rate than white students; however, the following study further indicates that black students’ dropout rate at business colleges is lower than that at traditional colleges. The attrition rate at traditional four year colleges was found to be higher over four years than the rate at two and four year business colleges (Talley, 1977).

College student attrition is becoming an important issue in private business colleges primarily because most of the emphasis in the past has been placed on recruitment of students and very little on retention (Schneider, 1982). Because of their open admissions policy, private business colleges accept many students who are poorly prepared in the basics of communication and mathematics (Hargrove, 1979). There are sixteen four-year business colleges, sixty-five junior colleges, and 437 business schools in the United States which are accredited by the
Association of Independent Colleges and Schools (AICS) with an estimated enrollment of 350,000 students (Schneider, 1982). Private business colleges are sometimes referred to as nontraditional postsecondary institutions. However, only half of the number of persons who attend a traditional college complete a program of study (Talley, 1982).

In an earlier study, Talley (1978) reported that close to seventy percent of independent school students either completed their programs of study or left before completion in order to accept a position in the desired field.

In a similar study, Erikson, Feldman, and Grant (1972) found a completion rate among proprietary schools that approached ninety percent. The researcher further states: "It was concluded that proprietary schools are more accountable to employers than traditional institutions; . . . they are market-driven" (p. 18).

Wilms (1973) concluded that proprietary schools can serve high school and college dropouts and minorities who were able students but for a variety of reasons were not able to function efficiently in a traditional institution.

According to the 1984-85 Hegis Fall Enrollment Reports, the Independent Colleges in Michigan had an increase of 881 students (72,798 to 73,679) or 1.21 percent.
Summary

Although the limited number of predictor studies report that the private business college dropout rate is lower than traditional colleges, this researcher believes that an open enrollment policy and lack of adequate remediation programs at many business colleges tend to program many black students for academic failure. It was reported that high school performance is a strong predictor of academic success. The literature supports the same conclusion for black student high school performance and academic success.

Business colleges offer a very specialized curriculum for their students. Basic general education courses with few required liberal arts courses are typical of most curriculums. The curriculum emphasizes the technical skills and theory needed for practical application in the office and business world in general. Therefore, if there is a lower drop out rate for blacks at business schools, it may be due to the difference between the business school's and traditional college's curriculum demand.

Community Colleges and Four Year Universities

Most universities are relatively selective in their admission standards; however, community colleges have open admissions policies and are generally over represented by minority students. Richardson (1985) has observed:
Despite the increased proportion of minority students in high school graduating classes, many urban universities are finding a declining percentage of minorities among their student bodies. Those who attend graduate at about half the rate of their non-minority counterparts.

Urban universities and community colleges both offer extensive remedial work, but there is at least tacit recognition that seriously deficient students have a better chance in the community college, with its wider range of course offerings, more flexible time requirements, greater commitment to working with the underprepared, and a generally more supportive environment. (p. 48-49)

Studies by Astin (1975; 1977) and Howard University researchers (Institute for the Study of Educational Policy, 1976) indicate that black students are disproportionately overrepresented in two-year colleges and underrepresented in major four-year colleges and universities. However, Gittel (1985) reports that the community-based colleges (two-year colleges) provide an important educational option for an important population, and their role in American higher education should be encouraged and defended. She further notes that:

Community-based colleges, which have emerged over the last fifteen years to serve primarily low-income adults who generally have been excluded from the mainstream of American social, economic, and political life, are the latest example of educational institutions specifically designed to reach those left out of the traditional educational experience. (p. 51)

Publicly supported junior colleges, which originated in this country, began calling themselves community colleges when they added community services to their original
transfer, occupational, and post high school terminal programs (Cohen, 1984). The researcher further reports that:

Although sizable numbers of students complete occupational programs, most of the enrollees are engaged in nonsequential activities that fall within the definition of community education. Transfer education must remain a core of the community college program or community colleges will move ever closer to the educational system's periphery. (p. 41-42)

On the other hand, Richardson (1985) reports that both urban universities and community colleges offer extensive remedial work. The researcher also reports that:

A cooperative study funded by the Ford Foundation currently in progress is intended to improve baccalaureate opportunities for urban students by identifying state or institutional policies that contribute to or impede effective transfer. Transfer students who spend the equivalent of two years in a community college and who complete a coherent program comparable to the first two years of a university program perform nearly as well as native students and graduate at comparable rates. Despite demographic pressures, most of the universities participating in The Ford project have remained relatively selective in comparison to their community college counterparts. (p. 46-47)

According to Vaughan (1984) the enrollment of academically weak students in the community college enabled four-year institutions to remain selective while subscribing to the popular liberal philosophy of universal higher education.

A 1984 Michigan Department of Education study focuses on the enrollment patterns of black students attending
two-year, four-year, and independent colleges.

In 1984, there were 16,202 blacks attending Michigan four-year colleges and universities. More specifically there were 6,066 males and 10,136 females. Their percentages of the total enrollment in Michigan four-year colleges and universities were 2.68 and 4.48, respectively. The black student enrollment in Michigan two-year public colleges in 1984 was 7,674 men and 12,947 women or 3.74 and 6.31 percent, respectively. Michigan independent colleges and universities in 1984 enrolled 2,746 black men and 5,807 black women. These percentages of the total enrollment in independent colleges and universities were 3.77 and 7.98 percent, respectively, (Moody, 1985). In 1984, Wayne State University, Eastern Michigan University, and Michigan State University enrolled 63.8 percent of all the black students enrolled in Michigan four-year colleges and universities. An examination of black enrollment figures at two-year public colleges reveals that five colleges—C. S. Mott, Highland Park, Lansing, Oakland, and Wayne County Community College—enrolled 69.2 percent of all the black students enrolled in such institutions. Seven Michigan independent colleges and universities enrolled 64.2 percent of all black students enrolled in independent colleges in Michigan (Moody, 1985). These data reflect both the access and transfer dimension of black student enrollment in Michigan Colleges.
In an undergraduate survey of black undergraduate students attending predominantly white, state-supported universities, the average reported college grade-point average was a full point lower than the students' high school average (Allen, Bobo & Fleuranges, 1984).

