COMMUNITY COLLEGE MINORITY MALES’ PERCEPTION OF SUCCESS STRATEGIES IN DEVELOPMENTAL MATH

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by

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The number of students attending higher education institutions has increased across the nation over the past few decades. Nearly 46% of students chose to begin postsecondary education or technical training at a community college (American Association of Community Colleges, 2008). Accessibility and lower tuition have contributed to the enrollment growth at 2-year colleges. Consistently, however, fewer minority students graduate in comparison with the majority student population.

The purpose of this study was to explore the perceptions of minority males regarding their motivation to attend college, engagement on campus, how they felt they were perceived on the campus, and their views on the strategies used in success initiatives as it related to developmental math. The study sought to determine if there were differences in those factors based upon successful completion of the remedial math course, enrollment status, the institution of attendance, and age. Eighty-nine minority males representing three community colleges in Ohio participated in the research.

The study findings suggest that minority males perceive themselves as engaged in the college environment, interacting well with faculty members, and having an overall positive experience on campus. Findings also suggest a need for colleges to provide resources, interaction opportunities, and communication as it pertains to their success.
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CHAPTER I
INTRODUCTION

Problem Statement

The number of students attending higher education institutions has increased across the nation over the past few decades. The National Center for Education Statistics (NCES, 2007) reported that in 1970 the total number of students enrolled at institutions of higher education was 7.4 million, but by 2009, the number had grown to 18 million (NCES, 2009). Nearly 46% of these students chose to begin postsecondary education or technical training at a community college (American Association of Community Colleges [AACC], 2008). Accessibility, lower tuition, and flexibility in scheduling have contributed to the enrollment growth at two-year colleges. In 2009, minorities represented 32% of the students attending higher education institutions (NCES, 2009), though they were only 17% in the late 1970s (NCES, 2007). Although the total enrollment of students in colleges and universities continues to increase, including a corresponding increase in the percentage of minority attendees, there has been a decline in the percentage of all males attending colleges and universities in comparison with females (NCES, 2009). This decline is compounded by lower graduation and retention rates of the minority males compared with other student groups (NCES, 2009). In light of the current demographic changes, it is important to determine what strategies are effective in retaining the minority male student. The ability to document the perceptions, attitudes, and levels of engagement of minority males attending community colleges will
identify the necessary resources and strategies to facilitate their successful completion and graduation.

**Background of the Problem**

As the labor market necessitates education beyond high school, the enrollment and graduation of males in higher education becomes the focus for researchers across the nation (Perrakis, 2008). The implications for minority males’ future employment and ability to maintain a household are directly tied to the strategies and effectiveness of retention efforts enacted by institutions of higher education. Autor (2010), in his report to the Federal Reserve Board of Governors, highlighted the stagnation of males’ educational attainment. With employment opportunities concentrated in either highly skilled positions with high wages or low-skilled positions with low wages, the economy is redefining gender roles. According to Autor’s report, these employment forces and the reversal of the educational attainment of males has resulted in “a labor market that greatly rewards workers with college and graduate degrees but is unfavorable to the less-educated, particularly less-educated males” (Autor, 2010, p. 16).

The demographics of college students have changed over the last several decades (Ryu, 2010). Nationally, there have been dramatic national increases in enrollment as well as increases in the percentage of minorities attending higher education institutions. Although more students are attending higher education than ever, male enrollment, as a percentage of the total student enrollment, has declined. Male enrollment in higher education represented a much higher percentage in 1970 than what they represent now. Male enrollment in degree-granting institutions in 1970 was 58%, but in 2009 it was
43%, a decline of 15% (Aud et al., 2011). As it becomes necessary for more individuals to earn a degree in order to obtain gainful employment, addressing the gender gap in college enrollment, with its corresponding gap in graduation rates, becomes paramount.

Enrollment trends consistently show a greater number of females enrolled in higher education when compared to their male counterparts and this trend is more apparent in minorities. African American females now comprise approximately 60% of the total African American enrollment in higher education (NCES, n.d.-a). Fewer African American males enrolling in higher education corresponds to fewer African American males obtaining undergraduate degrees. The proportion of African American male enrollment has decreased approximately 10%, with even greater proportional declines in Hispanic male enrollment (17%) during the same 30-year period (NCES, 2007). African American males’ enrollment, compared with that of African American females, has decreased by 28.6% (NCES, 2007).

There are also substantial differences in the minority higher education graduation rates. Asian/Pacific Islanders had the highest 6-year graduation rates: 65% at four-year public institutions and 26% at two-year public institutions for the 2002 and 2005 entering student cohorts (NCES, 2011). American Indian/Alaska Natives had the lowest graduation rates: 36% at four-year institutions and 18% at two-year institutions. African Americans’ graduation rates were 39% and 12%, respectively. Hispanics’ graduation rates were 46% at four-year institutions and 16% at two-year institutions (NCES, 2011). Low graduation rates, particularly for minority students, require action on the part of
community colleges, which have lower completion rates than four-year institutions of higher education.

Consistently fewer minority students graduate in comparison with the majority student population. Minority male students in particular graduate at a lower percentage than their female counterparts at both the bachelor and associate’s degree levels. Only 33% of African American males and 40% of Hispanic males earn college degrees compared with their female counterparts (College Board, 2010). African American females earned 69% of the associate degrees awarded to African Americans, whereas Hispanic females earned 64% of the degrees awarded to Hispanics in 2007 (Ryu, 2010). The current demographic trend indicates that fewer minority males attend and graduate from higher education institutions; it is of paramount importance to address this trend on a broad scale in order to impact a greater number of the minority males attempting postsecondary education.

In 2004, less than 8% of African American males aged 18 to 29 had obtained a college degree, in comparison with 17% of Caucasians (Kaiser Foundation, 2006). Additionally, minority males have one of the highest unemployment rates (19.4%) when compared with other groups (Bureau of Labor Statistics, n.d.-b). Many minority males live in areas of high crime, violence, and elevated high-school dropout rates (Kaiser Foundation, 2006). The statistics become even more dismal considering that 10% of minority males aged 18 to 29 are in prison, as compared with 1.5% of same-aged White males. Minority males’ lack of success in educational achievement and obtaining postsecondary degrees contributes to their high rate of imprisonment and unemployment;
this continues to concern higher education researchers, as it will prolong this detrimental cycle (Kaiser Foundation, 2006; Kelly, 2005).

Enrolling minority males in college is not enough to change the dynamics of their situation; strategies need to be put in place to ensure them successful outcomes. Programs designed for all students need to be evaluated with a special emphasis on perpetuating the success of minority males.

**Educational Attainment and Economic Impact**

Educational attainment has a direct impact on an individual’s average income and on his or her future economic status (Day & Newburger, 2002; U.S. Census Bureau, 2011). It is a well-known fact that an individual’s capacity to increase his or her earnings is based upon the highest degree he or she has earned (NCES, 2007; U.S. Census Bureau, 2011). Data from the U.S. Census Bureau indicates that an individual’s average annual income increases from $31,000 with a high school education, to $71,000 for one who has obtained a graduate degree. Although an individual’s level of education directly impacts her or his income, minority males still earn less in contrast to their White counterparts, regardless of their educational attainment (Day & Newburger, 2002; U.S. Census Bureau, 2011). African American males on average made $12,000 less than their White peers at each level of educational attainment (U.S. Census Bureau, 2011).

Educational attainment is also linked with employment. Individuals with an education beyond high school have greater opportunities for employment than those without postsecondary education. The Bureau of Labor Statistics (BLS, n.d.-a) indicated that unemployment rates decreased from 14.6 % for individuals with less than a high
school diploma to 5.2% for individuals with a bachelor’s degree or higher. Also, the total unemployment figures are further polarized during a downturn in the economy (BLS, 2010).

Although the overall unemployment rate in May 2011 was 9.1%, the 2011 unemployment rate for African Americans was 16.2% and 11.9% for Hispanics in this same point in time (BLS, n.d.-a). As the successful completion of courses leads to graduation and education is linked with employment, it is imperative for minority males to seek education beyond the high-school level. Minority males pursuing a college education must understand how education relates to employment and earning potential. Community colleges can serve as a stepping-stone to students seeking to obtain certification, advanced training, and/or degree completion. As minority males begin their quest for a college education at the community college level, it is essential they receive resources and direction tailored to their needs to cultivate their success and completion.

**Minority Enrollment Trends and Challenges**

Community colleges are seeing a steady increase in the number of minority students who choose to begin postsecondary education at the two-year institution (U.S. Government Accountability Office, 2007). Of all minorities attending higher education in 2007, 46% of African Americans and 55% of Hispanics attended community colleges (AACC, 2008). These evolving student demographics are prompting administrators and state government officials to change the way colleges and universities conduct their day-to-day operations, particularly in their efforts to retain and graduate minority students.
(Achieving the Dream [AtD], n.d.-c; Judkins & LaHurd, 1999; University System of Ohio [USO], n.d.).

The greatest challenge for community colleges is entering students’ lack of preparation for college, particularly minority students (Attewell, Lavin, Domina, & Lavey, 2006; Community College Research Center [CCRC], n.d.; Perin, 2005; Roueche & Roueche, 1993, 1999). Students frequently enroll in community colleges without the skills needed for success, and many enter unprepared to complete college-level courses successfully (Boylan, Bonham, & Bliss, 1994). Approximately 61% of entering community college students require some type of developmental-level coursework (NCES, 2004). Developmental education, often referred to as remedial education, is the term used by this researcher to identify courses that are below college level.

A national educational longitudinal study using the 1992 high school graduate cohort found that over 75% of African American and Hispanic students required at least one developmental-level course (Bailey, Jenkins, & Leinbach, 2005). Students required to take remedial coursework are more at risk of not completing a degree or certificate (NCES, 2004). Students taking these courses also have a higher attrition rate than the college-ready students, and over 73% of them do not complete the developmental course sequence (AtD, 2008a). The number of entering students unprepared for college-level work places strain on the community college system; it becomes a strategic and financial concern for community colleges to provide the “right” support services and instructional pedagogies to assist this group of students.
College-level math continues to be a major challenge for these students, specifically those entering a public, two-year institution (Parsad, Lewis, & Greene, 2003). With the understanding that a large number of students enter community colleges underprepared for college-level math, faculty and administrators need to closely analyze and evaluate the measures incorporated to assist minority students, and especially minority males (AtD, 2008b).

**Success Strategies**

With 61% of entering community college students requiring at least one developmental education course (NCES, 2004), faculty and administrators need to design and implement multiple approaches in order to reach all students. Community college administrators, faculty, and staff members currently address this need by designing programs to improve the success rate of all students, but with particular attention to students assessed below college level on placement examinations (AtD, n.d.-d). Though these programs and strategies are designed to help all students, their final impact on the minority male is largely unknown, and little information is available on what strategies may or may not work for this specific demographic (Gardenhire-Crooks, Collado, Martin, & Castro, 2010; Richardson & de los Santos, 1988).

Achieving the Dream: Community Colleges Count (AtD) is a “bold national effort to help more community college students succeed, with a special focus on students of color and low-income students” (AtD, n.d.-e, ¶1). This initiative began in 2004 with 23 colleges and currently 160 colleges are engaged in AtD’s national effort. The ultimate goal is to use collected data and research to drive educational and program decisions at
colleges throughout the nation. AtD community colleges are committed to developing programs and activities that will lead to an increased percentage of students (a) completing developmental courses, (b) enrolling in and completing gatekeeper courses, (c) completing courses with a C or better, (d) re-enrolling the following semester, and (e) earning a certificate or degree (AtD, n.d.-e). Participating colleges, located across the country, are documenting and evaluating programs geared to achieve the five outcomes of the AtD initiative. The four guiding principles of the initiative are (a) committed leadership, (b) culture of evidence in decision-making, (c) broad engagement, and (d) systematic institutional improvement (AtD, n.d.-d).

AtD (2008b) data indicated that male students in developmental education who participate in these success initiatives are not progressing at the same rate as their female counterparts. Findings indicated, 74% of females referred to developmental education persisted to the second year, and 61% to the third year. That compares with a second-year persistence rate of 69% for males referred to developmental education, and 56% of males who persisted to the third year. (AtD, 2008b, p. 2)

Limited data are available disaggregating the results among the ethnic, racial, and gender variables in Ohio. Improving the success rate for minority students seeking higher education at community college institutions is vital if they are to improve their employment and income potentials. Programs such as those implemented at various community colleges participating in AtD have the potential to provide vital information
as well as assessment and analysis of strategies used to determine the regional effectiveness of the successful models.

This national interest has brought together several organizations to assist community colleges with addressing the challenges of student preparation and success. These organizations provide important resources to improve the effectiveness of strategies and programs at the participating institutions (AtD, n.d.-g). The Lumina Foundation, the MDC, the Knowledge Works Foundation, the American Association of Community Colleges, Jobs for the Future, the MDRC, Nellie Mae Education, the Community College Research Center, the Community College Leadership Program, and Public Agenda are among the organizations and foundations that have contributed resources and expertise to address the challenges faced by community colleges (AtD, n.d.-g).

**Community College Access**

Access has been the primary goal of community colleges upon their inception and is consistently found in institutional mission statements and strategic plans across the globe (Mullin, 2010). Accessibly is important; however, it is essential that the focal points of student success and graduation rates become their primary goals in the future. NCES (2009) analyzed graduation rates for the 2004 cohort consisting of degree or certificate-seeking first-time students pursuing a full-time academic load at institutions. The findings indicated a 27.4% 3-year graduation rate for community colleges (NCES, 2009), whereas community college students who began in remedial coursework were found to have a 3-year graduation rate of only 8.5% (Greene, 2008).
While facing the challenges of remediation for unprepared students, community colleges must also face the increasing enrollment of first-time and returning college students due to the rising cost of higher education at 4-yr. institutions, the current economic conditions, and their sustained “access to education” mission. While maintaining their focus on access, community colleges also have a critical need to design effective, successful programs essential for their growing student population.

Ohio Students

Student enrollment in community colleges in Ohio was 209,800 during the fall term of 2010 (Ohio Board of Regents [OBOR], 2010a). The 2008-2009, 3-year associate degree graduation rate was 21%, with a first-year retention rate of 59% for first-time, full-time students (OBOR, 2010c). Minority graduation rates in Ohio are comparable to the national graduation rates for two-year institutions (OBOR, 2010a). Administrators at the University System of Ohio (USO, n.d.) have targeted increasing the number of degrees awarded to minorities. Currently, the minority population receives 8.63% of all types of degrees awarded; the USO’s goal is to raise this percentage to 13.98% (USO, 2008). Community colleges will be instrumental in helping the University System of Ohio obtain this goal.

As of 2010, 42% of students in Ohio entering higher education required remedial coursework, with the majority of entering students requiring remedial math rather than remedial English (OBOR, 2010b). Generally, students taking remedial coursework attend community colleges; in 2004, 80% of part-time students and 54% of full-time students were enrolled in 2-yr. institutions (OBOR, 2006).
A student’s placement in a developmental course continues as a consistent indicator of failure to graduate college in Ohio as well as across the nation (Bettinger & Long, 2005; Boylan & Saxon, 1998). OBOR (2010b) data revealed that of all students requiring at least one developmental class, only 27% completed an Associate’s degree in six years, in comparison with a 54% completion rate for students placing directly into college-level courses. However, limited data are available specifically addressing the completion rate of the minority male student taking remedial or developmental classes. Initiatives geared toward the success of students starting their postsecondary education in remedial coursework are currently underway (AtD, n.d.-c). Although these initiatives are experiencing some success, the effectiveness of programs designed specifically for minority male students is not well documented. Disaggregating and analyzing the data to determine if students are benefiting from colleges’ programs and initiatives will provide colleges with the information needed to significantly influence the lives of their students.

For many reasons, a major challenge for community colleges is documenting and measuring student retention and graduation rates. Students attend community colleges for numerous reasons other than obtaining a degree or certificate. Some students take one class, leave, and come back several semesters later. Many come to community colleges with no clear goal in mind, taking a variety of classes but not meeting any specific program or graduation requirements (AACC, n.d.-c).

Data management at the community college level has been a particular concern for many institutions. The complexity of the students who attend community colleges makes it difficult to determine what success metrics to use and how to use those metrics.
There is limited data on student retention and success rates of community college students from which to generalize strategies for the broad population, due to the diverse student population who attend with a wide range of academic goals. Accountability measures required by national accrediting bodies as well as pressure from state and governmental funding agencies require colleges to measure student success (Higher Learning Commission [HLC], n.d.). Data from community college administrators that previously provided information focused on enrollment irrespective of the actual graduation rate is no longer acceptable. State and national accrediting bodies presently require some measure of student outcomes for community colleges (HLC, n.d.). Also, institutions such as those in Ohio have been forewarned that a portion of the state-funding model will soon be based on graduation and retention rates, and not merely on enrollment (USO, n.d.). Ohio’s current strategic goals target an increase in the number of degrees awarded to minorities, with awarded degrees mirroring the state’s demographics (USO, n.d.). However, this goal will only be met when programs, activities, and/or success strategies are geared specifically to the minority student population.

**Purpose of the Study**

The purpose of the study was to explore the perceptions of minority males regarding their motivations to attend college, their level of engagement on campus, the impact of their college environments, and the strategies used in success initiatives at three community colleges. The study was designed to identify the engagement level, attitudes and perceptions of minority males enrolled in developmental math classes at three community colleges in Ohio. The study also determined if there are differences in those
factors based upon the selected students’ successful completion of the remedial math course, enrollment status, the institution of attendance, and age. Each of the three colleges has participated in the national Achieving the Dream (AtD) program funded by the Lumina Foundation (AtD, n.d.-c). The study attempted to gain understanding of what minority males perceive as the significant factors leading to their math performance. A cross-sectional survey method approach was utilized in the study. Nesbary (2000) defined this approach as “the process of collecting representative sample data from a larger population and using the sample to infer attributes of the population” (p. 10).

