

University of Nevada, Reno

**The Effects of Initial Placement Enrollment on
Community College Student Persistence:
A Case Study of Developmental Education Policy and Practice**

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in Education

By

George T. McNulty

Dr. Patricia K. Miltenberger/Dissertation Advisor

December, 2011

Copyright by George McNulty 2011

All Rights Reserved



University of Nevada, Reno
Statewide • Worldwide

THE GRADUATE SCHOOL

We recommend that the dissertation
prepared under our supervision by

GEORGE T. MCNULTY

entitled

**The Effects Of Initial Placement Enrollment On Community College Student
Persistence: A Case Study Of Developmental Education Policy And Practice**

be accepted in partial fulfillment of the
requirements for the degree of

DOCTOR OF PHILOSOPHY

Patricia Miltenber, Ph.D., Advisor

Gus Hill, Ph.D., Committee Member

Janet Usinger, Ph.D., Committee Member

Thomas Harrison, Ph.D., Committee Member

Gordon Zimmerman, Ph.D, Graduate School Representative

Marsha H. Read, Ph. D., Dean, Graduate School

December, 2011

Abstract

College student retention is one of the most significant issues in higher education. Nationally, persistence and graduation rates have changed sparingly over the past decade (Tinto, 2006-2007). In community colleges, one-half of all new students are retained from their first to second year and graduation rates are low. In student success literature, researchers have long discussed the association between academic preparedness and success in college. In his analysis of a National Education Longitudinal Study, Bailey (2008) estimated that 60% of recent high school graduates who enter post-secondary education through the community college enroll in at least one developmental English, math, and/or reading course or more. When compared with students needing no remediation, this group of students is far less likely to persist, or to complete a college degree (Bailey, 2008).

The purpose of this single institutional case study was to explore the relationship between student persistence rates and developmental education policy. Specifically, this study examined how assessment testing, placement policy, institutional practice, and initial course enrollment patterns related to student success. With the majority of students entering community colleges academically underprepared, the importance of the evaluation, as well the development of institutional policy, which may aid in increasing success rates, cannot be overstated (Price & Roberts, 2008-2009).

The research methodology of this study included qualitative and quantitative approaches. Data was collected from the academic transcripts of a single cohort of all first-time, full-time, associate degree-seeking students who were enrolled at the college during the 2007 Fall semester and tracked for their persistence rates through the 2010

Spring semester. In addition, seven college professionals were interviewed and relevant documentation examined in order to perform the qualitative portion of this study.

Descriptive statistics were utilized to report, summarize, and interpret the data. A Chi Square Test of Independence was employed to examine possible differences between groups as determined by selected independent and dependent variables. This mixed methods approach addressed the purpose of this study, that is, the study explored the relationship between student persistence rates and developmental education policy in terms of quantitative representation and qualitative explanation.

This study provided an in-depth perspective of the history of developmental education in addition to initial placement policy and practices at the college. Throughout the interviews, two themes emerged institutional struggle with the right to fail philosophy and ambivalence towards/questioning of the validity of assessment testing instruments. The Chi Square Test indicated that there were no statistically significant differences between groups as determined by selected independent and dependent variables. Overall, the quantitative results of this research study did not support the research findings of other studies.

Acknowledgements

There were many people who supported me throughout my studies. To my lovely wife who stood beside me always: you gracefully shouldered many responsibilities. Your resolve was especially strong and I am thankful for your encouragement. To my daughter who waited patiently to go to the park while I worked on the weekends; you are dear to my heart. To my parents: it is with honor that I acknowledge you. Thank you for showing interest in my progression and having faith in me. I am forever grateful for you. To my brothers, whom I greatly admire, thank you for your support.

The dissertation process was thought provoking and rewarding. I would like to express special thanks to Dr. Miltenberger; your consistent guidance was pivotal for me to have successfully conducted this study. You were engaging both personally and professionally. I feel fortunate to have had the opportunity to work closely with you. Dr. Hill, your expertise and help with the technical aspects of statistical analysis was much appreciated. Dr. Usinger, you provided thoughtful insight and perspective; your passion for qualitative research was inspiring. I would also like to thank Dr. Harrison, Dr. Zimmerman and Dr. Thornton for their valued contributions.

Table of Contents

	Page
Abstract _____	i
Acknowledgements _____	iii
List of Tables _____	viii
Table of figures _____	ix
CHAPTER ONE _____	1
Statement of the Problem _____	1
The Purpose of the Study _____	3
Research Questions _____	4
Significance of the Study _____	5
Definition of Terms _____	7
Delimitations of the Study _____	9
Limitations of the Study _____	9
Ethical Considerations _____	10
Summary _____	11
CHAPTER TWO _____	14
Review of the Literature _____	14
Community College Access _____	14
Developmental Education in the Community College _____	14
Developmental Education and Student Success _____	14
Evaluating Developmental Education for Effective Programming _____	21

Lumina Foundation and Achieving the Dream Policy Initiatives	24
Mandatory Assessment	27
Mandatory Placement	29
College Success Skills Course	33
The Complex Nature of Student Retention	37
Demographic Variables	38
Age	38
Gender	41
Ethnicity	44
Theoretical Perspectives of Student Retention	48
Theoretical Perspectives of Community College Retention	
Research	51
Community College Persistence	53
The State's Community College	54
Developmental Education in the State	54
College Student Persistence in the State	56
CHAPTER THREE	57
Methodology	57
Research Questions	58
Research Plan	59
Research Site	61
Participants	61

Data Sources and Analysis	61
Personal Interviews	62
Documents	63
Academic Transcripts	63
Quantitative Variables of the Study	65
Instrumentation	65
ACCUPLACER	65
Summary	66
CHAPTER FOUR	68
Results	68
Introduction	68
Research Questions	69
Summary of the Qualitative Analysis	70
Results of the Qualitative Analysis	71
Research Question 1	71
Right to Fail	73
Assessment Testing Instruments	77
Description of the Student Cohort	79
Summary of the Quantitative Analysis	85
Results of the Quantitative Analysis	86
Research Question 2	86

Research Question 3	89
Research Question 4	92
Research Question 5	95
Research Question 6	98
Summary	101
CHAPTER FIVE	103
Summary and Recommendations	103
Recommendations for Future Study	108
Implications for Practice	109
Summary	111
References	112
Appendix A	128

List of Tables

Table	Page
1. Summary of Pell Grant Eligibility for Students in Cohort _____	80
2. Summary of Age for Students in Cohort _____	81
3. Summary of Gender for Students in Cohort _____	81
4. Summary of Race/Ethnicity for Students in Cohort _____	82
5. Summary of Developmental Course Enrollment for Students in Cohort _____	83
6. Summary of Persistence Rates for Students in Cohort _____	83
7. Summary of Completion/Non-Completion of ACCUPLACER for Students in Cohort _____	84
8. Summary of How to Succeed in College Course Enrollment for Students in Cohort _____	84
9. Frequency Distributions for Persistence Status and ACCUPLACER Testing _____	87
10. Frequency Distributions for Persistence Status and Developmental English Enrollment _____	90
11. Frequency Distributions for Persistence Status and Developmental Math Enrollment _____	93
12. Frequency Distributions for Persistence Status and Developmental Reading Enrollment _____	96
13. Frequency Distributions for Persistence Status and CAPS 122 Enrollment _____	99

Table of Figures

Figure	Page
1. Persistence Status of Students who Took ACCUPLACER _____	88
2. Persistence Status of Students who did not Take ACCUPLACER _____	89
3. Persistence Status of Students who Enrolled in a Developmental English Course Based Upon Initial Placement Testing Scores _____	91
4. Persistence Status of Students who did not Enroll in a Developmental English Course Based Upon Initial Placement Testing Scores _____	92
5. Persistence Status of Students who Enrolled in a Developmental Math Course Based Upon Initial Placement Testing Scores _____	94
6. Persistence of Students who did not Enroll in a Developmental Math Course Based Upon Initial Placement Testing Scores _____	95
7. Persistence Status of Students who Enrolled in a Developmental Reading Course Based Upon Initial Placement Testing Scores _____	97
8. Persistence of Students who did not Enroll in a Developmental Reading Course Based Upon Initial Placement Testing Scores _____	98
9. Persistence Status of Students who Enrolled in How to Succeed in College _____	100
10. Persistence Status of Students who did not Enroll in How to Succeed in College _____	101

CHAPTER ONE

Higher education in the United States has some of the most prolific participation rates in the world. During the academic year 2006-2007, over 18 million undergraduates were enrolled in institutions of higher education (National Center for Educational Statistics, [NCES], 2010). Currently, two-thirds of all high school graduates enter a post-secondary program immediately following high school graduation (Hauptman, 2007). While the U.S. may be a world leader in the number of students who are able to gain access and participate in college, the same cannot be said for degree completion rates. Recent data from the Organisation for Economic Co-operation and Development (2008) indicate that the U.S. is average to below average in degree completion rates when compared to other industrialized nations.

Statement of the Problem

Extensive documentation exists related to the examination and study of student retention in higher education. One of the first comprehensive explorations into the subject originated over 70 years ago when McNeely (1937) studied the factors related to student morality in college. Since then a significant body of research has contributed to the knowledge base and understanding of college student retention and persistence (Bean & Metzner, 1985; Pascarella & Terenzini, 1980; Spady, 1970; Tinto, 1975, 1993). Yet significant gains in the rates at which students are retained have remained elusive (Seidman, 2005). In fact, national persistence and graduation rates have changed sparingly over the past decade (Tinto, 2006-2007). Therefore student persistence is a significant problem in higher education and there has been substantial focus and research on why some students withdraw, while others persist.

While there are considerable contributions to the study of student persistence, research and analysis on the subject in the community college environment is still relatively sparse (Bailey & Alfonso, 2005). Not only is there a lack of retention-specific research, but also there is a general lack of research on community colleges as a whole. For instance, a review of articles published in five mainstream higher education journals between 1990 and 2003 by Townsend, Donaldson, and Wilson (2004) found that only 8% of the 2,321 articles even mentioned community colleges. The study of community colleges in the state in which this study was conducted is particularly limited. This study will address this problem adding to the research base, through the examination of one of the state's community colleges.

In student success literature, researchers have long discussed the association between academic preparedness and retention in college (Barbe, 1951; Morante, 1989; Parr, 1930; Price & Roberts, 2008-2009; Roueche & Wheeler, 1973). This association is particularly apparent in community colleges where large numbers of entering students lack academic skills required for college level coursework (Bailey, Jeong, & Cho, 2008). Nationwide, about 60% of recent high school graduates who enter post-secondary education through community colleges take at least one developmental course (NCES Report, 2009). When compared with students needing no remediation, this group is far less likely to persist or complete a college degree (Bailey, 2008).

There are institutional characteristics that have been found to increase the success rates of developmental education students. Roueche and Snow (1977) identified mandatory assessment and placement as a cornerstone of a successful developmental education program in college. More recently, other researchers have indicated similar

findings (Boylan, 2002, 2009; McCabe, 2000). Placement and assessment are critical components that aid in student success in developmental coursework and subsequent success in college level coursework and thus persistence (Collins, 2009).

Past studies suggest that assessment is mandatory for the most part; however, placement in developmental coursework is often voluntary (Gerlaugh, Thompson, Boylan, & Davis, 2007). A study conducted on 1,100 community colleges by the American Association of Community Colleges (AACC, 2010) found that 58% of the responding colleges required assessment of all students. Of the 58%, 75% required some form of mandatory placement based on testing. In 1992, as a survey study of two-year colleges indicated, only 35% of the responding colleges mandated placement based on assessment results (Boylan, Bonham, & Bliss, 1994). The number of colleges mandating assessment testing and placement has dramatically increased. Nevertheless, assessment and placement policies, as well as practices in accordance therein, vary widely from institution to institution and from state to state (Dougherty & Reid, 2007).

The Purpose of the Study

The purpose of this single institutional, mixed methods approach was to explore the relationship between student persistence rates and developmental education policy. Specifically, this study examined how assessment testing, placement policy, institutional practice, and initial course enrollment patterns related to student success. Furthermore, a description of standard demographics was provided.

This study was conducted utilizing a cohort of first-time, full-time, associate degree-seeking students who enrolled at the college in the 2007 Fall semester. The student cohort was tracked for their persistence rates over a three-year period through the

2010 Spring semester. The researcher collected and analyzed select academic transcript data. Additionally, seven key personnel were interviewed to ascertain their knowledge of historical, academic, and political rationales pertaining to developmental education assessment and placement policies. Key documents and minutes of relevant committees were reviewed for policy context, adjustment, and implementation as they related to developmental education programming.

A review of the literature was conducted on college student persistence and retention in higher education. This review identified numerous topic areas within the field of community college student retention that required more research and attention. Specifically, it was determined that a need existed to examine further the relationship between student persistence and institutional policy as it pertains to developmental education programming in community colleges.

Research Questions

The following research questions were addressed.

1. What is the history and rationale for developmental education and initial placement policy at the selected institution?
2. Are there differences in persistence rates between groups of community college students who take the ACCUPLACER placement test versus those who do not?
3. Are there differences in persistence rates between groups of community college students who use placement testing results for initial English enrollment versus those who do not?