Summary

Most of the black college students are enrolled in junior and community colleges. However, a closer look at the data indicates that not only do many of these students not graduate and transfer to four year colleges, many of them are enrolled at junior and community colleges in nonsequential activities that fall within the definition of community education.

Four year colleges tend to be more selective than community colleges and many do not have an open enrollment policy.

This study is important because it focuses on the unique cross section of environments that black students enrolled in predominantly white colleges must cope with today. This study investigates how black students fair in a private two year college, a public two year college, and a four year public university.

The results from this study should be of interest to educators and others who are trying to develop and enhance cross-college articulation agreements and programs.
CHAPTER III

RESEARCH PROCEDURES

Introduction

This study is designed to determine if the proposed cognitive and demographic variables are related to black student academic success. Cognitive variables are high school GPA and college assessment tests. Demographic variables include sex, curriculum, residential experience, location of high school attended, remediation course(s) taken, and type of college attended. Multiple regression analysis was used to determine which variables contributed to the prediction of academic success.

Another intention of this study was to develop a retention model for black students enrolled in predominately white colleges. Finally, this study sought to determine whether cognitive or demographic variables are better predictors of academic achievement.

Research Hypotheses

The review of the literature has established a theoretical framework for this study. The contradictions in the literature about the proposed cognitive and demographic variables support the need for further research in
the area of this study. Based on the assumption that there is a relationship between cognitive variables, demographic variables and academic success, the following research hypotheses will be tested:

**Hypothesis 1:** There is a relationship between high school GPA and academic success.

**Hypothesis 2:** There is a relationship between college assessment tests and academic success.

**Hypothesis 3:** There is a relationship between sex and academic success.

**Hypothesis 4:** There is a relationship between type of curriculum enrolled in and academic success.

**Hypothesis 5:** There is a relationship between remedial course(s) taken and academic success.

**Hypothesis 6:** There is a relationship between residential experience and academic success.

**Hypothesis 7:** There is a relationship between location of high school attended and academic success.

**Hypothesis 8:** There is a relationship between type of college attended and academic success.

This chapter includes a description of the methods and procedures used in the study in order to answer the research questions indicated above.
Research Design and Methodology

The Research Sample

The total new black student enrollment for fall 1983 and fall 1984 was 728 for Grand Rapids J.C., 448 for Western Michigan University, and 84 for Davenport College or a combined total of 1,260 black students. The total population of 84 black students from Davenport College were part of the initial sample which included 100 black students from Grand Rapids J.C. and 100 black students from Western Michigan University. Students from Grand Rapids and Western were selected by random sample (without replacement). However, of the total sample of 284 students, eighteen (18) cases were unusable and the final sample, therefore, consisted of 266 black students, as can be seen in Table 3.

Design and Procedure

An ex post facto research design was used for this study (Campbell & Stanley, 1966). The dependent variable, representing academic success, was the students' cumulative college grade point average. The dependent cognitive variable and the independent cognitive and demographic variable will be transferred from the students' individual records to a form that lists the various headings for the
### Table 3
Description of Sample by Type of College and Sex

<table>
<thead>
<tr>
<th>College</th>
<th>Sex 1983</th>
<th>Sex 1984</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davenport College</td>
<td>8M</td>
<td>5M</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>34F</td>
<td>21F</td>
<td></td>
</tr>
<tr>
<td>Grand Rapids Junior</td>
<td>25M</td>
<td>27M</td>
<td>98</td>
</tr>
<tr>
<td>College</td>
<td>23F</td>
<td>23F</td>
<td></td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>21M</td>
<td>16M</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>29F</td>
<td>34F</td>
<td></td>
</tr>
</tbody>
</table>

| Total                     | 140      | 126      | *266  |

*Note: By the end of the fall 1985 term, thirty-one of the above described students had a .00 or zero cumulative grade point average (D.C.=6, GRJC=21, WMU=4).

stated variables. A sample copy of the form used can be found in Appendix A. The independent cognitive and demographic variables and categories used in this study are presented in Table 4 and Table 5, respectively.

### Table 4
Cognitive Variables and Categories

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category(ies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School GPA</td>
<td>Cumulative Grades</td>
</tr>
<tr>
<td>Assessment Test Scores</td>
<td>Reading (Verbal)</td>
</tr>
<tr>
<td></td>
<td>Math</td>
</tr>
</tbody>
</table>
Table 5  
Demographic Variables and Categories