**Significance of the Study**

The vast increase in the number of students entering community colleges makes it important for colleges to develop effective programs to assist their at-risk students. In the past, community colleges’ accountability measures focused on enrollment and not necessarily on metrics connected to success outcomes or program effectiveness (HLC, n.d.; USO, n.d.). These institutions are becoming aware of the need for more data-driven decision-making processes (AtD, n.d.-a). Budget restraints and accountability measures require colleges to place additional focus on student retention and graduation while utilizing resources more efficiently and effectively. Although many success programs are based on the theory of student engagement, there is a lack of research specifically addressing minority males in developmental math courses. This study investigated how minority males perceived the impact of the strategies affecting their math outcomes. A theoretical framework to identify the effects of student engagement, learning
communities, and the overall student case-management processes at three community colleges located in Ohio was also investigated.

**Theoretical Framework**

Many distinguished theorists have researched, developed, and discussed theories relating to student retention. Pascarella and Chapman (1983), and Astin, Terenzini, and Tinto (as cited in Pascarella & Chapman), are well-known theorists in the field of student retention. Tinto’s model of student retention is based on student engagement as it relates to academic and social integration (Pascarella & Chapman, 1983). Pascarella and Chapman described factors relating to student persistence based on Tinto’s prior work, emphasizing that the more a student is integrated in the college system, the more committed she or he will be to the institution and to accomplishing her or his goals (Pascarella & Chapman, 1983).

Tinto’s (1998) model stresses the importance of social interaction, academic interaction, and engagement and how these factors impact a student’s experience, satisfaction, success, and retention (Napoli & Wortman, 1998). Although these theories are the hallmark of student engagement, there have been concerns that most of the research on retention initiatives has been conducted for four-year colleges and universities and is not necessarily applicable to community college students (Bailey et al., 2004). Napoli and Wortman (1998) utilized what Tinto and others learned, and refined the theory specifically to fit with students entering community colleges; they added the social support the student receives and the student’s self-esteem to the work completed by Tinto and others for community college students (Napoli & Wortman, 1998).
Greene, Marti, and McClenny (2008) studied the relationship between a student’s minority identity and his or her engagement level as related to academic outcomes. The authors explored the academic effort expended by minorities in comparison with their academic outcomes, and the difference between the two indicated the net effects of the students’ efforts. The purpose of this study was to determine if there were differences in the amount of time spent on various educational practices among different ethnic groups and their academic outcomes. Two research questions guided this study: (a) “Do African American and Hispanic students in community college invest more time and energy in educational effective practices than their White counterparts?” and (b) “Do the academic outcomes of African American and Hispanic students differ from their White counterparts?” (Greene et al., 2008, p. 518). Engagement, as used by Greene et al., originates from the definitions of scholars such as Astin, Chickering, Pascarella, and Tinto, and it is defined as a student’s level of participation in college activities, interaction with faculty and peers, and use of college resources. Greene et al. found that African Americans reported greater engagement; however, the net effect of their efforts was not apparent. Hispanics, in turn, reported greater engagement in one aspect of the research, yet demonstrated lower academic outcomes.

These studies and others have clearly indicated the importance of engagement; however, engagement is not enough. Academic strategies geared toward minorities, and toward minority males in particular, are needed. Current research has not shown the complete course of action required to improve the success rates of minority males in developmental math courses.
Most research on student engagement, retention, and success has focused on the traditional four-year college students, with limited research on the minority student (Greene et al., 2008). Community colleges across the U.S. are designing programs to retain students and to improve overall graduation rates with inadequate information on how these programs impact the minority male and other student populations. Although the programs currently in design are based on the theoretical perspective of student engagement and social interaction developed by Tinto and Pascarella (Napoli & Wortman, 1998), the correlation of these theories to different student demographics remains to be investigated. There is an ongoing need to study the factors that affect the success of minority male students taking developmental education courses at community colleges.

**Research Questions**

The study was guided by the following five research questions:

RQ1: Is there a significant difference in motivation, judgment, or engagement level for minority males when compared by math outcome?

RQ2: Is there a significant difference in motivation, judgment, or engagement level for minority males when compared by demographics (enrollment status, age, and ethnicity)?

RQ3: Is there a significant difference in motivation, judgment, or engagement level for minority males when compared by college?

RQ4: How do minority males describe the learning and success strategies that contributed to their math outcomes?
RQ5: What strategies do minority males identify as beneficial in helping them meet their educational goals?

**Assumptions and Limitations**

Limitations may exist regarding the ability to generalize results to students attending four-year colleges and universities. This study focused on students taking developmental-level math courses in the community college; this targeted research will limit the ability to generalize the results to students not requiring developmental math coursework. Best and Kahn (2006) asserted that limitations are conditions beyond the control of the researcher and tend to inhibit the generalization of the study’s conclusions. Creswell (2009) contended that the limitations of a study determine exceptions, reservations, and qualifications inherent in the research effort. Limitations also are potential weaknesses of a study (Creswell, 2009). Leedy and Ormrod (2005) defined research assumptions as self-evident truths. The researcher makes the assumption that the study respondents will complete the survey honestly and the Student Success Survey is valid and reliable for minority males enrolled in two-year colleges. Readers of the study will assume that the researcher remained impartial and unbiased in the collection and analysis of the data. A limitation of the study is that results may not be characteristic of all other two-year colleges in Ohio or two-year colleges nationwide.

**Delimitations**

Delimitations are limitations of the research design proposed by the researcher (Creswell, 2009). This study consisted of a limited number of community colleges participating in the AtD initiative. Only minority male students taking
developmental-level math courses were included in the study. This quantitative study is bounded to the minority male, full-time and part-time students, and the constraints of time and available financial resources.

**Definition of Terms**

It is important in any study to define key terms. Following is a list of key terms used in the study and their definitions as they pertain to the study, to ensure clarification and understanding and to avoid any ambiguity in their interpretation. The general subject is the minority male attending community college; the specific subject is the effectiveness of success strategies used in developmental math courses in the Midwest region of the U.S.

_Atrition_: The Community College Survey of Student Engagement (n.d.-a) defined attrition as a student withdrawing from an institution without completing a program. For this study, attrition is defined as a student not continuing to the following semester.

_Developmental Education_: Roueche and Roueche (1999) defined developmental education as the process of preparing students for specific college-level courses or programs. This preparation includes topics such as studying effectively and thinking critically.

_Developmental Education-Level Course_: Developmental courses are not considered college-level and do not count toward college graduation. Boylan, Bonham, and White (1999) described developmental courses in English and math as those with content above high school-level but below the college-level expectation. For the purpose
of this study, the terms “developmental-level courses” and “remedial courses” were used interchangeably.

**Minority Male:** Minority male in this research is defined specifically as the African American and the Hispanic male.

**Persistence:** The Center for the Study of College Retention defined persistence as “a student returning the following semester” (n.d.). Students continuing their enrollment or who have earned a degree have persisted (NCES, 2000).

**Remedial-Level Courses:** Courses that are not considered college-level and used to prepare the student for college-level courses (AACC, 2000).

**Success Strategies:** The initiatives, programs, and/or activities designed and implemented to support the developmental education student (AtD, 2008c).

**Successful Completion of a Course:** A student receiving a C or better in a developmental course (AtD, 2008c).

**Retention:** A student returning to an institution the following semester (AtD, 2008).

**Targeted Success Initiatives:** AtD activities designed specifically to assist students and to increase retention and success (AtD, 2008c).

**Two-Year Institution:** A postsecondary institution that offers undergraduate degrees and programs of at least two but less than four years. Shorter-term vocational programs may also be offered at these institutions (NCES, n.d.-a). For the purpose of this research, the terms “two-year institution” and “community college” were used
interchangeably due to the similarities in their missions and the demographics of their respective student populations.

**Summary**

Chapter 1 provided an introduction to the problem: lack of completion of community college programs by minority male students. Chapter 1 also included a presentation of the problem statement and the research questions. The purpose of the study was discussed and the study participants were introduced.

Chapter 2 provides a review of the literature, including a description of societal influences affecting attrition and completion rates of minority male students; it also includes reviews of studies relevant to the research topic.
CHAPTER II
REVIEW OF THE LITERATURE

Introduction

This chapter provides a review of the literature reflecting the research and theories on community college students and success. The literature review includes an overview of current research, methodologies, and success strategy approaches utilized for community college students. The review of the literature highlights deficiencies in the literature describing the experiences of minority males, in particular, those attending community colleges and enrolled in developmental education courses. This chapter includes discussion of (a) community colleges, (b) minority students and the achievement gap, (c) the challenges facing community college students, (d) retention and student success theories and their theoretical framework, (e) developmental education, and (f) community college students in Ohio. The review begins with a broad discussion of community college students and proceeds to a discussion of specific approaches geared to student success in the community college.

Documentation

This researcher reviewed research documents, dissertations, and scholarly books obtained through the libraries of Kent State University and Cuyahoga Community College. The electronic databases searched included OhioLink, ERIC, ProQuest Dissertations, National Center for Educational Statistics, OhioLink Electronic Theses and Dissertations Center, EBSCOhost, Education Full Text, and Academic Search Complete. Bing and Google served as broad online databases to provide relevant information on the
topic of study. This researcher utilized organization websites and higher education state governing websites, which provided invaluable information. This researcher read, reviewed, and used more than 100 scholarly articles pertaining to higher education, community college students, student success and retention, student engagement, minority males, developmental education, employment data, and success strategies to provide material for the literature review.

**Community Colleges**

Community colleges have gained national attention as a solution to the decline in number of college-educated individuals in the United States (AACC, n.d.-b; The White House, n.d.). The President of the United States has made a concentrated effort to highlight the importance of the community college, visiting the community colleges that hosted two community college summits (AACC, n.d.-b; The White House, n.d.). The National Center for Public Policy and Higher Education (2006) identified the U.S. as ranking seventh in the world of countries with college-educated young adults. The 2020 national educational goal set by President Obama is to position the U.S. to have “the highest proportion of college graduates in the world” (Whitehouse.gov, 2010, ¶3). If this is to happen, community colleges will play a vital role in achieving it. Five million additional community college graduates will be needed to achieve this goal (The White House, n.d.). Community colleges are currently striving to achieve this agenda. Between the fall of 2008 and the fall of 2010, community colleges alone obtained an additional one million student enrollments (AACC, 2011).
Community colleges are currently experiencing enrollment growth in record numbers and enroll over 44% of all undergraduate students; this is a 10% increase over the past two years (AACC, 2011; NCES, 2007). According to the AACC (2011), 7.4 million of the 12.4 million community college students are enrolled in credit-bearing courses at one of the 1,167 community colleges in the nation. This enrollment growth comes from several factors: low educational cost, students’ need to work while attending school, students’ desire to remain close to home, and students’ lack of preparedness for the traditional four-year higher education environment (AACC, 2011). According to the NCES (n.d.), community college students engage in employment at a higher rate than their peers attending four-year institutions. The community college student demographic, as of the fall of 2008, consisted of 58% women, 45% minorities, and 42% first-generation college students. The increase in minority students, specifically Hispanic, has been dramatic; over the 10-year span between 1988 and 1998, there was an 85% increase in the percentage of Hispanics attending higher education institutions (Harvey, 2001). Of the 12.4 million community college students, the average age is 28, and 60% of students are enrolled on a part-time basis (AACC, 2011).

Community colleges’ open-door access policy allows students without the essential college-level preparation to attend a four-year institution to begin their higher education at a community college. This lack of preparation leads to low graduation rates, especially for minority students, at community colleges (AACC, 2010; Lynch & Engle, 2010). The AACC’s (2010) call for action has placed special emphasis on college completion, with the goal to increase student completion rates by 50% over the next
decade. Also, to accomplish the national agenda for 2020, understanding student demographics, utilizing proven strategies, benchmarking, and sharing best practices will become the norm for institutions. Additional research is needed to determine effective success strategies for community college students and also for those at higher risk of failure (Gardenhire-Crooks et al., 2010).

In areas such as the Midwest, decreased state funding for universities and community colleges will increase the need for accountability measures to determine student learning and success (Hagedorn, 2004; Moltz, 2009). Funding models in development will distribute funding based upon higher education outcomes. The number of institutions maintaining a focus predominantly on enrollment is declining, due in part to the states’ increasing expectations of accountability and outcomes (Bailey & Morest, 2006).

**Minority Students**

Most minority and low-income students enroll in community colleges to begin their postsecondary education (Bailey et al., 2004). Between 1987 and 2006, for traditional-aged college students (i.e., aged 18-24), African American enrollment rose from 10% to 32%, whereas Hispanic enrollment grew from 7% to 25% at higher education institutions (Ryu, 2008). Ryu noted that one in every three students attending a community college is a minority. Bailey et al. (2005) pointed out that in 1992, over 55% of Hispanic students enrolled in higher education began at the community college level. Research data have consistently confirmed that through the years, the postsecondary
enrollment of minority students has begun at the community college (AACC, n.d.; Bailey et al., 2004; NCES, n.d.-a; Ryu, 2008).

Though enrollment growth continues among the minority student population, graduation rates are dismal (NCES, n.d.-a). Comprising 47% of those attending community colleges, African Americans have one of the lowest persistence rates of all ethnic groups (Ryu, 2008). The National Education Longitudinal Study (NCES, n.d.-b) indicated a 4% graduation rate for African Americans who began at community colleges and transferred to four-year institutions to complete a bachelor’s degree; the comparable graduation rate for Caucasians is 17%. Bailey et al. (2005) contended, “At 37 percent, black community college students had a lower six-year completion rate than either Hispanics (42 percent) or Caucasians (52 percent)” (p. 39). Bailey et al. also emphasized the need for community colleges to target success initiatives specifically to the minority student. These meager graduation rates for minorities continue to concern the administrators of colleges and universities across the nation.

Although there are large numbers of minority students attending community colleges, they must often face feelings of isolation and a lack of full engagement in the college setting (Bailey et al., 2005). The higher education experience is frequently new to many minority students, as they are often the first in a family to attend a postsecondary institution. Research on minorities attending community colleges indicates that a student’s lack of engagement may lead to an early departure from the institution, especially a predominantly Caucasian institution (Greene et al., 2008; Hall & Rowan, 2001; Harper & Quaye, 2007; Jones, Castellanos, & Cole, 2002). These studies
emphasize the importance of engagement as it relates to overall student success (Greene et al., 2008; Jones et al., 2002). Jones et al. observed the perceptions of ethnic minorities attending a predominately Caucasian four-year research institution; they found that minority students felt isolated, the students were lacking in institutional support, and in some cases, the students encountered racism. Results also indicated that these students were not engaged in the total university setting and would often be engaged only within their own ethnic groups. Although several studies have indicated a low level of engagement for minority students, conclusive recommendations identifying how to engage the minority student are often absent from the research. Carter (2006) and Jones et al. (2002) supported the need for additional research on the perceptions of minority students regarding their success in higher education.

Harper and Quaye (2007) noted the importance of cultural identity for minorities and the need to nurture identity in order to enhance the educational experience and perceptions of minority students. Harper and Quaye conducted a qualitative analysis of minority males’ involvement in student organizations at a four-year college, and observed a sense of advocacy and improved cross-cultural communication skills developing through interactions in various student organizations. However, this study did not focus on the underprepared student, nor can the findings be generalized to students attending community colleges. Strayhorn (2008a) studied the effects of a student’s sense of belonging based on academic interactions, social interactions, and college experiences. These findings indicated the importance of grades and the amount of time students spent studying positively affected their sense of belonging at their respective institutions.
Specifically, Hispanic students felt a sense of belonging when they interacted with peers from other backgrounds and cultures (Strayhorn, 2008). This study supports the theory of student engagement and success (Panos & Astin, 1968).

**The Minority Achievement Gap**

Achievement gaps often occur among students of various ethnic groups. Minority students in particular have consistently lower graduation rates at both four-year and two-year institutions (NCES, 2007). The impact of the achievement gap is seen in the graduation rates of minority students. KewalRamani, Gilbertson, Fox and Provasnik (2007) found an achievement gap in the success rates of various ethnic groups at four-year institutions. In 2008, individuals between the ages of 25 and 29 with a bachelor’s degree included: Hispanics (12.9%), African Americans (17.5%), and Caucasians (30.7%; Ryu, 2010). These findings can be attributed to various factors, including lack of preparedness, increased risk factors, and family obligations, making higher education completion difficult for minority students (KewalRamani et al., 2007).

Community college statistics are no more promising. Within 6 years, 27% of African Americans had received a certificate or degree from a community college, lower than the overall rate of 36% (Bailey et al., 2004). Gender achievement gaps also exist and are more prevalent among minority students, especially African Americans. In 2004, African American females earned two times as many degrees as their male counterparts (KewalRamani et al., 2007).

Researchers and investigators have widely discussed the origins of the achievement gap between minority students and their Caucasian counterparts (Bailey et
al., 2005), and these discussions have yielded several possible causes: minority students are predominantly the first in their families to attend college, they do not attend the best secondary school systems, and many are not financially stable (Bailey et al., 2005). Minority students entering higher education must often cope with environmental change, as they are exposed to cultures different from the schools and neighborhoods where they grew up. Carter (2006) concluded that although barriers to the success of minority students have been identified, the achievement gap has not closed between various student ethnic groups.

The unfamiliarity in navigating the higher education system affects minority students’ ability to succeed. Jones et al. (2002) discovered a lack of commitment from institutions in developing and supporting cultural centers to address the unbalanced experiences faced by many minority students attending predominantly Caucasian institutions. Also, family support and involvement are very important for the minority student to succeed in higher education (Hernandez & Lopez, 2004; Jones et al., 2002).

**Student Challenges**

Community college students face many challenges in an environment that considers many of them to be at risk. The average community college student is drastically different from what was once considered the traditional college student. Traditional students are defined as recent high school graduates, enrolled full-time, attending a residential college, receiving financial support from parents, who may or may not work on a part-time basis (Hamm, 2004). In 1997, the median age of a student attending a four-year institution was 21; the median age for a student attending a
community college was 24 (NCES, 2007). The AACC (2011) reported that the average age of students attending community colleges has increased to 29. Hamm (2004) found that over 89.5% of community college students in 1999-2000 had at least one factor placing them in the non-traditional category, as these students worked full-time, attended college part-time, were single parents, were financially independent, and/or attended college several years after high school graduation. Each of these additional factors faced by the community college student has an impact on his or her persistence and success.