4. Are there differences in persistence rates between groups of community college students who use placement testing results for initial math enrollment versus those who do not?
5. Are there differences in persistence rates between groups of community college students who use placement testing results for initial reading enrollment versus those who do not?
6. Are there differences in persistence rates between groups of community college students who enroll in a college student success skills course in their first semester versus those who do not?

Significance of the Study

In the community college, nationally, nearly half of first-time, full-time, degree seeking students will exit the system after their first year of study (ACT, 2010). When colleges conduct their own retention research, findings can promote policy setting and programming that support student success initiatives at individual institutions (Astin, 1993; Tinto 2006-2007). Investigating student persistence at a single institution is important as this may pinpoint the particular and specific needs that determine student success, which may differ from institution to institution (Noel, Levitz, & Saluri 1985; Tinto, 2006-2007). This study may contribute information that could benefit strategic planning initiatives by providing a single institution study specific to developmental education policy and student persistence. This could result in targeted retention efforts that are unique to the college under study.

Over the past two decades, the scope and level of implementation of transparency, accountability, and assessment measures have been steadily increasing in higher

education (Burke, 2005; Dougherty & Hong, 2006). In the environment of accountability and budgetary constraints, federal and state policy makers, educators, and taxpayers evaluate institutional effectiveness (Wild & Ebbers, 2002). At the forefront of these evaluations is the monitoring of student success outcomes (Bailey et al., 2008). A growing number of states are recognizing the potential of using data based decision making to inform changes in policy and practice that can lead to improved outcomes for students (Dougherty & Kong, 2006). In particular, it is critical for community colleges to focus their goals on increasing retention and degree completion rates, which in return may influence the public's perception of how well their investment in higher education helps to produce tangible results (Bailey et al., 2004).

These concerns are well-founded in the state of focus, which has some of the lowest college success rates in the nation (Rai, 2008). In 2006, the state ranked 47th in the country in post-secondary attainment with 21% of the population between the ages of 25 and 64 having completed a bachelor's degree (Rai, 2008). This statistic, coupled with the increasing need for an educated workforce within the state provides even more reason for concern (Educational Needs Index Report, 2008). It is clear that if the state is to remain economically competitive, more emphasis should be placed on post-secondary achievement and investment in higher education (Rai, 2008).

In April 2002, the state system of higher education and Board of Regents approved a system-wide master plan entitled *Building [the state's] Future: A Master Plan for Higher Education in the state*. The plan is comprised of 11 performance indicators that are identified to monitor progress of established goals within the state's higher education system. Persistence and graduation rates are two of the identified

performance indicators. Studying the factors that are positively associated with persistence and graduation may contribute to the system's goals of improving institutional effectiveness and student success as established in the master plan for higher education.

The college under study is one of four state supported community colleges in the state. The college provides a wide range of educational opportunities including degrees, certificates, university transfer courses, work force training, and community education. Similar in nature and scope to the system's master plan, the college's 2006-2012 strategic plan consists of goals for improving student success outcomes, such as increasing the college's three-year graduation rates. The expectation is that this study may provide information that may contribute to these student success and retention efforts.

Definition of Terms

Attrition/withdrawal: Departure from higher education within the three year time limit of this study.

ACCUPLACER: A placement test designed to assess students' placement levels in English, math, and reading (College Board, 2009).

Associate Degree: A two-year degree course of study offered at community colleges.

Chi-Square Test of Independence: A statistical test utilized in order to determine whether there is a significant association between two categorical variables.

Cohort: A select group of students with common characteristics. For this study, the cohort was comprised of all first-time, full-time, degree-seeking students, who enrolled at the college under study in the 2007 Fall semester.

Developmental/remedial Courses: Courses in English, math, and reading for academically underprepared college students. Developmental/remedial courses are considered lower than college level courses and do not apply to any degree.

Developmental/remedial Education: For purposes of this study, developmental/remedial education was defined as college programming initiatives, which was designed to address academic deficiencies in English, math, and reading.

First-time, Full-time Student: A student who had never attended college and was enrolled in at least 12 academic credits as of the beginning of the 2007 Fall semester.

Graduation Rate: The percentage of students who graduate within a standardized period of time. Two-year college graduation rates are measured over a three-year period (NCES, 2009).

Graduate/completer: For the purposes of this study, a student who completed an Associate's Degree by the end of the 2010 Spring semester.

Initial Course Enrollment Pattern: For the purposes of this study, a set of college courses that a student was enrolled in as of the beginning of the 2007 Fall semester.

Non-experimental Research Design: Tests the association between the independent and dependent variables without controlling or manipulating subjects or conditions (Johnson & Christensen, 2000).

Non-persistence: A condition in which a student withdrawal's from college within the three year time limit of this study.

Pell Grant: A Pell grant is a financial need based form of financial aid provided by the federal government to students to help offset the costs of postsecondary education.

Persistence: A condition, in which a student was still enrolled, had transferred, or had graduated within the three year time limit of this study.

Retention: The ability of an institution to maintain enrollment of students successfully through degree completion (Seidman, 2005).

Socio-economic Status: For the purposes of this study, socio-economic status was determined as a student's eligibility status for the Pell Grant.

Transfer: A condition in which a student began higher education for the first time at the college under study and then exited to attend a different institution within the three year time limit of this study.

Delimitations of the Study

The study was confined to one small community college in a rural/suburban setting. The study was comprised of a first-time, full-time, degree-seeking student cohort and was tracked over a three year period. This research was confined to the study of specific variables. Due to the non-experimental nature of the research design the identified independent and dependent variables were not controlled or manipulated. Numerous other variables that have an effect on student success and persistence exist; however, they were not incorporated in this study. Additionally, seven key personnel were interviewed for their historical knowledge of policy and practice. Faculty Senate and Curriculum Committee minutes were reviewed for relevant policy considerations and discussions that pertained to developmental education programming at the college.

Limitations of the Study

Numerous variables may have an impact on student success outcomes that were not included in this study. In addition, this study utilized a single institutional case

utilizing qualitative as well as quantitative research techniques. There are a number of limitations inherent to case study designs. Case studies describe a single phenomenon, individual, group, population, or institution (Creswell, 2002). With this type of design data is inherently limited to what the researcher directly observes, reads, or experiences (Creswell, 2002). Case studies may also be limited because of the preconceived convictions or interpretive perceptions of the researcher (Best & Kahn, 2006). Furthermore, the presence of the researcher may have an influence upon the authenticity of the personal interviews with selected personnel.

Descriptive research techniques are limited because they do not establish cause and effect relationships between variables (Best & Kahn, 2006). Furthermore, this study does not control for extraneous variables—those variables that are not studied or accounted for by the researcher—which may influence student success outcomes. This study is limited due to a lack of external validity, that is, the extent to which the study's results can be generalized or applied to other settings is limited (Sprinthall, 2003). Therefore, the results of this single community college study may not be generalized or applicable to the broader population of community colleges and their students; however, it may provide some insight or aid in the understanding of similar observable phenomena in similarly situated contexts.

Ethical Considerations

The researcher is currently employed at the community college under study and while all efforts for objectivity were utilized, it is possible that researcher bias existed, as is commonplace, particularly in qualitative inquires in which the researcher is a member of the organization studied (Bogdan & Biklen, 2003).

Summary

Millions of students enroll in community colleges across the country. Nationally, the number of students that attend these institutions is expected to increase over the next decade (Wellman, 2002). This is due to the “growth in the number of high school graduates; demographic changes that are increasing the proportion of low-income and ethnic minority students; more stringent admissions requirements at many four year institutions; and rising college tuitions” (Wellman, 2002, p. 1).

Receiving an education beyond high school has become a necessity. It is estimated that 90% of the fastest growing occupations in the country will require a post-secondary education (Spellings Report, 2006). Post-secondary education refers to education beyond the high school level, and is provided by a broad range of collegiate institutions, such as, colleges, universities, and technical schools. In the state under study, it is projected that one-third of the state’s 100 most rapidly growing occupations will require an associate degree or above and nearly one-half of these occupations will require some form of a post-secondary credential (Nevada Career Information System, 2009). The community college is an educational institution that offers some of the most in-demand occupational degree and certificate programs. Yet nation-wide, and in the state, persistence to completion rates are low; thus, the rates at which students attain community college credentials are low.

In the economic environment of reduced state funding, student retention may become a matter of economic survival for some college systems (Summers, 2003). Understanding the profiles and characteristics of community college students who persist

can help institutions to define their needs and to prescribe services that will aid in their success (Seidman, 2005).

To be sure, the high financial costs associated with student attrition justify and demand the continued search for methods of reducing the rate of attrition of community college students. The high social and political costs of attrition demand deeper understanding of student attrition in order to develop strategies to reduce it. (Summers, 2003, p. 66)

Increasingly, community colleges are being called upon to produce results. In the assessment driven environment of higher education, key indicators like graduation and retention rates often measure institutional effectiveness. With the lack of research directly related to community college retention and developmental education policy reform, nationally and more specifically in the state, this study attempted to add to the literature by exploring the relationship between student persistence rates and institutional policy and practice related to developmental education programming at a single community college.

Chapter 2 is a review of selected literature that is relevant to this study. This chapter focuses on the mission and role of community colleges within higher education. The depth and breadth of developmental education in the state, as well as nationally, is examined. Also examined, is the association between state and institutional policies and practices and developmental education programming as related to student success and persistence. The theoretical foundations of college student retention and the success rates of community college students are reported through the investigation of numerous retention studies. In addition, the demographic factors of age, gender, ethnicity, and

college student success skills course enrollment are examined for their relationship to student success in higher education.

CHAPTER TWO

REVIEW OF THE LITERATURE

Community College Access

Community colleges have traditionally provided access into higher education for millions of Americans (Cohen & Brawer, 2003). The over 1,100 community colleges in the United States enroll more than 11.8 million students, with 6.8 million students enrolling in credit courses. This constitutes 46% of the undergraduate population, 41% of all first-time freshman, and 40% ethnic minorities (AACC, 2010). The traditional community college mission is broad; including transfer education, remedial or developmental education, vocational training, workforce development, continuing education, and baccalaureate programming (Dougherty & Townsend, 2006).

A core function of the community college is to provide open access admission (Cohen & Brawer, 2003). Open access is, by nature, non-exclusionary. This environment gives opportunities for all segments of society to have access to higher education. Therefore, the community college student population is extremely diverse. In large part, adult students, an overrepresentation of underrepresented, low-income, and employed students, and traditional high school aged graduates comprise the community college population. By virtue of the inclusive nature of community colleges, many of these students enter academically underprepared to succeed and are in need of remediation (McIntosh & Rouse, 2009).

Developmental Education in the Community College

Remediation is a very significant component of higher education, as it addresses the foundational academic needs of the thousands of underprepared students who enter

college each year (Bettinger & Long, 2009). By definition, academic under-preparation is associated with lacking the basic skill proficiencies in reading, writing, and/or mathematics to be successful in college level courses (Morante, 1989). Under-preparation in college is referred to as developmental education, which “is [programming] designed to provide students who enter college with weak academic skills the opportunity to strengthen those skills enough to prepare them for college-level coursework” (Bailey, Jeong, & Cho, 2008, p. 1).

Developmental education is a particular challenge for community colleges (Bailey, 2008; McCabe, 2000). Based on data from a nationally representative sample of the Beginning Postsecondary Students Longitudinal Study (BPS) 2003–04, 29% of community college students reported having taken at least one developmental course in their first year (NCES, 2010). However, these estimates are considered low among researchers because they only account for the first year of coursework and are self-reported (Provasnik & Planty, 2008).

Two different analyses of community college students — one using data from the National Education Longitudinal Study (NELS) and the other based on data on more than 250,000 first-time students at colleges participating in the *Achieving the Dream: Community Colleges Count initiative* — indicate that nearly 60% of students take at least one developmental education course during their community college career. (Bailey, 2008, p. 1)

Moreover, Roueche and Roueche (1999) estimated that the proportion of underprepared students needing developmental education is expected to increase for at least the next two decades, resulting in this student population being over-represented in

the community college. Therefore, the importance of community colleges placing emphasis upon developmental education programming initiatives is self-evident (Bailey, 2008). For under-prepared students, participation in developmental education is an essential element of success, access, and persistence in college (Boylan, 2002; McCabe & Day, 1998). Yet, despite the prevalence of students who take remedial courses at community colleges, there is surprisingly little definitive evidence on what constitutes effective developmental education programming and practice (Bailey et al., 2008).

Developmental Education and Student Success

Bettinger and Long (2009) examined a data set of over 28,000 students to study the effects of math and English remediation on persistence, transfer behavior, and degree completion. Their longitudinal study focused on traditional aged 18-20 year old first-time students who entered public colleges in Ohio in the Fall of 1998. The sample was tracked for six years and was limited to students who took the ACT (the primary admissions test in Ohio) and attended a 4-year college or students who had attended a community college with the intention to complete a 4-year degree. Student information was gathered from college transcripts, applications, standardized test reports, and student surveys.