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>Residential Experience</td>
<td>Dormitory</td>
</tr>
<tr>
<td></td>
<td>Commuter</td>
</tr>
<tr>
<td>College</td>
<td>Davenport College</td>
</tr>
<tr>
<td></td>
<td>Grand Rapids Junior</td>
</tr>
<tr>
<td></td>
<td>Western Michigan University</td>
</tr>
<tr>
<td>High School Location</td>
<td>AE - Adult Education</td>
</tr>
<tr>
<td></td>
<td>B - District over 50% Black</td>
</tr>
<tr>
<td></td>
<td>LTB - District less than 30% Black</td>
</tr>
<tr>
<td></td>
<td>OTB - District over 30% Black</td>
</tr>
<tr>
<td></td>
<td>OOT - Out of State</td>
</tr>
<tr>
<td></td>
<td>U - Unknown</td>
</tr>
<tr>
<td>Remediation Course(s)</td>
<td>Reading</td>
</tr>
<tr>
<td>Taken</td>
<td>Math</td>
</tr>
<tr>
<td>Curriculum</td>
<td>A - Fine Arts</td>
</tr>
<tr>
<td></td>
<td>B - Business</td>
</tr>
<tr>
<td></td>
<td>E - Education</td>
</tr>
<tr>
<td></td>
<td>H - Health</td>
</tr>
</tbody>
</table>

Data Analysis

The Statistical Analysis System (SAS) (Version 5 Ed. SAS Institute Inc., Cary, N.C. 1985) was used for the analysis procedures. Facilities at the Western Michigan University Math Lab were used to analyze the data.

Multiple regression analyses were used to test the stated hypotheses. The results are reported at the .05 level of significance.
The null hypothesis tested is that "the cognitive and demographic variables are statistically independent from academic success."

When the null hypothesis is rejected, it means that there is a correlational relationship between variables. It is important to remember that a correlational relationship between variables does not imply any causality between them (Leedy, 1980).
CHAPTER IV

RESULTS AND DATA ANALYSIS

Introduction

The data for this study, consisting of reported assessment scores, grade point averages, and demographic factors, were analyzed using multiple regression techniques and alpha was set at the .05 level.

Analysis of variance (ANOVA) was used to test the null hypothesis about several means. If t-tests had been used to test all the possible pairs of two means, the type I error rate (rejecting a true hypothesis) would have increased dramatically. However, t-tests were used to compare some coefficients, and the acceptance or rejection of the null hypothesis was based on the calculated t-score.

The ANOVA techniques were used to test the null hypothesis (all means are equal) against the alternative hypothesis (at least one value is different) with a specific alpha (Hinkle, Wiersma, & Jurs, 1979). The null hypothesis will be rejected if the data show that one or more of the means are significantly different from the others. The decision to reject Ho or fail to reject Ho was made by using the F-distribution and the F-test statistic.
The Statistical Analysis System (SAS) (Version five Ed. SAS Institute Inc., Cary, N.C. 1985) was used throughout this study to generate most of the statistics.

Because of the high correlation between verbal assessment and math assessment for Davenport College and Western Michigan University, multicollinearity (overlapping variance) was suspected. Simultaneous tests on regression coefficients was performed and the F-statistic was calculated.

**Results**

In this section the research and null hypotheses are first stated, and then tables and discussion are presented to support the results indicated.

**Hypothesis 1**: A relationship exists between high school GPA and academic success.

The estimate of the slope coefficient for cumulative college grade point average (CCGPA or academic success) regressed on HSGPA (controlling for the other variables, using all three schools) is .540 with an estimated standard error of .120.

\[
t - \text{test of } H_0: \quad H_0: \text{The true coefficient is zero} \\
H_a: \text{The true coefficient is not zero} \\
t = 4.49, \quad \text{PR} > \text{TI} \text{ is .0001}
\]

Therefore, reject \( H_0 \) in favor of \( H_a \) and conclude that
a relationship does exist.

When looking at individual schools, Davenport College's $P = .0001$ and Western Michigan Universities $P$ value $= .046$ are significance at the .05 level. However, Grand Rapids Junior College's $P$ value $= .717$ is definitely not significant. The three schools are presented in Table 6.

Table 6
High School GPA Variable

| School         | Estimate | Estimated Standard Error | T Calc | PR>|ITI |
|----------------|----------|--------------------------|--------|------|
| Davenport      | 1.176    | 2.59                     | 4.53   | .0001** |
| Western        | .340     | 1.67                     | 2.03   | .046*  |
| Grand Rapids   | .078     | 2.15                     | .36    | .717   |

*P $= .05$
**P $= .001$

The combination of cognitive and demographic variables, using schools together, is presented in Table 7. However, it must be noted that because of the lack of available assessment test data at Grand Rapids Junior College, assessment correlations were limited to comparisons between Davenport College and Western Michigan University. Therefore, the assessment variable is not included in the following table.
Table 7
ANOVA Table All Variables All Schools

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>PR&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSGPA</td>
<td>1</td>
<td>14.818</td>
<td>14.818</td>
<td>20.15</td>
<td>.0001**</td>
</tr>
<tr>
<td>DOE</td>
<td>1</td>
<td>.040</td>
<td>.040</td>
<td>.06</td>
<td>.8143</td>
</tr>
<tr>
<td>SEX</td>
<td>1</td>
<td>3.728</td>
<td>3.728</td>
<td>5.07</td>
<td>.0254*</td>
</tr>
<tr>
<td>CURRIC</td>
<td>3</td>
<td>9.291</td>
<td>3.097</td>
<td>4.21</td>
<td>.0065**</td>
</tr>
<tr>
<td>RESEXP</td>
<td>1</td>
<td>.386</td>
<td>.386</td>
<td>.53</td>
<td>.4691</td>
</tr>
<tr>
<td>HSLOC</td>
<td>5</td>
<td>7.011</td>
<td>1.402</td>
<td>1.91</td>
<td>.0947</td>
</tr>
<tr>
<td>COLLEGE</td>
<td>2</td>
<td>2.167</td>
<td>1.084</td>
<td>1.47</td>
<td>.2316</td>
</tr>
<tr>
<td>CURRIC COLLEGE</td>
<td>3</td>
<td>5.832</td>
<td>1.944</td>
<td>2.64</td>
<td>.0504</td>
</tr>
<tr>
<td>R REMEDL</td>
<td>1</td>
<td>.054</td>
<td>.054</td>
<td>.07</td>
<td>.7852</td>
</tr>
<tr>
<td>M REMEDL</td>
<td>1</td>
<td>2.829</td>
<td>2.829</td>
<td>3.85</td>
<td>.0512</td>
</tr>
<tr>
<td>ERROR</td>
<td>201</td>
<td>147.807</td>
<td>.735</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL ERROR</td>
<td>220</td>
<td>207.708</td>
<td>.944</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P < .05
**P < .01