An additional challenge facing community college students is that they are often underprepared for college-level studies and frequently have to take remedial coursework (Roueche & Roueche, 1993). Lack of adequate preparation affects a student’s ability to graduate as well as to graduate within a reasonable time frame. Students delaying postsecondary education following high school also require additional support and attention (Roueche & Roueche, 1993).

Williams (2002) contended that the lack of success on the part of the community college student could also be attributed to the fact that community colleges must fulfill a wide range of student needs. It is important for student services departments to help all incoming students, regardless of age, work status, ethnic group, or level of preparedness. Student service departments need to design programs specifically to meet the needs of the non-traditional student (Grubb, 2006; Williams, 2002).

Hispanic students face additional challenges and barriers to their success in college. Martinez and Fernandez (2004) noted that challenges for Hispanics include a lack of mentors and socialization resulting in a high attrition rate (citing Rendon, 1999).
Therefore, it is important for community colleges to design and implement programs for Hispanics, as the population of Hispanic students in community colleges has more than doubled over the last 30 years (NCES, 2007). The influx of Hispanic students has changed and continues to change the cultural dynamics of community colleges and places increased importance on the need for professional development and awareness on the part of community college faculty and staff (Martinez & Fernandez, 2004).

Hernandez and Lopez (2004) made various recommendations for colleges and universities to assist in the retention of Hispanic students. Along with these recommendations, Hernandez and Lopez also indicated a need for additional research to understand the reasons behind the lack of success for Hispanic students as well as solutions to close the educational gap. Colleges require both adequate knowledge and a willingness to commit to several areas of concern. Hernandez and Lopez cited personal factors, such as making sure faculty and staff understand the importance of academic self-concept for Hispanic students. According to Hernandez and Lopez, Hispanic students need words of encouragement and positive interaction with faculty members. It is also important for faculty members to understand the importance of constructive evaluation and feedback. Understanding Hispanic culture is also vital to designing programs beneficial to the success and retention of Hispanic students. For example, families are important to Hispanic students. Hernandez and Lopez recommended that institutions design programs not only to engage students, but also to engage their parents. Programs need to be geared to educating students and their families, and materials need to be sensitive to the language needs of families (Hernandez & Lopez, 2004). Finances
also play a significant role in the success of Hispanic students. Hernandez and Lopez recommended that colleges provide information on national and local scholarship opportunities and financial seminars for parents. Environmental factors such as a balance of activities, an inviting, diverse ethnic climate, and the presence of cultural communities are all factors in improving the retention of Hispanic students. While student engagement is important for all students (Tinto, 1998), faculty and student interactions, mentorship, and involvement in student organizations are paramount for Hispanic students, as noted by Hernandez and Lopez (2004). These recommendations utilized information on the Hispanic student’s culture in order to implement and design resources needed to help the Hispanic student succeed. However, Hernandez and Lopez focused on students attending four-year institutions and did not target those attending community colleges.

Flowers (2004) conducted a review of the literature to determine what factors and strategies are in use at colleges and universities to retain African American students and found a lack of research as such. Gardner, Keller, and Pitroskwi (as noted in Flowers, 2004) concluded that from a student’s perspective, the following are needed to aid in African American student retention: special support programs, diversity training, increased diversity in the faculty and staff, improved faculty and student interactions, and campus events geared specifically to African American students. Once again, this study focused on the university setting, and not the community college. Flowers also identified the need to determine the role community colleges can play in increasing the success of African Americans.
Minority Males

As community colleges continue to focus on student success, there are some institutions beginning to develop and design programs meant to improve the success rate of the minority male. Although more colleges are designing programs such as these, data available on the specific success strategies used are absent from the literature regarding minority males in developmental education (Strayhorn, 2008c). Community colleges are the predominant institution of choice for many minority male students. The largest gender gap in higher education exists within the African American population, with African American women attending at nearly twice the rate of African American males (Schmidt, 2008). Schmidt contended that some colleges neglect to discuss the success rates of African American males due to dismal graduation numbers. From 2001 and onward, African American women earned approximately two-thirds of associate’s and bachelor’s degrees awarded to African Americans, and the gap continues to widen (Peter & Horn, 2005).

Ellington and Frederick (2010) and Harper (2003) researched the experiences of African American males who were high achievers in math and attending four-year institutions. This study determined that these students were successful due to (a) participation in advanced academic programs, (b) strong support systems, and (c) participation in scholarship programs. However, these students do not represent those who begin in developmental education or those who attend community colleges.

A large study conducted by Strayhorn (2008c) utilized the College Student Experiences Questionnaire to investigate the correlation between supportive relationships
that African American males had with their college satisfaction and their academic success. In this study, data from the survey revealed “a multifaceted institutional response that brings together professionals from academic and student affairs represents the optimal condition for effective intervention” (p. 41). Although this study examined the self-reports of several hundred African American males, it remained on the university level and did not address males attending community colleges or those in developmental education.

Another study conducted by Strayhorn (2008b) investigated the factors that affect the success of low-income African American males. This research indicated that the higher the aspirations of the African American male, that is, to obtain a graduate degree, the more likely he was to be retained, in comparison with those whose goals were lesser. Strayhorn’s recommendation was for institutions to provide mentors, specialized first-year experience programs, and study groups.

**Developmental/Remedial Education**

The Institute for Higher Education (IHE, 1998) noted that the origins of remediation in the higher education system began when students needed assistance in Greek and Latin, and this practice continued in the 20th century in order to address students who were underprepared for coursework. In the 1960s and 1970s, the inception of open admission institutions also helped to frame the context for remedial education (Hull & Rose, 1989). The open access policy provided an option for students feeling unable to participate at four-year institutions. A survey conducted by the NCES (2004b) revealed that over 98% of community colleges provide open enrollment, in comparison
with 80% of public four-year institutions. Community colleges have a large number of students who require some type of remedial coursework (Roueche & Roueche, 1993, 1999). Developmental education has been necessary in the U.S. higher education system for over 150 years, and it is still essential for universities and community colleges today (Boylan et al., 1999).

Researchers, policy makers, and the public have often asked why developmental education is necessary, stating that it has been paid for prior to college, in a student’s secondary education. Addressing this question, Boylan et al. (1999) stated that only 43% of high school graduates taking college preparatory courses go on to the postsecondary system. They also indicated that there is a learning gap for students without college preparatory courses who continue on to college. This gap in preparation is only discovered once the student has enrolled in a higher education institution. Not reflected in the 43% are students who take college preparatory classes, yet still need remedial education.

The NCES (2004) has identified factors leading to attrition at institutions of higher education. The NCES report noted that 61% of students attending community colleges required at least one remedial course, whereas only 25% of students attending four-year institutions had to take at least one such course. Although these community college students received some type of intervention, they were still less likely to earn a degree or certificate (Bailey et al., 2005; Calcagno, Crosta, Bailey, & Jenkins, 2007; NCES, 2004). Requiring one remedial reading course proved to be the most accurate predictor of student attrition, creating a critical challenge at the institution for educating
the whole of the student population (NCES, 2004). Calcagno et al. (2007) also found that there was less of a benefit from remedial education for the first-time, older student (i.e., over the age of 25) than for the younger, more traditional-aged student. They also concluded that students of any age were more likely to succeed when they had completed at least 20 hours of non-remedial credit. Unfortunately, the study did not disaggregate data by either gender or ethnic group.

As community colleges continue to accept a large number of students who require remedial education, developmental education must become a more comprehensive and inclusive part of the curriculum (Kozeracki & Brooks, 2006). Roueche and Roueche (1999) concluded, “the majority of community colleges do not know how effective their remediation is because they do not assess their effectiveness very well, do not know how to assess it, or do not want to know” (p. 27). Research on the best strategies to assist students taking developmental education courses is limited. Current initiatives may provide a way to develop and implement best practices when designing programs geared to assist students requiring remedial/developmental education (AtD, 2008b).

**Student Retention**

According to the literature on student retention, the term has several definitions. Seidman’s (2005) broad definition of retention is the ability of a student to attain a goal, regardless of the time it took to complete the goal; the definition used to report retention rates by the NCES (n.d.) is as follows:

A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage. For four-year institutions, this is the
percentage of first-time bachelor’s (or equivalent) degree-seeking undergraduates from the previous fall who are again enrolled in the current fall. For all other institutions, this is the percentage of first-time degree/certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by the current fall. (Glossary section, ¶X)

The Center for the Study of College Student Retention published the definition used by U.S. governmental entities: “Program retention tracks the full-time student in a degree program over time (6yrs/4yr college, 3yrs/2yr college) to determine whether the student has completed the program” (CSCSR, n.d., ¶2). Retention data are reported on an annual basis (CSCSR, n.d.); however, it is well known that many students attend postsecondary education on a part-time basis, and the old theory of a traditional student is no longer the standard.

The CSCSR (n.d.) provided other examples of how institutions might define student retention in a way relevant to their student populations, as follows:

Course Retention: The number of students enrolled in each credit course after the course census date and the number of students who successfully complete the course with an A-D grade at the end of the term. Student Retention: If a student does not enroll for two consecutive regular terms, determine whether the student has achieved his/her academic and/or personal goals. Distance/Extended Campus Retention: A student is retained in a distributed learning course and/or program if he/she is making satisfactory progress towards a personal and/or educational objective consistent with the college’s mission. Colleges and universities must set
out to define what they will use as their operational definition of student retention, although it must be in-line with their state and governing bodies. (¶5)

Seidman (2005) noted in the Consortium for Student Retention Data Exchange report that first-year retention rates for students attending four-year colleges were 80.3% for Caucasian students, 74.7% for African American students, and 75.7% for Hispanic students. Asian student retention was the highest, at 86.9%. Tietjen-Smith, Masters, Smith, and Waller (2009) found that the average two-year retention rate for full-time community college students in 2005 was 56.3%. In this study, they also determined that there were significant differences in retention rates depending upon the location of the community college, that is, a suburban, urban, or rural community. Suburban community colleges had the highest retention rates. However, this study did not disaggregate data based on student demographics.

The complexity of students who attend community colleges makes it difficult to determine actual retention rates as well as strategies that may feasibly generalize to the larger student population. This data demonstrates why colleges and universities need to design retention programs for all students, but with a particular focus on minority students. NCES (2011a) suggested that two-year colleges should prioritize their focus on student retention, student success, and improving graduation rates, as the national graduation rate at community colleges is approximately 32%.

**Student Retention Theories**

There are many distinguished theorists researching, developing, and discussing theories related to student retention. Tinto, Pascarella, Astin, and Terenzini are well-
known theorists in the field of student retention. Tinto’s (1998) model of retention is based on student engagement in terms of academic and social integration. Pascarella and Chapman described factors relating to student persistence based on Tinto’s work, finding that the more a student is integrated into the system, the more committed she or he will be to the institution and to accomplishing her or his goals (Pascarella & Chapman, 1983).

Napoli and Wortman (1998) observed that Tinto’s model stresses the importance of social and academic interaction and engagement, and the impact it has on a student’s experience, satisfaction, success, and retention. However, one concern they had was that most of the research on retention and retention initiatives has taken place at four-year colleges and universities, and not at community colleges (Bailey et al., 2004). Napoli and Wortman (1998) reviewed the work of Tinto and others and subsequently refined the theory to fit students entering community colleges. To the work of Tinto and others, they added social support and self-esteem as factors influencing community college students’ retention (Napoli & Wortman, 1998).

Across the nation, students attend community colleges for various reasons. It is a challenge to determine what specific goals a student may have while attending a community college. Research suggests that colleges use a combination of information to assist in measuring retention, including: “(a) initial identification of the student’s goal, (b) periodic verification or adjustment of the goal, and (c) persistence of the student toward the goal” (Wild & Ebbers, 2002, p. 506). However defined, Wild and Ebbers contended that it is important for institutions of higher education to base the definition and measurement of retention on the rules and regulations of the state.
However, Leppel (2002) argued that many community college students leave college voluntarily due to personal reasons, not due to unsuccessful academic performance. Community colleges have many challenges in determining the causes of student attrition. Most community colleges have open access policies, and do not require students to declare a major or identify a particular educational goal when entering the institution. Additionally, students attend community colleges for a variety of reasons. Some attend to gain skills for professional development and career advancement, while others attend to take courses in order to transfer to a four-year institution (Leppel, 2002). These factors make it difficult to determine retention and graduation rates for community colleges.

**Retention Models**

Many programs and models of retention have been based on the theoretical work of Tinto and Pascarella (as cited in Napoli & Wortman, 1998), addressing the importance of social and academic interaction and engagement and how they impact student experience, satisfaction, success, and retention. The major concern in this approach is that most student retention programs are based on four-year colleges and universities, and not designed to fit community college students (Bailey et al., 2004). Napoli and Wortman (1998) set out to refine the theory specifically for students entering and attending community colleges. Many community colleges offer excellent retention programs, but lack the statistical data to show their relevance and impact.

Community colleges and universities utilize national surveys to assist them with meeting student needs and evaluating the student environment. Community colleges use
the Noel-Levitz survey (Noel-Levitz, n.d.-b) and the Community College Survey of Student Engagement (CCSSE, n.d.-b) to obtain data on student satisfaction and engagement. The CCSSE’s results are beginning to set the standard for national benchmarks to assist community colleges with providing an environment of positive student engagement (CCSSE, n.d.-b).

Derby and Smith (2004) discovered a relationship between students attending an orientation course and their likelihood of obtaining a degree, as well as student dropouts, re-enrollment, and persistence at community colleges. They found a positive correlation between a student’s enrollment in an orientation course and her or his retention (Derby & Smith, 2004). The courses used in the research not only taught students how to deal with academics, but covered personal development as well.

Glass and Oakley (2003) examined the attrition of accounting majors at community colleges in North Carolina, and designed a plan to identify what both colleges and accounting programs could do to improve the retention rates of their students. Their efforts involved surveying 59 accounting department chairs in the North Carolina Community College System. Results indicated that several factors could lower attrition rates, including: taking a personal interest in students, providing a car, nurturing, keeping quality in the accounting program, listening to students, and being observant. Results also indicated that students should be encouraged to ask questions and seek intervention early to avoid problems (Glass & Oakley, 2003). Many retention programs have similar goals to improve student social interaction and to nurture students. These items support the theories of Tinto, Pascarella, and Astin.
Postsecondary schools across the nation have designed summer bridge programs and pre-freshman activities. These programs range in length from one week on campus to a program lasting six weeks. Some programs award academic credit, while others work to improve the study and time-management skills of the incoming student. Maggio, White, Molstad, and Kher (2005) studied summer programs offered at selected universities across the U.S. and tracked students for 3 years. Three hundred ninety-seven students were followed during this period. The pre-freshman programs studied had the following characteristics: (a) 84.6% were in programs at institutions that required certain students to enroll in the program, (b) 292 students were required to participate in the program, (c) social recreation was provided for 90.7% of the students, and (d) 91% required mandatory professional counseling. Maggio et al. found the most significant factors in the programs that affected retention to be an on-site residency requirement, the awarding of academic credit, and the inclusion of mandatory peer tutoring.

Parker (2005) researched the placement, retention, and success of students taking mathematics at Clarion University. Parker found that the higher a student scored on the placement exam, the more likely that student would be retained and graduate from the institution in four years. Parker also determined that students more successful in the math courses at the institution were also more likely to graduate.

Orientation courses and first-year experience programs are becoming more prevalent and are often a requirement for freshman students. Derby and Smith (2004) studied the effectiveness of an orientation course for students attending a community college. They found a positive correlation between students attending the orientation
course and obtaining their degree compared with those not taking the orientation course. Results also showed a significant positive relationship between students re-enrolling after a “stop-out” period when taking the orientation course over those who did not take the course.

As administrators try to determine the reasons for student attrition, it is important for them to understand the environment at their institutions, in order to develop programs that effectively meet the needs of their students. A two-year study conducted at the University of Mississippi utilized focus groups to determine the causes of student attrition there (Richie & Hargrove, 2004). From the focus groups, the researchers determined that student absences played a significant role in what individuals believed was the reason for the attrition of freshman students. Subsequently, administrators designed a pilot telephone intervention program to address student absences. The program they designed was to call students with excessive absences to make them aware of the importance of attending class. The correlation analysis revealed that as a student’s absences increased, grades decreased (Richie & Hargrove, 2004). This was consistent for both the experimental and control groups. When assessing the effectiveness of the telephone intervention, the researchers found that students in the experimental group had fewer absences and higher semester grades than those in the control group (Richie & Hargrove, 2004).

Developed a number of years ago, learning communities are becoming common practice, particularly at four-year institutions. Learning communities can be designed in many ways. Residential colleges may design learning communities among students
living in the same dorm. Other learning communities are designed based on career interests. The structure and level of integration can vary among learning community designs (B. L. Smith & MacGregor, 2009). A learning community could also represent two linked courses or be fully integrated with common syllabi, collaborative activities, co-curricular activities as well as common themes existing across courses (B. L. Smith & MacGregor, 2009). As retention theories are based on student engagement, a learning community creates an avenue to increase a student’s engagement in campus life.

There are promising results from the student success perspective when students participate in learning communities in the community college setting (Raftery, 2005; Scrivener et al., 2008; R. A. Smith, 2010). Kingsborough Community College’s Learning Communities program is one of the few documented learning communities programs for community college students. Kingsborough’s Learning Communities program goal is to decrease the time students spend in remedial education while increasing their success in courses. The program has proved to be successful in moving students through the developmental education sequence of courses more readily than students who did not participate in the program (Scrivener et al., 2008). Zhao and Kuh (2004) determined that students were more engaged and satisfied with their educational experience because of their involvement in learning communities. However, limited research exists regarding the effectiveness of learning communities in relation to specific ethnic and racial student demographics.
Student Retention at Two-Year Colleges

Although it is a requirement for Title IV institutions to report retention rates of students, community colleges have difficulty in accurately determining student retention rates and success statistics because many students attend for reasons other than to obtain a degree or a certificate. Frequently, students do not identify academic goals at the time of admission. Many factors influence whether or not a student will remain at an institution after the first year of attendance. Studies have been conducted to determine what specific barriers arise and how to plan programs to effectively address them (DeBerard, Spielmans, & Julka, 2004; Harrell & Forney, 2003; Leppel, 2002).

