

5-1-2008

**The relationship between graduation and selected variables
among five cohorts of community college transfer students at
Mississippi State University**

Robert Paul Miller

Follow this and additional works at: <https://scholarsjunction.msstate.edu/td>

Recommended Citation

Miller, Robert Paul, "The relationship between graduation and selected variables among five cohorts of community college transfer students at Mississippi State University" (2008). *Theses and Dissertations*. 4609.

<https://scholarsjunction.msstate.edu/td/4609>

This Dissertation - Open Access is brought to you for free and open access by the Theses and Dissertations at Scholars Junction. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholars Junction. For more information, please contact scholcomm@msstate.libanswers.com.

THE RELATIONSHIP BETWEEN GRADUATION AND SELECTED VARIABLES
AMONG FIVE COHORTS OF COMMUNITY COLLEGE TRANSFER
STUDENTS AT MISSISSIPPI STATE UNIVERSITY

By

Robert Paul Miller

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Community College Leadership
in the Department of Instructional Systems, Leadership and Workforce Development

Mississippi State, Mississippi

May 2008

Copyright by
Robert Paul Miller
2008

THE RELATIONSHIP BETWEEN GRADUATION AND SELECTED VARIABLES
AMONG FIVE COHORTS OF COMMUNITY COLLEGE TRANSFER
STUDENTS AT MISSISSIPPI STATE UNIVERSITY

By

Robert Paul Miller

Approved:

James Davis
Professor and Program Coordinator
Department of Instructional Systems,
Leadership, and Workforce Development
(Chair Dissertation Committee)

Anthony Olinzock
Professor of Department of
Instructional Systems, Leadership,
and Workforce Development
(Committee Member)

Joe T. Adams
Research Coordinator, Public Affairs
Research Council of Alabama
(Committee Member)

Marty Wiseman
Professor and Director, John C.
Stennis Institute for Government
(Committee Member)

Jerry Mathews
Associate Professor and Graduate
Coordinator, Department of Instructional
Systems, Leadership, and
Workforce Development
(Committee Member)

Richard Blackburn
Dean of the College of Education

Name: Robert Paul Miller

Date of Degree: May 2, 2008

Institution: Mississippi State University

Major Field: Community College Leadership

Major Professor: Dr. Ned B. Lovell

Title of Study: THE RELATIONSHIP BETWEEN GRADUATION AND SELECTED
VARIABLES AMONG FIVE COHORTS OF COMMUNITY COLLEGE
TRANSFER STUDENTS AT MISSISSIPPI STATE UNIVERSITY

Pages in Study: 58

Candidate for Degree of Doctor of Philosophy

This study looked at the records of students who transferred 12 or more credit hours from Mississippi community colleges to Mississippi State University between 1999 and 2003. The five cohorts combined provided 5,969 student records to analyze regarding the persistence of these students in achieving the bachelor degree. Assignment to the graduate group or the non-graduate group was determined by graduation status as of four years after transfer to MSU. Background variables (age, gender, race) and academic integration variables (ACT score, GPA, number of hours transferred) were analyzed for both groups.

The Chi Square Test for Independence was conducted to determine relationships between gender and graduation status and race and graduation status. Both tests revealed

the existence of relationships, but Phi and Craven's V Coefficient calculations registered negligible to weak associations.

The t-test for Independent Measures was conducted on the remaining variables and found that statistically significant differences existed between the mean scores of these variables within the graduate group and the non-graduate group. The only exception was with the background variable of age.

From these results, it was concluded that community colleges and universities can continue to predict persistence to degrees based on selected academic integration variables. Such predictability can allow for the development and delivery of academic advising tools and intervention models to strengthen the transfer process.

DEDICATION

This dissertation is dedicated to my wife, LeAnn Gupton Miller, and my children, Sebron Lee Miller and Mollie Kate Miller. Without their patience and support for me in all the big and small tasks that seem to consume my time, I would accomplish nothing of meaning and have no one with which to share this wonderful life. Thank you; I love you.

ACKNOWLEDGEMENTS

God has so richly blessed me with a wonderful family to support me and with a challenging and rewarding work environment that keeps me motivated to learn and seek self-improvement. In these regards, I want to acknowledge, with great appreciation, my wife, LeAnn Gupton Miller, for her encouragement and daily admonition against procrastination, especially during the last six months of my research project.

I would also like to say a heartfelt thank you to my mentors and colleagues at East Mississippi Community College who have advised and critiqued my professional work, as well as my scholastic attempts through this research project. I specifically want to recognize the following people who I consider as significant participants in my successful completion of this dissertation: Dr. Rick Young, Dr. Raj Shaunak, Dr. Hari Sharma, Dr. Melanie Sanders, Dr. Jim Huerkamp, Dr. David Mullins, Dr. Jacqueline Hale, Dr. Deborah Blake (Pullen, retired), and Dr. Tommy Davis (retired).

It is imperative that I acknowledge the efforts of Dr. James “Ed” Davis in reclaiming me into the graduate research fold. For more than a year, he helped me revive my goals and navigate the administrative necessities of completing this very important stage in my professional life.

In conclusion, however, I must point out that chances are I would not be in the leadership position that I hold today, nor would I have the relationships that I have with

so many community college leaders in Mississippi and Alabama, if it were not for Dr. Ned Lovell (retired). Dr. Lovell, former public school superintendent-turned community college leadership developer, helped instill a passion for community college education that was merely blossoming while I was teaching, but is now in full bloom and bearing fruit as an administrator. As my career continues to mature, I hope to share this same passion with others and see it grow to fruition in the community colleges of Mississippi and the Southeastern United States.

TABLE OF CONTENTS

DEDICATION	ii
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	vii
CHAPTER	
I. INTRODUCTION	1
Theoretical Framework	3
Statement of the Problem	5
Purpose of the Study	5
Research Hypotheses.....	6
Delimitations.....	7
Limitations.....	8
Definitions	8
Organization of the Dissertation	10
II. LITERATURE REVIEW	12
Introduction.....	12
Transfer in General.....	12
Transfer and Background Variables.....	17
Transfer and Academic Integration Variables	19
Summary.....	21
III. METHODS AND MATERIALS	22
Research Design.....	22
Population	23
Procedures.....	24
Data Analysis	24

IV. RESULTS AND DISCUSSION.....	26
Descriptive Data.....	26
Age	27
Gender.....	29
Race	30
ACT Score	32
GPA	35
Number of Hours Transferred.....	37
Findings	39
Summary.....	44
V. SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS.....	47
Summary.....	47
Implications	48
Recommendations	50
REFERENCES.....	52
APPENDIX	
A. MISSISSIPPI STATE UNIVERSITY IRS PERMISSION LETTER.....	57

LIST OF TABLES

1	Chronological Age Distribution for All Cohorts.....	28
2	Gender Distribution for All Cohorts.....	30
3	Race Distribution for All Cohorts	31
4	ACT Composite Score Distribution for All Cohorts	34
5	Frequency Distribution of GPA for All Cohorts	36
6	Credit Hours Transferred Distribution for All Cohorts	38
7	Gender by Graduation Status Crosstabulation	40
8	Chi-Square Test for Independence for Gender By Graduation Status	40
9	Race by Graduation Status Crosstabulation.....	41
10	Chi-square test for Independence for Race by Graduation Status.....	41
11	Group Statistics for <i>t</i> -test Samples	43
12	<i>t</i> -test for Independent Measures for Selected Independent Variables	44

CHAPTER I

INTRODUCTION

Comprehensive community colleges have always been multifaceted institutions that serve both individual and community concerns. The institutions of the new century represent changes and positive development of over 100 years. Today, in the United States, approximately 1,195 community colleges enroll nearly 6.6 million credit students, which are almost half of the undergraduate students in the nation (Community College Stats, 2007). Comprehensive community colleges of today provide pre-bachelor degree programs, occupational programs, workforce development services, adult basic education, remedial education, cultural and arts programs, intercollegiate and intramural athletics, and on and on. In addition, functions such as community service, continuing education, and guidance tend to overlap each other on most community college campuses (Cohen & Brawer, 1996). Yet, today, as it has throughout its journey to reach today, the comprehensive community college holds steadfast to its primary curricular functions of academic transfer education, career and technical education, and developmental education.

First, the function that is most well known by the general public is academic transfer education. According to Laanan (1996), given the wide variety of educational

opportunities provided by the community college, academic transfer education is a critical element in access to the bachelor degree for low-income students. Yet, to carry out this critical and seemingly defined function, community colleges must face many challenges. These challenges include enrollment fluctuation, changing accountability measures and transfer definitions, and credibility among university colleagues.

Second, facing challenges of its own, career and technical education has established a proper place for itself within the community college. With the passage of the Vocational Education Act of 1963, money and programs flooded into community colleges across the country (Cohen & Brawer, 1996). The Carl D. Perkins Vocational Education Act of 1984 and its subsequent reauthorizations, including the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV), have not only provided funding, but specific guidelines for administering vocational-technical education programs have also been included.

Student populations in career and technical education at community colleges have grown and continue to remain somewhat steady. In fact, by 1985, 72% of the total associate degrees conferred were in occupational curricula and today more than one-third of all college students are enrolled in career and technical education and over 40 million adults are engaged in short-term, post-secondary, occupational training (Career & Technical Education, 2007).

Third, developmental education is a critical issue educationally, economically, and socially not only for community colleges, but also for public schools and universities. It seems, however, that most conversations, both derogatory and favorable, are taking

place in the community colleges. Each year larger numbers of under-prepared high school graduates, high school dropouts, GED recipients, returning adults, new immigrants, welfare recipients, and others join the ranks of new freshmen in community colleges (Roueche & Roueche, 1999).