Hypothesis 2: A relationship exists between college assessment tests and academic success.

As previously stated, a limited amount of assessment data was available at Grand Rapids Junior College; therefore, this hypothesis deals only with Davenport College and Western Michigan University data.
Verbal assessment and math assessment have an estimated correlation of .43, which is somewhat high; therefore these factors were considered individually and simultaneously due to the possibility of multicollinearity.

Table 8 presents correlation data about Davenport assessment and CCGPA using individual tests.

Table 8
Davenport Assessment and CCGPA

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Estimated Slope Coeff</th>
<th>Estimated Standard Error</th>
<th>T Calc.</th>
<th>PR&gt;ITI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>.142</td>
<td>.099</td>
<td>1.43</td>
<td>.1598</td>
</tr>
<tr>
<td>Math</td>
<td>.001</td>
<td>.030</td>
<td>0.02</td>
<td>.9849</td>
</tr>
</tbody>
</table>

Simultaneously  

Ho: True verbal assessment coefficient and true math assessment coefficient = 0

Ha: Both are not equal to 0

The following is a computation of F using the simultaneous tests on regression coefficients (Neter & Wasserman, 1974). The calculations are as follows:
\[
F = \frac{28.166 - 26.803}{26.803} = 1.068
\]

\[
F - Table (0.05, 2, 42) = 3.25 \text{ critical value}
\]

The data fail to reject the null hypothesis. No evidence exists here for a relationship between assessment scores and college GPA at Davenport College.

**Western Michigan University**

This analysis follows the same reasoning used in the Davenport analysis for this hypothesis. Correlation is estimated at 0.58.

Table 9 presents correlation data about Western Michigan University assessment and CCGPA using individual tests.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Estimated Slope Coeff</th>
<th>Estimated Standard Error</th>
<th>T Calc</th>
<th>PR&gt;TI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>-0.044</td>
<td>0.202</td>
<td>-2.17</td>
<td>0.0337</td>
</tr>
<tr>
<td>Math</td>
<td>0.036</td>
<td>0.013</td>
<td>2.86</td>
<td>0.0056</td>
</tr>
</tbody>
</table>

Individually these coefficients do not seem to relate to academic success. However, multicollinearity may be a problem as evidenced by the fairly high correlation (0.58). This is supported by the fact that the two coefficients
are almost equal, but are opposite in sign. So, a simultaneous test is indicated.

Simultaneously

\[ \text{Ho: True verbal assessment coefficient and true math assessment coefficient} = 0 \]

\[ \text{Ha: Both are not equal to 0} \]

The calculations are as follows:

\[ F = \frac{25.723 - 22.658}{22.658} = 4.396 \]

\[ F - \text{Table (.05, 2, 65)} = 3.15 \text{ critical value} \]

The data reject the null hypothesis that both coefficients are zero. The two assessment scores are both related to college GPA at Western Michigan University.

Hypothesis 3: A relationship exists between sex and academic success.

\[ \text{Ho: True female GPA mean = True male mean} \]

\[ \text{Ha: They are not equal} \]

Table 10 presents means, standard errors, F - values and coefficients of correlation between sex and college GPA for all schools and separate schools.
Table 10
Correlation Between Sex and CCGPA

<table>
<thead>
<tr>
<th>College(s)</th>
<th>F</th>
<th>PR&gt;F</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Mean</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Schools Together</td>
<td>5.07</td>
<td>.0254*</td>
<td>1.67</td>
<td>.15</td>
<td>1.98</td>
<td>.16</td>
</tr>
<tr>
<td>Grand Rapids J.C.</td>
<td>4.71</td>
<td>.0342*</td>
<td>1.40</td>
<td>.32</td>
<td>1.93</td>
<td>.31</td>
</tr>
<tr>
<td>Davenport</td>
<td>0.19</td>
<td></td>
<td>1.55</td>
<td>.22</td>
<td>1.71</td>
<td>.38</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>2.12</td>
<td>.1502</td>
<td>2.26</td>
<td>.13</td>
<td>2.51</td>
<td>.18</td>
</tr>
</tbody>
</table>

*P .05

Overall, there appears to be a difference in College GPA by sex. The significant F-ratio indicates that the difference in means was too great to attribute to random sampling fluctuation. Thus, the null hypothesis was rejected. However, of the individual colleges, only Grand Rapids J.C. shows evidence of a difference. Frequencies, means and standard error are presented in Table 11.

Hypothesis 4: A relationship exists between the type of curriculum and academic success.

Because Davenport College is basically a business school, the only curriculum offered other than business is
Table 11
Grand Rapids J.C. College GPA by Sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Mean</th>
<th>Mean Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>.46</td>
<td>1.36</td>
<td>.65</td>
</tr>
<tr>
<td>Male</td>
<td>.52</td>
<td>1.73</td>
<td>.53</td>
</tr>
<tr>
<td>Total</td>
<td>.98*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Two cases were unusable.