Napoli and Wortman (1998) found community college students generally had more psychosocial issues as well as external pressures affecting their retention rates. Students’ social support and self-esteem were factors in retention specific to community colleges, added to the work done by Tinto and others (Napoli & Wortman, 1998). Leppel (2002) identified other factors influencing student persistence: (a) family income, (b) age, (c) race, (d) academic and social integration, and (e) academic performance. In a longitudinal study, DeBerard et al. (2004) identified specific predictors of academic achievement and retention among college freshmen. The population they studied was 72% female, 87.3% non-smokers, and 64.2% non-binge drinkers. The physical health of the students and coping strategies were consistent with the national norms for those in the corresponding age group. The 10 predictors used were correlated with the students’ GPAs. DeBerard et al. found that smoking and binge drinking negatively related to cumulative GPA; as drinking increased, cumulative GPA decreased. Of the 10 predictors
evaluated in this study, only one predictor, high school GPA, was statistically linked to retention.

DeBerard et al. (2004) found a statistical relationship between cumulative GPA and retention. Although the study did not support the original hypotheses, it was felt by the researchers that the study identified factors affecting student achievement. DeBerard et al. summarized the research by stating, “This study demonstrated the utility of the model to predict academic achievement but not college student retention” (p. 7). The study did provide a model useful for predicting which students would be at risk of academic failure during the first year of college.

Harrell and Forney (2003) studied the rigor of high school curricula as related to the academic success of Hispanic students in their first year of college. Harrell and Forney found that family demographics played a unique role in the retention of these students. The majority of Hispanic students in this study were first-generation, that is, with no parent previously attending college or obtaining a college degree. Research indicates that students with parents having some college education generally have higher retention rates, primarily because their parents are more knowledgeable on how to navigate the higher education system (Harrell & Forney, 2003). Harrell and Forney emphasized the importance of Hispanic students receiving continuous, quality-mentoring relationships that provide proactive assistance to students. Another factor affecting the Hispanic student is the rigor of his or her high school curriculum. Hispanic students generally score in a low percentile of the Scholastic Aptitude Test exams due to the poor
quality of the curriculum they encounter in the public education system (Harrell & Forney, 2003).

Harrell and Forney (2003) emphasized the importance of a more rigorous high school academic curriculum and suggested that decision-makers address these students’ financial needs. They suggested that processes be put in place to prepare the families and students for the process of seeking financial aid and that it is vital this assistance take place early, while students are still in high school.

King (2003) studied the attendance patterns of students and the financial decisions they made affecting student persistence and success. A student’s decision to attend college full-time, versus attending part-time and working, has been found to be a determining factor in a student’s ability to achieve his or her academic goals. King determined that a student’s academic success might depend upon the decision to work or not to work while attending college. King determined that it is a better choice for students to assume loans and work less than to maintain employment and attend college at the same time. King identified five factors affecting student success: (a) type of institution attended, (b) attendance status, (d) housing arrangement, (e) student loans, and (f) employment. King asserted that “more time and attention must be devoted to counseling students on college campuses, in high schools and community-based organizations, and through federal TRIO programs, about the costs, benefits, and consequences of making financing choices” (p. 82).
Achieving the Dream

There is currently an interest for colleges across the nation to address the issue of student success in developmental education (AtD, 2010; Mellow & Heelan, 2008). These efforts are the result of national data on students’ lack of successful progression in reaching educational goals when, lacking in preparation, they place in developmental courses (NCES, 2008). Achieving the Dream, originally funded by the Lumina Foundation, began in 2004 with identifying 26 community colleges to be demonstration institutions (AtD, n.d.-c). Achieving the Dream, Inc., is a national nonprofit that is dedicated to helping more community college students, particularly low-income students and students of color, stay in school and earn a college certificate or degree (AtD, n.d.-h).

The AtD initiative was intended to have a systemic and national impact on the success of students, especially those traditionally facing barriers to achieving their academic goals (AtD, n.d.-i). Over 160 community colleges in over 30 states across the nation are participating in this initiative. With the assistance of AtD, a culture of evidence is beginning to take precedence in how decisions and policies are formulated, as they relate to developmental education (Rutschow et al., 2011). Institutions around the nation are using data to make decisions as well as to determine if strategies and initiatives will continue or be brought to scale. Based on best practices and empirical data, this new focus will have a major impact on programming at community colleges.

Recognized in this initiative is that community college students have a variety of goals. AtD colleges aim for their students to accomplish the following: “(a) successfully complete the courses they take, (b) advance from remedial to credit-bearing courses, (c)
enroll in and successfully complete gatekeeper courses, (d) enroll from one semester to the next, and (e) earn degrees or certificates” (AtD, n.d.-i, ¶3). AtD colleges identify strategies to help students become successful. The support provided by this initiative includes providing colleges with coaches to guide schools in their efforts, assistance with data analysis, and public policy support. The AtD colleges are similar in student demographics, enrolling a large number of students needing remedial education (AtD, n.d.-j). Strategies used by the schools provide students with adequate and important services to help them succeed. Although this initiative’s basic purpose and goal is student success, colleges have the flexibility to design individual programs to address their own internal issues.

Achieving the Dream is now in its seventh year of existence, and what started as an initiative with a few community colleges involved is now a non-profit organization with goals to impact policy at the state level. Policy teams have been formed in several states with the understanding that to have a major impact, policies must be changed at both the college and state levels. The report written by Rutschow et al. (2011) on the first five years of AtD led to much discussion and discourse concerning the initiative’s impact. According to the study, the initial colleges developed a wide range of activities and initiatives geared to helping students succeed; however, most of the projects remained on a small scale. One positive effect of AtD was that colleges are beginning to make data-driven decisions. Other findings indicated small changes in student outcomes, most likely due to the fact that many of the initiatives were still in pilot stages (Rutschow et al., 2011). Although the initial five-year study did not show drastic changes and success
measures at most of the schools, there is still great momentum gained in helping students succeed.

This researcher investigated the perceptions and attitudes of minority males who attended one of three AtD community colleges, specifically those students taking remedial math, in order to learn how the programs and strategies affect these students’ success. Collaboration between institutions as well as sharing best practices were identified as strategies for improving developmental education by the IHE (1998) and are consistent with the goals of the AtD program.

**Ohio Students**

Students attending colleges in Ohio mirror the national demographic data. The 2008 freshman class in this region consisted of 55% women, 16% minorities, and 62% attending full-time (OBOR, 2010a). In Ohio, 39% of students attending community colleges are enrolled on a full-time basis, compared with 85% of students enrolled on a full-time basis at four-year institutions (OBOR, 2010a). In the fall of 2009, over 544,000 students attended institutions of higher education in Ohio, with 39% of these students attending community colleges. Sixty percent of first-year community college students attended on a part-time basis, and 59% of those were first-generation students (OBOR, 2010a). Similar to national data, 49% of the community college students were over the age of 24, whereas at the universities, only 16% were over the age of 24 (OBOR, 2010a).

The student graduation and success data in Ohio is less promising than the national average. The fall 1998 Ohio cohort of first-time freshmen, attending community college and four-year institutions, showed six-year completion rates of 29% for
minorities, versus 47% for non-minority students at four-year colleges (OBOR, 2005). Thirty-seven percent of students entering higher education in Ohio required remedial coursework (OBOR, 2006). Overwhelmingly, 80% of part-time community college students needed remedial education (OBOR, 2010b). The data indicate that these students generally graduate at lower rates than students taking only college-level courses, as only 27% of students graduated within 6 years when required to take remedial courses (OBOR, 2005). Of the entering community college freshmen in 2009, 50% took a remedial math or English course, with more taking remedial math than English (OBOR, 2010b). Students prepared for college-level work are three times more likely to earn a bachelor’s degree than those needing remedial courses (OBOR, 2010b).

Overall, institutions in cities across the U.S. develop retention strategies to help students succeed. States are spending millions of dollars on remedial education in higher education, and the need to move students to college-level coursework continues as a driver (OBOR, 2010b). In Ohio, 10 million dollars have been spent on remedial education, which is 6.4% of the total support to community colleges in this region (OBOR, 2010). Understanding the costliness of remedial education, institutions are realigning their financial resources to programs that will increase student success, with the hopes of decreasing future remediation costs (AtD, n.d.-b).

The development of innovative success strategies is gaining momentum, as colleges strive to address the issue of developmental education. Some colleges focus specifically on minority males (AtD, 2008b). In Ohio, four-year colleges and universities move ahead with targeted initiatives; however, there is a lack of strategies targeted at
community colleges to address certain pressing issues, such as the success of minority male students in developmental math. There is still a deep need to identify the challenges and barriers faced by African American males in order to improve their retention rates (Rideaux, 2005). Best practices or the comparative analysis of programs such as these have not emerged in the literature.

**Community College Initiatives**

There are many national initiatives involving community colleges. Achieving the Dream, Completion by Design, and the Developmental Education Initiative are all geared to improve the success of students attending community colleges, specifically those beginning in developmental education. These programs are geared toward creating policy changes that will have an impact at the college and ultimately at the state level.

Completion by Design (CBD, n.d.), a Gates Foundation-funded, five-year initiative, is geared to increase completion and graduation rates for low-income students attending community colleges. CBD builds upon the work and data of Achieving the Dream. The theoretical framework established by this initiative is to recognize the significant stages in a student’s journey that may cause her or him to leave college. The goal is to identify those points and create support systems that will deter the likelihood of their occurrence, so that students can complete college (CBD, n.d.). There are currently colleges across five states involved in this initiative. Data regarding its effectiveness is yet to be determined.
Limitation of Current Research

Student retention and success strategies continue to be the focus of studies and research at four-year institutions. Most of the research has been limited to the specific institution where the study was conducted. Bailey et al. (2004) asserted that there is limited research on community colleges describing the details of programs for student success as well as limited published research on effective practices. Rideaux (2005) stressed that college administrators must ask African American males what they need, and then develop programs designed to meet those needs. Strayhorn (2008c) recommended additional research to further test the theories of goal commitments and institutional commitments for African American male students. Scholars such as Harper and Quaye (2007) have done extensive research on the minority male student, though predominantly at the four-year institution. Community colleges have a large portion of their student populations requiring some form of remediation upon admission. Due to the number of students taking remedial courses on entry into two-year institutions, the trend is to address the overall lack of student success in developmental math education, and not specifically one gender or racial demographic. Community colleges engage in addressing the needs of all students, but addressing such an issue only globally will not close the achievement gap that is prevalent in the minority male student population.

The research of Lee and Ransom (2011) focused on minority males and contributes to the growing body of knowledge concerning the educational state of minority males. In their research, several recommendations were outlined. Lee and Ransom also recognized the gap in research as it pertains to minority males, resulting in a
lack of solutions to improve the educational state of minority males. Lee and Ransom made the following recommendations: (a) national priority is needed to address outcomes for minority males, (b) additional partnerships are needed for mentoring, (c) close the educational gap at the high school level, (d) better trained teachers and culturally diverse educators are needed, (e) retention programs specific to the young men of color are needed, and (f) more research is needed to assist in understanding their challenges as well as to provide data-based solutions.

Foundations and national initiatives are forcing colleges to address their low graduation rates (Lumina Foundation, n.d.; The Ohio Board of Regents, 2008). The American Council on Education has underscored the need for colleges to concentrate efforts and resources on students with the greatest need, such as minority male students (ACE, 2011). Though minority male students taking developmental math have the greatest need, there is limited research available on this student demographic. Carter (2006) further supported the importance of programs targeted toward specific student groups, as interventions meant for all students may fall short of their goal. Bailey and Morest (2006) stressed how community colleges need to develop data systems that allow them to understand what barriers many students face, the journeys they take, and to recognize the most effective strategies for student success. Scholars have recognized and recommended the importance of evaluating, designing, and implementing developmental education programs built on empirical research. Collaboration within and between institutions will most likely improve the number of students who are successful in colleges and universities (Boylan & Bonham, 2007; Roueche & Roueche, 1999;
Waycaster, 2001). Building successful developmental education programs to meet the needs of all students designed on established research and comprised of best practices, will require collaboration and discussion at all levels within and among many colleges and universities.

Summary

Chapter 2 provided an overview of the literature related to community college students. The review included current research, the minority achievement gap, the status of minority males in community colleges, and an overview of the Achieving the Dream initiative. The following chapter presents the methodology that was used to investigate the perceptions and attitudes of minority male students participating in AtD and other success initiatives at three community colleges, and the success of these students in their academic endeavors.
CHAPTER III

METHODS

Introduction

This chapter describes the methods used in addressing the research question in this study. It contains the following: (a) design of the study, (b) participants, (c) data collection, (d) data analysis, and (e) summary. The instrument developed for this study is described, and the constructs are defined. The purpose of this study was to investigate the motivation, attitudes, and level of engagement of minority males taking developmental math courses at three community colleges in Ohio, based upon their perceptions. The study sought to ascertain how colleges’ initiatives and environment impact the success of these students. This chapter outlines the procedures utilized by this researcher to conduct the study and describes the instrument, the participants, as well as how the data were collected and analyzed.

Research Questions

As presented in Chapter 1, the purpose of this study was to explore the perceptions of minority males who had taken a developmental math course and also participated in some aspect of a success initiative at their college of attendance. Several of the participating institutions have yet to adopt all of the initiatives, as they are still under review for effectiveness. Minority males at these institutions had varying levels of engagement at their respective campuses. This researcher examined enrollment characteristics and demographic information and made comparisons between the minority males who succeeded in math and those who did not. This comparison was
done to determine if minority males had varying reasons for attending college, if there were differences in engagement on campus, and how they felt they were viewed while attending their respective colleges. This study also attempted to determine if the college of attendance played a role in the perceptions of the minority males, in terms of reasons for attending college, how they felt they were judged while on campus, and the engagement level at the institutions.

The latter part of the research investigated what minority males perceived as factors contributing to their success in math. It also sought to determine what strategies assisted in helping minority males succeed in college overall. The following five research questions were examined in this study:

1. Is there a significant difference in motivation, judgment, and engagement level for minority males when compared by math outcome? In this study, motivation refers to why the males attended college; judgment refers to how the minority males felt they were perceived on campus; and engagement refers to how involved the males were on their campuses.

2. Is there a significant difference in motivation, judgment, and engagement level for minority males when compared by demographics (enrollment status, age, and ethnicity)?

3. Is there a significant difference in motivation, judgment, and engagement level for minority males when compared by college?

4. How do minority males describe the learning and success strategies that contribute to their math outcomes?
5. What strategies do minority males identify as beneficial to helping them meet their educational goals?

**Null Hypothesis**

1. There is no significant difference in motivation, judgment, or engagement level for minority males when compared by their math outcomes.
2. There is no significant difference in motivation, judgment, or engagement levels for minority males when compared by demographics.
3. There is no significant difference in motivation, judgment, or engagement level for minority males when compared by college of attendance.
4. Themes will be identified based upon the responses provided to the open-ended question.
5. Themes will be identified based upon the responses provided to the open-ended question.

**Participants**

This study utilized a targeted sample of African American and Hispanic males ($N = 510$) attending one of three community colleges in Ohio. The researcher was unable to contact 45 of the 510 participants due to either an individual having left an institution or an individual’s e-mail address was no longer in service. The final sample of the participants was $N = 465$. These minority males also participated in at least one success initiative at their colleges that was designed to assist students in developmental education. Each male participant was enrolled in a developmental math course at his home institution between the fall of 2009 and the fall of 2010 terms.
Survey Instrument

At the time of this study no survey existed that was designed to capture the motivation, engagement, judgment, and impact of success initiatives for students in developmental education. Surveys such as the Survey of Entering Student Engagement (SENSE, n.d.) are designed for entering students during the first few weeks of their college experience, and the Community College Survey of Student Engagement (CCSSE) measures institutional practices as well as the behaviors of students in the community college setting (CCSSE, n.d.-b). While these surveys are relevant to students, neither focuses on students in developmental education. Additionally, the National Survey of Student Engagement (NSSE, n.d.) is designed for students who attend four-year institutions, and the Noel-Levitz survey is designed to gauge students’ satisfaction with their institutions and to rank the importance of certain issues from the student’s perspective (Noel-Levitz, n.d.-a); but again, neither are designed for students in developmental education.

Based upon these observations and research, this researcher developed the Student Success Survey (SSS; see Appendix 1). The SSS was designed to collect five types of information: demographic, motivation (for attending college), judgment (how students feel they are treated on campus), engagement (relationships with other students, faculty relationships, and participating in college activities), and by way of an open-ended question segment, the perceptions and experiences of participants in AtD and other success initiatives. The SSS questions were developed from information gathered during focus-group discussions conducted at an institution; a review of the literature
regarding student engagement; a review of the Noel-Levitz, CCSSE, and SENSE surveys; as well as general interest questions addressing the research topic (CCSSE, n.d.-b; Public Agenda, 2007; SENSE, n.d.).

The subscales identified in this survey are consistent with the literature and research on student success. Student engagement is being studied across the country with the goal of determining the level of engagement of students and its relationship to success and retention in college (McClenney & Marti, 2006; AtD, n.d.-c; Public Agenda, 2007). A large-scale research study conducted by Gardenhire-Crooks et al. (2010) helped to inform the Motivation and Judgment subscales in the survey. The research involved asking students about (a) influences on the decision to attend college, (b) racial identity, (c) making friends, (d) seeking help, and (e) interacting with faculty members. As the literature indicates, each of these subscales has been shown to impact student success.

The SSS consisted of 49 scaled items utilizing a 4-point Likert scale of (1) Strongly Agree, (2) Agree, (3) Disagree, and (4) Strongly Disagree for each of the items. The remainder of the survey related specifically to math success and success strategies impacting the participant. Individuals involved in the success initiatives at each of the participating colleges reviewed the SSS instrument. Subsequently, a pilot study was conducted with a group of 26 minority males outside of the targeted sample, and changes were made to the survey based upon this feedback. Students provided pertinent information to the researcher concerning the interpretation of the survey questions while also identifying areas that lack clarity in the survey. Individuals serving as directors of
student success programs also reviewed the survey and provided feedback. Survey questions were modified based upon the feedback.