Although the function of developmental education is a relevant issue, which is considered often for research and discussion among community college professionals, it deals with below level or pre-collegiate remedial instruction. The two functions of academic transfer education and vocational-technical education, however, provide community college researchers with a variety of issues regarding collegiate level instruction, persistence toward completion of degrees, and the occurrence of transfer of credit to universities.

The general issues of transfer from the community college to the university and persistence toward completion of the bachelor degree was the focus of this study. Specifically, this study examined the transfer of Mississippi community college students to Mississippi State University (MSU) and the differences between those who persisted toward the bachelor degree and those who did not, based on each group's description within the variables of age, race, gender, ACT score, GPA, and the number of credit hours transferred.

Theoretical Framework

Over the last 30 years, the two theoretical models that have influenced studies regarding background and academic integration variables and their effect on the

persistence toward the college degree are Tinto's (1975) Student Integration Model and Bean's (1985) Student Attrition Model. According to Tinto's theory, attrition is the negative result of a student's interactions with the college environment. Through a student's higher education career, persistence to the college degree is the result of the proper combination of individual motivation and academic ability and the academic and social characteristics of the college. The more students focused on completing their college goals and the more dedication they displayed toward the institution, the more likely they were to persist to their desired degree.

According to Bean's theory, college persistence can be modeled similarly to organizational turnover. In both occurrences, attitudes are formed and decisions to continue or not to continue in college are ultimately made based on the interaction of external variables provided by the institution and internal variables existing with the student. In Bean's approach, the external variables are categorized as academic, social, and environmental, while the internal variables are identified as college grades, institutional fit, and goal attainment.

In their study of the results of a model designed to unite the Student Integration Model and the Student Attrition Model, Cabrera, Castaneda, Nora, and Hengstler (1992) noted that both models regard persistence as the result of a complex set of interactions over time. The two models also argue that pre-college characteristics affect how well students subsequently adjust to their institution. Furthermore, they found that both models agree that persistence is affected by the successful match between the student and the institution.

Statement of the Problem

Even in the new century, transfer and articulation are key policy issues in higher education, especially community colleges (Ignash & Townsend, 2001). It is undetermined whether the population of career and technical education students transferring from community colleges to universities is at a significant number to warrant policy changes regarding articulation of such curricula, even though recent federal vocational education legislation does call for an expansion of articulation that includes two-year and four-year institutional partnerships (American Vocational Association, 1998). However, persistence toward the bachelor degree after transfer remains an important topic of research and study among scholars and policy makers across all disciplines (Cohen & Brawer, 1996; Flaga, 2006; Gibson, 1995; Grow, 1998; Higgins & Katsinas, 1999; Ignash & Townsend, 2001; Laanan, 2007; Welsh & Kjollien, 2001). Furthermore, easily ascertainable, pre-transfer and post-transfer characteristics should be looked at over time to assess relationships between such variables and persistence toward the bachelor degree (Cejda & Kaylor, 1997).

Purpose of the Study

The purpose of this study was to determine whether statistically significant differences exist between students who persist toward the bachelor degree and those who don't, based on selected background and academic integration variables for students who transferred from Mississippi community colleges to MSU. Furthermore, tests to determine statistically significant relationships between selected variables and persistence

to the bachelor degree for these same community college transfer students were conducted. Results were acquired through analyses of 5,969 student records of Mississippi community college students who transferred to MSU over five consecutive academic years (i.e., 1999, 2000, 2001, 2002, and 2003). Those students who displayed persistence to the bachelor degree by graduating within four academic years after transfer were compared to those students who did not graduate within four academic years after transfer. The specific variables analyzed included age, gender, race, ACT score, transfer GPA, and number of credit hours transferred.

The results of this study will assist admissions counselors, program advisors, and administrators at MSU in providing interventions based on predictions of persistence toward the bachelor degree by students who transfer from Mississippi community colleges. In addition, it will provide Mississippi community college administrators with valuable information in promoting transfer activities and counseling students in regards to background and academic integration variables.

Research Hypotheses

Regarding Mississippi community college students who transferred to MSU during the academic years of 1999, 2000, 2001, 2002, and 2003, the following hypotheses were tested:

1. There is no statistically significant relationship between the gender of students and their persistence to the bachelor degree.

2. There is no statistically significant relationship between the race of students and their persistence to the bachelor degree.
3. There is no statistically significant difference between the mean age of students who persisted to the bachelor degree and the mean age of students who did not persist to the bachelor degree.
4. There is no statistically significant difference between the mean ACT score of students who persisted to the bachelor degree and the mean ACT score of students who did not persist to the bachelor degree.
5. There is no statistically significant difference between the mean transfer GPA of students who persisted to the bachelor degree and the mean transfer GPA of students who did not persist to the bachelor degree.
6. There is no statistically significant difference between the mean number of credit hours transferred by students who persisted to the bachelor degree and the mean number of credit hours transferred by students who did not persist to the bachelor degree.

Delimitations

This research was delimited by the research population selected, the use of background and academic integration variables, and time. The population examined consisted of 5,969 student records of Mississippi community college students who transferred at least 12 credit hours to MSU between 1999 and 2003. Independent variables of age, race, gender, ACT score, transfer GPA, and number of credit hours

transferred were examined to determine the existence of statistically significant differences between students who persisted to the bachelor degree and students who did not persist to the bachelor degree, i.e. graduation status. The dependent variable of graduation status (i.e., Yes or No) was defined as taking no more than four academic years after transfer to MSU to complete requirements for the bachelor degree.

Limitations

This study conducted ex post facto research methods; therefore, the factors analyzed could not be experimentally manipulated. Although several cause-and-effect relationships can be analyzed in one study, specific causal patterns can not be determined with any degree of certainty (Gall, Borg, & Gall, 1996).

Another limitation is that the data only relates to the transfer student population at MSU, and it only includes students who transferred from Mississippi community colleges. Therefore, no generalization can be established beyond a population with the same or extremely similar characteristics.

Definitions

The following definitions were used in this study:

- Academic Credit – Recognition by MSU that a student has fulfilled a requirement leading to a degree. This study only identified the number of credit hours transferred to MSU and not the specific and individual courses that describe the academic credit.

- Articulation – Systematic efforts, processes, or services intended to ensure educational continuity and to facilitate orderly, unobstructed progress between levels of segments of institutions on a statewide, regional, or institution-to-institution basis (Bender, 1990, as cited in Bers, 1994).
- Attrition – The result of a student stopping or postponing their persistence toward a degree.
- Associate Degree – A measure of completion awarded, predominantly by community colleges, to students who successfully complete a postsecondary program of study generally consisting of 60 or more semester credit hours. Common variations of the associate degree are: Associate of Arts, Associate of Science, and Associate of Applied Science.
- Bachelor Degree – The first level of completion most commonly awarded to students by a four-year college or university, such as MSU.
- Community College – A type of postsecondary educational institution that provides a variety of opportunities for constituents, the most common of which is transfer education and occupational entry education awarding an associate degree. In addition to these two functions, comprehensive community colleges also provide adult basic education, workforce development services, continuing education, and a full range of student development services.

- Credit Hour – The smallest unit of measurement awarded for successful completion of a course or other requirement for completion of a degree.
- Graduate – A student that completes all requirements for a degree. In this study, completion of the bachelor degree at MSU within four academic years of transfer was necessary to be considered a graduate.
- Non-graduate – A student that does not complete all requirements for a degree. In this study, not completing the bachelor degree at MSU within four academic years constituted a non-graduate.
- Retention – The result of a student persisting toward a degree.
- Transfer – The mechanics of credit, course, and curriculum exchange – as part of the articulation process – to include recognition of, and credit for, learning in experiential and applicable contexts (Kintzer, 1997).
- Transfer Student – A student, who has attended at least one college and earned academic credits, and who upon seeking admission to another college, petitions the current college to recognize and accept the academic credit from the previous college. In this study, it defines students who last attended a Mississippi community college and transferred at least 12 credit hours to MSU.

Organization of the Dissertation

This dissertation is organized into five chapters. Chapter I provides information regarding the problem to be studied, the purpose of the study, the research hypotheses,

and information pertinent to understanding the study. Chapter II is a review of the literature related to community colleges, especially in the areas of academic transfer education and the study of variables among community college transfer students, including age, race, gender, ACT score, transfer GPA, and number of hours transferred. Chapter III presents the methodology of the study. Chapter IV presents the research findings, including the rationale for accepting or rejecting the six null research hypotheses. Chapter V contains the summary of findings, conclusions of the researcher, implications for applying the findings, and recommendations for further study.

CHAPTER II

LITERATURE REVIEW

Introduction

Literature describing the occurrence and the study of the transfer of academic credit from the community college to the university and the variables affecting persistence toward the bachelor degree are discussed in this review. Two categories of variables are highlighted: (a) background variables (age, gender, race) and (b) academic integration variables (ACT score, credit hours, GPA).

Transfer in General

The Transfer Assembly Project, conducted by the Center for the Study of Community Colleges (CSCC) and sponsored by the Ford Foundation, developed the following definition for transfer: “all students entering the community college in a given year who have no prior college experience and who complete at least 12 college credit units, divided into the number of that group who take one or more classes at the university within four years” (Hirose, 1994, p. 64). However, many other definitions and types of transfer exist.

Townsend (2001) found that current transfer patterns can be categorized into two student groups: those who begin at the community college and those who begin at the university. Furthermore, she postulated that universities should be as interested in

transfer methods and patterns as community colleges, if not more, due to the phenomena of “swirling enrollment” and “double-reverse transfer” that tend to be the path of more students. However, Welsh and Kjorlien (2001) concluded that although states and higher education institutions have the ability to collect and use data related to transfer activities that could affect policy, thus maximizing productivity of these activities, they generally do not monitor the effectiveness of their management information systems – the main tool in this process.