Due to variations in testing and placement policies of the state's colleges, not all students who placed into remedial coursework were required to take it. In their analysis, Bettinger and Long (2009) estimated that students in remediation have better educational outcomes in comparison to students with similar backgrounds and preparation who are not required to take the remedial courses. The researchers found that math and English remediation are estimated to reduce the likelihood of dropping out after five years, and

increase the likelihood of completing a bachelor's degree within four to six years. Specifically, students in remedial English were found to be 15.2% less likely to drop out than similar students. In addition, students in math remediation were found to be 13.9% less likely to drop out and 1.5% more likely to graduate in six years than were similar students. The researchers suggested that while the results give a sense of the positive effects of remediation, further investigation into how remediation influences educational outcomes was needed (Bettinger & Long, 2009).

Similarly, Bhar (2010) drew upon data collected from the Chancellor's Office of California Community Colleges to research the effects of math and English remediation on academic attainment. The study was conducted on a sample of 68,884 first-time college freshmen who enrolled in California community colleges in the Fall semester of 1995. Student records were assessed for a six-year period through the Spring semester of 2001. Bhar investigated whether students who were severely and moderately skill deficient in math and/or English, and who had also remediated successfully through the developmental sequence, were as successful as non-remedial students who attained college-level competency in English and math. The results demonstrated that underprepared students who attain the level of college-level English and math experience success outcomes, such as credential completion and transfer, at rates similar to those of college-prepared students who did not require remediation in English and math. Bhar concluded by suggesting that the evidence supported the efficacy of remedial instruction.

Utilizing college transcript data from the National Educational Longitudinal Study (NELS:88), a project of the U.S. Department of Education's NCES, Attewell, Lavin, Domina, and Levey (2006) detailed the developmental coursework patterns of a

single cohort of high school students who enrolled in college eight years following high school. This nationally representative sample of 6,879 students included students who entered 2- and 4-year, private and public, selective and nonselective colleges. The results indicated that 40% of these students took at least one remedial course in college. From this total, 28% of the students took remedial mathematics, 9% took remedial reading, 18% took remedial writing and comprehensive language arts, and 9% took remedial courses in some other academic area. For 2-year colleges specifically, remediation was more widespread, with 58% of the student population enrolled in remedial coursework. From this total, 44% enrolled in between one and three remedial courses, and 14% enrolled in more than three remedial courses (Attewell, Lavin, Domina, & Levey, 2006).

In their analysis of the 2-year colleges, Attewell et al. (2006) reported that, overall, the students who participated in remediation had significantly lower graduation rates than the students who did not take remedial coursework. The data indicated that 28% of remedial students graduated within 8.5 years as compared to 43% of nonremedial students. However, after controlling for family background and academic performance in high school, the effects were nonsignificant. The factors that reduced a student's chances of graduating included low family socio-economic status, poor high school preparation, and being African American. Therefore, the researchers concluded that enrollment in remedial coursework did not, in itself, lower a student's chances of graduation (Attewell et al., 2006).

In the same study, Attewell et al. (2006) examined a number of other factors pertaining to the association between developmental course taking patterns and graduation. They investigated whether the number of remedial courses taken influenced

the likelihood of graduating, and found that academically equivalent students had statistically the same chance of graduating regardless if they took three remedial courses or no remedial courses. Additionally, they investigated if the type of remedial course taken was consequential in relationship to graduation. They found that students who took reading remediation were 11% more likely to graduate with a degree (associate's or bachelor's) and students who took writing remediation were 7% more likely to graduate than were academically equivalent students who did not take reading or writing remediation. The findings also indicated that students who took two or more remedial mathematics courses were 3% less likely to graduate with a degree. Furthermore, the researchers investigated successful course completion of remedial coursework and its relationship to graduation. They found that students who passed remedial reading were 11% more likely to graduate, students who passed remedial writing were 13% more likely to graduate, and students who passed remedial mathematics were 11% more likely to graduate than were academically equivalent students who did take and or pass these courses (Attewell et al., 2006).

Other studies suggest that students who qualify for developmental education are negatively impacted regarding their success in college. Hawley and Harris (2005-2006) conducted a study to determine the factors that positively and negatively affected persistence of first-year students at a large metropolitan community college. Data was collected and analyzed utilizing a Cooperative Institutional Research Program Freshman Survey specifically designed for community college students. Although the study sample of 133 students was a small data set, the sample population was found to be representative of all first-time students at the college.

Hawley and Harris (2005-2006) indicated that student characteristics influencing persistence could be classified into three broad categories. These included barriers, motivations and aspirations, and expectations. The findings demonstrated that the strongest predictors of attrition were the number of developmental classes required and English as a second language. Another strong predictor of attrition was the intention to transfer to a four-year college, which was classified as an academic motivation. The strongest predictors of persistence were being African American or Latino, cumulative grade point average (GPA), and the length of time students plan to spend at the college. The researchers concluded by recommending that raising the expectations, motivations, and preparation of first-year college students, before they reached an institution of higher education, was critical for their persistence and success in college.

Furthermore, Adelman (2004) presented the principle indicators of undergraduate student academic histories. These indicators were measures of student success, attainment, attendance patterns, curriculum participation, and academic performance. In this report, Adelman analyzed postsecondary transcript records of traditional-age college students over a nearly 30-year time span, from 1972 through 2000. Adelman drew upon three longitudinal studies provided by the NCES to chronicle the data pertaining to the principle indicators. These data sources included; *The National Longitudinal Study of the High School Class of 1972*, which consisted of a cohort sample of 12,600 students who graduated in 1972 and who were tracked through 1986; the *High School and Beyond Study*, which consisted of a cohort sample of 8,400 students who were tracked from 1980 through 1992; and the *National Education Longitudinal Study of 1988*, which consisted of a cohort sample of 8,900 students who were tracked from 1988 through 2000.

Examining college remediation within the context of the factors that impacted student success measures, like graduation rates and time to degree, Adelman's (2004) analysis of the High School and Beyond data set of 1980 through 1992 suggested that students who required remediation had significantly lower graduation rates. The analysis yielded bachelor degree earning rates at 39%, compared to 69% of the students who took no remediation. This graduation rate pattern was replicated in NELS88 through 2000. Moreover, Adelman (2004) reported that both the number and type of remedial courses had an influence on student success outcomes.

For example, he found that 19.7% of students who took two or more remedial courses graduated, 16.6% of students who took courses in remedial reading graduated, 27.1% of students who took two or fewer remedial mathematics courses graduated, and 39.9% of students who took one remedial course graduated (Adelman, 2004). Adelman (2004) compared this data to data that indicated 58.3% of the students who did not require remediation also graduated. This supported his analysis that remedial students are far less likely to succeed. These conflicting studies, which are associated with the success rates of remedial students, suggest that it is critical for state education systems and institutions of higher education to evaluate the effectiveness of their developmental education programs.

Evaluating Developmental Education for Effective Programming

In his report, *Setting up Success in Developmental Education: How State Policy Can Help Community Colleges Improve Student Outcomes*, Collins (2009) suggested that there is limited evidence as to what works in developmental education. Due to this and the combination of large developmental education enrollments and cost, Collins

postulated that it is critical for states to intensify their efforts in the creation and implementation of new interventions related to developmental education programming. He identified (a) preventative strategies, (b) assessment and placement, (c) implementation and evaluation of program innovation, and (d) performance measures and incentives, as state level strategies, which could be implemented to increase student and institutional successes in developmental education.

Zachry (2008) suggested strategies commensurate with Collins (2009) in her report, *Promising Instructional Reforms in Developmental Education: A Case Study of Three Achieving the Dream Colleges*. The key findings included implementing instructional techniques that would increase the success rates of low- and high-level developmental education students and curriculum designs aimed at accelerating students' progression through developmental education course sequencing. The researcher concluded that early evaluations by the colleges demonstrated positive trends in student success based upon the instructional reforms that were implemented.

Furthering the idea as to the importance of research and evaluation of developmental education programming, Perin (2005) overviewed organizational approaches that were based upon a study conducted by The Community College Research Center of 15 community colleges, which identified promising practices in developmental education that improve the performance of underprepared students. These practices included analyzing the structure of developmental education in relationship to organizing it as a centralized or mainstreamed program; the development and implementation of assessment and placement policies; and improving instructional approaches. A promising practice also identified was new course formats designed to

increase student achievement, which included “self-paced, tutor-based, online, accelerated, intensive summer, contextualized, personalized, combined reading-writing, combined remedial and college English, study skills, offsite, alternation of instruction and application, and instruction following a quarterly rather than semester schedule” (Perin, 2005, p. 31).

States also have an important role in developing remedial policy. In their policy brief, *Improving Student Success by Strengthening Developmental Education in Community Colleges: The Role of State Policy*, Price, and Roberts (2008-2009) recommended how state policy can improve the success of developmental education students in a variety of ways. Their recommendations included (a) implementing state data systems and reporting requirements, (b) identifying a single statewide assessment instrument, (c) allowing students to enroll in college-level courses concurrently with developmental courses, (d) increasing reimbursement rates and providing performance-based funding incentives, (e) providing innovation funds for community colleges to pilot alternative models for developmental education courses, and (f) changing financial aid eligibility rules for developmental education students (Price & Roberts, 2008-2009).

Research has concluded that examining institutional and state policies and practices is useful in identifying innovative approaches that improve the success rates of remedial students (Calcagno & Long, 2008). Scholars, politicians, and the public have raised numerous questions regarding the effectiveness of developmental education (Bailey, 2008; Kozeracki, 2002). A recent study calculated the annual cost of remediation at 1.9 to 2.3 billion dollars in the nation’s community colleges (Strong American Schools, 2008). McCabe and Day (1998) estimated that without

developmental education, more than two million students would drop out from higher education each year, many from community colleges. Perin (2005) reasoned that developmental education “programs are a prominent feature of community colleges, and without them postsecondary access would be seriously curtailed” (p. 1). Helping students, who are in need of remediation, succeed is important because of the clear and broad benefits of higher education.

Lumina Foundation and Achieving the Dream Policy Initiatives

Increasingly, community colleges examine and implement policy strategies that are created to refine the design, management, and funding of academic programs and services (Jenkins, 2006). In line with these discussions, in 2003 The Lumina Foundation for Education began a national initiative, *Achieving the Dream: Community Colleges Count*, to assist community colleges in developing policies to increase student success. Achieving the Dream is a multi-year national initiative to help community college students succeed, with a particular emphasis placed upon underrepresented student groups that have traditionally faced significant barriers to success. Specifically, the initiative “seeks to help more students reach their individual goals which may include earning a community college certificate or degree, attaining a bachelor's degree, and/or obtaining a better job” (Achieving the Dream, 2010). Participating community colleges work to increase the percentage of their students who successfully complete the courses they take, advance from remedial to credit-bearing courses, enroll in and successfully complete gatekeeper courses, enroll from one semester to the next, and earn degrees and/or certificates (Achieving the Dream, 2010). More than 100 community colleges and 4 universities in 22 states have participated in Achieving the Dream initiatives.

Achieving the Dream (2010) has specified six “high leverage” policy areas, which help to promote the goal of improving student success. These include (a) a clear public commitment, (b) a strong data-driven accountability system, (c) aligned expectations, standards, assessments, and transition requirements across educational systems, (d) incentives for improving services to academically underprepared students, (e) financial aid policies and other financial incentives to promote persistence, and (f) public support. Achieving the Dream emphasizes the utilization of data to help bring about change within community colleges, as well as in state and federal policy.

A number of Achieving the Dream (2010) policy initiatives promote institutional practices that advance policy specifically related to developmental education and the success rates of underprepared students. The state of Texas participates in Achieving the Dream policy initiatives. In 2009, for example, The Higher Education Policy Institute of the Texas Higher Education Coordinating Board released a set of recommendations for policy practice and research with the goal of systematically enhancing the capacity of state institutions in order to provide effective developmental education. Two of these recommendations included programmatic policy related to mandated placement and testing assessment.

Assessment and placement policies can be an important tool for improving educational outcomes of underprepared students (Dougherty & Reid, 2007; Zachry, 2008). An example is reported in Achieving the Dream’s (2010) *Framework for State Policies to Support Student Success Document*, which indicates that the standardization of institutional policies at the state level helps to support community colleges in their efforts to increase the rates at which students succeed. Policy suggestions within this

document included mandatory assessment of first-time students, in addition to mandatory placement into remedial coursework based upon assessment results. The document also conveyed the importance of reporting academic outcomes, as well as, the tracking of success rates of underprepared community college students in terms of their relationship to successful developmental education programming.