**Survey Variables**

This section describes the variable subscales used in this study. Sections 1 through 3 were self-assessment aspects of the survey measured on a Likert scale ranging from (1) *Strongly Agree* to (4) *Strongly Disagree*.

**Motivation:** The first construct on the SSS instrument *Motivation* was designed to determine the participants’ goals for attending college. This section consisted of 14 items asking the participant to introspectively examine his reasons for attending college. This construct also delineated the participant’s future goals. The content of this section included: family expectations, financial stability, and goals for a better life.

**Judgment:** Section 2 of the survey consisted of 10 items to determine how the male minority participants felt they were perceived on campus.

**Engagement:** Section 3 provided 25 items to determine if the participant took part in college activities, engaged with faculty members, and also had friends on campus. This section included questions regarding trust, making friends, participating in campus events, and regarding relationships with faculty. The last section of this construct asked the participant about seeking help from tutors, financial aid, and learning problems.

Demographic information was gathered from all of the minority male participants. This information provided the basis on which additional analysis was disaggregated to determine what measures impacted specific students. The demographic information also
allowed this researcher to determine how results would apply to the various groups comprising the sample.

Additional demographic information was sought through a number of yes/no questions asking about the math placement test, studying for the test, the number of times taking the placement test, and the number of credit hours a student was taking. The demographic form also asked about study habits: participation in a learning community or study groups, amount of time spent studying, number of successfully completed math classes, participation in the orientation program, and meeting with advisors. Survey respondents were also asked their age and the number of hours they worked each week.

The survey concluded with open-ended questions designed to capture students’ experiences at the selected colleges to determine which factors had a positive impact on their outcomes in the developmental math course or courses. This section included questions regarding participation in a learning community and preparation for math success. It also helped to determine which strategies were instrumental in student success.

All participants at each institution received the same survey to improve its reliability. The reliability of the survey was also evaluated according to the Cronbach’s alpha reliability coefficient for each subscale and the total scale using the 49-scaled items, as Cronbach’s alpha is a measure of internal consistency. For the motivation scale the alpha was 0.833; for the judgment scale it was 0.584; and for engagement it was 0.865.
Procedures

Institutional Review Boards representing Kent State University, and the participating colleges granted permission for the study to take place (Appendix C). Participants were identified from each college by their institutional research departments, who then provided e-mail addresses to this researcher.

Collection of Data

The participants received an introductory e-mail from the researcher indicating the purpose of the survey and requesting their participation. Three days following the introductory e-mail, participants received another e-mail providing them with a link to the survey, including the consent form. The participants were then instructed to proceed with approval, or they could choose not to participate. As previously indicated, a total of 510 e-mails were sent out with the link to the survey, of which 45 were returned due to invalid e-mail addresses.

Subsequent e-mails were sent out to the students who did not initially respond to the survey, and each subsequent e-mail was sent only to those who had not responded. Three weeks following the initial electronic mailing of the survey, students at College A were mailed surveys. The mailed surveys included the following: (a) a personally addressed, introductory letter; (b) a consent form; (c) the student success survey; and (d) a self-addressed envelope with return address and first-class postage. However, obstacles to obtaining the home addresses for the other participants rendered the mailed surveys infeasible.
To ensure maximal participation and with the ease of e-mail, frequent electronic reminders were sent to all non-responders. Participants at College A also received follow-up phone calls. As an incentive to increase participation, students completing the survey received a six-dollar deposit to their campus student card.

**Data Analysis**

Multivariate analysis of variance (MANOVA) was used to examine responses to Research Questions 1 through 3. According to Pallant (2005), a MANOVA is preferable when multiple dependent variables are present. The MANOVA decreases the likelihood of Type 1 errors that may occur if the individual analysis of variance (ANOVA) was run as the statistical process. Alpha levels were set at a significance value of .05 for all tests.

To examine Research Question 1, a MANOVA was conducted using math outcome (pass vs. fail) as the independent variable to determine any significant difference in the set of dependent variables. The dependent variables were: (a) motivation, (b) judgment, and (c) engagement.

Three MANOVAs were utilized to examine Research Question 2 using the following independent variables: (a) enrollment status, (b) age, and (c) ethnicity, in order to determine significant differences in the three dependent variables. The dependent variables consisted of (a) motivation, (b) judgment, and (c) engagement.

Research Question 3 was also examined by using MANOVA, with the college of attendance as the independent variable. The dependent variables were: (a) motivation, (b) judgment, and (c) engagement. A factor analysis was conducted on each subscale to determine the reliability of each content area.
The second portion of the research study focused specifically on success strategies that were designed to help students succeed in their math coursework. This portion included an open-ended segment of the survey, allowing participants to provide additional information and insight. Although this research did not utilize a mixed-methods approach, narrative data were collected from the participants. Narrative data can be obtained from various sources such as: (a) open-ended questions and written comments on questionnaires, (b) testimonials, (c) individual interviews, and (d) discussion groups or focus group interviews (Taylor-Powell & Renner, 2003).

A phenomenological approach was incorporated on the open-ended questions that sought to understand the meanings of the responses (Bogdan & Biklen, 2007). Responses were placed on color-coded note cards and then grouped per theme. The responses were also individually separated and coded for college and math outcome. The process to analyze this data utilized similar steps taken during analysis of qualitative data. As indicated by Taylor-Powell and Renner (2003), the researcher should determine the focus of the analysis. The recommendation from Taylor-Powell and Renner indicates two approaches: (a) focus by question and/or (b) focus by case, individual, or group. A combination of the above strategies incorporating a focus on the actual question and group responses were used to analyze this question.

Bogdan and Biklen (2007) described the importance of developing coding categories for narrative data. Strategy codes help to identify how people complete and accomplish things referring to techniques, methods, and other factors (Bogdan & Biklen, 2007). As Research Question 4 asked the participants to reference what strategies
impacted their math outcome, this coding process was utilized. The descriptive statistics and codes were applied to the responses of the open-ended questions.

The final phase of the research, posed by Research Question 5, asked the minority males to identify what their colleges could do to better help them meet their educational goals. The open-ended portion of the survey was also treated as described previously in Research Question 4. This information provided insight into what strategies contributed to their overall success in college. Descriptive statistics were collected and coded responses were also used in this segment of the research.

**Ethical Considerations**

Confidentiality of the participants and the institutions they attended was maintained at all times. Neither institution nor participants have been identified by name in the study at any time. Results are discussed on the basis of the success initiatives and the aggregated perceptions of the minority males provided at each college. All research participants in the study have a right to privacy, with the expectation that the data will be kept confidential at all times. The right to privacy and confidentiality was also disclosed to research participants prior to the start of the study. Data were only reported in an aggregated form. A cover letter provided to the participants explained to them the privacy and ethical issues of the study as well as delineated that participation would be voluntary. All personally identifiable information was removed following data collection to maintain the confidentiality of the participants. Internet surveys were completed through www.surveymonkey.com.
Summary

This chapter identified the research methodology, design, and intended analysis of the collected data. It included: (a) design of the study, (b) participants, (c) data collection, and (d) data analysis. It also restated the research questions, including the null hypotheses as appropriate for each question. The chapter identified how participants were selected and recruited for the study. Information on the Student Success Survey instrument construction and pilot testing was presented as well.

Chapter 4 presents the results of the survey and the statistical analyses conducted on the data at the three participating institutions. It describes the demographic statistics, the number of surveys sent, and the number of surveys received.
CHAPTER IV

RESULTS

Introduction

This chapter describes the results and the statistical analysis of the data obtained from the Student Success Survey as well as the compilation of the open-ended questions regarding the student’s perception on the impact of strategies on their math outcome. Descriptive statistics and demographic information about the participants are presented followed by the statistical analysis of the data.

Pre-Analysis Data Screening

Ninety-six individuals responded to the survey. The data was transferred into SPSS 16.0 for analysis. Participants who did not provide their consent or did not finish a large portion of the survey were removed from the analysis. After removing those participants, 89 participants were left.

Descriptive Statistics

A third of the participants (N = 89) were 26-35 years of age (29, 32.6%) and nearly all were African-American (85, 95.5%). Half were unemployed (41, 46.1%) and two-thirds (58, 65.9%) had more than 2 years in between their last class prior to attending college. Almost 7 out of every 10 participants (68.5%) were not the first in their family to attend college. Frequencies and percentages for demographic information are presented in Table 1.
Table 1

*Frequencies and Percentages for Demographic Information*

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<tr>
<td>36-45</td>
<td>12</td>
<td>13.5</td>
</tr>
<tr>
<td>46+</td>
<td>24</td>
<td>27.0</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>85</td>
<td>95.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Hours of work per week</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 10</td>
<td>11</td>
<td>12.4</td>
</tr>
<tr>
<td>10-20</td>
<td>8</td>
<td>9.0</td>
</tr>
<tr>
<td>21-36</td>
<td>13</td>
<td>14.6</td>
</tr>
<tr>
<td>Greater than 36</td>
<td>16</td>
<td>18.0</td>
</tr>
<tr>
<td>Not currently working</td>
<td>41</td>
<td>46.1</td>
</tr>
<tr>
<td><strong>First of immediate family to attend college</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>28</td>
<td>31.5</td>
</tr>
<tr>
<td>No</td>
<td>61</td>
<td>68.5</td>
</tr>
<tr>
<td><strong>Years between last class and attending current college</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>12</td>
<td>13.6</td>
</tr>
<tr>
<td>1-2 years</td>
<td>18</td>
<td>20.5</td>
</tr>
<tr>
<td>More than 2 years</td>
<td>58</td>
<td>65.9</td>
</tr>
<tr>
<td><strong>College of attendance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College A</td>
<td>56</td>
<td>62.9</td>
</tr>
<tr>
<td>College B</td>
<td>27</td>
<td>30.3</td>
</tr>
<tr>
<td>College C</td>
<td>6</td>
<td>6.7</td>
</tr>
</tbody>
</table>

More than two-thirds of the participants took part in their college’s orientation program (60, 68.2%). Most of the participants are enrolled full-time (67, 76.1%), on average, taking 9-12 credit hours per term (57, 64.8%). Nearly all the participants took the math placement exam once (82, 93.2%) with a large majority (75, 85.2%) not studying prior to the exam. Once enrolled in math, the amount of time outside of class
spent studying and preparing for math varied, with the largest number of participants preparing 1-3 hours per week (27, 30.3%). Less than 10% (8) of the participants did not meet with an advisor during the period between Fall 2009 and Fall 2010; most of the participants (53, 60.2%) met with an advisor 1-3 times during that period and a third met more than six times. Frequencies and percentages for college-related questions are presented in Table 2.

**Research Variables**

Three research variables were created from the 49 survey questions that had responses that ranged from 1 = strongly agree to 4 = strongly disagree. A Motivation variable was created by taking the mean score of all of the 14 questions in section 2 (“I attend college to…”). The Judgment variable was created by taking the mean score of the 9 questions in section 3 (“While attending college, I…”). Two judgment questions were reverse coded (am judged by staff on my appearance and am an outsider on campus). The Engagement variable was created by taking the mean score of all of the 25 questions in section 4 (“On Campus I…”). One engagement question was reverse coded (prefer keeping to myself). The average motivation score was 23.98, placing responses between strongly agree and agree. The average judgment score was 15.37, placing responses between agree and disagree for judgment. The average engagement score was 53.54, signifying responses were close to agree for engagement.

Cronbach’s alpha was calculated for each of the survey subscales. The results were then analyzed to determine the reliability of each based on the negative corrected item-total correlations and deletion of items. It revealed that motivation and engagement
Table 2

*Frequencies and Percentages for College-Related Questions*

<table>
<thead>
<tr>
<th>Question</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participate in college orientation program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>60</td>
<td>68.2</td>
</tr>
<tr>
<td>No</td>
<td>28</td>
<td>31.8</td>
</tr>
<tr>
<td>Math placement exam was taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>before taking college courses</td>
<td>88</td>
<td>98.9</td>
</tr>
<tr>
<td>after taking college courses</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Prepared or studied for math placement exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>14.8</td>
</tr>
<tr>
<td>No</td>
<td>75</td>
<td>85.2</td>
</tr>
<tr>
<td>Number of times exam was taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>82</td>
<td>93.2</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>6.8</td>
</tr>
<tr>
<td>Enrollment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>67</td>
<td>76.1</td>
</tr>
<tr>
<td>Part-time</td>
<td>21</td>
<td>23.9</td>
</tr>
<tr>
<td>Credit hours on average per term</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-8</td>
<td>19</td>
<td>21.6</td>
</tr>
<tr>
<td>9-12</td>
<td>57</td>
<td>64.8</td>
</tr>
<tr>
<td>13-20</td>
<td>12</td>
<td>13.6</td>
</tr>
<tr>
<td>Times met with advisor between Fall 2009 to 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3</td>
<td>53</td>
<td>60.2</td>
</tr>
<tr>
<td>4-6</td>
<td>19</td>
<td>21.6</td>
</tr>
<tr>
<td>Greater than 6</td>
<td>8</td>
<td>9.1</td>
</tr>
<tr>
<td>Did not meet with advisor</td>
<td>8</td>
<td>9.1</td>
</tr>
<tr>
<td>Time outside of class studying or preparing for math</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 hour</td>
<td>19</td>
<td>21.3</td>
</tr>
<tr>
<td>1-3 hours</td>
<td>27</td>
<td>30.3</td>
</tr>
<tr>
<td>3-5 hours</td>
<td>23</td>
<td>25.8</td>
</tr>
<tr>
<td>Greater than 5</td>
<td>20</td>
<td>22.5</td>
</tr>
</tbody>
</table>
had good reliability (> 0.80), while judgment had less than questionable reliability (< 0.60) based on guidelines stated in George and Mallery (2009).

The items on the Student Success Survey (SSS) were subjected to a Principal Component Analysis (often referred to as Factor Analysis) and varimax rotation using SPSS Version 16.0. Inspecting the correlation matrix there were many coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .669 above the recommended value of .6 (Pallant, 2005) and the Bartlett’s test of Sphericity was significant at a level of .000 (Pallant, 2005), supporting the ability to factor the variables in the survey. Based upon the eigenvalues above 1.0, the scree plot, and factors loading at .3 and above (Pallant, 2005), three factors were identified as expected prior to the analysis. The scree test and percentage of variance indicated that the three factors accounted for 46% of the variance. According to Pallant, this value is substantially above the chance level.

Table 3

*KMO and Bartlett’s Test*

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | .669 |
| Bartlett’s Test of Sphericity | Approx. Chi-Square | 2269.089 |
| | Df | 780.000 |
| | Sig. | .000 |

Since normality has to be assessed in order to conduct the MANOVAs, Kolmogorov Smirnov (KS) tests were conducted on motivation, judgment, and engagement. Results of the three KS tests were significant for judgment, violating the
assumption for normality. The $F$ statistic, however, is robust against violations of normality (Stevens, 1999), indicating a slight effect on the Type 1 Error Rate.

Motivation and engagement satisfies the assumption of normality. Table 4 presents the means, standard deviations, Cronbach alphas, and KS test results for motivation, judgment, and engagement.

Table 4

*Means, Standard Deviations, Cronbach Alphas, and KS Test Results for Motivation, Judgment, and Engagement*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>$\alpha$</th>
<th>Number of items</th>
<th>KS $z$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>23.98</td>
<td>5.78</td>
<td>0.83</td>
<td>14</td>
<td>0.68</td>
<td>.744</td>
</tr>
<tr>
<td>Judgment</td>
<td>15.37</td>
<td>2.57</td>
<td>0.58</td>
<td>9</td>
<td>1.49</td>
<td>.023</td>
</tr>
<tr>
<td>Engagement</td>
<td>53.54</td>
<td>8.38</td>
<td>0.89</td>
<td>26</td>
<td>0.84</td>
<td>.477</td>
</tr>
</tbody>
</table>

**Research Questions Results**

**Research Question 1**

RQ1: Is there a significant difference in motivation, judgment, or engagement levels for minority males when compared by math outcome? To examine Research Question 1, a multivariate analysis of variance (MANOVA) was conducted to assess if there was a significant difference ($p < .05$) in motivation, judgment, or engagement levels for minority males on math outcome (pass vs. fail).

The results of the MANOVA were not significant, $F (3, 255) = 1.09$, $p = .367$, suggesting there were no differences in the motivation, judgment, or engagement levels
by math outcome (pass vs. fail). Because the MANOVA was not significant, the individual ANOVAs were not examined. The null hypothesis that there was not a difference in motivation, judgment, and engagement by math outcome cannot be rejected in favor of the alternative hypothesis. Results of the MANOVA are presented in Table 5. Means and standard deviations for motivation, judgment, and engagement are presented in Table 6.

Table 5

*Results of MANOVA and ANOVAs for Motivation, Judgment, and Engagement by Math Outcome*

<table>
<thead>
<tr>
<th>Source</th>
<th>MANOVA F (3, 255)</th>
<th>Motivation</th>
<th>Judgment</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>1.09</td>
<td>0.690</td>
<td>.387</td>
<td>0.742</td>
</tr>
</tbody>
</table>

*Note.* *p* < 0.05  **p** < 0.01

Table 6

*Means and Standard Deviations for Motivation, Judgment, and Engagement by Math Outcome*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Pass M</th>
<th>Pass SD</th>
<th>Fail M</th>
<th>Fail SD</th>
<th>Total M</th>
<th>Total SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>24.18</td>
<td>5.94</td>
<td>23.94</td>
<td>5.59</td>
<td>23.98</td>
<td>5.78</td>
</tr>
<tr>
<td>Judgment</td>
<td>15.59</td>
<td>2.16</td>
<td>15.06</td>
<td>3.20</td>
<td>15.37</td>
<td>2.57</td>
</tr>
<tr>
<td>Engagement</td>
<td>54.00</td>
<td>8.02</td>
<td>52.51</td>
<td>9.03</td>
<td>53.54</td>
<td>8.38</td>
</tr>
</tbody>
</table>
Research Question 2

RQ2: Is there a significant difference \((p < .05)\) in motivation, judgment, or engagement levels for minority males when compared by demographics (enrollment status, age, and ethnicity)? To examine Research Question 2, three separate MANOVAs were conducted to assess if there was a significant difference in motivation, judgment, or engagement levels by demographics (enrollment status, age, and ethnicity). The result of the first MANOVA which examined motivation, judgment, and engagement by enrollment status (full-time vs. part-time) was not significant, \(F(3, 84) = 0.510, p = .677\), suggesting there were no differences in motivation, judgment, and engagement by enrollment status. The result of the second MANOVA which examined motivation, judgment, and engagement by age (18-25 vs. 26-35 vs. 36-45, vs. 46+) was not significant, \(F(9, 255) = 1.17, p = .312\), suggesting there were no differences in motivation, judgment, and engagement by age. The result of the last MANOVA which examined motivation, judgment, and engagement by ethnicity (African-American vs. Hispanic) was not significant, \(F(3, 85) = 0.604, p = .614\), suggesting there was no difference in motivation, judgment, and engagement by ethnicity.