Transfer oriented partnerships between community colleges and universities seem to be important, though difficult, unions to foster. Kisker (2007) studied an articulation partnership between a community college and a university. The study revealed strong evidence supporting the usefulness of such partnerships in bolstering the transfer function of the community college and the bachelor degree production of the university. However, it also highlighted concerns regarding management of both long-term goals and day-to-day operations of the articulation process itself. Strong internal and external collaboration seemed to be the key to partnership success.

According to Laanan (1996), given the wide variety of educational opportunities provided by the community college, transfer is a critical element in access to the bachelor degree for low-income students. Yet, to carry out this critical and seemingly defined function, community colleges must face many challenges. Barkley (1993) examined issues since the mid-1980s and recognized several challenges: (a) a decline in the number of students earning an associate degree and transferring to a university; (b) an increase in enrollment diversity due to workforce requirements; (c) a greater need to measure

transfer success due to accountability; (d) a lack of consistent definitions and formulae for calculating transfer; and (e) serious education budget cuts across the country that affect both two-year and four-year institutions.

Another challenge for the transfer education function is the limited credibility it receives from some four-year institutions. Although accredited community colleges follow the strict criteria of regional bodies such as the Southern Association of Colleges and Schools (SACS), faculty and administration of four-year institutions often believe that two-year college instruction is of lower standards (Best & Gehring, 1993; Piland, 1995; Turner, 1992). This attitude and the perceived welfare of an institution's "collegiate function" often spur major and sudden changes in curricula. Cohen and Brawer (1996) found that such changes can be readily traced to requirement changes at local four-year colleges and universities. Just as important, Bers (1994) noted that changes in curricula occur because of changing needs in business and industry, and that community colleges' prompt and accurate responses occasionally find four-year colleges lacking in credibility in limited areas such as business and computer information.

The indication of the literature is that transfer students are as likely to have a vocational degree as an academic degree (Barkley, 1993). One of the guidelines that the Assembly used to form the definition was that transfer should not be restricted to only students taking academic courses, because many students who take vocational classes end up transferring (Hirose, 1994).

Cohen and Brawer (1996) found various studies that showed from 11% to 40% transfer rates from vocational programs to four-year colleges and universities. In an

earlier commentary, Cohen (1989) stated that more students transfer from so-called career programs than from the traditional baccalaureate directed programs. Gonzenbach (1993) studied 484 students enrolled in two-year office occupations programs in Illinois. Almost 24% stated they intended to transfer. A majority of these students desired to transfer to improve career opportunities and increase earning potential.

When intentions of students in academic transfer programs are compared with those of students in vocational programs, there is often considerable overlap. In fact, according to Shearon, Brownlee, and Johnson (as cited in Fredrickson, 1998), a 1990 profile of community college students in North Carolina revealed overlapping educational goals of students in academic transfer education and vocational training programs. Fredrickson's own study defined the extent which North Carolina students from vocational programs transferred, as compared to students from academic transfer programs, as being significant. She found that 3 out of 10 transfer students at University of North Carolina System universities came from vocational programs at North Carolina Community College System institutions.

Bender (1991) looked at a variety of studies of both public and proprietary institutions and found that among transfer students holding the Associate of Applied Science degree, the most frequently selected educational areas were business, engineering, health fields, and computer science. Likewise, Cohen and Brawer (1996) found that in states such as Illinois and California, four-year colleges with the highest rates of acceptance of occupational courses were those having high numbers of career-related programs of their own.

Even with acceptance, completion can be tough for many. Some data show that students transferring from the community college into the university environment are less likely to persist. According to the National Center for Education Statistics (1998), a longitudinal study of postsecondary students showed that students who began in four-year institutions were much more likely to report completing a bachelor's degree in five years than those who began in two-year institutions (57% versus 8%).

Koker and Hendel (2003) tracked three cohorts of students to determine differences among them regarding persistence to the bachelor degree. One cohort consisted of students who enrolled in post-secondary level courses as high school students before matriculating to the university being studied. Another cohort consisted of students who did not take post-secondary courses in high school, but completed at least 26 credit hours at a community college before transferring to the university being studied. The third cohort consisted of students who did not take post-secondary courses in high school, but completed at least 26 credit hours at a four-year college prior to transferring to the university being studied. The dependent variable was graduation status and independent variables included age, gender, race, transfer GPA, and number of credits transferred. The results showed that variables related to academic performance clearly impact the likelihood of a successful transfer experience for all three cohorts. Additionally, when the number of transferred credits is not considered in the analyses, membership in the two-year college cohort had a stronger positive relationship to graduation than did membership in the four-year college cohort.

In addition, transition factors other than those measured by GPA or test scores are often cited as significant to the successful persistence toward the bachelor degree, or at least make a significant positive impact on transfer students during their first year. Flaga (2006) found that advising procedures, university campus familiarity, positive orientation experiences, and on-campus living environments created successful transfer transition experiences for 30 community college transfer students who were studied during their first year after transfer to the university. Laanan (2007) examined 717 California community college students who transferred to a California university. Conclusions of the study included determining positive academic and social adjustment predictors in the form of (a) the transfer students' perception of the four-year environment, (b) the experiences transfer students' have with counselors, and (c) involvement in student clubs and organizations before and after transfer.

Transfer and Background Variables

Community colleges serve almost half of the undergraduates in the United States at approximately 1,195 institutions. These nearly 6.6 million undergraduate students consist of a variety of age groups with 43% being 21 or younger and 16% being 40 or older. Of these students, 59% are women and 34% constitute multiple minority groups (Community College Stats, 2007).

In a study tracking two separate cohorts of students that graduated from Florida community colleges during two separate academic years and transferred into the State University System of Florida the first year after graduation, Windham (2002) found that

relationships between age and transfer, and gender and transfer, were consistent between the two cohorts. Of the 22,338 students in the first cohort, students aged 21 years or less transferred at a rate of 71.7% and students over 45 years of age transferred at a rate of 46.3%. Of the 28,364 students in the second cohort, 68.8% of those 21 years of age or less transferred and only 33.6% of those over age 45 transferred. Regarding gender, within the first cohort, males transferred at a rate of 65.8% and females at a rate of 60.8%. Within the second cohort, males transferred at a rate of 61% and females at a rate of 56.2%.

Piland (1995), in a study of bachelor degree graduates who were community college transfer students, attempted to determine any patterns of success. He found the following relationships between race and graduation rates. Native Americans, Caucasians, and Hispanics tended to graduate fastest, while Caucasians, Hispanics, and Asians tended to have the highest graduation rates over time. As for gender, the study showed that female transfers tend to graduate earlier than males. However, over time the graduation rates are similar.

Wolf-Wendel, Twombly, Morpew, and Sopcich (2004) conducted a study of Hispanic women who transferred from one of two urban community colleges to a selective private women's college and the respective transfer agreements used by these colleges. The study concluded that female community college students who were brave, had the necessary academic background, and made the full transition to the new college were successful.

Gibson (1995) determined a profile of community college students who transferred to MSU in 1989 and persisted to graduation: (a) ACT scores of 18 or higher; (b) approximately 20 years of age; (c) 60 or more credit hours transferred to MSU; (d) white; and (e) male. His study further concluded that, proportionately, more non-white than white transfer students and more female than male transfer students persisted toward the bachelor degree. Also, credit hours, GPA, and age were the only variables that had a statistically significant correlation with persisting to the bachelor degree. Unlike GPA and credit hours, which were positively related, age was negatively related to graduation.

Transfer and Academic Integration Variables

Despite the perceptions held, in both specific and general areas, when academic performance is studied, transfer track students perform as well as native university students (Montondon & Eikner, 1997). In Mississippi, Day (1999) looked at the academic performance of more than 10,000 students at the state's eight Institutions of Higher Learning (IHL) who transferred from the state's 15 public community colleges during academic year 1997-98. A comparison of the cumulative mean GPA by term showed that IHL native students performed better during the fall term, but community college transfers and native students performed equally well in the spring term.

Similarly, Cejda and Kaylor (1997) found the existence of a "transfer shock" phenomenon at two private liberal arts colleges. However, Cejda (1997) also noted that based on this specific study, there is strong evidence to suggest that reporting the transfer shock of a total sample or population does not accurately reflect the performance of

community college students in their respective disciplines. In fact, he found that community college students who transferred in the disciplines of education, fine arts, and humanities and social sciences experienced transfer ecstasy – or an increase in GPA. Whitfield (2005), however, found that community college transfer students experienced significant declines in GPA in advanced sequences of organic chemistry and biochemistry at the university after having lower sequences of courses within these same disciplines at the community college.

Piland (1995) found that there is a very strong relationship between transfer GPA and graduation rates. Students with the highest GPA's (3.5-4.0) graduate the fastest and have the highest overall rates. In fact, the study showed a two to one margin of highest GPA over lowest GPA (less than 2.5).

At Mississippi four-year institutions, Stone (1975) conducted a study of 162 transfer students. Half of these students had been enrolled in transfer programs prior to admission at the senior institutions and the other half had been enrolled in terminal degree programs. He found that although transfer students with terminal associate's degrees scored lower on the ACT than other transfer students, there was no significant difference between the GPA of the two groups. However, in another study comparing graduates to non-graduates, Grow (1998) found that transfer students who had a higher transfer GPA or transferred more academic credits to the university were more likely to graduate with the bachelor degree.

Summary

Vaughan (2006) insists that transfer has remained an important part of the community college's mission even though it has become limited by administrative imagination and academic programming. Not only has transfer remained an important part of the community college mission, but the methods and patterns of transfer to and from universities by community college students continues to elevate as an important topic for research and study (Townsend, 2001).

It is also apparent that researchers are intrigued by studying comparisons between traditional and non-traditional aged transfer students, as well as between genders and between and among minority groups and non-minority groups. However, the strongest evidence of persistence predictor variables are found in studies that compare GPA and other academic measures for students who graduate and those who do not.