Consequently, of the 68 usable cases, only 4 were health services related and not business related. Therefore, Davenport was omitted from the analysis of this hypothesis, and Grand Rapids J.C. and Western Michigan University were analyzed separately. The results of the analysis are presented in Table 12.

As can be seen by inspecting Table 12, curriculum differences in college GPA are apparent at Western Michigan University but not at Grand Rapids J.C. A closer look at the correlations between curriculum is presented in Table 13.
Table 12

Grand Rapids J.C. and Western Michigan University College GPA Curriculum

<table>
<thead>
<tr>
<th>College</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Rapids</td>
<td>1.58</td>
<td>.2142</td>
<td>1.40(.22)</td>
<td>1.23(.24)</td>
<td>---</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>7.57</td>
<td>.0002</td>
<td>1.57(.18)</td>
<td>2.44(.12)</td>
<td>2.98(.27)</td>
</tr>
</tbody>
</table>

Codes:  
* A - Fine Arts  
B - Business  
E - Education  
H - Health  
* (Students without a major are in A-Fine Arts)
Table 13

Western Michigan University Pairwise Comparison of Means (P values Reported)

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>A</th>
<th>B</th>
<th>E</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>.</td>
<td>.0002*</td>
<td>.0001*</td>
<td>.0150</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>.0369</td>
<td>.7444</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td>.3388</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td>.</td>
</tr>
</tbody>
</table>

*Six comparisons, so a protected alpha = .05 level is .05/2 = .004166. A 6

P value less than .00417 indicates significance.

Table 13 indicates that students enrolled in the business or education curriculums do significantly better than students enrolled in the liberal arts and health curriculums.

Hypothesis 5: A relationship exists between remedial course(s) taken and academic success.

Western Michigan University, Grand Rapids J.C. and Davenport College encourage students with a low HSGPA or low assessment score(s) to enroll in remedial math and/or remedial reading.

H0: Mean GPA yes = mean GPA no
Ha: Means not equal
Table 14 presents correlational coefficients and F-statistics for remedial course(s) taken and college GPA.

Table 14
Correlations Between Remediation and College GPA

<table>
<thead>
<tr>
<th>College</th>
<th>Reading</th>
<th></th>
<th>Math</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>PR&gt;F</td>
<td>F</td>
<td>PR&gt;F</td>
</tr>
<tr>
<td>All Schools</td>
<td>0.07</td>
<td>.7852</td>
<td>3.85</td>
<td>.0512</td>
</tr>
<tr>
<td>Grand Rapids J.C.</td>
<td>2.69</td>
<td>.1064</td>
<td>0.05</td>
<td>.8219</td>
</tr>
<tr>
<td>Davenport</td>
<td>2.11</td>
<td>.1541</td>
<td>0.06</td>
<td>.8030</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>0.02</td>
<td>.8951</td>
<td>1.35</td>
<td>.2496</td>
</tr>
</tbody>
</table>

None of the schools shows significant differences in college GPA means according to whether the student took remedial course(s) or not. Either there is no difference, or this particular sample just did not show one.

The data failed to reject the null hypothesis Ho for all the above tests.

Table 15 provides a closer investigation of remediation and visually indicates a lack of significant difference between students who took remediation and those who did not.
### Table 15

**All Schools' Frequency Remediation by Sex, Year and College GPA**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sex</th>
<th>Reading</th>
<th>Math</th>
<th>Frequency</th>
<th>College GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>F/M</td>
<td>No/No</td>
<td>33/25</td>
<td>2.10/2.07</td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>F/M</td>
<td>Yes/Yes</td>
<td>53/29</td>
<td>1.73/1.77</td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>F/M</td>
<td>No/No</td>
<td>53/38</td>
<td>1.77/1.86</td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>F/M</td>
<td>Yes/Yes</td>
<td>33/16</td>
<td>1.89/2.03</td>
<td></td>
</tr>
</tbody>
</table>

Total Math or Reading 140

<table>
<thead>
<tr>
<th>Year</th>
<th>Sex</th>
<th>Reading</th>
<th>Math</th>
<th>Frequency</th>
<th>College GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>F/M</td>
<td>No/No</td>
<td>44/26</td>
<td>2.05/2.04</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td>F/M</td>
<td>Yes/Yes</td>
<td>34/22</td>
<td>1.72/1.59</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td>F/M</td>
<td>Yes/Yes</td>
<td>33/25</td>
<td>1.79/1.66</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td>F/M</td>
<td>No/No</td>
<td>45/23</td>
<td>2.00/2.01</td>
<td></td>
</tr>
</tbody>
</table>

Total Math or Reading 126

Total 266

**Hypothesis 6:** A relationship exists between residential experience and academic success.

Davenport College and Western Michigan University students either live in campus dorms or off campus. Only Grand Rapids J.C. students are not provided the dorm or on campus living option. However, Table 16 represents the...
F-ratio for the combined school means.

Table 16
Residential Experience and Academic Success Correlational Coefficient

<table>
<thead>
<tr>
<th>College</th>
<th>F</th>
<th>PR&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Schools</td>
<td>0.53</td>
<td>.4691</td>
</tr>
</tbody>
</table>

H₀: Residential experience yes = Residential experience no
Hₐ: Both are not equal
Fail to reject the null hypothesis.