Because no MANOVA was significant, the null hypothesis that there was not a difference in motivation, judgment, or engagement by the demographics cannot be rejected in favor of the alternative hypothesis. Results of the three MANOVAs are presented in Table 7. Means and standard deviations for motivation, judgment, and engagement by enrollment status, age, and ethnicity are presented in Table 8.
### Table 7

**MANOVAs for Motivation, Judgment, and Engagement by Enrollment Status, Age, and Ethnicity**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MANOVA $F$</th>
<th>Motivation (3, 85)</th>
<th>Judgment (1, 87)</th>
<th>Engagement (1, 87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>3, 84</td>
<td>0.51</td>
<td>0.16</td>
<td>0.41</td>
<td>0.88</td>
</tr>
<tr>
<td>Age</td>
<td>9, 255</td>
<td>1.17</td>
<td>0.72</td>
<td>1.01</td>
<td>1.63</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>3, 85</td>
<td>0.60</td>
<td>0.34</td>
<td>0.01</td>
<td>1.63</td>
</tr>
</tbody>
</table>

*Note.* *p* < 0.05 **p* < 0.01

### Table 8

**Means and Standard Deviations for Motivation, Judgment, and Engagement by Enrollment Status, Age, and Ethnicity**

<table>
<thead>
<tr>
<th>Group</th>
<th>Motivation</th>
<th>Judgment</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>Enrollment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>23.75</td>
<td>5.83</td>
<td>15.42</td>
</tr>
<tr>
<td>Part-time</td>
<td>24.33</td>
<td>5.56</td>
<td>15.28</td>
</tr>
<tr>
<td>Total</td>
<td>23.89</td>
<td>5.75</td>
<td>15.39</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>22.79</td>
<td>5.57</td>
<td>15.42</td>
</tr>
<tr>
<td>26-35</td>
<td>24.10</td>
<td>5.60</td>
<td>15.96</td>
</tr>
<tr>
<td>36-45</td>
<td>25.75</td>
<td>5.42</td>
<td>15.00</td>
</tr>
<tr>
<td>46+</td>
<td>24.12</td>
<td>6.42</td>
<td>14.79</td>
</tr>
<tr>
<td>Total</td>
<td>23.98</td>
<td>5.78</td>
<td>15.37</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>23.95</td>
<td>5.90</td>
<td>15.37</td>
</tr>
<tr>
<td>Hispanic</td>
<td>24.50</td>
<td>2.08</td>
<td>15.50</td>
</tr>
<tr>
<td>Total</td>
<td>23.98</td>
<td>5.78</td>
<td>15.37</td>
</tr>
</tbody>
</table>
Research Question 3

RQ3: Is there a significant difference in motivation, judgment, or engagement levels for minority males when compared by college? To examine Research Question 3, a MANOVA was conducted to assess if there were differences ($p < .05$) in motivation, judgment, or engagement levels by college (College A vs. College B vs. College C). The results of the MANOVA were not significant, $F(6, 170) = 0.62$, $p = .713$, suggesting there were no differences in motivation, judgment, or engagement by college. The null hypothesis that there was not a difference in motivation, judgment, and engagement by college cannot be rejected in favor of the alternative hypothesis. Results of the MANOVA are presented in Table 9. Means and standard deviations are presented in Table 10.

Table 9

**MANOVAs for Motivation, Judgment, and Engagement by College**

<table>
<thead>
<tr>
<th>Source</th>
<th>MANOVA $F(6, 170)$</th>
<th>ANOVAs $F (2, 86)$</th>
<th>Motivation</th>
<th>Judgment</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>0.62</td>
<td>0.47</td>
<td>1.47</td>
<td>0.04</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p* < 0.05  **p* < 0.01
Table 10

*Means and Standard Deviations for Motivation, Judgment, and Engagement by College*

<table>
<thead>
<tr>
<th>College</th>
<th>Motivation</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>College A</td>
<td>24.28</td>
<td>5.31</td>
<td>15.68</td>
<td>2.56</td>
<td>53.66</td>
<td>8.79</td>
</tr>
<tr>
<td>College B</td>
<td>23.11</td>
<td>6.78</td>
<td>14.67</td>
<td>2.73</td>
<td>53.48</td>
<td>8.10</td>
</tr>
<tr>
<td>College C</td>
<td>25.00</td>
<td>5.65</td>
<td>15.67</td>
<td>1.37</td>
<td>52.67</td>
<td>6.59</td>
</tr>
<tr>
<td>Total</td>
<td>23.98</td>
<td>5.78</td>
<td>15.37</td>
<td>2.57</td>
<td>53.54</td>
<td>8.38</td>
</tr>
</tbody>
</table>

**Research Question 4**

RQ4: What strategies do minority males identify as beneficial in helping them to meet their educational goals? To examine Research Question 4, descriptive statistics were conducted on survey questions 16, 22, 24, and 25, as well as the open-ended question 26. Results showed that the majority of the students in all three colleges took a college success course; however the majority did not participate in a math study group. Only 2 participants from College B participated in a study group (7.7%) whereas 15 (27.3%) of the College A participants took part in a study group. Nevertheless, for those that did, all but one student at College A (91.7%) thought it was beneficial. The majority of the students participating in the study did not participate in a Math Learning Community, although students attending College A had the largest portion of its students participating in one (17, 30.4%). For those that did take part in a Math Learning Community, two-thirds from College A indicated it helped them succeed (12, 66.7%)
whereas those from College B responded just the opposite, two-thirds (4, 66.7%) did not think it helped them succeed; no students from College C participated in a Math Learning Community. Frequencies and percentages for survey questions 16, 22, 24, and 25 are presented in Table 11.

Table 11

*Frequencies and Percentages for Survey Questions 16, 22, 24, and 25*

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>College A</th>
<th></th>
<th></th>
<th>College B</th>
<th></th>
<th></th>
<th>College C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did you take a college success course?</td>
<td>Yes</td>
<td>33</td>
<td>58.9</td>
<td>18</td>
<td>66.7</td>
<td>5</td>
<td>83.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>23</td>
<td>41.1</td>
<td>9</td>
<td>33.3</td>
<td>1</td>
<td>16.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do you and/or did you participate in a math study group?</td>
<td>Yes</td>
<td>15</td>
<td>27.3</td>
<td>2</td>
<td>7.7</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>40</td>
<td>72.7</td>
<td>24</td>
<td>92.3</td>
<td>6</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If yes, was it beneficial?</td>
<td>Yes</td>
<td>11</td>
<td>91.7</td>
<td>2</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1</td>
<td>8.3</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Did you participate in a Math Learning Community?</td>
<td>Yes</td>
<td>17</td>
<td>30.4</td>
<td>4</td>
<td>14.8</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>34</td>
<td>60.7</td>
<td>22</td>
<td>81.5</td>
<td>6</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don't know</td>
<td>5</td>
<td>8.9</td>
<td>1</td>
<td>3.7</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If yes, did being part of the math learning community help you succeed in math?</td>
<td>Yes</td>
<td>12</td>
<td>66.7</td>
<td>2</td>
<td>33.3</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>6</td>
<td>33.3</td>
<td>4</td>
<td>66.7</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Survey question 26 was an open-ended question asking what person, program, or strategy helped the student successfully complete math. This segment of the study allowed each participant to express what he perceived as impacting his success in math.

One student commented, “I participated in Math 0850 that was joined with my Math 0950. It helped me with my organization, studying, and test taking skills. It also
helps me improve on my self esteem.” Another student indicated that “all the above (study partners, computer software) was very helpful to me, especially the book that we used, On Course.” (On Course refers to the book used in the course Math 0850 at one institution.) Other comments from the participants indicated the importance of an interactive class. Of the successful math students 11% participated in a math study group; of those who participated, all felt the math study group was helpful. One student commented, “it was [a] very helpful group with a lot of questions asked.”

The participant responses were placed on color-coded note cards identified by categorical clusters. Analysis of the open-ended questions revealed themes that emerged from the participants’ responses and were clustered into three categories: (a) external resources, (b) classroom pedagogy, and (c) self-sufficiency and effort. Two emergent themes were identified as the importance of (a) being self-directed learners and (b) interdependency that leads to success.

**Research Question 5**

RQ5: What strategies do minority males identify as beneficial in helping them meet their educational goals? To examine Research Question 5, responses to the open-ended survey questions 28 and 29 were clustered. Question 28 asked: *What could the college do to help you be successful in accomplishing your educational goals?* The participants’ responses were clustered into seven categories: cheaper books/financial aid, more classes/scheduling options, tutors/study groups, nothing, better teachers, additional resources/learned skills, and other.
The largest response for College A was for *nothing* to be done to help the students (13, 25.5%). At College B, aside from other response category (7, 35.0%), the largest response was for *better teachers* (5, 25.0%). At College C, there was one response in each of the five categories: *cheaper books/financial aid, more classes/scheduling options, tutors, nothing*, and other. Frequencies and percentages for Question 28 responses are presented in Table 12.

Table 12

*Frequencies and Percentages for Responses to Survey Question 28*

<table>
<thead>
<tr>
<th>Question 28 Response</th>
<th>College A</th>
<th>College B</th>
<th>College C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Cheaper books/financial help</td>
<td>4</td>
<td>7.8</td>
<td>0</td>
</tr>
<tr>
<td>More classes/scheduling options</td>
<td>6</td>
<td>11.8</td>
<td>1</td>
</tr>
<tr>
<td>Tutors/study groups</td>
<td>12</td>
<td>23.4</td>
<td>3</td>
</tr>
<tr>
<td>Nothing</td>
<td>13</td>
<td>25.5</td>
<td>4</td>
</tr>
<tr>
<td>Better teachers</td>
<td>5</td>
<td>9.8</td>
<td>5</td>
</tr>
<tr>
<td>Additional resources/learned skills</td>
<td>8</td>
<td>15.7</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>5.9</td>
<td>7</td>
</tr>
</tbody>
</table>

Survey question 29 dealt with other aspects of the participants’ college experience that played a significant role in their success and was clustered into eight categories: student clubs/other students, class scheduling, teachers, tutors, having good self-discipline, the staff, family support, and other. At College A, the largest number of
responses was for the opportunity to engage more on the campus (10, 21.7%) as well as having good self-discipline (doing homework and going to class; 10, 21.7%). At College B, the largest response related to the teachers (36.8%). For College C, it was a split between having good self-discipline (2, 33.3%) and other responses (2, 33.3%).

Frequencies and percentages for survey question 29 responses are presented in Table 13.

Table 13

*Frequencies and Percentages for Responses for Survey Question 29*

<table>
<thead>
<tr>
<th>Question 29 Response</th>
<th>College A</th>
<th></th>
<th>College B</th>
<th></th>
<th>College C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Engagement opportunities</td>
<td>10</td>
<td>21.7%</td>
<td>1</td>
<td>5.3%</td>
<td>1</td>
<td>16.7%</td>
</tr>
<tr>
<td>Class scheduling</td>
<td>2</td>
<td>4.3%</td>
<td>4</td>
<td>21.1%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Teachers</td>
<td>7</td>
<td>15.2%</td>
<td>7</td>
<td>36.8%</td>
<td>1</td>
<td>16.7%</td>
</tr>
<tr>
<td>Tutors/support</td>
<td>4</td>
<td>8.7%</td>
<td>2</td>
<td>10.5%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Self-discipline</td>
<td>10</td>
<td>21.7%</td>
<td>1</td>
<td>5.3%</td>
<td>2</td>
<td>33.3%</td>
</tr>
<tr>
<td>Staff</td>
<td>7</td>
<td>15.2%</td>
<td>2</td>
<td>10.5%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>13%</td>
<td>2</td>
<td>10.5%</td>
<td>2</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

This question as well as questions 26 and 28 allowed the students to express their perception on what strategies, resources, and/or individuals played a role in their success. The questions also allowed students who were not successful to express what additional support they felt would have been beneficial in helping them succeed. The participants’ responses ranged from continuing the support that is currently being provided to
providing additional tutorial resources. The participants’ responses were placed on color-coded note cards and then identified by categorical clusters. Analysis of the open-ended questions revealed themes that emerged from the participants’ responses and were clustered into 3 categories: (a) resources, (b) interaction opportunities, and (c) addressing individual needs. Three emergent themes were identified as the importance of colleges to: (a) address economic conditions, (b) communication, and (c) understanding the needs of minority males.

**Continue the Current Strategies**

The students attending these AtD schools recognized the additional focus and dedication to helping them succeed. “Keep doing what you are doing” relates to the work of the success strategies and additional focus currently being implemented on each college campus. Some students indicated, “this college is doing all the things that I need it to do” and to “keep doing what they’re doing.” Another student said, “I think the college does more than its share to help you be successful if you want to be successful.”

**Resources**

College resources emerged as a theme, as students felt they needed additional support. The participants provided the following comments: “provide resources, making students aware of resources available,” “offer better support services,” “cheaper text books,” “give student mentors,” “more understanding of student problems,” “My college is actually doing a job of addressing most issues, but I say invest in more tutors for the core classes, Engineering, electronic . . . etc.,” and “offer better support services.”
Course Scheduling

The last theme that emerged in the responses of those who were successful in remedial math was scheduling and course-related; this was derived from comments such as, “more online courses,” “more weekend classes,” as well as,

Just keep the college doing what its doing. Also, sometimes I need help to decide or to figure out what I need to do next or what would be the next best strategy and what courses or classes I need to take to fulfill my career goals so maybe we need better counselors who can help with that.

Another student wrote, “Have the classes I need for I can graduate and have math tutors that can speak English. I went to my high school teacher for math help because I could not understand the tutors at the ____ campus,” and another wrote, “Bring classes that are a part of my major closer to my location ____ campus.”

Resources and Assistance With Coursework

The minority male students who were unsuccessful in remedial math indicated a greater need for resources and assistance with their math coursework. One student suggested that his college “provide information on resources.” Another student cited, “____ is a good college, and the help was provided. I just need more help in math.” Other comments included: “Make sure there is enough resources for me,” “have more tutors available for students schedules,” and “[a] math tutor that has patience one-on-one.”
Faculty Members

Some students who responded to the survey expressed the need and desire to have good faculty members. The need to have faculty members who are understanding of their needs and willing to go the extra mile was important. One student commented, “the teachers were great!” Another student cited, “Great instructors that are compassionate.”

Summary

This chapter presented the results obtained from the Student Success Survey obtained from the three participating colleges in Ohio. The two segments of this research provided quantitative data to determine if there were significant differences amongst various factors. The second portion of the research provided the participants the opportunity to respond to open ended questions relating to their perspective on factors that played a part in their math outcome and success at the college. The analyses were reported and described as they related to the research questions in this study. Chapter 5 presents the summary, implications, and recommendations for future study.
CHAPTER V
SUMMARY, DISCUSSION, IMPLICATIONS AND CONCLUSION

Summary

To help all of their students succeed, colleges must change from standard practices to those that improve a student’s ability to transfer, obtain a certificate, or graduate. Faculty, administrators, and staff at community colleges across the country are beginning to talk among themselves regarding best practices and to share their ideas and processes in order to increase the retention rates of their students. The success of the minority male continues to be a challenge for most community colleges, as this group of students still succeeds at extremely low rates when compared with the majority student population. Many colleges in the United States are designing programs for minority males based on new research that is paramount to helping this group of students succeed.

Students entering into higher education are requiring developmental/remedial coursework at an alarming rate. Some states are seeing more than 60% of entering students in need of at least one developmental course. Among course subjects, developmental math is the greatest challenge for students, as many either wait to take math as late as possible in their college careers or must repeat a course one or more times. Research has also shown that when students need remedial coursework they are less likely to complete college (Roueche & Roueche, 1999; AtD, n.d.-b).

The community college student faces many challenges as he or she strives not only to gain entry to a postsecondary institution, but also to obtain a degree or certificate. Work, family commitments, and a lack of preparation for college are just a few of the
issues that community college students face. In addition, it is a vicious cycle for the minority male attending postsecondary education, as he has the highest unemployment rate, has the lowest graduation rate, is least likely to attend an institution of higher education, and is more likely to live in poverty. Nonetheless, these groups of students have made their way to the doors of post-secondary institutions; however, they often find themselves quickly leaving the vehicle that they had hoped would provide them with a better life.

Strategies to assist the minority male who has arrived at the doors of higher education require additional attention from educators above what they do to help other student demographics succeed. Effective strategies to assist the minority male must be identified and utilized at the community college that he attends. Sharing best practices, research techniques, and feedback from students concerning implemented strategies among community colleges remains vital to this effort.

This chapter contains the summary of findings, implications for the practice, discussion, and future research recommendations regarding the success of the minority male attending a community college.

**Purpose of the Study**

The goal and purpose of this research was to identify the perceptions of minority males enrolled in community colleges in order to assist the institutions with designing strategies that will help this population succeed in developmental math. Identifying strategies to meet their needs remains paramount for the community college. An increasing number of students are choosing to attend community colleges as their college
of choice; however, they arrive underprepared. In this study, I attempted to delineate and to understand the experiences of underprepared minority males taking developmental math and to determine if the strategies that had been incorporated at community colleges impacted their success in the classroom. An integral aspect of this research entailed open-ended questions geared to capture minority males’ perceptions of success strategies implemented at their respective institutions. This portion of the research made it possible to contextualize the participants’ responses.