CHAPTER III

METHODS AND MATERIALS

The purpose of this study was to determine whether statistically significant differences exist between students who persist toward the bachelor degree and those who don't, based on selected background and academic integration variables for students who transferred from Mississippi community colleges to MSU. Furthermore, tests to determine statistically significant relationships between selected variables and persistence to the bachelor degree for these same community college transfer students were conducted.

This chapter discusses the research methodology used in the study. Descriptions of the research design, the population studied, the research questions and subsequent hypotheses, the procedures followed, and the data analyses are detailed.

Research Design

The research required for this study was *ex post facto*. In *ex post facto* research, causes are studied after they presumably have exerted their effect on another variable (Gall, Borg & Gall, 1996). In addition, several cause-and-effect relationships can be analyzed in one study when experimental manipulation is not possible. Preceding the analyses, data was collected and presented in descriptive form. According to Gall, Borg and Gall (1996), "unless researchers first generate an accurate description of an

educational phenomenon as it exists, they lack a firm basis for explaining or changing it” (p. 374).

The purpose of this study was to determine whether statistically significant differences exist between variable means for Mississippi community college students who transfer to MSU and persist to the bachelor degree and those who do not persist. In addition, tests to determine statistically significant relationships between selected independent variables and the dependent variable of graduation status were conducted. Independent variables tested included background (age, gender, race) and academic integration variables (ACT score, transfer GPA, and number of hours transferred). The dependent variable was the transfer students’ persistence toward the bachelor degree at MSU as defined by their status after four academic years: graduate or non-graduate. The independent variables of age, ACT score, number of credit hours transferred, and transfer GPA are classified as interval data, because differences can be measured between points located on the scales on which these variables are found. The independent variables of gender and race are classified as nominal data, because each merely assigns a category label.

Population

The research population consisted of student records of students who transferred at least 12 academic credits from a Mississippi community college to MSU between 1999 and 2003, and had a reported ACT score (N=5,969). Graduation status was determined by a posted date of graduation within four years of the date of transfer.

Procedures

The data for the study was collected from the MSU mainframe computer by permission and under the direction of the Registrar. After obtaining approval from the MSU Institutional Review Board (Appendix A), the data was released. The original data included records of students transferred from institutions other than Mississippi community colleges, as well as records of students whose last attended institution was not a Mississippi community college. Since the population of interest was students who transferred from a Mississippi community college to MSU, all others were sorted out of the set. The data was then separated into cohorts according to the academic year of transfer (1999, n = 932; 2000, n = 1267; 2001, n = 1362; 2002, n = 1231; 2003, n = 1177).

Data Analysis

Frequency distributions and percentages for each independent variable were calculated. A total of 5,969 cases were analyzed. For the purpose of this study, the following research hypotheses were tested:

1. There is no statistically significant relationship between the gender of students and their persistence to the bachelor degree.
2. There is no statistically significant relationship between the race of students and their persistence to the bachelor degree.

3. There is no statistically significant difference between the mean age of students who persisted to the bachelor degree and the mean age of students who did not persist to the bachelor degree.
4. There is no statistically significant difference between the mean ACT score of students who persisted to the bachelor degree and the mean ACT score of students who did not persist to the bachelor degree.
5. There is no statistically significant difference between the mean transfer GPA of students who persisted to the bachelor degree and the mean transfer GPA of students who did not persist to the bachelor degree.
6. There is no statistically significant difference between the mean number of credit hours transferred by students who persisted to the bachelor degree and the mean number of credit hours transferred by students who did not persist to the bachelor degree.

The research hypotheses were tested using independent measures t-tests for interval data and chi-square analyses for nominal data. SPSS v15 was used to perform statistical analyses in the study.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter provides a description of what was found in the study. The first section describes the data in terms of each of the independent variables, using frequencies and percentages. The second section furnishes evidence for each of the hypotheses tested with regards to the independent variables. And the third section is a discussion of the results as applied to the rationale for the study.

Descriptive Data

The purpose of this study was to determine whether statistically significant differences exist between Mississippi community college students who transferred to MSU and persisted to the bachelor degree and those who did not persist. In addition, statistically significant relationships between selected independent variables and the dependent variable of graduation status were considered. Independent variables tested included background variables (age, gender, race) and academic integration variables (ACT score, transfer GPA, number of hours transferred). The dependent variable was the transfer students' persistence toward the bachelor degree at MSU as defined by their status after four academic years: graduate or non-graduate. The research population consisted of student records of students who transferred at least 12 academic credits from a Mississippi community college to MSU between 1999 and 2003, and had a reported

ACT score (n=5,969). Graduation status was determined by a posted date of graduation within four years of the date of transfer. This section describes the data studied in terms of the independent variables of age, gender, race, ACT score, transfer GPA, and number of hours transferred.

Age

This background variable represented the chronological age of the students during the term in which they transferred to MSU. The age range for all records (n=5,969) was 18 to 54 years. The average age was 20.35 years with a standard deviation of 2.842. The mode for all cases was 20 years and the median age of the population was 20 years. The average age for graduates (n=3,385) was 20.37 years with a standard deviation of 2.941. The average age of non-graduates (n=2,584) was 20.33 years with a standard deviation of 2.706. Age frequency distribution, stated in intervals for all cohorts, is found in Table 1.

Table 1 Chronological Age Frequency Distribution for All Cohorts

Cohort	Variable Range	Graduate		Non-Graduate		Totals		
		n	%	n	%	n	%	
1999	Age	18-20	482	68.5	222	31.5	704	75.5
		21-25	128	65.3	68	34.7	196	21.0
		26-30	11	64.7	6	35.3	17	1.8
		31-40	7	70.0	3	30.0	10	1.1
		41-50	4	80.0	1	20.0	5	<1.0
		Over 50	0	0	0	0	0	0
		Cohort Totals	632	67.8	300	32.2	932	100
		2000	Age	18-20	517	57.8	377	42.2
21-25	170			52.3	155	47.7	325	25.7
26-30	12			44.4	15	55.6	27	2.1
31-40	11			61.1	7	38.9	18	1.4
41-50	2			66.7	1	33.3	3	<1.0
Over 50	0			0	0	0	0	0
Cohort Totals	712			56.2	555	43.8	1267	100
2001	Age			18-20	573	60.5	374	39.5
		21-25	173	45.5	207	54.5	380	27.9
		26-30	14	66.7	7	33.3	21	1.5
		31-40	7	70.0	3	30.0	10	<1.0
		41-50	4	100	0	0	4	<1.0
		Over 50	0	0	0	0	0	0
		Cohort Totals	771	56.6	591	43.4	1362	100
		2002	Age	18-20	511	61.5	320	38.5
21-25	174			49.6	177	50.4	351	28.5
26-30	7			36.8	12	63.2	19	1.5
31-40	18			78.3	5	21.7	23	1.7
41-50	5			71.4	2	28.6	7	<1.0
Over 50	0			0	0	0	0	0
Cohort Totals	715			58.1	516	41.9	1231	100
2003	Age			18-20	356	47.7	391	52.3
		21-25	183	48.0	198	52.0	381	32.4
		26-30	10	37.0	17	63.0	27	2.3
		31-40	3	15.8	16	84.2	19	1.6
		41-50	2	100	0	0	2	<1.0
		Over 50	1	100	0	0	1	<1.0
		Cohort Totals	555	47.2	622	52.8	1177	100
		Grand Totals	3385	56.7	2584	43.3	5969	100

Age distribution among the five cohorts of transfer students was similar. The largest concentration of students, from 63% to 76%, belonged to the 18 to 20 years interval. The 1999 cohort (n=932) had 704 (76%) of its students in this interval, the 2000 cohort (n=1,267) had 894 (71%), the 2001 cohort (n=1,362) had 947 (70%), the 2002 cohort (n=1,231) had 831 (68%), and the 2003 cohort (n=1,177) had 747 (63%). As would be expected, however, the smallest concentration of students belonged to the over 50 years interval. Only one student, age 54, was found in this interval, and the record was in the 2003 cohort. Furthermore, the combined records within the intervals of 26 to 30 years, 31 to 40 years, 41 to 50 years, and over 50 years made up less than 4% of records within each of the cohorts.

It is noteworthy to point out that although larger numbers of students were found in the 18 to 20 years interval and, thus, provided larger numbers of graduates, the 41 to 50 years interval had the highest percentage of graduates across each of the cohorts, with the exception of the 2002 cohort. In the 2002 cohort, the highest percentage of graduates was found in the 31 to 40 years interval with 78.3%.

Gender

Male students accounted for 54% (n=3,238) of the student records studied and female students accounted for 46% (n=2,731). Distribution of gender remained rather consistent across each cohort. Furthermore, of the 3,385 (57%) students, within the records studied (n=5,969), who graduated within four years of transferring to MSU, 1,783 (53%) were males and 1,602 (47%) were females. Female students tended to have

slightly higher graduation rates within each cohort, with the exception of cohort 1999 in which males posted a higher graduation rate of 68.1%. The gender frequency distribution for all cohorts is found in Table 2.