Achieving the Dream colleges in Connecticut, North Carolina, and Virginia have also focused on policies related to the governance of assessment and placement in their institutions of higher education. Each state redesigned placement and assessment policies related to cut scores in order to improve community college student success. In his report, Collins (2009) outlined the key findings related to the processes of the development of policy:

Each state performed comprehensive analyses, including surveys and validation studies, to determine the impact of placement policies on student outcomes. Each state brought K-12 and community college faculty together to discuss the skills and competencies high school students need to succeed in college, so that placement-test cut scores could be based on an emerging cross-sector consensus. These conversations required compromises between two groups of faculty: those who insisted that setting the bar high was necessary to ensure academic excellence and those concerned that standards set too high would limit access. States navigating similar terrain should be prepared to help faculty resolve this tension and arrive at a balanced approach that facilitates access while preserving academic excellence. Perhaps most important, the states found that engaging in a collaborative process to set placement cut scores was more valuable than

determining the cut score itself, because the process requires that K-12 schools and community colleges develop consensus on the level of academic preparation required to succeed in entry-level college courses. (pp. 9-10)

Mandatory Assessment

The prevalence of mandated assessment policies is evident; a vast number of community colleges report requiring assessment testing (Gerlaugh et al., 2007; Shults, 2001). Shults (2001) analyzed a national data set provided from a study conducted by the AACC, which pertained to the policies and practices of developmental education in community colleges. A survey was sent to more than 1,100 community colleges across the United States in order to obtain data for the study. From this number, 40% of the community colleges completed and returned the surveys. Based on the data analysis, Shults (2001) reported that 58% of these institutions required assessment testing. More recently, Gerlaugh, Thompson, Boylan, and Davis (2007) analyzed a data set from a study conducted by the National Center for Developmental Education (NCDE), which also pertained to the study of developmental education programming in the community college. A systematic circular sampling method was utilized to select 45 two-year institutions from across all regions of the United States of which 29 were selected for the study. Gerlaugh et al. (2007) reported that 92.4% of these institutions mandated policy that required assessment testing.

Numerous researchers have discussed the association between mandatory assessment and student success (Boylan, 2002; Collins, 2009; McCabe, 2000; Roueche & Roueche, 1999; Roueche & Snow, 1977). In his book, *What Works: A Guide to Research-Based Practices in Developmental Education*, Boylan (2002), summarized an

extensive best practices of developmental education study conducted from the fall of 1999 through the summer of 2000 by the Continuous Quality Improvement Network (CQIN) and the NCDE. The goal of the study was to provide policy makers, administrators, and practitioners with a guide for effectively administering and organizing developmental education programming in higher education. Data were collected through a survey instrument and 36 institutions that “had strong reputations for delivering developmental education successfully” (Boylan, 2002, p. 4) were included in the study. Boylan (2002) suggested that a critical step in the success of underprepared students was to first identify their skill level in math, English, and reading through assessment testing.

In his report, *No One to Waste: A Report to Public Decision Makers and Community College Leaders*, McCabe (2000) presented the results of The National Study of Community College Remedial Education, which was conducted by The League for Innovation in the Community College and the AACC. The purpose of this study was to increase the understanding of the importance of remedial education in the community college. The study included 25 institutions. One of the major findings indicated that mandatory assessment was an essential component of remedial programs. “If community colleges do not know which students are academically underprepared they have no way to provide appropriate programs” (McCabe, 2000, p. 42). This underlying concept reinforces the importance of mandated assessment testing. Moreover, Roueche and Roueche (1999) suggested that colleges requiring assessment reported that student retention improved when mandatory policies were enforced. Similarly, related to assessment and placement, Collins (2009) suggested the need for states to consider

policies that are more prescriptive to be applied to students early in their academic careers, as this is associated with improved student outcomes.

The association between student success and mandatory assessment and placement has been a topic of discussion in higher education for decades. In their book, *Overcoming Learning Problems: A Guide to Developmental Education in College*, Roueche and Snow (1977) indicated that developmental education was a major concern in postsecondary education. In order to examine the topic, the researchers surveyed 139 community colleges and 134 four-year colleges regarding their developmental education programs. The survey consisted of over 150 questions, which were designed to assess nine descriptive categories of developmental education. These categories included context, philosophy, rationale, placement of students, organizational structure, support services, curriculum, staffing, and evaluation. Regarding assessment and placement, the researchers found that 83% of the community colleges surveyed required assessment testing, which in their estimation contributed to a successful developmental education program and thus, student success. Moreover, the researchers “suggested that, for some high risk students in community colleges, mandatory [placement into] remedial courses may be related to student success” (Roueche & Snow, 1977, p. 28).

Mandatory Placement

There are many concerns about developmental education as it pertains to placement policy. The research suggests that assessment testing is often mandatory, yet placement in developmental coursework is often voluntary (Gerlaugh et al., 2007). Assessment results indicate if, and at what level, students should be placed into the developmental schemata. Following assessment, according to the literature, mandatory

placement is also an integral step in providing successful developmental programs in higher education (Bailey, 2008; Boylan, 2002; Boylan et al., 1994; McCabe, 2000; Roueche & Roueche, 1999). In his report, McCabe (2000), found that open enrollment policies prohibit faculty from providing developmental education and curtail students' ability to succeed when they enroll into courses for which they are not academically prepared. Moreover, Boylan (2002) indicated that "mandatory assessment followed by voluntary placement undermines the entire concept of assessment as a means of promoting student success" (p. 36).

Still, placement policies vary widely from state to state and institution to institution (Collins, 2009; Dougherty & Reid, 2007). Boylan, Bonham, and Bliss (1994) analyzed a data set from a study conducted by the NCDE between 1989 and 1992, which focused on the characteristic components of developmental programs. The study sample included 116 institutions. The composition was made up of 28% community colleges, 10% technical colleges, 33% private 4-year colleges and universities, 21% public 4-year universities and 9% research universities. Boylan et al. (1994) reported that 35% of the 2-year institutions and 69% of 4-year institutions had policies, which required placement into remedial coursework based upon the assessment testing results of their students. The researchers suggested that the lack of mandated placement into developmental programming at the two-year colleges was a weakness because of the association of remediation with student success.

Roueche and Roueche (1999) indicated that voluntary compliance with remedial courses of underprepared students continued to be a weak link in developmental education programs nationwide. In his analysis of two independent data sets comprised

of community college students — one using data from NELS and the other based on data on more than 250,000 first-time students at colleges participating in the *Achieving the Dream: Community Colleges Count initiative*—Bailey (2008) reached the same conclusion, suggesting that many underprepared students never enroll in the courses in which they are placed. Specifically, in his analysis of the Achieving the Dream sample, Bailey (2008) indicated that 20% of the students referred to developmental math and 33% of students referred to developmental reading did not enroll in any developmental courses within the first three years of college. Moreover, 44% of students referred to developmental reading and 31% of students referred to developmental math did not complete their sequence of courses at all. Bailey (2008) concluded that developmental education in community colleges was not working well and recommended that reform is clearly needed in this area of higher education.

In an earlier study to assess the efficacy of developmental education programming, the NCDE designed a longitudinal study that was conducted between 1988 and 1994 (Boylan & Bliss, 1997). The population of institutions included over 3,000 colleges and universities in the United States, from which 160 institutions were selected utilizing a series of systematic sampling methods. Transcript data was collected from 6000 developmental students who placed into remedial coursework at these institutions. Boylan and Bliss (1997) conducted a review of the literature and concluded that program components most frequently cited, related to the success of developmental education students, were centralized program organization, mandatory assessment, mandatory placement, tutoring, advising, and program evaluation. A casual-comparative method

was used to explore the relationship among these variables to first-term and cumulative GPA performance in developmental courses and retention.

Boylan and Bliss (1997) reported that a centralized, or well coordinated administrative structure, tutoring with tutor training, and ongoing and systematic program evaluation were most significantly related to student retention and course success. For mandatory assessment, no statistically significant differences were found in retention rates between students participating in voluntary or mandatory assessment. Mandatory placement in developmental education was found to be positively related to retention at 4-year institutions, but negatively related to retention at 2-year institutions. However, the researchers did report that students participating in the developmental programs, which featured mandatory assessment and placement, were more likely to succeed in their subsequent English and mathematics courses than those students in the programs where placement and assessment were voluntary.

Advising and counseling were found to have a negligible relationship to retention and cumulative GPA, but they were associated with first-term GPA and success in initial developmental courses at 4-year institutions and in developmental mathematics at all institutions (Boylan & Bliss, 1997). Similar to the results found for mandatory assessment and placement, those students participating in developmental programs that included advising and counseling were more likely than students in programs without advising and counseling to have higher success rates in their developmental coursework (Boylan & Bliss, 1997). The rationale for this study was to determine the impact of developmental education, to identify successful developmental education techniques and

components, and to determine what is known and not known about developmental education.

College Success Skills Course

The community college mission is to provide open access to higher education regardless of educational background (Bailey, 2008; Cohen & Brawer, 2003). This inclusive nature results in a significant portion of the student population enrolling at community colleges that are academically, economically, and socially disadvantaged (O'Gara et al., 2009). To help students overcome barriers to success, community colleges have implemented an array of support services. One method of support is the offering of college success skills courses (O'Gara et al., 2009). Enrolling in these courses can assist students in a variety of ways such as providing information on taking notes, reading textbooks effectively, test taking strategies, memory techniques, learning and personality styles, time management strategies, and career exploration. Despite the prevalence of college success skills courses being offered at community colleges, there is little research to support their effectiveness (Zeidenberg et al., 2007). However, the research that does exist suggests enrollment in a college success skills course is associated with positive outcomes like improving study skills; connecting with and learning about college; retention; graduation; and academic performance (Boudreau & Kromrey, 1994; Derby, 2007; O'Gara, et al., 2009; Schnell & Doetkott, 2002-2003; Zeidenberg, et al., 2007).

Boudreau and Kromrey (1994) indicated a lack of longitudinal studies in higher education related to the association between college student success skills courses and student success. The researchers conducted a study at the University of South Florida, which examined the relationship between the completion of a freshmen orientation

course and retention (defined as enrollment during a subsequent semester following completion of the course), academic performance, and graduation. The sample, which consisted of 1,286 first-time students, was tracked for a period of five years and was divided into two groups, those students who participated in the course and those students who did not. The findings showed that students who participated in the course were more likely to be retained and performed better academically, but there were no significant differences in graduation rates between the two groups. The researchers estimated that several factors outside of their focus might have determined the positive academic outcomes. These included that the orientation course increased interactions between peers and faculty, provided information about the college and the services available, and demonstrated to the students that the institution was interested in their success. Boudreau and Kromrey (1994) concluded that further research was needed in order to ascertain the reasons for why and how participation in a college student success skills course increased the rates at which students succeed.

In another longitudinal study designed to examine the association between college student success skills courses and student success, Schnell and Doetkott (2002-2003) conducted their research to provide insight into a strategy for increasing student retention. The study was conducted at a medium sized Midwestern public university. The sample consisted of 1,853 students who were tracked over a period of four years, 1991 through 1994. The researchers analyzed retention rates to determine whether those students who enrolled in a first year seminar course were retained at higher rates than those students who did not. The results indicated that retention rates were significantly higher for the group of students who enrolled in the first year seminar course versus the group of

students who did not. The researchers concluded with the suggestion that long-term retention is important in higher education and that the results of this study substantiated the idea that first year seminar courses contributed to improving retention and that they are a worthwhile investment (Schnell & Doetkott, 2002-2003).

Conducting a qualitative study, O’Gara et al. (2009) explored student perceptions of student success courses at two urban community colleges. A random sample of 44 first-time, full-time, degree-seeking, students in the Fall of 2005 who had persisted through the Spring of 2006 were selected for the study. Of the 44 students in the sample, 28 enrolled in the student success courses. Through an analysis and exploration of student interviews, the researchers found that the college student success skills course was an essential resource for students. Their reasons included that this course helped students gain more information about college, classes, study skills, and build relationships with instructors and other students. Based upon these results, O’Gara et al. (2009) recommended that colleges should consider requiring these courses for all degree-seeking students in light of the multiple benefits.

Studying the impact of college student success skills courses, Derby (2007) examined the predictive nature of participation in an orientation course in relationship to ethnic background and degree completion. The study was conducted at a public, Midwestern, rural community college from the Fall semester of 1998 through the Spring semester of 2002. The sample consisted of 3,538 students of which 92 were African-American, 241 were Hispanic, and 3,205 were white. For African-American and Hispanic students, the results indicated a non-significant relationship between degree completion and their participation in the orientation course. However, white students

who participated in the course were significantly more likely to graduate. The researcher indicated that the small sample size of African-American and Hispanic students was a limitation of the study and suggested the need for further research on the topic.

Boylan (2002) contended that addressing non-academic deficiencies was just as important as addressing academic deficiencies. For example, many students enter community colleges lacking basic study skills, which can hinder their success. Addressing the need for further investigation into the association between college success skills courses and student success, a Community College Research Center study was conducted by Zeidenberg et al. (2007) of all students who initially entered Florida community colleges for the first time in the fall of 1999. The sample size was reduced to nearly 37,000 students and this cohort was tracked for over 17 terms, which amounted to nearly six years. Specifically, the objective of this study was to measure if students who enrolled in a college success skills course were more likely to earn a degree or certificate, transfer to a 4-year college within the state, or have had continued to persist within the time period of the study versus those students who did not.

Overall, 36% of the 37,000 students enrolled in a college success skills course, while 63% of the sample required remediation in at least one subject area. The results indicated that non-remedial students who enrolled in a college success skills course were 8% more likely to have completed a credential, 7% more likely to persist, and 5% more likely to transfer versus those non-remedial students who did not (Zeidenberg et al., 2007). The results also indicated that those students who needed remediation were 10% more likely to have persisted and 3% more likely to have transferred if they had enrolled in a college success skills course when compared to those remedial students who did not.