Table 17 provides a closer investigation of residential experience by year and individual college. It is observed that at Western Michigan University both the 1983 and 1984 students who had "no" for residential experience had a higher College GPA than students who had "yes" for residential experience (N = 2.70 Y = 2.15 and N = 2.59 Y = 2.06, respectively). It is also observed that at Davenport the 1984 students who had "no" for residential experience had a lower College GPA than students who had "yes" for residential experience (N = 1.92 Y = 2.97).

Hypothesis 7: A relationship exists between racial mix of the high school district and academic success.

Students in this study graduated from a variety of racially mixed high school districts before enrolling at
either of the colleges in this study. Because of the variability in black student success at predominantly white colleges, this hypothesis was constructed to test for difference in college GPA due to the previous racial mix of high school enrollment.

Table 17
Residential Experience Frequency by College GPA

<table>
<thead>
<tr>
<th>Year</th>
<th>College</th>
<th>Experience</th>
<th>Frequency</th>
<th>College GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>DC</td>
<td>N</td>
<td>29</td>
<td>1.67</td>
</tr>
<tr>
<td>1983</td>
<td>DC</td>
<td>Y</td>
<td>13</td>
<td>1.42</td>
</tr>
<tr>
<td>1983</td>
<td>WM</td>
<td>N</td>
<td>5</td>
<td>2.70</td>
</tr>
<tr>
<td>1983</td>
<td>WM</td>
<td>Y</td>
<td>45</td>
<td>2.15</td>
</tr>
<tr>
<td>1983</td>
<td>GR</td>
<td>N</td>
<td>48</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>140</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>College</th>
<th>Experience</th>
<th>Frequency</th>
<th>College GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>DC</td>
<td>N</td>
<td>20</td>
<td>1.92</td>
</tr>
<tr>
<td>1984</td>
<td>DC</td>
<td>Y</td>
<td>6</td>
<td>2.97</td>
</tr>
<tr>
<td>1984</td>
<td>WM</td>
<td>N</td>
<td>2</td>
<td>2.59</td>
</tr>
<tr>
<td>1984</td>
<td>WM</td>
<td>Y</td>
<td>38</td>
<td>2.06</td>
</tr>
<tr>
<td>1984</td>
<td>GR</td>
<td>N</td>
<td>50</td>
<td>1.42</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>126</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total n =</td>
<td></td>
<td>266</td>
<td></td>
</tr>
</tbody>
</table>

Code: N - NO  
Y - YES  
DC - Davenport College  
GR - Grand Rapids J.C.  
WM - Western Michigan University
Ho: All racial mix GPA means are equal.
Ha: All means are not equal.

Correlational coefficients and F - ratios between colleges and different mixes of school districts can be seen in Table 18.

Table 18
Correlations of Racial Mix Between High School District and College GPA

<table>
<thead>
<tr>
<th>College</th>
<th>F</th>
<th>PR&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Schools</td>
<td>1.91</td>
<td>0.0947</td>
</tr>
<tr>
<td>Grand Rapids</td>
<td>2.09</td>
<td>0.0801</td>
</tr>
<tr>
<td>Davenport</td>
<td>1.36</td>
<td>0.2673</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>0.99</td>
<td>0.4036</td>
</tr>
</tbody>
</table>

The correlational coefficients for all of the above tests were not significant; therefore, the null hypothesis was not rejected. Either racial mix in the high school district doesn't affect College GPA or this sample just doesn't show.

Table 19 lists thirty (30) school districts where 275,237 (93.5 percent) of Michigan's 294,372 black students attend high school.

Hypothesis 8: A relationship exists between type of college attended and academic success.
Most black students are enrolled in junior or community colleges. This trend is followed by enrollment in business schools or colleges and by the smallest black freshmen enrollment occurring at four year colleges or universities. Higher tuition costs, in some instances, but mostly higher pre-enrollment standards are probably responsible for this trend.

Table 19

The Thirty Michigan School Districts With The Largest Black Student Enrollment 1984-1985

<table>
<thead>
<tr>
<th>District</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Detroit City School District</td>
<td>172,134</td>
<td>87.8</td>
</tr>
<tr>
<td>2. Flint</td>
<td>19,756</td>
<td>63.0</td>
</tr>
<tr>
<td>3. Saginaw City School District</td>
<td>8,735</td>
<td>53.9</td>
</tr>
<tr>
<td>4. Grand Rapids</td>
<td>8,681</td>
<td>35.6</td>
</tr>
<tr>
<td>5. Pontiac City School District</td>
<td>8,568</td>
<td>50.5</td>
</tr>
<tr>
<td>6. Benton Harbor</td>
<td>6,004</td>
<td>79.9</td>
</tr>
<tr>
<td>7. Lansing</td>
<td>5,895</td>
<td>25.3</td>
</tr>
<tr>
<td>8. Highland Park City Schools</td>
<td>5,672</td>
<td>99.3</td>
</tr>
<tr>
<td>9. Kalamazoo</td>
<td>4,146</td>
<td>33.8</td>
</tr>
<tr>
<td>10. Muskegon City Schools</td>
<td>2,795</td>
<td>37.9</td>
</tr>
<tr>
<td>11. Battle Creek</td>
<td>2,672</td>
<td>29.8</td>
</tr>
<tr>
<td>12. Inkster City School District</td>
<td>2,643</td>
<td>97.0</td>
</tr>
<tr>
<td>13. Muskegon Heights</td>
<td>2,592</td>
<td>87.0</td>
</tr>
<tr>
<td>14. Southfield</td>
<td>2,537</td>
<td>28.7</td>
</tr>
</tbody>
</table>
Table 19—Continued