Table 2 Gender Distribution for All Cohorts

Cohort	Variable	Graduate		Non-Graduate		Totals	
		n	%	n	%	n	%
1999	Gender						
	Female	282	67.5	136	32.5	418	44.8
	Male	350	68.1	164	31.9	514	55.2
	Cohort Totals	632	67.8	300	32.2	932	100
2000	Gender						
	Female	343	59.7	232	40.3	575	45.4
	Male	369	53.3	323	46.7	692	54.6
	Cohort Totals	712	56.2	555	43.8	1267	100
2001	Gender						
	Female	371	59.5	253	40.5	624	45.8
	Male	400	54.2	338	45.8	738	54.2
	Cohort Totals	771	56.6	591	43.4	1362	100
2002	Gender						
	Female	329	58.2	236	41.8	565	45.9
	Male	386	58.0	280	42.0	666	54.1
	Cohort Totals	715	58.1	516	41.9	1231	100
2003	Gender						
	Female	277	50.5	272	49.5	549	46.6
	Male	278	44.3	350	55.7	628	53.4
	Cohort Totals	555	47.2	622	52.8	1177	100
Grand Totals		3385	56.7	2584	43.3	5969	100

Race

The records received from the MSU Registrar contained the following race categories: American Indian/Alaskan Native, Asian/Pacific Islander, Black, Caucasian, and Hispanic. The number of student records within the categories of American Indian/Alaskan Native (n=19), Asian/Pacific Islander (n=40), and Hispanic (n=39) each accounted for less than 1% of the population studied (n=5,969). Therefore, these three

categories were collapsed into the category of Other for the purpose of analysis and accounted for 1.6% (n=98) of the studied population. The frequency distribution for the background variable of race in the categories of Black, Caucasian, and Other for all cohorts is displayed in Table 3.

Table 3 Race Distribution for All Cohorts

Cohort	Variable	Graduate		Non-Graduate		Totals	
		n	%	n	%	n	%
1999	Race						
	Black	52	49.5	53	50.5	105	11.3
	Caucasian	571	70.5	239	29.5	810	86.9
	Other	9	52.9	8	47.1	17	1.8
	Cohort Totals	632	67.8	300	32.2	932	100
2000	Race						
	Black	62	37.6	103	62.4	165	13.1
	Caucasian	640	59.0	445	41.0	1085	85.6
	Other	10	58.8	7	41.2	17	1.3
	Cohort Totals	712	56.2	555	43.8	1267	100
2001	Race						
	Black	69	40.1	103	59.9	172	12.6
	Caucasian	698	59.3	479	40.7	1177	86.4
	Other	4	30.8	9	69.2	13	1.0
	Cohort Totals	771	56.6	591	43.4	1362	100
2002	Race						
	Black	63	43.7	81	56.3	144	11.7
	Caucasian	635	59.9	425	40.1	1060	86.1
	Other	17	63.0	10	37.0	27	2.2
	Cohort Totals	715	58.1	516	41.9	1231	100
2003	Race						
	Black	46	30.5	105	69.5	151	12.9
	Caucasian	499	49.8	503	50.2	1002	85.1
	Other	10	41.7	14	58.3	24	2.0
	Cohort Totals	555	47.2	622	52.8	1177	100
	Grand Totals	3385	56.7	2584	43.3	5969	100

Caucasian students accounted for 86% (n=5,134) of the records studied, with distribution percentages remaining consistent across all cohorts. Within this category, 3,043 (59.3%) students graduated within four years of transfer to MSU. The Caucasian

category also posted the highest graduation rates for each cohort, with the highest being found in cohort 1999 (70.5%). One exception to this pattern was found in cohort 2002 where students in the category of Other posted the highest graduation rate for the cohort with 63%.

Black students accounted for 12.4% (n=737) of those students who transferred 12 or more credit hours from a Mississippi community college between 1999 and 2003, and had a posted ACT score. Within this category, 292 (39.6%) students graduated within four years of transfer to MSU. The 1999 cohort posted the highest graduation rate for the Black category (49.5%) and the 2003 cohort posted the lowest graduation rate for the Black category (30.5%).

ACT Score

This academic integration variable represented the ACT composite score submitted by students at the time of transfer to MSU. The ACT composite scores for all records (n=5,969) ranged from the lowest of 9 to the highest of 35. The average ACT composite score was 20.54 with a standard deviation of 3.919. The mode for all cases was 19 and the median score of the population was 20. The average ACT composite score for graduates (n=3,385) was 20.92 with a standard deviation of 3.852. The average ACT composite score of non-graduates (n=2,584) was 20.05 with a standard deviation of 3.952. ACT composite score frequency distribution, stated in intervals for all cohorts, is found in Table 4.

The largest concentration of ACT composite scores was found in the 19 to 23 interval (n=2,657). This interval also accounted for the largest number of graduates across all cohorts (n=1,587). Graduation rates, which reflected completion of the bachelor degree within four years of transfer to MSU, remained somewhat consistent within each interval, across all cohorts. Rates ranged from 15.8% to 80.0%. The lowest graduation rate was posted in the 2002 cohort within the 9 to 13 interval as 15.8% (n=3). The highest graduation rate was posted first in the 1999 cohort within the 29 to 32 interval as 80.0% (n=28). The other posting of the highest graduation rate was in the 2001 cohort within the 33 to 36 interval as 80.0% (n=4). The 29 to 32 interval posted the highest graduation rate for all cohorts combined (63.2%).

Table 4 ACT Composite Score Distribution for All Cohorts

Cohort	Variable Range	Graduate		Non-Graduate		Totals	
1999	ACT Score	n	%	n	%	n	%
	9-13	7	53.8	6	46.2	13	1.4
	14-18	158	60.8	102	39.2	260	27.9
	19-23	297	68.6	136	31.4	433	46.5
	24-28	142	74.7	48	25.3	190	20.4
	29-32	28	80.0	7	20.0	35	3.8
	33-36	0	0	1	100	1	<1.0
	Cohort Totals	632	67.8	300	32.2	932	100
2000	ACT Score	n	%	n	%	n	%
	9-13	8	44.4	10	55.6	18	1.4
	14-18	196	50.0	196	50.0	392	30.9
	19-23	360	59.7	243	40.3	603	47.6
	24-28	127	58.0	92	42.0	219	17.3
	29-32	20	60.6	13	39.4	33	2.6
	33-36	1	50.0	1	50.0	2	<1.0
	Cohort Totals	712	56.2	555	43.8	1267	100
2001	ACT Score	n	%	n	%	n	%
	9-13	9	40.9	13	59.1	22	1.6
	14-18	232	49.9	233	50.1	465	34.1
	19-23	334	58.7	235	41.3	569	41.8
	24-28	161	62.9	95	37.1	256	18.8
	29-32	31	68.9	14	31.1	45	3.3
	33-36	4	80.0	1	20.0	5	<1.0
	Cohort Totals	771	56.6	591	43.4	1362	100
2002	ACT Score	n	%	n	%	n	%
	9-13	3	15.8	16	84.2	19	1.5
	14-18	192	49.9	193	50.1	385	31.3
	19-23	331	61.8	205	38.2	536	43.5
	24-28	154	64.7	84	35.3	238	19.3
	29-32	33	66.0	17	34.0	50	4.1
	33-36	2	66.7	1	33.3	3	<1.0
	Cohort Totals	715	58.1	516	41.9	1231	100
2003	ACT Score	n	%	n	%	n	%
	9-13	16	59.3	11	40.7	27	2.3
	14-18	152	39.8	230	60.2	382	32.5
	19-23	265	51.4	250	48.4	516	43.8
	24-28	104	49.5	106	50.5	210	17.8
	29-32	17	41.5	24	58.5	41	3.5
	33-36	1	50.0	1	50.0	2	<1.0
	Cohort Totals	555	47.2	622	52.8	1177	100
Grand Totals		3385	56.7	2584	43.3	5969	100

GPA

The academic integration variable of grade point average (GPA), as reported at the time of transfer to MSU, for the population studied ranged from a low of 1.01 to a high of 4.00 (M=3.02, SD=.569). The mean GPA for students who persisted to the bachelor degree was 3.17 with a standard deviation of .525. The mean GPA for students who did not persist to the bachelor degree was 2.83 with a standard deviation of .567. The frequency distribution of GPA, stated in intervals for all cohorts, is found in Table 5.

The largest number of student records was found in the 3.01 to 3.50 interval for each cohort, ranging from 179 in cohort 2003 to 244 in cohort 2000. The only exception to this pattern was found in cohort 2002 where the interval of 3.51 to 4.00 contained the largest number of student records (n=231). Graduation rates maintained a consistent pattern across all cohorts with the lower scaled intervals posting lower graduation rates and the higher scaled intervals posting higher graduation rates. The highest graduation rate posted for all cohorts (81.2%) was located in cohort 1999 in the 3.51 to 4.00 interval. Cohort 1999 also posted the highest overall graduation rate (67.8%) among the five cohorts.

Table 5 Frequency Distribution of GPA for All Cohorts

Cohort	Variable Range	Graduate		Non-Graduate		Totals	
1999	Transfer GPA	n	%	n	%	n	%
	1.01-1.50	0	0	1	100	1	<1.0
	1.51-2.00	13	38.2	21	61.8	34	3.6
	2.01-2.50	68	45.9	80	54.1	148	15.9
	2.51-3.00	167	63.5	96	36.5	263	28.2
	3.01-3.50	203	77.2	60	22.8	263	28.2
	3.51-4.00	181	81.2	42	18.8	223	23.9
	Cohort Totals	632	67.8	300	32.2	932	100
2000	Transfer GPA	n	%	n	%	n	%
	1.01-1.50	0	0	2	100	2	<1.0
	1.51-2.00	12	28.6	30	71.4	42	3.3
	2.01-2.50	64	28.3	162	71.7	226	17.8
	2.51-3.00	197	55.5	158	44.5	355	28.0
	3.01-3.50	244	64.9	132	35.1	376	29.7
	3.51-4.00	195	73.3	71	26.7	266	21.0
	Cohort Totals	712	56.2	555	43.8	1267	100
2001	Transfer GPA	n	%	n	%	n	%
	1.01-1.50	0	0	1	100	1	<1.0
	1.51-2.00	10	29.4	24	70.6	34	2.5
	2.01-2.50	81	30.0	189	70.0	270	19.8
	2.51-3.00	203	53.8	174	46.2	377	27.7
	3.01-3.50	241	65.7	126	34.3	367	26.9
	3.51-4.00	236	75.4	77	24.6	313	23.0
	Cohort Totals	771	56.6	591	43.4	1362	100
2002	Transfer GPA	n	%	n	%	n	%
	1.01-1.50	0	0	0	0	0	0
	1.51-2.00	8	25.0	24	75.0	32	2.6
	2.01-2.50	84	37.7	139	62.3	223	18.1
	2.51-3.00	166	47.8	181	52.2	347	28.2
	3.01-3.50	226	69.1	101	30.9	327	26.6
	3.51-4.00	231	76.5	71	23.5	302	24.5
	Cohort Totals	715	58.1	516	41.9	1231	100
2003	Transfer GPA	n	%	n	%	n	%
	1.01-1.50	0	0	2	100	2	<1.0
	1.51-2.00	2	7.0	25	93.0	27	2.3
	2.01-2.50	72	30.1	161	69.9	233	19.8
	2.51-3.00	134	42.5	181	57.5	315	26.8
	3.01-3.50	179	55.2	145	44.8	324	27.5
	3.51-4.00	168	60.9	108	39.1	276	23.4
	Cohort Totals	555	47.2	622	52.8	1177	100
Grand Totals		3385	56.7	2584	43.3	5969	100