The researchers suggested that college student success skills courses were important because they increase a student's awareness of how to succeed in college and, based on the data from this study, they concluded that enrollment in this course had positive effects on a students' chances of graduating, persisting, or transferring (Zeidenberg et al., 2007).

The Complex Nature of Student Retention

Numerous variables are associated with student retention in higher education. Tinto (2006-2007) suggested that students enter college with a variety of different pre-entry characteristics. These include family background, demographic variables, personal skills, personal abilities, prior schooling, as well as initial levels of goal and institutional commitments. In an earlier study pertaining to the theoretical underpinnings of student retention, Bean and Mentzer (1987) indicated that the best predictors of dropouts were GPA, in addition to the intent to leave college, which was directly determined by the number of hours enrolled, and academic, psychological, and demographic variables. Through the investigation of variables that affect student retention, such as demographics, institutions of higher education may be able to identify students who are at risk of dropping out prior to enrolling in college (Seidman, 2005). Based upon student retention theory, numerous researchers have documented that demographic variables appear to have an influence on students' adjustment to college life and their retention in college (Bean & Metzner, 1985; Pascarella & Terenzini, 1980; Spady, 1970; Tinto, 1975, 1993). Due to their relevance in retention literature, the demographic variables reviewed in this research study were age, gender, and ethnicity.

Demographic Variables

Age

Early in its history, community college enrollment mainly consisted of traditional-aged students. The earliest two-year colleges were primarily responsible for teaching general education curriculum to freshman and sophomore students who were recent high school graduates, prior to transfer to a four-year college or university (Thornton, 1972). The community college mission is substantially more diverse today and so are the age ranges of the student population attending them. For example, 46% are younger than 21, 40% are between the ages of 22 and 39, and 16% are over 40. The result is an average age of 28 for the current community college student population (AACC, 2010).

Many researchers have indicated that a number of factors related with age exist that influence college attrition. Bean and Mentzer's (1985) conceptual model of nontraditional student undergraduate attrition "assumed that older students will have more family responsibilities, hours of employment, and higher levels of absenteeism than younger students and that the indirect effects of age on dropout should be through these variables" (p. 494). Bean and Mentzer suggested that older students could have elevated dropout rates due to these responsibilities. Similarly, Tinto (1993) indicated that older students tend to devote more time to family and are therefore more prone to drop out than are traditional-aged students.

The differences in academic success and persistence rates, as they relate to variations in age, have been a focus of much attention and study; however, research on the subject has produced conflicting results. Hagedorn (2005) conducted a longitudinal study based on a transcript analysis of a stratified sample of 5,000 urban community

college students in the Los Angeles Community College District. The sample was tracked from 1974 through 2001 and the data were drawn in the Spring of 2001. The results indicated that a positive relationship existed between age and GPA, that is, as age increased so did GPA. For instance, the 18-21 age group had a GPA of 2.25, the 22-30 age group had a GPA of 2.53, the 31-45 age group had a GPA of 2.78, and the 46 and up age group had a GPA of 2.84 (Hagedorn, 2005).

Consistent with these results, Owens (2003) analyzed a sample of 158 students at two community colleges and found a significant positive relationship between GPA and age (i.e. as age increases, GPA increases, or similarly, as age decreases, GPA decreases). In student success literature, GPA is often found to be one of the most significant measures of persistence (Tinto, 1993). The higher the GPA the more likely a student is to persist in college (Tinto, 1993).

Sorey and Duggan (2008) conducted a study, which examined the differential predictors of institutional persistence between adult and traditional-aged students. The cohort consisted of a group of first-time, degree-seeking students who entered a southeast community college in Virginia in the Fall of 2005. Two random samples were drawn from a total population of 34,940 students. These samples consisted of 350 adult students (25 years of age or older) and 350 traditional-aged students (18 to 24 years of age). The results indicated that 85% of the traditional students sampled persisted to the Spring 2006 semester versus 80% of the nontraditional students sampled. However, the researchers noted that these differences were not found to be statistically significant.

Similarly, Mohammadi (1996) found fall-to-fall persistence to be highest for those aged 22 or younger based on his study of Patrick Henry Community College

students. Specifically, Mohammadi indicated that attrition rates after one year were higher for those students in the age ranges of 23-35 and 45-50. However, the researcher also noted that age was found to be a non-significant predictor of attrition based upon the results of the study (Mohammadi, 1996).

Windham (1995) studied a cohort of 1,424 first-time students at a Florida community college who were tracked over a two-year period between 1990 and 1992. Windham found that the students least likely to return were older, working full-time, attending college part-time, and those students who had taken developmental education courses in their first semester. These factors were statistically significant. In particular, older students were more likely to be working full-time and attending college part-time than are younger, more traditional-aged students (Bean & Mentzer, 1985). Windham (1995) suggested that there was a negative association between age and persistence, thus, as age increased the likelihood of drop out increased.

In contrast, several other studies have revealed that older students are more likely to persist in college. Zhai and Monzon (2004) conducted a study of 45,398 community college students in the San Diego Community College District during the Fall semester of 2000. Persistence rates were measured the following Spring semester of 2001. The findings indicated that 45.3% of 18-24 age group, 27% of the 25-34 age group, and 22.1% of the 35 and over age group, did not persist to the Spring semester of 2001. These results demonstrated that older students were more likely to persist. Furthermore, Cofer and Somers (2000) conducted a persistence study, which utilized data from The National Postsecondary Student Aid Survey (NPSAS:96) database. The population consisted of a sample of 7,507 students. Two background variables (e.g., age and

dependent status) were significantly related to within-year persistence of two-year college students. The researchers concluded that students over age 30 were 6.23% more likely to persist when compared to students between the ages of 22-30 (Zhai & Monzon, 2004).

Institutional factors exist that may influence a students' decision to depart from college. In their research regarding the factors influencing a students' commitment to an institution of higher education, Strauss and Volkwein (2004) conducted a multicampus study on 51 public institutions; 23 of these institutions were four-year colleges and 28 of these institutions were two-year colleges. Surveys were sent to each one of the institutions in order to collect the data. In total, there were 8,217 responses from first-year students; 2,499 of these were from the four-year colleges and 5,718 of these were from the two-year colleges. Based on the results of the survey response analysis, the researchers found that older students were more likely to be committed to the institution, regardless of college type. This was determined by the level of institutional commitment, which was measured based upon a students' willingness to go to the same college if they had to start college over, their opinion that the education they received was of high quality, their level of satisfaction, and a sense of belonging to the institution (Strauss & Volkwein, 2004). The research has indicated that students who report higher levels of institutional commitment are more likely to persist in college (Tinto, 1993, 2006-2007).

Gender

Historically, men have been overwhelmingly the student population enrolled in institutions of higher education, regardless of institutional type (Deegan, Tillery & Associates, 1985). However, with the advent of open-admission policies and other factors, between 1950 and 1970, the two-year college student population increased

significantly. Over this time span, the community college student population quadrupled to include minorities, women, adults, and returning veterans (Deegan, et al., 1985).

Today, the student population has changed proportionally. Now, enrollments at community colleges have shifted to women being the overwhelming population.

Community colleges in the United States are comprised of 56% females and 44% males (AACC, 2010). In terms of the raw numbers, these differences are significant.

In terms of college student retention, there are various reasons why men and women drop out from higher education. Bradburn (2002) utilized data from the Beginning Postsecondary Students Longitudinal Study (BPS:96/98) to examine attrition in the first three years of postsecondary education. This study addressed the reasons for early departure of both two and four year college students. Based upon the results of the study, Bradburn indicated that women were much more likely to depart from college due to changes in family status or because of conflicts at home, or due to personal problems. The reasons for drop out were significantly different for men. Bradburn reported that men were much more likely to drop out from college due to academic problems or because of work conflicts.

Literature that compares persistence and retention based on gender is mixed. Cofer and Somers (2000) found no significant difference on gender as it related to persistence in college. Other researchers have found comparable results. Leppel (2002) utilized data based on the 1990 survey of Beginning Postsecondary Students (BPS), conducted by the NCES of the U.S. Department of Education to study first-year persistence differences between men and women. The sample included 2,647 men and 2,737 women. The results indicated the persistence rates of men to be 92.78% and

93.28% for women; however, these differences in these results were not statistically significant. While Leppel discussed the factors affecting the persistence of men and women, the researcher did not theorize as to why the persistence rates of the two groups may have differed.

Nippert's (2000-2001) study based on The Cooperative Institutional Research Program (CIRP) surveys consisted of 4,408 first-time, full-time freshmen attending 360 two-year colleges. Through random selection, this sample was narrowed to 262 students. Converse to the findings of other studies, the results indicated that gender type was significantly related to academic success. Females persisted at higher rates than males in terms of their likelihood of completing a degree. However, in the discussion, Nippert (2000-2001) did not elaborate upon why females persisted at higher rates than males. Nonetheless, other studies have suggested the exact opposite relating to the persistence differences between men and women.

Boyer (2005) studied retention of first-time freshmen at an urban Midwestern university over a three semester period for the purpose of determining the variables that contributed to their persistence in college. The sample size for this study was 286 students. The researcher found that women were less likely to persist than men were in their first semester of college. Although it was beyond the scope of the study, the researcher drew from past research to explain the possible reasons for the differences in persistence, which suggested that women tended to have less involvement with faculty early in their educational careers and had more family obligations, and these factors tended to influence their persistence in college negatively.

Other researchers have found similar results as Boyer (2005). In their study of fall to spring persistence, Zhai and Monzon (2004) found that women were more likely than men to have withdrawn during the semester, 54% versus 45%, and to have not persisted, 52% versus 47%. While the researchers discussed the reasons for withdrawal for the study population as a whole, they did not indicate specifically whether these differences were related to gender classification. These results seem to suggest that gender is inconsistent in terms of its predictive value and association with retention in college. However, this inconsistency warrants further investigation of the effect of gender on persistence and retention in order to determine whether the variable is significant or not.

Ethnicity

The U.S. population is becoming increasingly more ethnically diverse. By percent of the total population, between 2010 and 2050 all ethnic groups reported on by the U.S. Census Bureau are projected to increase, with the exception of the white population, which is projected to decrease (U. S. Census Bureau, 1984). Because of this shift, college enrollments are following the same pattern (Seidman, 2005). For instance, from 1992 to 2002, the Hispanic student population increased from 8% to 12% and the African-American student population increased from 10% to 12% (Bailey, Leinbach, & Jenkins &, 2005).

Students that have traditionally been underrepresented in institutions of higher education are overrepresented in community colleges. In 2002, 51% of the total Hispanic student population and 44% of the total African-American student population were enrolled in public two-year colleges nationwide. By comparison, four-year public

colleges enrolled just 25% of the total Hispanic student population and 31% of the total African-American student population (Bailey et al., 2005). Today, nationally, 40% of community college enrollments are constituted of underrepresented minority groups (AACC, 2010).

Researchers have been examining the relationship between student success and ethnic group affiliation for some time. The Consortium for Student Retention Data Exchange ([CSRDE], 2009) reports on first to second year retention rates and six year graduation rates of four-year college students. The CSRDE (2009) report for 2002-2003 included over 500 colleges from across the United States. The results indicated that first to second year retention rates of were 86.9% for Asian students, 80.3% for Caucasian students, 75.7% for Hispanic students, 74.7% for African-American students, and 67.2% for American Indian students. The six-year graduation rates of were as follows: Asian students 61.1%, Caucasian students 56.9%, Hispanic students 41.7%, African-American students 41.7%, and American Indians 35.8% (Seidman, 2005). This data demonstrates significantly lower achievement rates of underrepresented student populations.

In higher education, the rates at which students from underrepresented groups succeed are a concern, especially at community colleges (Bailey & Alfonzo, 2005; Wild & Ebers, 2002). Degree completion rates among ethnic groups attending community colleges have risen over the past 35 years, yet persistence to graduation rates of students from diverse backgrounds is still disproportionately low (Adelman, 2004).

The absolute numbers of associate and bachelor's degrees awarded to African-Americans and Hispanics grew substantially between 1992 and 2002, at rates far above the average for all race/ethnicities. Nonetheless, both African-Americans and Hispanics

remained underrepresented in higher education relative to their rates of high school graduates and underrepresented among those earning credentials relative to their rates of undergraduate enrollment in higher education in 2002 (Bailey, et al., 2005).

Furthermore, nearly 70% of the total Associate degrees conferred in 2006 were earned by Caucasians (National Center for Educational Statistics, 2010). This is a concern because of the changing demographics of higher education enrollments and in the United States and the fact that ethnic minorities constitute 40% of community college enrollments.

Continuing with this perspective, Bailey et al. (2005) summarized national statistics regarding access and attainment of low income and minority students. The researchers utilized data from the Integrated Postsecondary Education Data System (IPEDS) annual surveys of all higher education institutions and the Beginning Postsecondary Students Longitudinal Study (BPS:96/01) in order to analyze numerous educational measures. Pertaining to persistence and retention, overall 50% of all students who began at a community college completed a certificate, associate, or bachelor's degree, or transferred to a four-year institution after 6 years. As it relates to race/ethnicity comparisons, the researchers reported that the six-year graduation rates of Caucasian students were 52%, Hispanic students 42%, and African-American students 37%. Additionally, transfer rates to and degree completion rates at bachelor granting institutions were lower for both African-American and Hispanics (Bailey et al., 2005).