For this research, I gleaned information gathered from focus group discussions and information from the Noel-Levitz and CCSEE surveys to develop my own survey, the Student Success Survey. This survey contained questions directed specifically to minority male students who were participating or who had participated in success initiatives at their college of attendance; it collected demographic data, including enrollment patterns, age range, preparation for math placement exams, and study habits.

**Research Questions**

The five research questions for this study, as presented in Chapter 3, are as follows:

1. Is there a significant difference in motivation, judgment, or engagement levels for minority males when compared by math outcome? In this study, motivation refers to why the subjects attended college; judgment refers to how the subjects felt they were perceived on campus; and engagement refers to how involved the subjects were at their institutions.
2. Is there a significant difference in motivation, judgment, or engagement levels for minority males when compared by demographics (enrollment status, age, and ethnicity)?

3. Is there a significant difference in motivation, judgment, or engagement levels for minority males when compared by college?

4. How do minority males describe the learning and success strategies that contribute to their math outcomes?

5. What strategies do minority males identify as beneficial in helping them to meet their educational goals?

Discussion

The findings for Research Question 1 were quantitatively analyzed using data obtained from the Student Success Survey that I administered to minority males attending one of three community colleges in Ohio. This methodology produced data regarding the participants’ perceptions of (a) their reasons for attending college, (b) how they felt they were perceived at their institutions, and (c) their engagement levels at their respective colleges. I compared this perceptual data among the males who had successfully completed a developmental math class with a grade of “C” or better, and those who did not, by their college of attendance, enrollment status, and age.

The first set of statements queried the participants regarding their reasons for pursuing higher education. The query was worded as such: “I attend college to…” This lead-in sentence was followed by 14 short phrases designed to pinpoint each student’s goal(s) for attending college. The second query was worded “At college I am…” and
this was also followed by 10 short phrases designed to determine how the student felt he was perceived on his campus. The final queries (“On campus I…” and “On campus I have…”) were geared to illicit the student’s perceived level of engagement. The quantitative analysis of this section showed no significant differences in motivation, judgment, or engagement level among participants who passed remedial math versus those who did not. Although the mean scores were lower in all subscales for the participants who did not pass math, these differences were also insignificant. The next section provides an analysis of the findings for the African American and Hispanic males surveyed by their pass rates in math.

**Discussion of Research Question 1**

**Motivation.** The Multiple Variance of Analysis (MANOVA) results showed no significant difference in motivation (reason for attending college) between the males who were successful versus those not successful in completing the developmental math class. The analysis indicates that minority males attend college for the same reasons regardless of their performance in math. The participants stated that their goals were to make better lives for themselves and to obtain a career. The sample size in this aspect of the research most likely did not have any effect on the results. All students attend college in general to make a better life or to obtain career goals. Hall and Rowan (2000) also found in their qualitative study of minority males attending four-year institutions that this group of students attended to reach personal goals with no distinction among them by their level of academic achievement.
Judgment. The MANOVA results for the judgment subscale also showed no significant differences among the participants in this category. This subscale was designed to determine how, as minorities, the students felt themselves to be perceived on their campuses. One possible reason for not finding a difference among the groups in this portion of the research is conceivably the small size of the sample group. An additional reason for the finding in this particular category could be that the minority males in this study may have been reluctant to perceive themselves as not accepted on their campuses. In terms of comparing the minority males who succeeded in math with those who did, it seems that judgment, or how students felt they were perceived on their campuses, does not impact their ability to succeed in developmental math: though further investigation into this construct should be conducted.

Research conducted by Patitu (2000) investigating the satisfaction of minority males attending four-year institutions revealed that they had an overall satisfaction with their experiences at these institutions. According to Patitu, although these minority males were attending predominantly Caucasian institutions, they were satisfied overall with their college environment. On the other hand, research conducted by the College Board (2010) revealed that minority males often felt like outsiders, which may contribute to their comparatively high rate of departure from college. This report emphasized the importance of “minimizing the feeling like an outsider” (p. 40).

Another dynamic that may have influenced this finding is that all of the students who participated in the research took part in some type of success initiative at their institutions, which may have provided them with additional support and a better
experience at their colleges. Strategies such as learning communities, study groups, and orientation are all geared to acclimate students to the college environment and decrease the likelihood of their feeling isolated or disconnected.

**Engagement.** The MANOVA results for Research Question 1 did not reveal a significant difference. This would indicate that the students were engaged at the same level independent of their math outcomes. Research consistently shows that the more students are engaged, the more successful they will be; however, there is limited research targeting minority males in developmental math community colleges. Although the students in question perceived themselves to be engaged in the college environment, possibly through participation in the success strategies, it revealed no impact on their success in developmental math.

This study showed no significant difference among students by math outcome and perceived level of engagement. This finding is consistent with earlier findings from AtD data. Research conducted by McClenney and Marti (2006) evaluating the Achieving the Dream initiative indicated that minority students involved in the AtD initiatives were more engaged than non-participating students. The early data from AtD indicated that while participating students were more engaged than non-participating students, overall success in specific courses had not yet been realized (McClenney & Marti, 2006). The overall level of engagement of all the minority males as presented in this study was not significantly sufficient to impact math success. It confirms the importance of other factors and strategies that are needed to assist students in developmental math. The results from this study as well as the findings in the AtD data also reinforce the concept
that what minority males perceive as being engaged in the college environment may not be at a level of other student groups where the engagement level may have had an impact on their success.

**Discussion of Research Question 2**

The analysis of this research question indicates no difference amongst the students based upon their enrollment status, age, and ethnicity. It would seem reasonable to expect that regardless of age, students attend institutions of higher learning for the same reasons, that is, to have a better life, to take care of a family, and so forth, and this similarity was evident in the responses obtained by the Student Success Survey. Although the MANOVA results measuring differences in how the participants felt themselves to be perceived on campus, based on age, did not show a significant difference, both the younger (18-25) and the older (>45) age ranges depicted a higher level of engagement than the 26-35 and 36-45 age groups, with a mean score of 51.7, as compared with 55.79 and 55.25 for the other age groups. Although the differences in engagement levels were not significant, the younger-aged student would still most likely have fewer external commitments than the older student, allowing him to be more involved in his college environment. Similar to the findings for Research Question 1, surveying only the African American and Hispanic population of males does not allow comparisons with other demographics that could reveal significant differences in engagement among different students groups. This homogeneous sample indicates the level of engagement did not vary within the participants and essentially had no impact on their success in math.
There is limited research disaggregating the engagement levels of minority males based upon age and enrollment status in higher education; however, Harper’s (2009) research indicated that minority males were still less engaged at their colleges, even to a point of disengagement, when compared with both their female and Caucasian counterparts, something that can affect the likelihood of their academic success.

Another finding, though not at a significant level, was a difference in how the participants felt they were perceived on their respective campuses. The older male group exhibited a higher level of agreement in feeling heard by the faculty, feeling judged on their performance and not ethnicity, and fitting in on campus, perhaps reflecting greater maturity and a more positive self-image than the younger age group, whose mean score was 15.4 and 25.9, compared with 14.8 for the older age group. The small sample size may also have impacted the assessment of significant differences based on demographic characteristics of the African American and Hispanic groups.

**Discussion of Research Question 3**

**College of attendance.** The MANOVA results to assess differences in motivation, judgment, or engagement levels among the three participating institutions, revealed no significant differences. These results could be attributed to the fact that all of the males in this research participated in some success initiative at their colleges, equalizing the differences in both judgment and engagement level. Each institution in the study had programs and success initiatives in place to engage all of their students in developmental education, and these initiatives may have impacted the participants’ perception of judgment and engagement at their colleges.
Similar to the previous research questions, the size of the participant group may have impacted the results of this analysis. This small sample size is of particular concern as one of the participating colleges was only able to provide an extremely small number of minority males involved in the success initiatives at their institution. The student population of this particular college had a different demographic makeup when compared to the other institutions.

The analysis in this research question yielded comparable data as previously reported in Research Question 1 indicating that motivation would not yield significant differences between students regardless of the institutions in which they are enrolled. Students attend community college for the same primary reason independent upon the specific institution. Judgment and engagement levels could yield significant differences among the institutions possibly with different student demographics. There has yet to be documented research that has attempted to compare success rates amongst minority males attending different colleges. There is extremely limited research available that has attempted to compare the impact of strategies of colleges for the minority male student.

**Discussion of Research Question 4**

As the purpose of the research was also to determine which strategies positively impacted the academic performance of minority male students, the survey also asked participants to identify the initiatives they felt were beneficial to their educational experiences. Open-ended questions were included in the survey to gather their perceptions of the success initiatives designed to assist them in the developmental math course. Each participant was asked about his study habits: participation in a math
learning community, what strategies helped him to be successful in math, what the college could do to help him achieve his educational goals, what aspects of his college experience facilitated his success in math, what learning and study strategies facilitated his success in math, if he had prepared for the math placement exam, and how many years had passed since his last course.

Research Question 4 sought to determine how minority males perceived the learning and success strategies that impacted their math outcome. Through this segment of the research, I sought to learn the processes employed by the participants to prepare for the math placement exam, how many hours they spent studying for math, as well as asking participants to describe the factors contributing to their success. Based on the findings discussed in Chapter 4, three themes emerged in the responses collected from the participants who had successfully completed developmental math: (a) utilization of external resources, (b) classroom pedagogy, and (c) self-sufficiency and effort. Two emergent themes were also identified: (a) self-directed learners and (b) interdependency.

The theme described most often by the minority males who were successful in the developmental math class was that of utilizing external resources that were available to them. These resources often took the form of computer software to learn the course material. Many of the colleges participating in the Achieving the Dream initiative have used some form of computer programs to help the student progress through developmental math. Although the colleges in this research have not mandated the use of computer software in developmental math, some faculty members utilize it exclusively in their courses. The comments made by the students in this research support the use of
computer software as a means to increase student success in math. Math software is one way to actively engage the student during this phase of his learning. The comments received from the minority males in this research indicated that the math software is one factor contributing to their success; however the reasons why they perceived this way were not disclosed. The value of further investigation into these reasons is warranted.

Participants who successfully completed remedial math also described tutoring resources, study partners, or study groups as positively impacting their success. Community colleges in particular offer tutoring services free of charge; the challenge in some instances, however, is to bring students to these resources. Success initiatives at the colleges in this research have focused on driving these resources to the students. In this way, these aspects of the initiatives provide an avenue to help all students, not only selected student populations.

Gardenhire-Crooks et al. (2010) conducted a qualitative study of minority males in developmental education. However, the study did not address the question of what teaching methodologies or strategies assisted these students with succeeding in developmental math. A large study conducted by Weissman et al. (2011) saw initial promising results from students participating in learning communities, but a long-term effect on the success of these students did not come to pass. Also, their findings did not identify one specific subgroup of students who benefitted more than the others. The above studies and their findings highlight the need for community colleges to implement additional pedagogies, such as study partners and related techniques, in all developmental math courses.
According to their responses to the open-ended questions, the minority males who were unsuccessful in the remedial math course did not feel participation in a math learning community was helpful to them. Of those same students, 60% indicated that it had been over two years between their last high school class and attending college. This span of time appears to be a factor impacting student success, with one possible solution being to offer a refresher course for these students. Approximately 80% of the males did not participate in a math study group or engage with a study partner. Although these students participated in the success initiatives at their respective institutions, their lack of personal contact with a study partner or study group may have contributed to their lack of success in the remedial math course. This finding relates to two aspects of student success: (a) the importance of seeking out resources and (b) engaging in the college environment. Students who seek out tutoring have the ability to succeed in courses and those who can reach out to other students will also have a better opportunity to succeed. Students who were successful were self-directed learners as well as understanding the importance of interdependency that leads to success. The successful students often sought out tutors or participated in study groups.

**Discussion of Research Question 5**

Research Question 5 sought to determine what other measures minority males felt that their colleges could implement to help them achieve their academic goals. All of the participants responded to this question, regardless of their math outcome. Three themes emerged from these responses: (a) interaction opportunities, (b) provide adequate resources, and (c) addressing the student’s individual needs. Emergent themes consisted
of: (a) addressing the economic conditions, (b) communication, and (c) understanding the needs of minority males.

**Interaction opportunities.** The students attending these AtD schools recognized the additional focus and dedication of their college communities helping them succeed. The statements they provided are encouraging for the colleges in this study, as the students could recognize their colleges’ efforts; yet, a greater effort must be made to involve more minority male students at these colleges. These institutions have implemented mandatory orientations, peer mentoring programs, as well as wrap-around support services for their developmental students. The key to these strategies is to increase student engagement at these institutions. Providing opportunities for interaction with faculty and other students in the classroom as well as the college environment as a whole appears to be a significant factor identified by minority males in this study.

**Resources.** College resources also emerged as a theme. The students expressed a need for additional support. Although some of the students in this study were successful in math, they still felt that additional support would help to continue their success. The students in the research understood both the benefit of knowing what resources are available as well as utilizing those resources. Colleges must begin to design programs and strategies to address the specific concerns of the minority male. Minority males in this study expressed the economic conditions that affect their success in college, indicating a need for institutions to be cognizant of situations that may influence their individual outcomes.
**Addressing individual needs.** The last theme emerging from the responses of the minority males was the need for colleges to address their individual needs. Many factors attributed to this theme such as course scheduling. Appropriate course scheduling is a continual concern and challenge for community colleges. As community college students have very different course scheduling needs than full-time, four-year university students, it is difficult for community colleges to offer classes at times that will meet the needs of all of every student; inevitably, some students’ needs will not be met.

The minority male students who were unsuccessful in remedial math indicated a greater need for resources and assistance with their coursework. All of their comments stressed the need for resources, which might indicate that some students did not seek out tutoring services or were unaware of them. All of the minority males, regardless of their success in math, provided comments regarding available resources that reinforce the importance of resources in helping these students succeed. Tutoring appeared to be a major resource need for all of the students who participated in the research.

Some students who responded to the survey expressed the need and desire to have good faculty members. The need to have faculty members who are understanding of their needs and willing to go the extra mile was important. It is vital for any developmental education program to have instructors that are committed to developmental education as well as having the patience to work with the students most in need.
Relevance of This Research to Previous Research

The review of literature indicated some factors are known regarding effective success strategies for all students in developmental math; however, little is known specifically for minority males in developmental math. Lee and Ransom (2011) recognized the gap in education solutions for minority males and emphasized the need for additional research. Greene et al. (2008) found African Americans reported high engagement levels; however, it was not correlated to their academic achievement. This research builds and expands on the body of work relating to the needs of minority males. Comparing minority males (motivation, judgment, and engagement) based on math outcome, age, enrollment status, and college of attendance, no significant differences were found. This research builds and expands on the body of work relating to the needs of minority males, comparing minority males (motivation, judgment, and engagement) based on math outcome, age, enrollment status, and college of attendance. Perrakis’ (2008) research focused on the sense of belonging and its ability to predict academic success. This research, however, studied males at all academic levels with no specific target on developmental education. Strayhorn’s (2008a) sense of belonging research expressed the need to develop optimal effective interventions while also finding that supporting relationships did not always relate to academic success for minority males. Bailey et al. (2005) expressed the need for community colleges to target success initiatives to the minority student and identify ways to increase the engagement of minority males on the community college campuses. Pope (2006) in this research also determined the importance of reaching out to African American males.
This study further supports research conducted by Gardenhire-Crooks et al. (2010) indicating the need for communication to minority males regarding resources to meet their individual needs. Rideaux (2005) stressed the need of colleges to identify barriers faced by African Americans through direct communication and querying of the students.

This research builds and expands on the body of work concerning college practices as it relates to minority males. Themes that emerged from minority males in this study indicated opportunities to develop areas of self-sufficiency and interactive learning environments. Classroom interaction found in this study is consistent with the CCSSE 2010 findings (Interdependency) and use of skills labs such as math labs. Bailey, Jaggars and Jenkins (2011) referenced math pedagogy, Rutschow and Schneider (2011) began to look specifically at pedagogy and technology aided approaches to instruction with its impact on student success. Jaggars and Hodara (2011) also began to discuss math pedagogy indicating how student collaboration showing signs of posting impact math outcomes.

**Implications of This Research**

Having served as an administrator, an instructor, a mentor, and a student in higher education, I have had the opportunity to work closely with minority male students attending community colleges. Minority males have the same aspirations as other males as they enter higher education; however, they are so often unprepared for the college environment and the demands of college coursework. Minority males in this study as well as those participating in other studies have indicated satisfaction with their level of
engagement on the campus. Although they feel connected to the college, it has not impacted their success. This outcome may indicate their level of misunderstanding as to what it means to be engaged in the college environment.

As this research also uncovered, although the minority males felt they were well perceived on their campuses, many indicated little or no desire to make new friends or participate in college events. As research by McClenny and Marti (2006) and others have pointed out, the first three weeks of a term for new students is extremely important for student retention and success. Although it is encouraging to know that minority males are comfortable on the campus and feel they are judged by their knowledge, it is still disconcerting to see the consistently low completion rates for this population of students.

Minority male role models can have a significant effect on the success of students. Harper (2009) reinforced the need to have male role models to impact the success of the students in his study. Although this research did not focus on role models, it queried the participants to determine if they had mentors. Not surprisingly, only three out of the total participants indicated having a mentor that played a role in their success. Colleges still hesitate to target resources and activities specifically for one group of students. Funding becomes a concern and challenge with multiple priorities and needs that must be filled on all levels of the institution. As an administrator, I understand the importance of supporting programs that will provide minority males with the needed attention and the platform to discuss the predominant concerns and issues that face this population.
Underlying problems face the minority male student that he is unable to manage or address single-handedly. Colleges must integrate the discussion and strategies to tackle these challenges into its institutional fabric and culture. Focusing on the issues that affect the minority male student population, in addition to those who need remedial education, will begin to narrow the achievement gap. The strategies that are being piloted and scaled up at many institutions will remain insufficient until colleges seek to determine the many underlying issues as well as generate solutions specific to this student population.