Number of Hours Transferred

The academic integration variable of number of hours transferred was limited at the lower end of the scale to a minimum of 12 semester credit hours. This limit assured the researcher that each record studied was based on the completion of the equivalent to one semester of coursework prior to transfer to MSU and was an adaptation of the transfer definition as described in the Transfer Assembly Project, as noted in Chapter II of this document. An upper limit was not established due to the variety of reasons that students might obtain a large number of credit hours, including attendance at multiple institutions prior to transfer to MSU. However, the records studied were selected based on the students' last attended institution being a Mississippi community college. Based on these limits, the subsequent range of semester credit hours transferred to MSU between 1999 and 2003 by students from Mississippi community colleges was from 12 to 176 ($M=51.73$, $SD=23.318$). Frequency distribution of credit hours transferred, stated in intervals for all cohorts, is found in Table 6.

Table 6 Credit Hours Transferred Distribution for All Cohorts

Cohort	Variable Range	Graduate		Non-Graduate		Totals	
1999	Credit hours transferred	n	%	n	%	n	%
	12-23	130	62.2	79	37.8	209	22.4
	24-35	54	53.5	47	46.5	101	10.9
	36-47	49	53.3	43	46.7	92	9.9
	48-59	84	64.6	46	35.4	130	13.9
	60-72	218	82.3	47	17.7	265	28.4
	73 or more	97	71.9	38	28.1	135	14.5
	Cohort Totals	632	67.8	300	32.2	932	100
2000	Credit hours transferred	n	%	n	%	n	%
	12-23	132	55.0	108	45.0	240	18.9
	24-35	64	40.0	96	60.0	160	12.6
	36-47	49	34.3	94	65.7	143	11.3
	48-59	75	47.5	83	52.5	158	12.5
	60-72	281	70.8	116	29.2	397	31.4
	73 or more	111	65.7	58	34.3	169	13.3
	Cohort Totals	712	56.2	555	43.8	1267	100
2001	Credit hours transferred	n	%	n	%	n	%
	12-23	112	57.1	84	42.9	196	14.4
	24-35	65	38.5	104	61.5	169	12.4
	36-47	49	46.2	57	53.8	106	7.8
	48-59	109	49.5	111	50.5	220	16.2
	60-72	320	67.2	156	32.8	476	34.9
	73 or more	116	59.5	79	40.5	195	14.3
	Cohort Totals	771	56.6	591	43.4	1362	100
2002	Credit hours transferred	n	%	n	%	n	%
	12-23	105	55.3	85	44.7	190	15.4
	24-35	54	46.6	62	53.4	116	9.5
	36-47	47	38.2	76	61.8	123	10.0
	48-59	107	51.0	103	49.0	210	17.1
	60-72	279	68.4	129	31.6	408	33.1
	73 or more	123	66.8	61	33.2	184	14.9
	Cohort Totals	715	58.1	516	41.9	1231	100
2003	Credit hours transferred	n	%	n	%	n	%
	12-23	56	29.6	133	70.4	189	16.1
	24-35	29	23.6	94	76.4	123	10.5
	36-47	44	33.6	87	66.4	131	11.1
	48-59	78	41.3	111	58.7	189	16.1
	60-72	226	63.0	133	37.0	359	30.5
	73 or more	122	65.6	64	34.4	186	15.7
	Cohort Totals	555	47.2	622	52.8	1177	100
Grand Totals		3385	56.7	2584	43.3	5969	100

The median number of hours transferred for all cases was 57 and the mode was 12. The mean number of hours transferred by students who persisted to the bachelor degree was 54.93 with a standard deviation of 23.03. The mean number of hours transferred by students who did not persist to the bachelor degree was 47.53 with a standard deviation of 23.03.

The 60 to 72 interval posted the most student records across all cohorts with a low of 218 records in cohort 1999 to a high of 320 records in cohort 2001. The same interval also posted the highest graduation rates within each cohort. The highest graduation rate across all cohorts was found in cohort 1999 with 82.3% in the 60 to 72 interval and 67.8% for the entire cohort.

Findings

This section furnishes evidence for each of the hypotheses tested in regards to the independent variables for student records of Mississippi community college students who transferred to MSU between 1999 and 2003. First, the analyses of the nominal scaled variables of gender and race will be discussed. Then the interval scaled variables of age, ACT score, GPA, and number of hours transferred will be discussed.

The first null hypothesis stated that there is no statistically significant relationship between the gender of the transfer student population studied and their persistence to the bachelor degree. The Chi Square Test for Independence was used to determine the existence of a relationship between the two dichotomous variables. The dependent variable of graduation status placed students in one of two groups: graduate or non-

graduate. The independent variable of gender placed students in one of two groups: female or male. The results of the test showed a statistically significant relationship between the two variables of gender and graduation status, $\chi^2(1, N=5,969) = 7.799$, $p < .05$, two sided; therefore, the null hypothesis was rejected by the analysis. To determine the strength of the relationship, a Cramer's V Coefficient was calculated (.036, $p < .05$) and showed a negligible association (Rea & Parker, 1992) between the two variables. Data is displayed in Tables 7 and 8.

Table 7 Gender by Graduation Status Crosstabulation

Gender	Graduation Status		Total
	Yes	No	
Female	1602	1129	2731
Male	1783	1455	3238
Total	3385	2584	5969

Table 8 Chi-Square Test for Independence for Gender By Graduation Status

	Value	<i>df</i>	Asymptotic Significance (2-sided)	Approx. Significance
Chi-Square	7.799	1	.005	
Cramer's V	.036			.005
N of valid cases	5969			

The second null hypothesis stated that there is no statistically significant relationship between the race of the transfer student population studied and their persistence to the bachelor degree. The Chi Square Test for Independence was used to determine the existence of a relationship using the categories of graduate and non-graduate for the dependent variable of graduation status and the categories of Black,

Caucasian, and Other for the independent variable of race. The results of the test showed a statistically significant relationship between the two variables of race and graduation status, $X^2(2, N=5,969) = 102.694, p < .05$, two sided; therefore, the null hypothesis was rejected by the analysis. To determine the strength of the relationship, a Cramer's V Coefficient was calculated and showed a weak association (Rea & Parker, 1992) between the two variables (.131, $p < .05$). Data is displayed in Tables 9 and 10.

Table 9 Race by Graduation Status Crosstabulation.

Race	Graduation Status		Total
	Yes	No	
Black	292	445	737
Caucasian	3043	2091	5134
Other	50	48	98
Total	3385	2584	5969

Table 10 Chi-square test for Independence for Race by Graduation Status.

	Value	<i>df</i>	Asymptotic Significance (2-sided)	Approx. Significance
Chi-Square	102.694	2	.000	
Cramer's V	.131			.000
N of valid cases	5969			

The third null hypothesis stated that there is no statistically significant difference between the mean age of students who persisted to the bachelor degree and the mean age of students who did not persist to the bachelor degree. A t-test for Independent Measures was used to determine whether differences existed between the mean chronological age of transfer students who graduated and transfer students who did not graduate. Students

who graduated within four years of transfer to MSU were about the same age ($M=20.37$, $SD=2.941$) as transfer students who did not graduate ($M=20.33$, $SD=2.706$). There was no statistically significant difference between the ages of the two groups, $t(5,997) = .543$, $p > .05$, two-tailed; therefore, the analysis failed to reject the null hypothesis. Group statistics and results of Independent Measures tests are displayed in Tables 11 and 12.

The fourth null hypothesis stated that there is no statistically significant difference between the mean ACT composite score of students who persisted to the bachelor degree and the mean ACT composite score of students who did not persist to the bachelor degree. A t-test for Independent Measures was conducted to determine the existence of differences between the two groups. Students who persisted to the bachelor degree had a higher ACT composite score ($M=20.92$, $SD=3.852$) than students who did not persist ($M=20.05$, $SD=3.952$). This difference was statistically significant, $t(5,967) = 8.560$, $p < .05$, two-tailed; therefore, the null hypothesis was rejected by the analysis. Group statistics and results of Independent Measures tests are displayed in Tables 11 and 12.

The fifth null hypothesis stated that there is no statistically significant difference between the mean transfer GPA of students who persisted to the bachelor degree and the mean transfer GPA of students who did not persist to the bachelor degree. A t-test for Independent Measures was conducted to determine whether differences exist between the two groups. Students who persisted to the bachelor degree had higher transfer GPA scores ($M=3.169$, $SD=.524$) than students who did not persist ($M=2.828$, $SD=.567$). The difference was statistically significant, $t(5,967) = 23.746$, $p < .05$, two-tailed; therefore,

the null hypothesis was rejected by the analysis. Group statistics and results of Independent Measures tests are displayed in Tables 11 and 12.