<table>
<thead>
<tr>
<th>District</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Beecher</td>
<td>2,495</td>
<td>65.7</td>
</tr>
<tr>
<td>16. Ann Arbor Public Schools</td>
<td>2,468</td>
<td>17.6</td>
</tr>
<tr>
<td>17. School District of Ypsilanti</td>
<td>2,170</td>
<td>36.3</td>
</tr>
<tr>
<td>18. Oak Park City School District</td>
<td>2,045</td>
<td>55.4</td>
</tr>
<tr>
<td>19. Jackson</td>
<td>1,764</td>
<td>22.8</td>
</tr>
<tr>
<td>20. Buena Vista School District</td>
<td>1,548</td>
<td>73.9</td>
</tr>
<tr>
<td>21. Romulus Community School District</td>
<td>1,318</td>
<td>24.1</td>
</tr>
<tr>
<td>22. Westwood Community Schools</td>
<td>1,292</td>
<td>50.0</td>
</tr>
<tr>
<td>23. Willow Run Community Schools</td>
<td>1,204</td>
<td>32.6</td>
</tr>
<tr>
<td>24. Mt. Clemens Community Schools</td>
<td>1,161</td>
<td>30.0</td>
</tr>
<tr>
<td>25. Ecorse Public School District</td>
<td>1,122</td>
<td>50.5</td>
</tr>
<tr>
<td>26. River Rouge City Schools</td>
<td>1,021</td>
<td>40.3</td>
</tr>
<tr>
<td>27. Albion</td>
<td>826</td>
<td>35.4</td>
</tr>
<tr>
<td>28. Wayne - Westland</td>
<td>756</td>
<td>4.6</td>
</tr>
<tr>
<td>29. Taylor</td>
<td>714</td>
<td>5.3</td>
</tr>
<tr>
<td>30. Hamtramck Public Schools</td>
<td>695</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Source: Michigan School Racial-Ethnic Census, Student and Staff Data, 1984-85

Ho: Mean GPA WMU = mean GPA GR = mean GPA DC
Ha: Not all equal

Table 20 presents the correlational coefficient and F-ratio between type of college and academic success.
Table 20
Correlation of Type of College and College GPA

<table>
<thead>
<tr>
<th>College</th>
<th>F</th>
<th>PR&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>All schools</td>
<td>1.47</td>
<td>.2316</td>
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</table>

Fail to reject Ho.

A closer focus on individual College GPA by frequency and year is presented in Table 21.

An individual display of college GPA indicates a larger black student GPA at Western Michigan University for 1983 and 1984.

Table 21
Individual College GPA by Frequency and Year

<table>
<thead>
<tr>
<th>Year</th>
<th>College</th>
<th>Frequency</th>
<th>CCGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>DC</td>
<td>42</td>
<td>1.59</td>
</tr>
<tr>
<td>1983</td>
<td>GR</td>
<td>48</td>
<td>1.70</td>
</tr>
<tr>
<td>1983</td>
<td>WM</td>
<td>50</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td>DC</td>
<td>26</td>
<td>2.16</td>
</tr>
<tr>
<td>1984</td>
<td>GR</td>
<td>50</td>
<td>1.42</td>
</tr>
<tr>
<td>1984</td>
<td>WM</td>
<td>50</td>
<td>2.19</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>126</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>266</td>
<td></td>
</tr>
</tbody>
</table>

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CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine cognitive and demographic variables which relate to black student academic success at college. Because there is a void in research on predicting the academic success of black students, comparing a private business college with a public two year college and a public four year college/university, the need for this type of study was recognized and undertaken.

The cognitive predictors used in this study were high school GPA and college assessment test scores. Demographic variables included sex, residential experience, type of college, high school location, remediation course(s) taken, and curriculum. All of these variables were found to be significant in a number of previous research studies.

The subjects in this study consisted of 284 entering black freshmen students in either two or four year programs at Davenport College, Grand Rapids Junior College, or Western Michigan University during the fall of the academic years 1983-1984 or 1984-1985.
Davenport College is a non-profit, private two-year business college accredited by the Association of Independent Colleges and schools and the North Central Association; Grand Rapids Junior College is a public two-year college, accredited by the North Central Association and is covered by the 1966 Community College Act of Michigan which includes post secondary vocational-technical education in the definition of community college programs; Western Michigan University is also accredited by The North Central Association and is a comprehensive public university.

The total new black student enrollment for fall 1983 and 1984 was 728 for Grand Rapids J.C., 448 for Western Michigan University, and 84 for Davenport College or a combined total of 1,260 black students. The total population of 84 black students from Davenport College were part of the initial sample which included 100 black students from Grand Rapids J.C. and 100 black students from Western Michigan University. Students from Grand Rapids and Western were selected by random sample (without replacement). However, of the total sample of 284 students, eighteen (18) cases were unusable and the final sample, therefore, consisted of 266 black students.

The statistical analysis was performed on all cognitive and demographic variables, controlling for academic success (Cumulative College GPA). Multiple Regression
techniques were administered which included Analysis of Variance and t-Tests.

The statistical data collected did not confirm that the research null hypothesis was untenable for the period under investigation. The same hypothesis with a different independent variable was tested in each analysis:

There is a relationship between variable and academic success.

The cognitive variable which showed a significant relationship to academic success was high school GPA. The demographic variables which were significant consisted of sex and curriculum.