Interestingly, there are also research studies suggesting opposing results. Boyer (2005) conducted a study predicting the variables related to persistence over three consecutive semesters of first-time freshman at an urban Midwestern university. The researcher indicated that African-American students were 10 times more likely to persist

than Caucasian students were. However, this demographic variable was not found to be highly significant and intriguingly there was no discussion or examination into these particular findings.

Furthermore, Fike and Fike (2008) performed a study, which analyzed predictors of fall-to-spring and fall-to-fall retention of 9,200 first-time college students. Student data for this study was collected from an urban Texas public community college and tracked for a period of four years, 2001-2004. Student ethnicity was not found to be consistently/significantly associated with student attrition. Although the results of these studies were not found to be statistically significant, they are reported here in order to establish that there are inconsistent results associated with retention and ethnicity.

In addition, suggesting the lack of study and investigation into the factors associated with student retention at two-year colleges, Brooks-Leonard (1991) conducted a study for the purpose of determining demographic and academic factors related with fall to spring persistence at a two-year public technical college in the state of Indiana. The study consisted of a sample of 796 students. The demographic factors found to have been significantly associated with retention included educational objective, enrollment status, employment status, and age. However, the results indicated that ethnicity was not significantly related with persistence. The academic factor significantly related with retention was first-term GPA. The researcher concluded that the results of this study could help to develop targeted retention strategies at this particular college (Brooks-Leonard, 1991).

There are numerous differences in persistence found when examining the relationship to demographic factors, as is indicated by the research pertaining to how

retention in college is influenced by age, gender, and ethnicity. This conclusion is reinforced based upon the results of the studies presented here, which have demonstrated inconsistent outcomes. From college to college, student retention study results vary, even when the research agenda is similar in scope and organization. There are a variety of reasons for this. The diversity of institutions—the type, size, geographic location, student population, and institutional mission—influences the results. This fact gives rise to the significance of a single institution study.

Theoretical Perspectives of Student Retention

The literature indicates a myriad of factors associated with student persistence in college. The research of Tinto (1975, 1993), Spady (1970), and Bean and Mentzer (1985) influence and guide research pertaining to retention in higher education. Analyzing their theoretical models highlights the multi-faceted nature of college student attrition.

Credited for one of the earliest models of student attrition, Spady (1970) advanced the study of dropouts from higher education with his synthesis of the existing research. He explained the drop out process as an “interdisciplinary approach involving an interaction between the individual student and his particular college environment in which his attributes (e.g., dispositions, interests, attitudes, and skills) are exposed to influences, expectations, and demands (e.g., courses, faculty members, administrators, and peers)” (p. 77). Spady suggested that numerous factors influence the dropout rate. These include family background, normative congruence defined as the degree of compatibility between the interests, attitudes, dispositions, and expectations of the student, and the behaviors that result from the interactions with other students, academic

potential, friendship and support, intellectual development, grade performance, social integration defined as the subjective sense of belonging and warmth of interpersonal relationships, satisfaction, and institutional commitment. Spady applied his model of college student attrition in a longitudinal study at the University of Chicago with 683 first-year students. He concluded that academic performance is clearly the dominant factor, which influences attrition.

Tinto's (1975, 1993) model of student retention explained dropout from college as a longitudinal process that begins when students enter an institution of higher education. Tinto suggested that students come to college with pre-entry characteristics, which include family background, skills, abilities, prior schooling, initial levels of goal, and institutional commitments. Tinto described the events that occur within the college environment as academic and social integration, following initial entrance. Tinto associated academic integration with academic performance and faculty and staff interaction and social integration with extra-curricular activities and peer relationships. Academic and social experiences have an impact on goal and institutional commitments, which Tinto suggested ultimately, influence a student's decision to depart from college. Tinto (1993) recognized that external commitments such as family and work obligations might also influence goals and commitments and thus, departure from college. Persistence in college then "is a 'multi-dimensional process', which results from the interaction between the individual and the institution and which is influenced by characteristics of both elements" (Tinto, 1975, p. 41).

Most influential models of student retention have focused almost exclusively on the traditional college student living in residence at four-year colleges or universities

(Bailey & Alfonzo, 2005). Addressing this, Bean and Metzner (1985) proposed a theoretical model that focused on non-traditional student attrition. They defined the non-traditional student population as follows:

A nontraditional student is older than 24, or does not live in a campus residence (e.g., is a commuter), or is a part-time student, or some combination of these three factors; is not greatly influenced by the social environment of the institution; and is chiefly concerned with the institution's academic offerings, especially courses, certification, and degrees. (Bean & Metzner, 1985, p. 489)

Their model, similar in structure to Tinto (1975, 1993) and Spady (1970), comprises background factors, the longitudinal nature of attrition, and academic factors. However, Bean and Metzner deemphasized the impact of social integration on attrition. They emphasized that non-traditional students are more concerned with an institution's academic offerings (e.g., courses, certifications, and degrees) and that social variables outside of the college environment, like family responsibilities, are expected to be of greater importance (Bean & Metzner, 1985).

Following an extensive review of the literature of 70 two and four year institutions and the combined study of 40,000 students, Bean and Metzner (1985) concluded that there are elements that are unique to non-traditional student attrition. These include environmental factors (e.g., finances, family responsibilities, hours of employment, outside encouragement, and the opportunity to transfer) and psychological factors. Psychological factors are outcomes of utility defined as perceived practical outcomes of college, satisfaction with college, goal commitment, and stress (Bean & Metzner, 1985). Psychological outcomes occur as a direct result of academic and

environmental factors and therefore indirectly influence intent to leave college. Bean and Mentzer (1987) tested their model with 624 non-traditional freshmen students at a Midwestern urban commuter university enrolling 22,000 students. Their results indicated that the best predictors of dropout were GPA, as well as, the intent to leave, which is directly determined by academic, psychological, background variables, and hours enrolled.

Theoretical Perspectives of Community College Retention Research

Walleri (1981) proposed a theoretical research design of student attrition and retention in the community college. This five-part report focused on the high-risk community college student population. In his review of the literature, the researcher grouped factors associated with retention and attrition into four classes: student characteristics (e.g. academic aptitude, age, socio-economic status) institutional characteristics (e.g. quality of student services), the interaction effects between student and institution (e.g. social and academic integration), and societal or external factors (e.g. economic conditions and work conflicts). Walleri assessed each of these areas for their applicability to the community college.

In his research study involving a random sample of almost 6000 first-time students from fifteen community colleges in California, Walleri (1981) indicated that more than half of the students withdrew during the first-year. The results also indicated that these students tended to be older, enrolled part-time, attended the community college to improve job skills, and held higher paying skilled positions than those students who persisted. The researcher found that there was a direct relationship between employment, education, and attrition. “The interrelationship between work, education, and attrition

was directly confirmed when these former students were interviewed with regard to reasons for withdrawal. Job conflict and preference for job over school were the two most frequently given responses” (Walleri, 1981, p. 9).

In an earlier study, Pascarella, Smart, and Ethington (1986) employed Tinto’s (1975) model to explain long-term persistence behavior of two-year college students. Their research was based on a national sample of 825 first-time students who initially enrolled in 85 two-year institutions in the fall of 1971. This cohort was tracked over a 9-year period, from 1971 to 1980. The results indicated that secondary school achievement, commitment to the initial institution of enrollment, and socio-economic status influenced persistence. Measures of academic and social integration were found to have the most significant effects on persistence and degree completion of the study sample (Pascarella, Smart, & Ethington, 1986).

Mohammadi (1996) conducted a longitudinal study at Patrick Henry Community College in Virginia in order to establish a valid and reliable set of indicators of student retention/attrition for institutional effectiveness among community colleges. The study tracked first-time, full-time student cohorts over a four year period, from the Fall of 1988 through the Fall of 1992. The study examined data for 721 students entering in Fall 1988, 761 students entering in Fall of 1989, 824 students entering in Fall 1990, 801 students entering in Fall 1991, and 736 students entering in Fall 1992. First and second year retention rates were measured. The findings indicated that the most significant predictors of student retention for all cohorts were a student’s educational goals, which were defined as the intention to complete a certificate or degree upon college entrance (Mohammadi, 1996).

Mohammadi (1996) underscored that 40% of the student population left after one year and had not intended to complete a degree or certificate. Mohammadi indicated that this finding was supported by previous research. In addition, hours enrolled per semester, number of credit hours completed, semester GPA, and overall GPA were also significant predictors of retention. Mohammadi also indicated that attrition rates after one year were higher for female, minority, part-time students and those in the age ranges of 23-35 and 45-50.

The review of the selected research directly related to community college student retention outlines some of the factors that have been found to influence persistence at two-year colleges. These factors included academic aptitude, academic integration, age, employment status, enrollment status, ethnicity, external forces, gender, grade point average, institutional characteristics, number of credit hours completed, secondary school achievement, social integration, socio-economic status, and student goals. An abundance of research studies pertaining to college student retention has occurred; however, results of studies and models are inconclusive and require further inquiry.

Community College Persistence

Statistical measures pertaining to community college persistence and completion rates figures are consistently low. Lenning, Beal, and Sauer (1980) reported that 55% of 2-year college students were retained from their first to second year. These rates have remained virtually unchanged with 55.7% first to second year retention rate figures being reported in 2010 (ACT, 2010). Associate degree attainment rates are also consistently low. Furthermore, Adelman (2004) reported that community college graduation rates were essentially flat between the years of 1972 and 2000. A national report of all first

time, full-time, degree/certificate seeking community college students who entered college in 2003-2004 indicated that only 25% had achieved a credential by 2006-2007 (NCES, 2009). This rate is measured over a three-year period, which is the U.S. Department of Education's recommended timeframe of associate degree completion.

The State's Community College

In 1967, the state in which the college under study is located opened its first community college. From the inception, the purpose of the community college was to provide a comprehensive range of program options and educational opportunities for its citizenry. The community college was created to be an open-door institution that provided occupational, transfer, community service, and developmental education missions (Donnelly & Van Doren, 1971). These essential functions are still intact today, and there has been the addition of three community colleges since the state opened its first in 1967.

The state's community colleges share characteristics similar to their national counterparts. They are open-access institutions, and their educational missions are wide-ranging, including select baccalaureate programs. The state's community colleges currently enroll more than 65,000 students with 52% enrolled full-time (The Nevada System of Higher Education [NSHE], 2010).

Developmental Education in the State

The personnel comprising the system of higher education in the state understood the importance of developmental education programming. This function was part of the original comprehensive mission for the state plan for community colleges. Recognizing the needs of the communities that would be served, Donnelly and Van Doren's (1971)

State Plan for Community Colleges in the State indicated that community colleges would provide developmental education in reading, mathematics, and communication for skill deficient students. “Through the developmental programs, any student has the opportunity to work on his own individual problems associated with his learning” (Donnelly & Van Doren, 1971, p. 11). The developmental education philosophy provides access to higher education for many would be students who might not otherwise have the opportunity to do so. A byproduct of offering developmental education in college is an increase in the college-educated citizenry (McCabe, 2000).

In union with the core function of the community college, and consistent with the original mission, the state’s community colleges offer developmental education for thousands of underprepared students every year. In 2009, 40% of recent high school graduates attending the state’s community colleges enrolled into developmental coursework (NSHE, 2010). This computation does not include other student populations needing remediation. The state’s community colleges also enroll a substantial number of returning adult students who also require remediation. This seems to suggest that the majority of the community college students are in need of remediation at some point in their educational careers. By comparison, based on data from a nationally representative sample of the BPS 2003–04, 29% of community college students reported having taken at least one developmental course in their first year (NCES, 2010). Taking these and other measures into account establishes the importance of the study of developmental education programming policy and success rates of students that are in need of remediation nationally and in the state.

College Student Persistence in the State

Decades ago, Donnelly and Van Doren (1971) reported that college student retention was a concern in the state. Yet overall, success rates of the state's community college students are mixed at best. The state's first to second year persistence rate figures consistently exceed national averages. In 2006, 68% of first-time, full-time, degree-seeking students persisted from their first to second year. However, only 15% of all of first-time, full-time, degree/certificate seeking students that began their studies during 2003-2004 graduated with a credential within three academic years (NSHE, 2010). There is increasing concern among policy makers and educators that retention and completion rates are disproportionately low and more emphasis needs to be placed on raising success rates (Bailey, Leinbach, & Jenkins, 2005). It is clear that success rate measures of community college students in the state and nationwide, are consistently low. For developmental education students the odds of success are even lower, which further justifies more research in this area.

CHAPTER THREE

METHODOLOGY

The purpose of this single institutional case study utilizing mixed methods was to explore the relationship between student persistence rates and developmental education policy. Specifically, this study examined how assessment testing, placement policy, institutional practice, and initial course enrollment patterns related to student success. A cohort of all first-time, full-time, degree-seeking students who enrolled at the college in the 2007 Fall semester were tracked for persistence rates through the 2010 Spring semester. The researcher collected and analyzed select academic transcript data. Further, seven interviews of key administrators and faculty members were conducted along with a document analysis. This chapter describes the research questions, research plan, the research site, participants, data sources and analysis, quantitative variables, instrumentation, and summary.