Determining the perfect formula to help students succeed is a challenge for all in higher education. Identifying solutions to improve the success rates of minority males, specifically those in developmental math, will require sustained efforts, research, and innovative approaches. Wrap-around support services such as advising, tutoring, peer mentoring, and other services have proved to be instrumental in assisting students; however, additional efforts must still take place. The results of this research as well as data from AtD research indicate that although colleges have focused on designing success strategies for all students, minority males still succeed at a rate less than other students. A notable finding in this research indicated that the minority males perceived themselves as engaged in the college environment, knowing their goals for attending college, feeling judged based on his knowledge, interacting well with faculty members, and overall, having a positive experience at their institutions. These findings suggest that the success strategies and focused attention on students in developmental coursework have improved the college environment for the minority male.
Another finding from this research indicates that there are specific teaching approaches perceived by minority males as influencing in their success in developmental math. The minority males in this research indicated that math software, such as MyMathLab, was also instrumental in their success. Assigning computer math coursework may lead to widespread success if used in more developmental math classes. MyMathLab, as well as other computer software packages, allow the student to work both in and out of the classroom, utilizing information and problem-solving activities to assist with successful completion of actual coursework (MyMathLab, n.d.). An interactive and engaging classroom was another attribute the minority males cited as contributing to their success. Along with this finding regarding course design, the males who were successful in math also identified peer tutors and study groups as playing a role in their success. All of these specific findings have the potential to assist colleges supplementing other success strategies by including specific classroom pedagogies and strategies that the minority male has indicated as helpful to him in developmental math.

Finally, all the minority males in this study indicated a continual need for colleges to provide services and resources that will help them remain in college. Those services and resources include: (a) scholarships, (b) information about resources available, (c) additional tutoring, (d) information about outside financial resources, and (e) varying course schedules that allow them to complete their degrees. Although these items are instrumental to all students, they are of particular importance for minority males to meet their academic goals and succeed in higher education. Interestingly, a number of students in this research indicated a need for colleges to understand their personal needs as well as
to inform the students of external resources. These needs were also identified in a study conducted by Gardenhire-Crooks et al. (2010), who found that minority males wanted their colleges to provide them with information about additional resources applicable to their individual circumstances. As community colleges focus their efforts on this population of students, the findings in this research will assist them with designing a full program, one that encompasses student services and academic design, to best fit with the needs of these students.

**Implications for Community Colleges**

There are still many unanswered questions regarding how to move the unprepared student through developmental education and place him or her on the path toward college completion and success. The continuing achievement gap for the minority male is a concern for colleges and for the nation. The recent study conducted by Gardenhire-Crooks et al. (2010) underscores the need for additional research to identify effective success practices that will improve the completion rates for men of color. Their study asserts, “the academic success of these men is critical not only for their own futures, but also for our well-being as a nation” (Gardenhire-Crooks et al., p. 85, ¶4). As the demographics of the student population continue to change at community colleges, it will remain vital that colleges disaggregate the data currently in research concerning the strategies utilized for the developmental education student. Community colleges and other educational institutions must implement specific programmatic and policy changes to make a sustainable and large-scale impact on the lives of their students.
Every aspect of the student’s journey must be addressed. This includes support services, academic program models, instructional design geared toward accountability and engagement, and continued dialogue with students through surveys and focus group discussions. Colleges must not shy away from the reality that there is a group of students who are not succeeding at an acceptable level for the growth of their students, the state, or the nation.

**Limitations of the Study**

This research investigated three community colleges in Ohio that are part of the AtD initiative; therefore, generalizing the results of this study would be applicable only to those institutions participating in the research. Currently there are six community colleges specifically in Ohio that are AtD schools; having data from these colleges would strengthen this research with the potential to provide greater insights into the success of minority males in Ohio. Although a limited number of schools are participating in the AtD initiative, most schools within Ohio are conducting some form of success initiatives aimed to increase the success of students overall in developmental education. It is also feasible to involve other schools as well.

The response rate from the survey yielded a 20% return; a higher response rate might have assisted in determining if any significant differences in motivation, judgment, or engagement level were present. It is often a challenge to persuade participants to complete surveys that have no mandatory requirement. The use of an electronic survey provides quick feedback, ease of distribution, and low cost; however, it lacks the ability to determine if the email was read. This also plays into the inability to reach those
individuals who failed to even open the invitation to participate in this research. In my role as an administrator at a college, I do not have the direct contact with students that may have led to a larger percentage of those willing to participate. The inability to have a captive audience limits the ability to make a true connection to the participants. A larger sample may have had the impact to show that there are certain aspects of engagement, judgment, and motivation that are not different for minority males specifically in developmental education.

Each college studied utilized different strategies to assist all students with their developmental courses; a study comparing identical strategies could yield results that could generalize to a larger population of students. A study such as this could lend itself to enabling the researcher to determine predictors to success or failure for minority males. The qualitative portion of the research would allow the researcher to probe into the responses provided by the males as to ascertain what specific approaches impacted their success. This study did not allow the unsuccessful students to clearly respond to their perspectives on why they did not pass math. It indirectly obtained information by asking what other resources could be provided that could assist in their success. A qualitative approach would clearly allow the researcher to ask follow-up questions to draw out the information and have the ability to suggest conclusions concerning both aspects of the study.

An additional limitation of this study was the inability to ascertain student level data concerning the success rates of minority males at all the institutions, specifically what is being reported as a portion of the AtD data. This study relied on the student to
self-report if they successfully passed the developmental math course. A more objective approach would be beneficial in identifying specifically what strategy had the most impact on the student’s success.

**Recommendations for Future Research**

There are several recommendations for future research based upon the results of this study. Designing programs to meet the needs of all students is an overly complicated and unrealistic expectation. Many variables and factors come into play with each group of students, particularly with the diverse group who enroll in community colleges.

Students who are unprepared for college work often have the expectation that services, programs, and resources will be available to meet all of their needs. Minority males as one subset of students with unique challenges require tailored programming to succeed. Although researchers across the nation are studying the effectiveness of success strategies for the developmental student, the unique features of the institution, its student body, and policy in the various states will also affect to what degree practices can be replicated.

One recommendation from this study would be for researchers to conduct a qualitative study of minority males in developmental math to delve deeper into their perceptions of the benefits of using computer software in the math courses. A qualitative study focused on only the successful students in developmental math, concentrating on the specific goal of targeting the math pedagogy utilized in the course, is also essential.

This study scratched the surface in identifying the impact of computer software in the classroom; a more focused examination could render additional insights. There is limited research that has disaggregated data to clearly indicate which classroom strategies
are most effective with minority males. Additional research in this area would continue to build a base of knowledge for colleges to follow.

A modified replication of this study, done on a broader scale with AtD colleges across different states and designed to investigate math strategies and to determine if there are significant differences in outcomes based upon the strategy used for this population of students, would be helpful. This study found that students who were successful in math identified one particular strategy as effective: however, a larger, broader study could support the findings in others.

Colleges across the country have implemented programs geared to helping the minority male student succeed. These programs provide resources and subsequent programs to meet the social, financial, and academic needs of this group of students. Research conducted on these programs to determine promising or best practices could help to inform program design in other colleges across the nation. Additional research will be beneficial to further investigate the themes revealed in this study to determine its importance and impact on the success of minority males.

Finally, conducting a full, mixed-method study involving both quantitative and qualitative data collection and analysis regarding success strategies used in their effectiveness for minority male students would capture valuable data that could then assist colleges with similar demographic design programs for their minority male students.
As more institutions develop initiatives for minority males, further research should be conducted to determine the social impact of these programs in addition to the academic impact that these programs may have.

**Conclusion**

The three main objectives of this research were to determine if there were significant differences in the motivation, judgment, or engagement level of minority males based upon the following factors: (a) math outcome, (b) age, (c) ethnic origin, (d) college of attendance, and (e) enrollment status. With the next aspect of my research, I sought to determine what minority males perceived to be the most effective learning and success strategies for helping them with remedial math. Through this final aspect of the research, I sought to determine which strategies community colleges could employ to assist minority males with achieving their academic goals.

Identifying the risk factors that lead to student departure has been a subject of research for many years. Factors such as part-time enrollment, minority student status, part-time or full-time employment, delayed entrance to college, and placement in developmental coursework have been researched by many (Harper, 2009; Harvey, 2001; Roueche & Roueche, 1999); however, research conducted on success strategies geared specifically to minority males in developmental math has just begun.

Researchers have identified student engagement as one of the most important aspects of student success (McClenney & Marti, 2006). As noted previously, research on student engagement began at the four-year university, with additional research now taking place on students at the community college. Community college students are
predominantly engaged at a lower level than students attending a four-year institution on a full-time basis, because they have a greater number of external obligations. Also, minority students often attend institutions where the cultural and ethnic demographic composition are unlike their previous home and/or school environment. These differences often create feelings of isolation in minority students and make for a lack of quality interactions with others at their institutions (Martinez & Fernandez, 2004). Tinto’s (1975) research has documented that students who are not fully integrated into their colleges’ environments will depart from the institution. This research queried minority males to determine if they perceived themselves as engaged in the campus environment. Overwhelmingly, regardless of their success in math, these students perceived themselves to be engaged on their campuses. Though they professed to being engaged, this did not effectively translate to their success in math. This result could indicate two scenarios: additional support and resources are needed for minority males, specifically in developmental math, and the level of satisfaction with their perceived engagement is not enough to ensure success.

National initiatives (e.g., AtD, Completion by Design) are pushing colleges to focus on success strategies that will move students successfully out of developmental coursework. Although this push has had a nationwide impact, limited research exists documenting disaggregated data to study the implications of initiatives for minority males. The three colleges in this research have identified the completion rate of students in developmental math by ethnicity, but not by gender. Recent reports indicated that the completion rate for African Americans in developmental math is below all other
ethnicities. These reports underscore the need to delve into pedagogy and other college resources that are provided which may prove to be beneficial to this group of students.

This research has initially identified some classroom strategies from the perspective of the minority males who successfully completed developmental math. As some faculty embrace the use of math software in their courses, the broader impact of using software in developmental math courses may lead to greater success rates for minority males. The additional factors identified by the research participants as leading to their success were study groups and having a study partner.

Student engagement has been widely researched and documented by those seeking solutions to educational issues. The minority males in this research indicated that they were engaged; yet many still identified a need for mentoring. The three colleges in this research have each developed mentoring programs for the students in their respective success programs. Though learning communities were implemented at most of the colleges in this study, the minority males did not indicate them as attributing to their success. Research conducted by the Open Door project has seen initial success with learning communities, yet in the most recent report, the success was not sustained over a long period of time (Weissman et al., 2011). This study followed students participating in their colleges’ mentoring programs, learning communities, and other pilot projects during the course of the research. Of the programs and activities examined, those that the researcher highlighted as having an initial impact on student success included using computer software, attending study groups, and having a study partner.
There is much excitement at community colleges across the United States as strategies are discussed, enhanced, developed, and shared to increase the success rates of their students. Administrators, faculty, and staff are becoming open themselves to discuss the struggles, challenges, and promising practices with both their colleagues as well as governmental officials. Much has been learned; however, there is still much more to learn and then to determine a course of action that provides not only access to higher education, but also success within it. Additional research is needed to identify the strategies and resources that will provide sustainable, scalable, and obtainable goals to meet the needs of all students. This research attempted to contribute one small facet of the ever-emerging body of knowledge on how to help students in post-secondary education succeed.
APPENDIX A

STUDENT SUCCESS SURVEY
Appendix A

Student Success Survey

The Student Success Survey is designed to allow you to identify what success, teaching and learning strategies contributes to your success. It will ask you about your decision to attend college, what activities impacted your success in college, your interaction with friends and faculty on campus, and other general questions about your college experience. Please mark your response for each item. There are no right or wrong answers but your thoughts, attitudes, and opinions are very important.

<table>
<thead>
<tr>
<th>I attend college to....</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 earn the respect of others</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>2 be a role model for children</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>3 be the boss rather than the worker</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>4 be successful in life</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>5 learn things I don’t know</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>6 improve myself</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>7 meet family expectations</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>8 have a better life</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>9 reach the goals I have for myself</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>10 support my family better</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>11 be independent – stand on my own two feet</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>12 challenge myself</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>13 make new friends</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>14 build a positive future for myself</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>While attending college, I....</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 am judged on my performance, not my color</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>16 am welcomed on the college campus</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>17 find colleges are more color blind</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>18 am treated like every other student</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>19 am judged by staff on my appearance</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>20 am an outsider on campus</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>21 belong on campus</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>22 am listened to by my instructors</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>23 am respected on campus</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>24 am more respected than in high school</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>On campus I.....</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 participate in campus activities</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>26 have made new friends</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>27 have time to make new friends</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>28 came to get an education not make friends</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>29 can trust others</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
This section will allow you to describe your enrollment status, participation in the college orientation program and general background information…

What college do you attend?

- College A
- College B
- College C

What is your age?

- 18 - 25
- 26 - 35
- 36 - 45
- > 45

Please identify what ethnic background best represents you.

- African American
- Hispanic
Are you the first in your immediate family to attend college?
☐ Yes  ☐ No

How many hours do you work each week?
☐ <10  ☐ 10 – 20  ☐ 21 – 36  ☐ > 36  ☐ I am currently not working

Are you?
☐ full-time student (9 or more credits hours or more)
☐ part-time student (8 or less credits hours)

What credit hour system are you on?
☐ semester
☐ quarter

How many credit hours on average do you take per term?
☐ 1 – 8  ☐ 9 – 12  ☐ 13 – 20

Did you meet with an advisor during the semester/quarters including and between Fall 09 thru Fall 10?
☐ Yes  ☐ No
If yes, how many times? 1 – 3 ☐ 4 – 6 ☐ > 7 ☐

Did you participate in the college’s orientation program ☐ Yes  ☐ No

Did you take a college success course? ☐ Yes  ☐ No
(sucess course is a course designed to identify study skill, time management skills and test taking skills and overall college survival skills)

Math Success

Pre- Math placement

How many years ago did you take your last class prior to attending this college?
☐ Less than 1 year  ☐ 1 – 2 years  ☐ more than 2 years

I took the math placement test ☐ before attending college ☐ after taking some college classes

I prepared/studied for the math placement exam ☐ Yes  ☐ No

How many times did you take the math placement test ____________ # of times
Post Math Assessment test and placement

How much time outside of class did you spend each week studying for math class?

__________ hours

Did and/or do you participate in a math study group?  
☐ Yes  ☐ No

How many different math classes have you completed successfully? __________ classes

Did you participate in math learning community?  
☐ Yes  ☐ No  ☐ Don’t know

(A math learning community is defined as taking a math course with an additional course with the same group of students)

If yes, did being part of the learning community help you succeed?  
☐ Yes  ☐ No

What learning and study strategies helped you be successful in math (e.g., study partners, computer software, use of computer math software, or lab activities)?

____________________________________

What served as challenges to your math outcome?

____________________________________

What could the college do to help you be successful in completing your educational goals?

____________________________________

What other aspects of your college experience played a role in your success?

____________________________________

What courses do you plan to take next semester/quarter?

____________________________________

Thank you for completing this student success survey!
APPENDIX B

INFORMED CONSENT
Appendix B

Informed Consent

Minority Males’ Perception of Success Strategies in Math

Dear Student:

I am a doctoral student at Kent State University and will be conducting a study to gain an understanding of the perception of students like you attending community colleges. This research will help to establish best and effective success practices that are geared to help students succeed.

**Purpose**
The purpose of my research is to explore the thoughts of minority males about the activities, college settings, and policies used in community colleges in the Midwest. This research will include a survey designed to allow you to identify how the overall college environment and practices contributed to your success.

This form provides you with information concerning the research study. The principal investigator, Sandy L. Robinson, a student at Kent State University, will be conducting the study.

Your participation in this study is entirely voluntary. You can stop completing the survey at any time.

**Risks and Benefits:**
There are no potential risks to completing and participating in this study. Procedures and practices will be implemented to assure confidentiality. The benefits of this study involve identifying specific success strategies that will increase the success rates of others like you attending community colleges.

**Confidentiality**
You have a right to expect respect for autonomy, trust, scientific integrity, and fidelity. Every research participant has the right to expect there will be no chance of being identified by name at any time, before, during, or after the study. No personally identifying information will be used in the research or data analysis. The records of this study will be stored securely and kept private.

**Contacts and Questions:**
If you have any questions about this research please feel free to ask. If you have questions or would like additional information, please contact the Principal Investigator, Sandy L. Robinson by telephone at 216-509-6421 or by email at slrobin1@kent.edu.

**Statement of Consent:**
I have read the above information and have sufficient information to make an informed decision about participating in this study. I consent to participate in the study.

Please press submit (you will be taken to the online survey)
APPENDIX C

IRB APPROVAL
RE: Protocol #11-144 entitled “Minority Males’ Perspectives on Community College Success”

Hello,

I am pleased to inform you that the Kent State University Institutional Review Board has reviewed and approved your Application for Approval to Use Human Research Participants as Level I/Exempt research. This application was approved on March 24, 2011. Your research project involves minimal risk to human subjects and meets the criteria for the following category of exemption under federal regulations:

Exemption 1: Research conducted in established or commonly accepted educational settings, involving normal educational practices.

Exemption 2: Research involving the use of educational tests, surveys, interviews, or observation of public behavior.

Exemption 3: Research involving the use of educational tests, surveys, interview procedures, or observation of public behavior not exempt under category 2, but subjects are elected or appointed public officials or candidates for public office.

Exemption 4: Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.

Exemption 5: Research and demonstration projects conducted by or subject to approval of department or agency heads, and which are designated to study, evaluate, or otherwise examine public programs or benefits.

Exemption 6: Taste and food quality evaluation and consumer acceptance studies.
Submission of annual review reports is not required for exempt projects. If any modifications are made in research design, methodology, or procedures that increase the risks to subjects or includes activities that do not fall within the approved exemption category, those modifications must be submitted to and approved by the IRB before implementation.

Please contact the IRB administrator to discuss the changes and whether a new application must be submitted. *It is important for you to also keep an unstamped text copy (i.e., Microsoft Word version) of your consent form for subsequent submissions.*

Kent State University has a Federal Wide Assurance on file with the Office for Human Research Protections (OHRP); FWA Number 00001853.

Respectfully,
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