The sixth null hypothesis stated that there is no statistically significant difference between the mean number of credit hours transferred by students who persisted to the bachelor degree and the mean number of credit hours transferred by students who did not persist to the bachelor degree. A t-test for Independent Measures was conducted to determine if differences existed between the two groups. Students who graduated within four years transferred more credit hours to MSU (M=54.93, SD=23.030) than students who did not graduate within four years (M=47.53, SD=23.030). This difference was statistically significant, $t(5,967) = 12.296, p < .05$, two-tailed; therefore, the null hypothesis was rejected by the analysis. Group statistics and results of Independent Measures tests are displayed in Tables 11 and 12.

Table 11 Group Statistics for *t*-test Samples

Independent Variable	Graduation Status	N	Mean	Standard Deviation	Standard Error Mean
Age	Yes	3385	20.37	2.941	.051
	No	2584	20.33	2.706	.053
ACT Score	Yes	3385	20.92	3.852	.066
	No	2584	20.05	3.952	.078
GPA	Yes	3385	3.1692	.52474	.00902
	No	2584	2.8284	.56731	.01116
Credit Hours	Yes	3385	54.93	23.030	.396
	No	2584	47.53	23.030	.453

Table 12 *t*-test for Independent Measures for Selected Independent Variables.

Independent Variable	<i>t</i>	<i>df</i>	Significance (2-tailed)	Mean Difference	Standard Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Age	.537	5967	.591	.040	.074	-.106	.185
ACT Score	8.560	5967	.000	.871	.102	.672	1.071
GPA	23.996	5967	.000	.34074	.01420	.31290	.36857
Credit Hours	12.296	5967	.000	7.397	.602	6.218	8.577

Summary

The purpose of this study was to determine whether statistically significant differences exist between Mississippi community college students who transferred to MSU between 1999 and 2003 and persisted to the bachelor degree and those who did not persist. In addition, statistically significant relationships between selected independent variables and the dependent variable of graduation status were considered. The student records studied (N=5,969) were divided into two groups: graduates (n=3385) and non-graduates (n=2584) and compared based on the mean scores of the background variable of chronological age and the academic integration variables of ACT composite score, transfer GPA, and number of hours transferred. Additionally, frequencies of student records within the two categories of gender and the three categories of race were analyzed to determine relationships that exist for the two groups of graduation status.

Regarding the nominal scale variables of gender and race, both revealed the existence of a relationship, but both associations were low. Considering gender, for

instance, within the graduate group (n=3385), males represented 52.7% of the membership. Similarly, within the non-graduate group (n=2584), males represented 56.3% of the membership. Females represented 47.3% of the graduate group and 42.1% of the non-graduate group. As the Chi Square Test for Independence revealed, $\chi^2(1, N=5,969) = 7.799, p < .05$, two sided, a relationship between gender and graduation existed, but was negligible when assuming that similar representations could have occurred by chance.

Likewise, when analysis was conducted regarding a relationship between race and graduation, the graduation group contained student records for Caucasian students (n=3043) that outnumbered student records for Black students (n=292) more than 10:1 and student records found in the Other category (n=50) by more than 60:1. Yet, the graduation rates accounted for a weak association and a weak argument that a similar distribution could not have happened by chance, according to the Chi Square Test for Independence, $\chi^2(2, N=5,969) = 101.777, p < .05$, two sided.

Regarding the variables of age, ACT score, GPA, and number of hours transferred, t-tests for Independent Measures revealed statistically significant differences between the graduates and the non-graduates for three of the four variables. Within each of the academic integration variables of ACT score, GPA, and number of hours transferred, it was readily apparent that, in general, as variable scores increased, graduation rates increased. The only exceptions to this pattern occurred within the variable of number of hours transferred for the interval of 12 to 23 credit hours. For the

1999, 2000, 2001, and 2002 cohorts, the interval of 12 to 23 credit hours posted higher graduation rates than the mid-range intervals for each of those cohorts.

The t-test for Independent Measures conducted using the background variable of chronological age, however, did not reveal a statistically significant difference between the graduate group and the non-graduate group. Students who graduated within four years of transfer to MSU were about the same age ($M=20.37$, $SD=2.941$) as transfer students who did not graduate ($M=20.33$, $SD=2.706$). There was no statistically significant difference between the ages of the two groups, $t(5,997) = .543$, $p > .05$, two-tailed.

CHAPTER V
SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Summary

A review of literature confirmed that transfer of credits remains an important part of the community college mission. Additionally, the literature review revealed that studies of the phenomena of transfer and scholarly commentary from university-based researchers and community college-based practitioners support the need for the study of background characteristics and academic integration characteristics of transfer students as predictors of success (Cejda, 1997; Day, 1999; Gibson, 1995; Grow, 1998; Piland, 1995; Stone, 1975; Townsend, 2001; Windham, 2002).

Therefore, the general issues of transfer from the community college to the university and persistence to the bachelor degree were the focus of this study. Specifically, this study examined the transfer of Mississippi community college students to MSU and the differences between those who persisted to the bachelor degree and those who did not. Influenced by Tinto's (1975) Student Integration Model and Bean's (1985) Student Attrition Model, this study looked at the effect of pre-college and pre-transfer characteristics on subsequent student success.

Student records for 5,969 Mississippi community college students who transferred at least 12 credit hours to MSU between 1999 and 2003 were the subjects of this study.

Descriptive analysis separated them into five cohorts based on year of transfer. Furthermore, each cohort was further described regarding a set of independent variables and one dependent variable. The independent variables consisted of background variables (age, race, gender) and academic integration variables (ACT score, GPA, number of hours transferred). The dependent variable was graduation status, which was defined by whether or not the transfer student graduated with a bachelor degree within four years of the date of transfer to MSU.

Six research hypotheses were tested regarding the independent variables for the graduation group and the non-graduation group. The five null hypotheses regarding race, gender, ACT score, GPA, and number of hours transferred were rejected because the statistical analyses revealed significant findings. However, statistical analysis revealed findings that failed to reject the null hypothesis regarding age.

Implications

The results of this study should assist faculty and staff of Mississippi community colleges who advise students regarding factors that influence transfer and success after transfer. Not only are the findings similar to those found in much of the literature, they also reflect the general practice, for instance, of advising community college students to maintain a high GPA and earn as many credits prior to transfer as practical. Support for such an application of student advisement can be drawn from the evidence of the student records studied. Within each of the academic integration variables of ACT score, GPA, and number of hours transferred, in general, as variable scores increased, graduation rates

increased. Therefore, it may be generalized that students who transfer from Mississippi community colleges to MSU and earn the bachelor degree within four years of transfer tend to have a higher ACT score ($M=20.92$, $SD=3.852$), a higher GPA ($M=3.17$, $SD=.525$), and transfer more credit hours ($M=54.93$, $SD=23.03$).

Likewise, the study revealed an association between the background variable of race and persistence to the bachelor degree and the background variable of gender and persistence to the bachelor degree for Mississippi community college transfer students. However, the associations were negligible to weak. Furthermore, regarding the background variable of age, a statistically significant difference was not shown to exist between the age of graduates ($M=20.37$, $SD=2.941$) and non-graduates ($M=20.33$, $SD=2.706$). Although community college faculty and staff who advise students regarding transfer should continue to recognize that each of these factors can shape the transfer outcome of a student, in general, findings of the student records studied do not infer the need for extra emphasis on any of these factors.

University faculty and staff who advise community college transfer students should also benefit from these findings. Because recruitment, retention, and graduation of community college transfer students is important to the university (Day, 1999; Flaga, 2006; and Kisker, 2007; Laanan, 1996; Montondon & Eikner, 1997; Townsend, 2001; Welsh & Kjorlien, 2001), using academic integration variables such as ACT score, GPA, and number of hours transferred to predict persistence to the bachelor degree can help shape the development of interventions for those students who tend to be below the average scores found in this study.

As stated earlier, Bean's (1985) theory promoted that, in regards to student attrition, attitude formation and decision making by college students were influenced by the interaction of external variables, such as academic, social, and environmental factors, and internal variables, such as college grades, institutional fit, and goal attainment. An implication of this study would be that students who tend to transfer fewer hours from the community college may need considerable interaction with an advisor to fully understand the scope of their program of study, including all necessary courses needed and a realistic timeline for completion. In addition, regular and intentional follow-ups could be conducted by the advisor in order to assure the student remains on track, focused on the timeline, and persisting with the goal of graduation in mind. Furthermore, transfer students who tend to have lower ACT scores or a lower GPA may need interventions that help them improve study skills and test-taking skills in order to counteract transfer shock and subsequently elevate their academic performance record to assure persistence to the bachelor degree.

Recommendations

It is recommended that additional research regarding transfer of Mississippi community college students to MSU continue in order to determine if this study can be further generalized and to determine additional findings regarding the population of community college transfer students. Future research could expand the number of both background and academic integration variables studied. Also, research conducted in the near future could drill down into any of the individual cohorts to determine if additional

students have persisted to the bachelor degree after the four-year threshold, which was used as a limit for this study.

A related finding of this study was the apparent disproportion of Caucasian students transferring from Mississippi community colleges to MSU as compared to non-Caucasian students. One of the factors affecting this ratio could have been the limitation placed on student record selection that required the student's last institution attended to have been a Mississippi community college. Nevertheless, of the 5,969 student records studied, which represented Mississippi community college transfer students over a five year period, 5,134 (86%) were Caucasian, 737 (12.4%) were Black, 40 (.67%) were Asian/Pacific Islander, 39 (.61%) were Hispanic, and 19 (.32%) were American Indian/Alaskan Native. Future research could focus on determining the factors that influence such a large difference in numbers between racial groups within the transfer population of Mississippi community college students at MSU.