The research questions guiding this study were constructed based upon the review of the literature. The research questions do not directly address the demographic variables of age, gender, and ethnicity. Nevertheless, they are of interest to the researcher and were reported because of their preponderance in college student retention and persistence literature.

A single community college was selected for study based upon the state's low community college completion rates, lack of research studies specific to the state's community colleges, and a statewide shifting of mandatory assessment and placement policies as it pertains to developmental education programming. The following research questions guided the study.

Research Questions

1. What is the history and rationale for developmental education and initial placement policy at the selected institution?

Interviews were conducted and institutional documents were reviewed in order to answer research question number 1.

2. Are there differences in persistence rates between groups of community college students who take the ACCUPLACER placement test versus those who do not?

Does data support required placement testing policy? The data was analyzed using a Chi Square Test in order to answer research question number 2.

3. Are there differences in persistence rates between groups of community college students who use placement testing results for initial English enrollment versus those who do not?

Does data support policy that requires enrollment in developmental English courses as identified by placement test results? The data was analyzed using a Chi Square Test in order to answer research question number 3.

4. Are there differences in persistence rates between groups of community college students who use placement testing results for initial math enrollment versus those who do not?

Does data support policy that requires enrollment in developmental math courses as identified by placement test results? The data was analyzed using a Chi Square Test in order to answer research question number 4.

5. Are there differences in persistence rates between groups of community college students who use placement testing results for initial reading enrollment versus those who do not?

Does data support policy that requires enrollment in reading courses as identified by placement test results? The data was analyzed using a Chi Square Test in order to answer research question number 5.

6. Are there differences in persistence rates between groups of community college students who enroll in a college student success skills course in their first semester versus those who do not?

Does data support policy that requires enrollment in a college student success skills course for first-time students? The data was analyzed using a Chi Square Test in order to answer research question number 6.

Research Plan

The research methodology was a single institutional case utilizing mixed methods approaches. The utilization of qualitative and quantitative techniques was employed. Creswell (2002) noted case studies are useful when “the researcher explores in depth a program, an event, an activity, a process, or one or more individuals” (p. 15). Using this form of a qualitative research method allows understanding of the phenomenon under study from a broad viewpoint or perspective (Yin, 2003). In addition, a compelling reason to conduct case study research is to collect a rich description of information, which is not typically accessible (Merriam, 1998). Gathering this type of information was accomplished through the inclusion of personal interviews and document analysis.

The study analyzed the academic transcripts of the 2007 first-time, full-time, degree-seeking student cohort at the college. Descriptive statistics were utilized to describe student characteristics and persistence statuses of the cohort. “Descriptive research uses quantitative methods to describe what is, describing, recording, analyzing, and interpreting conditions that exist” (Best & Kahn, 2006, p. 24). Data was described utilizing percentages, frequency distributions, and cross-tabulations. The Chi-Square Test was utilized in order to analyze and report statistical significance.

To gain a comprehensive perspective, as well as a contextual meaning of developmental education at the college, data were derived from three sources. These were: (a) personal interviews of seven key personnel at the college to ascertain the historical, academic, and political rationale for existing developmental education policy, (b) document analysis of the Faculty Senate and Curriculum Committee minutes to determine the evolution of developmental education policy, and (c) academic transcript analysis over a three year period (2007-2010) comparing first-time, full-time, degree-seeking students who enrolled at the college under study in the 2007 Fall semester. For this study, the major intent of the transcript analysis was to compare students who tested into developmental education (in English, math, and/or reading coursework) and subsequently enrolled based on placement test results against those students who tested into developmental education and did not enroll in these pre-collegiate courses based on placement test results. This research also made comparisons within the cohort by taking into account their enrollment or non-enrollment in a college student success skills course. These comparisons were presented utilizing descriptive statistics.

The study was submitted to the University Institutional Review Board (IRB) for review and approval. It was also submitted to the appropriate administrators at the college under study. The transcript analysis included a review of pre-existing educational data, and was periodic in nature, thereby occurring at two points in time; the 2007 Fall semester, and the 2010 Spring semester. A three-year period was utilized for this study, which is based upon the U.S. Department of Education NCES (2010) definition of associate degree completion parameters.

The Research Site

The college under study was established in 1971 and is a small rural/suburban community college located in a western state. The college serves more than 5,000 students each semester within an 18,000 square-mile service area.

Participants

Consistent with qualitative research methodology, a small, purposefully selected sample of research participants were asked to participate in the study. The interviewees were selected based upon their position and knowledge of policy development and content and were interviewed for their historical and current understanding of developmental education policy and practice. The interviews were conducted with four college administrators and three faculty members, including a former and the current president of the college, a vice-president, a director, and the instructional leaders of the English, math, and reading programs.

Data Sources and Analysis

Multiple methods of data collection and analysis were utilized in this study including: (a) personal interviews, (b) documents, and (c) academic transcripts.

Personal Interviews

Upon IRB approval, the research participants (interviewees) were contacted by e-mail to determine their interest in taking part in the study. The interviewees received an e-mail that outlined the importance of the research study and expressed appreciation for their participation. Once the interviewees agreed to participate, a time, date, and location was established for the interview sessions to take place. It was anticipated that the interviews would last approximately one hour. It is also important to note that the research participants were given the opportunity to withdraw from the interview at anytime.

The interview questions were developed based upon a review of the literature and were designed to collect information documenting policies and practices related to developmental education programming at the college. The interview questions were open-ended and were intended to enhance, promote, and facilitate participant discussion. The interview questions were reviewed by a faculty member of the Department of Educational Leadership at the University of Nevada, Reno who is familiar with qualitative research and the development of research questions. The 11 interview questions are located in appendix A.

The interview sessions were audio taped. This permitted the researcher to focus on the questions and participant responses rather than taking extensive notes. The audiotapes were transcribed verbatim by a transcription agency. An initial review of the transcribed interviews was conducted for information that was pertinent to the purpose of this study. This review resulted in a scaled down version of the interviews, which were read three times. Participant responses were color coded, organized, and grouped by

themes. This enabled the researcher to perform an analysis and interpret the interviews. Interviewee responses were reviewed holistically for conceptual understanding and historical relevance as it relates to policy advancement and practice in developmental education.

Documents

A review was conducted of the Faculty Senate and the Curriculum Committee minutes for relevant information, which was associated with developmental education policy and practice. The documentation of the college's policies utilized for this research study was collected from the online intranet system and the library archives. The Faculty Senate and Curriculum Committee's minutes were analyzed over the selected period, 2005 through the present. This specific time-period was selected because of the significant changes that have occurred in developmental education policy since the year of 2005. The primary focus of the document analysis was to investigate the discussions and changes that were associated with developmental education policy and practice.

Academic Transcripts

Data was collected from the academic transcripts of a single cohort of all first-time, full-time, degree-seeking students who were enrolled at the college during the 2007 Fall semester and were tracked for persistence rates through the 2010 Spring semester. The cohort consisted of 299 students. This study utilized non-random data which was appropriate as the student cohort was comprised of an entire population (Berk, 2003).

The researcher requested the data through the colleges' Data Request System (DRS). This request was routed to the Institutional Research Department.

Representatives from the Institutional Research Department extracted identified student

transcript data from the Student Information System (SIS) and then exported the data to a password protected EXCEL file. In total, the data set was comprised of selected demographic and collegiate characteristics, which included Pell Grant eligibility, age, gender, ethnicity, persistence statuses, completion/non-completion of the ACCUPLACER, placement testing scores in English, math, and reading, and 2007 Fall semester course enrollments of the students in the cohort. Identification numbers were assigned to protect student confidentiality.

Data was cross-referenced at two points in time; the 2007 Fall semester, and the cessation of the 2010 Spring semester in order to answer research questions 2 through 6. This study analyzed academic data specific to select initial course enrollment patterns and persistence statuses over the specified period of time. The Statistical Package for the Social Sciences (SPSS) was utilized to measure, compute, and report statistical differences. Specifically, to analyze the statistical differences between the selected independent and dependent variables of this study a Chi Square Test was utilized. The Chi Square Test is a non-parametric test that allows a researcher to examine a data set and establish if variables are associated and if the differences are significant (Salkind, 2000). This is the appropriate test when the variables are categorical and the scale of measurement is nominal (Johnson & Christianson, 2000). It is important to note, the Chi Square Test does not measure the degree of the relationship between variables, but rather the likelihood that that some factor other than chance accounts for an apparent relationship between variables (Best & Kahn, 2006).

Quantitative Variables of the Study

The independent variables of this study included: completion or non-completion of the ACCUPLACER; enrollment and non-enrollment in developmental English, math, and or reading coursework as identified by the ACCUPLACER testing scores; and enrollment and non-enrollment in a college student success skills course. The dependent variable was persistence, which was comprised of four levels: associates degree completion, continued enrollment, transfer, and no longer enrolled in college within the three year time limit of this study. It is important to note that the research design of this study was non-experimental and therefore the indentified independent and dependent variables were not controlled or manipulated.

Instrumentation

ACCUPLACER

The college under study utilizes The College Board's ACCUPLACER, which is one of the most commonly employed computerized adaptive placement testing systems in higher education (Mattern & Packman, 2009). The primary function of the ACCUPLACER is to determine levels of academic preparation. This test provides educators with information about the basic academic skills of students entering college. ACCUPLACER tests measure the following six dimensions: reading comprehension, sentence skills, arithmetic, elementary algebra, college-level mathematics, and writing.

The ACCUPLACER's internal consistency reliability was reported at .92 for arithmetic, .92 for elementary algebra, .86 for college-level math, .87 for reading comprehension, and .91 for sentenced skills (Mattern & Packman, 2009). In addition, numerous predictive validity studies completed through the Admitted Class Evaluation

Service (ACES) between 2001 and 2006 indicated a moderate to strong relationship between test scores and course success. This research included the examination of 47 studies, which included data from 17 unique institutions. Of the 17 institutions, 82.4% were community colleges. These indicate that ACCUPLACER test scores are useful in terms of accurately placing students into courses in which they are likely to succeed (Mattern & Packman, 2009).

The System of Higher Education establishes minimum cut scores in math, English and reading based upon College Board recommendations for this states' four community colleges that administer the ACCUPLACER. Although generally consistent, there are slight variations with cut scores from institution to institution. The College Board indicates that ACCUPLACER test scores are useful in terms of accurately placing students into courses in which they are likely to succeed. However, in 2007 the college under study had a policy that allowed students to enroll in developmental math and English courses regardless of placement.

Summary

This single institutional case study explored student persistence as well as developmental education processes related to assessment and placement in order to analyze student data for the intentions of informing developmental education policy. This objective was accomplished through the development and activation of the research plan outlined in chapter 3. The research methodology of this study consisted of a single institutional case utilizing mixed methods approaches. Qualitative and quantitative techniques were utilized to interpret the data under study. The researcher utilized (a) personal interviews of seven key personnel at the college to ascertain the historical,

academic, and political rationale for existing developmental education policy, (b) document analysis review of the Faculty Senate and Curriculum Committee minutes to determine the evolution of developmental education policy, and (c) academic transcript analysis over a three year period comparing the persistence rates of first-time, full-time, degree-seeking students who enrolled at the college in the 2007 Fall semester. The results of this study are presented in chapter 4.

CHAPTER FOUR

RESULTS

The purpose of this single institutional case utilizing mixed methods was to explore the relationship between student persistence rates and developmental education policy. Specifically, this study examined how assessment testing, placement policy, institutional practice, and initial course enrollment patterns related to student success.

Introduction

Chapter 4 provides the results of the analysis of the data gathered for this research study. Findings from the study were divided into qualitative and quantitative categories. For the qualitative component, interviews were conducted with seven research participants, and historical documents at the college were reviewed. Eleven open-ended interview questions provided the basis for the qualitative analysis. The interview questions were designed to collect information documenting the history and policy and practices related to developmental education at the college. Faculty Senate and Curriculum Committee minutes from 2005 through the present were reviewed for information pertaining to developmental education. However, a review of the committee minutes found little to report related to developmental education policy and practice.

The Statistical Package for the Social Sciences (SPSS) was utilized to summarize the quantitative data, which was based on 299 student transcript records. Descriptive statistical techniques were utilized to report, summarize, and interpret the data. Cross tabulation and the Chi Square Test were employed in order to examine possible differences between groups as determined by selected independent and dependent variables. The independent variables of this study were completion or non-

completion of the ACCUPLACER; enrollment and non-enrollment in developmental English, math, and or reading coursework as identified by the ACCUPLACER testing scores; and enrollment and non-enrollment in a college student success skills course. The dependent variable was persistence, which was comprised of four levels: associates degree completion, continued enrollment, transfer, and no longer enrolled in college within the three year time limit of this study. These analyses addressed the six research questions.

Research Questions

1. What is the history and rationale for developmental education and initial placement policy at the selected institution?
2. Are there differences in persistence rates between groups of community college students who take the ACCUPLACER placement test versus those who do not?
3. Are there differences in persistence rates between groups of community college students who use placement testing results for initial English enrollment versus those who do not?
4. Are there differences in persistence rates between groups of community college students who use placement testing results for initial math enrollment versus those who do not?
5. Are there differences in persistence rates between groups of community college students who use placement testing results for initial reading enrollment versus those who do not?