Predicting academic success using the high school GPA variable was successful. Ervin and Hogrebe (1984) compared high school GPA and SAT scores with freshmen-year GPA earned in regular university classes by developmental studies students and regular college students. The amount of variance accounted for was higher for these combined variables. Although developmental and regular college students were combined, the findings of this researcher indicated that high school GPA alone accounted for fifteen percent of the variance in College GPA.

The relationship between sex and academic success conflicts with previous findings in studies done by Fleming (1984), Sueizle and Bradley (1978), and Ramist (1981). However, it supports studies done by Smith and
Allen (1984) and Thomas (1984a) which indicated that black males on predominantly white campuses tend to report higher grade point averages than black females.

The relationship between major (curriculum enrolled in) and academic success agrees with the findings of Young (1983), Williams and Kent (1982), Doughtie, et al. (1976), Hager and Elton (1971), Kimball, Sedlacek & Brooks (1973), and Bayer and Boruch (1967).

Conclusions

1. High school GPA is the major contributing variable in predicting the academic success of black students attending predominantly white colleges.

2. The Western Michigan University students evidenced interaction between their math assessment and verbal assessment scores. Students with high math scores have higher college GPA's than those with high verbal scores.

3. The demographic factor sex appears to predict academic success for all schools together, but only for Grand Rapids J.C. when analyzing individual schools. Males in both examples had higher college GPA's than females.

4. Western Michigan University students evidenced highly significant correlations between curriculum enrolled in and academic success. Students enrolled in
education and business had higher college GPA's than those enrolled in the arts and health curriculums.

5. Neither all schools together nor individual schools showed evidence of a correlation between enrolling in remedial course(s) and academic success. However, it could be that this sample was not representative of the population. On the other hand, it could be considered encouraging that there is no difference. Possibly, it is because the remedial students were brought up to par with the non-remedial students.

6. There was no significant correlation between residential experience for all schools together. However, at Western Michigan University, students who lived off campus in 1983-1984 had higher college GPA's than those living on campus. On the other hand, Davenport students who lived on campus in 1984-1985 had lower college GPA's than those living off campus.

7. The racial mix between high school district was not a good predictor of college GPA.

8. The type of college attended was a poor predictor of college GPA.

Recommendations

- The majority of the students in this study had been enrolled in remedial course(s) which was either mandatory (at Western Michigan University) or recommended (at
Davenport College or Grand Rapids Junior College) as terms of admission. Therefore, each college should conduct a research study that would compare the college GPA of black students who are required to enroll in a remediation program with the college GPA of black students who are not required to enroll in a remediation program. The homogeneity of groups would be protected by using students who were diagnosed to be just above the remediation program enrollment cut-off score with students who were diagnosed to be just below the remediation program enrollment cut-off. A pretest-posttest design with remediation being the treatment for the experimental group and no remediation for the control group should be administered and the results used for institutional decision making.

It is quite evident in this study that the potential dropout rate for black students at each college is high. Therefore, it is recommended that a more adequate retention model be developed at each college.

The problem of black student academic success and retention must be considered a high priority at each college. Recruiters and admissions counselors must clearly articulate the expectations of the college to potential black students. The students' strengths and weaknesses as well as the college's resources and potential support systems must be thoroughly discussed. Once the student is enrolled, a variation of the Data Driven...
Minority Retention Model (Goodrich, 1979), highlighted with others in Table 2, should be implemented as follows:

1. A sound data base must be established (including application, acceptance and admission) by racial ethnic group. Academic status profile by division and department, student classification profile, longitudinal student progression profile, graduation rates, and a student performance data system need to be included. Exit procedures for monitoring students who leave the college for non-academic reasons also need to be included.

2. A computerized academic monitoring system for early identification of students (first one-third of term) who are experiencing academic failure must be implemented to suggest avenues of assistance available, from tutorial services to academic advising to counseling. The monitoring system must have (a) the support of college administrators, (b) individuals selected as monitors to institute data formatting and data gathering processes, (c) a procedure for sending concern for academic achievement letters to students from the vice president for academic affairs, director of minority affairs, divisional dean, and or departmental Chairperson, (d) academic achievement follow-up by academic support personnel and key administrators, and (e) a academic monitoring system evaluation report for use in college wide planning.

3. Communication linkages must be developed between
academic components by establishing academic articulation and retention committees. Implementation steps must include (a) development of articulation and retention committees within each division/department, (b) a procedure for periodical dissemination of data (each semester/quarterly) on all students within a division/department, and (c) a procedure for each committee to make appropriate recommendations to the division/department head, and for monitoring committee outcomes.

4. Organize a minority retention workshop to discern the nature of underlying problems, suggest workable solutions, and identify the administrative support and commitment necessary to effect institutional change.

5. Establish pre-professional academic societies on campus to improve the enrollment distribution and retention of black students in under-represented disciplines.

6. Perform a longitudinal follow-up and evaluation must be performed to assess the overall impact on the college after the implementation of the above stated recommendations.
Appendix A

Form for Collecting Demographic Characteristics
<table>
<thead>
<tr>
<th>NAME</th>
<th>HSGPA/CGPA</th>
<th>DOE</th>
<th>SEX</th>
<th>ASSESSMENT SCORES</th>
<th>READING/MATH</th>
<th>RESIDENTIAL EXPERIENCE</th>
<th>H.S. LOCATION</th>
<th>REMEDIAL COURSE(S)</th>
<th>COLLEGE ATTENDED</th>
</tr>
</thead>
</table>
Appendix B

Davenport College Math Assessment Test
BIBLIOGRAPHY


Chicago: Rand McNally.


Hall.


for the Study of Social Problems, Chicago.