REFERENCES

- Almeida, D. A. (1991). Do underprepared students and those with lower academic skills belong in the community college? *Community College Review*, 18(4), 28-32.
- American Vocational Association. (1998). *The official guide to the Perkins Act of 1998: The authoritative guide to federal legislation for vocational-technical education*. Alexandria, VA: Author.
- Barkley, S. M. (1993). A synthesis of recent literature on articulation and transfer. *Community College Review*, 20(4), 38-50.
- Bean, J. P. (1985). Interaction effects based on class level in an explanatory model of college student dropout syndrome. *American Educational Research Journal*, 22(1), 35-64.
- Bender, L. W. (1991). Applied associate degree transfer phenomenon: Proprietaries and publics. *Community College Review*, 19(3), 22-28.
- Bers, T. H. (1994). Articulation and transfer. In A. M. Cohen & F. B. Brawer (Eds.), *Managing community colleges: A handbook for effective practice* (pp. 247-261). San Francisco: Jossey-Bass.
- Best, G. A., & Gehring, D. D. (1993). The academic performance of community college transfer students at a major state university in Kentucky. *Community College Review*, 21(2), 32-41.
- Cabrera, A. F., Castaneda, M. B., Nora, A., & Hengstler, D. (1992). The convergence between two theories of college persistence. *Journal of Higher Education*, 63(2), 123-139.
- Career and Technical Education*. (n.d.). Retrieved July 25, 2007, from US Department of Education: <http://www.ed.gov/about/offices/list/ovae/pi/cte/index.html>.
- Carlan, P. E., & Byxbe, F. R. (2000). Community colleges under the microscope: An analysis of performance predictors for native and transfer students. *Community College Review*, 28(2), 27-42.
- Cejda, B. D. (1997). An examination of transfer shock in academic disciplines. *Community College Journal of Research and Practice*, 21, 279-288.

- Cejda, B. D., & Kaylor, A. J. (1997). Academic performance of community college transfer students at private liberal arts colleges. *Community College Journal of Research & Practice*, 21(7), 651-659.
- Chaves, C. (2006). Involvement, development, and retention: Theoretical foundations and potential extensions for adult community college students. *Community College Review*, 34(2), 139-152.
- Cohen, A. M. (1989). Commitment to transfer. *ERIC Digest*. (ERIC Document Reproduction Service No. ED310832).
- Cohen, A. M., & Brawer, F. B. (Eds.). (1994). *Managing community colleges: A handbook for effective practice*. San Francisco: Jossey-Bass.
- Cohen, A. M. & Brawer, F. B. (1996). *The American Community College* (3rd ed.). San Francisco, CA: Jossey-Bass Inc.
- Community College Stats*. (n.d.). Retrieved August 12, 2007, from American Association of Community Colleges: <http://www2.aacc.nche.edu/research/home.html>.
- Day, L. L. (1999). *Mississippi Public Community/Junior College Students Enrolled in Mississippi Public Universities, Academic Year 1997-98*. Unpublished Report, Mississippi State Board for Community and Junior Colleges.
- Dickerson, J. R. (1993). The graduation rate in spring semester 1992 of the community college transfer students who entered Mississippi State University in fall semester 1988 (Master's Thesis, Mississippi State University, 1993). *Masters Abstracts International*, 32/01, 24.
- Eaton, J. S. (Ed.). (1988). *Colleges of choice: The enabling impact of the community college*. New York, NY: Macmillan Publishing Company.
- Flaga, C.T. (2006). The process of transition for community college transfer students. *Community College Journal of Research and Practice*, 30, 3-19.
- Fredrickson, J. (1998). Today's transfer students: Who are they? *Community College Review*, 26(1), 43-54.
- Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction* (6th ed.). White Plains, NY: Longman Publishers.
- Gibson, I. (1995). The relationship between graduation and selected variables among community college transfer students at Mississippi State University. (Doctoral Dissertation, Mississippi State University, 1995). *Dissertation Abstracts International*, 56/06, 2089.

- Gonzenbach, N. M. (1993). Factors affecting decisions by office occupation students to continue education beyond the community college. *Community College Review*, 21(2), 22-31.
- Gravetter, F. J., & Wallnau, L. B. (1996). *Statistics for the behavioral sciences: A first course for students of Psychology and Education* (4th ed.). St. Paul, MN: West Publishing Co.
- Grow, A.P. (1998). Prediction of graduation and nongraduation of Mississippi State University transfer students utilizing pre-enrollment information (Doctoral Dissertation, Mississippi State University, 1998). *Dissertation Abstracts International*, 59/08, 2794.
- Higgins, C. S., & Katsinas, S. G. (1999). The relationship between environmental conditions and transfer rates of selected rural community colleges: A pilot study. *Community College Review*, 27(2), 1-25.
- Hirose, S. M. (1994). Calculating student transfer rates: The transfer assembly project. *Community College Review*, 22(1), 62-71.
- Howell, D. C. (1997). *Statistical methods for psychology* (4th ed.). Belmont, CA: Wadsworth Publishing Company.
- Ignash, J.M., & Townsend, B.K. (2001). Statewide transfer and articulation policies: Current practices and emerging issues. In B.K. Townsend & S.B. Twombly(Eds.). (2001). *Community Colleges: Policy in the Future Context* (p. 173-192). Ablex Publishing: Westport, CT.
- Kintzer, F. C. (1997). *Articulation and transfer: Critical contributions to lifelong learning*. (ERIC Document Reproduction Service No. ED409066)
- Kisker, C.B. (2007). Creating and sustaining community college-university transfer partnerships. *Community College Review*, 34(4), 282-301.
- Koker, M., & Hendel, D. (2003). Predicting graduation rates for three groups of new advanced-standing cohorts. *Community College Journal of Research and Practice*, 27, 131-146.
- Laanan, F. S. (1996). Making the transition: Understanding the adjustment process of community college transfer students. *Community College Review*, 23(4), 69-84.
- Laanan, F.S. (2007). Studying transfer students: Part II: Dimensions of transfer students' adjustment. *Community College Journal of Research and Practice*, 31, 37-59.

- McCabe, R. H. (1988). The educational program of the American community college: A transition. In J. S. Eaton (Ed.). (1988). *Colleges of choice: The enabling impact of the community college*. (pp. 93-115). New York, NY: Macmillan Publishing Company.
- Montondon, L., & Eikner, E. (1997). Comparison of community college transfer students and native students in an upper level accounting course. *Community College Review, 25(3)*, 21-38.
- National Center for Education Statistics. (2000). *The condition of education 1998*. Retrieved March 18, 2000, from <http://nces.ed.gov/pubs98/condition98/>.
- Piland, W. E. (1995). Community college transfer students who earn bachelor's degrees. *Community College Review, 23(3)*, 17-26.
- Rea, L.M., & Parker, R.A. (1992). *Designing and conducting survey research*. San Francisco: Jossey-Bass, Inc.
- Research & Curriculum Unit. (2000). *Postsecondary curriculum framework*. Jackson, MS: Mississippi Department of Education.
- Roueche, J. E., & Roueche, S. D. (1999). *High stakes, high performance: Making remedial education work*. Washington, D.C.: Community College Press.
- State Board for Community & Junior Colleges. (2000). *Articulation agreement between the Mississippi board of trustees of state institutions of higher learning and the Mississippi state board for community and junior colleges*. Jackson, MS: Author.
- Stone, J. C. (1975). A study of the relative academic success of Mississippi public junior college completions of terminal programs who transferred to Mississippi public senior colleges in 1969 through 1972. (Doctoral Dissertation, Mississippi State University, 1975). *Dissertation Abstracts International, 36/03*, 1469.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 53*, 89-125.
- Turner, C. S. (1992). It takes two to transfer: Relational networks and educational outcomes. *Community College Review, 19(4)*, 27-33.
- Townsend, B. (2001). Redefining the community college transfer mission. *Community College Review, 29(2)*, 29-42.

- Vaughan, G. (2006). Community college transfers come full circle-almost. *Community College Journal*, June/July, 28-32.
- Ward, P. (1947). *Terminal Education in the Junior College*. New York, NY: Harper & Brothers Publishers.
- Webster's new collegiate dictionary*. (1979). Springfield, MA: G & C Merriam Company.
- Welsh, J., & Kjorlien, C. (2001). State support for interinstitutional transfer and articulation: The impact of databases and information systems. *Community College Journal of Research and Practice*, 25, 313-332.
- Whitfield, M. (2005). Transfer-student performance in upper-division chemistry courses: Implications for curricular reform and alignment. *Community College Journal of Research and Practice*, 29, 531-545.
- Windham, P. (2003). *A comparison of associate in arts transfer rates between 1994-95 and 1998-99*. Unpublished report to the Florida State Board of Community Colleges.
- Wolf-Wendel, L., Twombly, S., Morphew, C., & Sopcich, J. (2004). From the barrio to the bucolic: The student transfer experience from HSIs to Smith College. *Community College Journal of Research and Practice*, 28, 213-231.

APPENDIX A

MISSISSIPPI STATE UNIVERSITY IRB PERMISSION LETTER



September 25, 2007

Robert Paul Miller
PO Box 7976
Columbus, Ms 39705

RE: IRB Study #07-259: The Relationship Between Graduation and Selected Variables Among five Cohorts of Community college Transfer Students at Mississippi State University

Dear Mr. Miller:

The above referenced project was reviewed and approved via administrative review on 9/25/2007 in accordance with 45 CFR 46.101(b)(4). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

Please refer to your IRB number (#07-259) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact Christine Williams at cwilliams@research.msstate.edu or 325-5220.

Sincerely,

A handwritten signature in blue ink that reads "Katherine Crowley". The signature is fluid and cursive.

Katherine Crowley
Assistant IRB Compliance Administrator

cc: Ed Davis

Office for Regulatory Compliance

P. O. Box 6223 • 8A Morgan Street • Mailstop 9563 • Mississippi State, MS 39762 • (662) 325-3294 • FAX (662) 325-8776