6. Are there differences in persistence rates between groups of community college students who enroll in a college student success skills course in their first semester versus those who do not?

Summary of the Qualitative Analysis

The interviews provided the content for the qualitative component of this study. A small, purposefully selected sample of seven college personnel were identified; four key college administrators and three faculty members, including the former and the current president of the college, a vice-president, a director, and the instructional leaders of the English, math, and reading programs took part in the interviews. An initial review of the transcribed interviews was conducted for information that was pertinent to the purpose of this study. This review resulted in a scaled down version of the interviews, which were read three times. Participant responses were color coded, organized, and grouped by themes. This enabled the researcher to perform an analysis and interpret the interviews.

The results of the analysis are presented in the qualitative research question and in the form of two emergent themes that originated from the interview questions. The two emergent themes that consistently emerged throughout the interviews were institutional struggle with the *Right to Fail* philosophy and ambivalence towards/questioning of the validity of the assessment testing instrument. The development of the emergent themes added an additional element of understanding to this research study as it related to documenting the history, policies, and practices of developmental education programming at the college.

Results of the Qualitative Analysis

Research Question 1

What is the history and rationale for developmental education and initial placement policy at the selected institution?

The inclusion of developmental education was part of the State Plan for Community Colleges (Donnelly & Van Doren, 1971). Historically, at the college there had been an emphasis placed upon developmental education. As an interviewee stated, “as an open-door institution we took whoever came in the door, we accepted who they were, no matter the academic level”. Since the inception of community colleges in the state, developmental education has been a major component of the core institutional mission. Remedial courses in English, math, and reading were offered at the college as early as the academic year 1972-1973. Another administrator described developmental education as “the very essence of an open-access institution”. Developmental education helps to provide access to a college education by allowing students to enroll in courses that were created to fill knowledge gaps in their basic skills. This philosophy ultimately affords multitudes of underprepared students the opportunity to pursue their educational goals.

The right to fail philosophy is connected to the history of developmental education. This philosophy in practice allows students to *choose* to enroll in courses at will when they enter college, regardless of preparation, and they have the right to fail. Traces of the right to fail were integrated into the initial state plan for community colleges. For instance, “if a student cannot master the content, he should be allowed to try some other course or program without penalty” (Donnelly & Van Doren, 1971, p. 4).

Furthermore, “it is not a system designed to fail students but rather one designed to pass students” (Donnelly & Van Doren, 1971, p. 4). In the 1970s and early 1980s, right to fail principles were interwoven into the fabric of the college as a direct result of the State Plan for Community Colleges. This philosophy would eventually have an influence upon the progression of initial placement practices and thus developmental education.

The use of assessment testing for placement began at the college in 1982-1983. At first, the English department provided the testing service, but assessment was eventually transferred to the Counseling Department due to logistics. The English assessment the Test of Standard Written English (TSWE) was utilized. In 1989, seven years later, the college implemented assessment testing for math placement, which was called MAPS (Multiple Assessment Programs and Services). The college utilized these instruments prior to the ACCUPLACER, which was instituted in 2005.

According to the interviewees, prior to 1982 formal assessment and placement practices did not occur at the college. Initial placement practices began simply enough. Placement was informal and often initiated by students speaking with a faculty member or counselors regarding their transcripts or their academic histories. In addition, assessment would occur in the classroom, sometimes on the first day of classes as one faculty member described. Ultimately, it was the instructor’s responsibility to teach students regardless of academic preparation. For instance, one faculty member stated, “it was our responsibility in the classroom to bring students up to where they should be”. This was the character of assessment and placement during the 1970s and the early 1980s. It was an environment, as one administrator stated, “that would often drive instructors crazy”.

Consequently, a systematic or institutionally prescribed method for assessing students' levels of academic preparation for English or math initial placement did not exist. As time progressed, these informal practices were found to be problematic. For instance, a faculty member stated, "many students were failing English 101 and this was specifically due to a lack of academic preparation, which was the result of not being assessed properly". Eventually English faculty discussed the need for and importance of accurately placing students into English 101. Administrators understood and supported better placement and eventually, the Board of Regents approved assessment testing for English placement. The Board of Regents instituted this change system-wide for all institutions of higher education within the state. By 1983, assessment examinations were highly recommended. In essence, the high attrition rates in English 101 were the impetus for the development and implementation of assessment testing and placement practices at the college.

Right to Fail

As was noted multiple times during the interviews, one of the primary purposes of the community college was to provide opportunities for all segments of society to pursue a college education. This in part, along with the open-access mission, fostered the right to fail philosophy, which was especially prevalent in the early years of the college. As a faculty member stated, "there was truly an idea that you let students get in there and try; they had the right to fail, after all, why inhibit people from taking what they wanted?" "We took students where they were, academically speaking, and it was our responsibility in the classroom to bring them up to where they should be," another faculty member stated. "Ever since I have been at the college, since the early 1980s, I have heard about

this and I guess I am enough of a 70s person that I wanted to save people, but yet I still think that everyone has the right to fail". These statements were, in particular, a reflection of the environment of the 1970s and early 1980s.

Yet, the right to fail environment was in conflict with various issues pertaining to student and institutional success. Numerous interviewees stated, "if students are not prepared for the courses they are enrolled in, how are they benefitting from them?" As well, "if students are not placed properly they might enroll into a class that is too difficult, which could result in them taking it again and again, and how does this benefit the institution?" In addition, as an administrator stated: "this may have an impact upon the student economically and have an impact upon persistence and retention rates." These statements were from interviewees who were questioning the processes by which the institution ensured that students were academically prepared for the courses into which they enrolled. During the interview sessions, there was a sense that these issues had increased in frequency over time. The result was the need for the college to implement a more organized and systematic method of assessment and placement.

There were other suggestions that were indicative of a movement away from the practices associated with right to fail. A faculty member stated: "faculty were frustrated due to many of their students not being qualified to be in their courses and (as a result) there was a bigger push from the faculty and the administration to ensure that students were prepared. Ultimately, I think the institution had an ethical responsibility to do what was in the best interest of its students". It was clear that there became a philosophical disconnect between right to fail and aspects of managing the college effectively.

As was noted by the interviewees, there were numerous reasons why the right to fail philosophy was problematic, yet, to some extent, its underlining principles are still very much intact. This was evidenced by the discussion regarding the question of mandating assessment and placement at the college, which had been a controversial issue. In fact, as a faculty interviewee stated “there are faculty who think that instituting this as a required policy would be discriminatory in nature and would also restrict access to higher education”. Open access and equal opportunity are community college ideals, historically established as the basis for the creation and development of community colleges. Although it has never been a mandatory policy per se, assessing and accurately placing students has been a highly recommended practice for decades at the college. In fact, some regarded this idea as an initiative that was counter to the primary mission of the community college.

Every interviewee referred to the importance of accurate assessment and placement as it related to student and institutional success; however, the question about whether to mandate assessment and placement as an institutional policy elicited varied perspectives. As a faculty member and administrator suggested, “other community colleges have proven that mandated assessment and placement of students actually improves graduation and retention rates”. Yet, did the disadvantages outweigh the advantages? As another faculty member suggested, “are you going to make every single student pay for the test? What if they do not intend to take English or math?” As an administrator and faculty member suggested, “it is not practical to mandate a policy which impacts every single student on the campus”. As another faculty member suggested, “the current economy and budget situation will not support this mandate”. As

an administrator suggested, “required placement might actually impede progress”. As a faculty and administrator suggested, “a policy such as this could negatively impact the enrollment numbers”.

Further adding to these perspectives, another administrator interviewee suggested the following:

We need to be careful with this one because of the differences in our student populations and their educational goals. For example, what if I am a student and I just want to enroll in an accounting class to upgrade my jobs skills? Will the institution require that I take an assessment test? Or, what if I am a student who decides to start college a few days prior to the beginning of the semester, and I work full-time and don't have the time to take an assessment test? Will the institution require that I take an assessment test before I can enroll? Furthermore, what if I am a returning adult student who has been out of school for many years and I take the assessment test and place into math 91? Maybe I just need to brush up on my math skills. Is the institution going to require that I take this class before I can enroll in the next class up, math 93? I think this can actually impede a student's progression. Similarly, what if I place into English 90? Does this mean the institution will require that I take three English classes before I can get to the one that will actually count towards a certificate or a degree? Yes, this can really impede progress.

As many of the interviewees alluded, mandating assessment and placement policy would require a major institutional commitment, which could change operational structures as well as the mission of the college to some extent. This mandate could also

have an impact upon institutional resources, enrollments, and student success. Some of the controversy revolved around the business aspects of higher education, in addition to underlining philosophical viewpoints. Paradoxically, interviewees identified that mandated assessment and placement policy might actually support, as well as deter from the college's mission. However, most of the interviewees were concerned about a policy where institutional mandates had the potential to restrict access to higher education and course enrollments.

Assessment Testing Instruments

An analysis of the history of the college revealed that assessment testing had been in place since 1982-1983. Each interviewee acknowledged the importance of accurate assessment and placement. An administrator stated:

If a student is in a class they are not prepared for, they may become frustrated. As a result, this could become a source of frustration in the classroom for the rest of the students because unprepared students pull the instructor's attention away from what he should be focusing on, and that's getting students to where they need to be in order to progress to the next level.

This type of an educational environment has consequences for the institution and the student as well. Nevertheless, while it has been a highly recommended practice for decades that college personnel recommend students engage in assessment testing, the instrument itself has long been a source of uncertainty among faculty and administrators. There were many examples throughout the interviews that illustrated this point.

- As a faculty member stated, "how do we know if an assessment instrument works like it is intended to? All assessment instruments seem to have a rather 'iffy'

quality to them anyway, I believe, in terms of their ability to accurately place students”.

- Another faculty member stated, “the best assessment instrument as far as I am concerned is a writing sample, you know, through the English department, but I doubt that we are ever going to see that either, especially now because of the financial implications and resources that would be involved in order to make it happen”.
- As an administrator stated, “I don’t think that math skills can be accurately measured by a standardized test like the ACCUPLACER. I think the math department needs to construct their own tests, a set of math tests based upon high school experience. So, if a student comes in with four years of high school math, we need our own internal assessment, one that is based on our own curriculum”.
- Another administrator stated, “I always held to the belief that assessment results should not be used in isolation for placement purposes. It should also be the responsibility of faculty and counselors to place students into their courses”.

These findings revealed uncertainty regarding the effectiveness of assessment tests and a lack of confidence in the ACCUPLACER. Throughout the process of interviewing the research participants, there were three mutually agreed upon perspectives regarding the college’s use of assessment instrumentation. First, faculty and administrators have never agreed upon an assessment instrument. In fact, as an administrator interviewee stated,

the ACCUPLACER was selected not because it was thought of as the most effective assessment, but rather because most other institutions in the state were

utilizing it at the time when the college decided to implement it. We thought this would be in the best interests of our students.

Presently, all community college institutions of higher education in the state utilize the ACCUPLACER. Secondly, faculty and administrators value and understand the usefulness of assessment. Lastly, accurate placement is considered a critical factor for student success.

Description of the Student Cohort

Students in the cohort consisted of all first-time, full-time, degree-seeking students who enrolled at the college in the 2007 Fall semester and whose persistence rates were tracked through the 2010 Spring semester. The quantitative data was requested through the college's Data Request System (DRS) and collected by the Institutional Research Department. Tables 1 through 8 summarize selected demographic and collegiate characteristics of the 299 students included in this study.

Table 1 summarizes the financial need of the student cohort. Pell grant eligibility was used as the indicator of socio-economic status. The analysis of the student records for this study indicated that the number of students eligible to receive Pell grant funding was 69. This was 23.1% of the total cohort. However, the majority of students in the cohort were not eligible to receive Pell grant funding, which included 230 students, or 76.9% of the cohort.

Table 1

Summary of Pell Grant Eligibility for Students in Cohort

Pell Grant Eligibility	<i>N</i>	%
Yes	69	23.1
No	230	76.9
Totals	299	100.0

Table 2 summarizes the age distribution of the students in the cohort. Most students were between 18 and 19 years of age, comprising 258 of the students, or 86.3% of the cohort. The category 20-24 years of age consisted of 25 students or 8.4% of the cohort. The category 25-29 years of age consisted of 5 students or 1.7% of the cohort. The category 30-34 years of age consisted of 3 students or 1% of the cohort. The category 35-39 years of age consisted of 2 students or .7% of the cohort. The category 40-44 years of age consisted of 4 students or 1.3% of the cohort. The category 45-49 years of age consisted of 2 students or .7% of the cohort. There were no students older than 47 years of age in the cohort and the average age was 19.0.

Table 2

Summary of Age for Students in Cohort

Age	<i>N</i>	%
18-19	258	86.3
20-24	25	8.4
25-29	5	1.7
30-34	3	1.0
35-39	2	0.7
40-44	3	1.3
45-49	2	0.7
≥ 50	0	0.0
Totals	299	100.0

Table 3 summarizes the student cohort by gender. The majority of the students were female. The number of female students was 180 or 60.2% of the cohort. The number of students who were male was 119 or 39.8% of the cohort.

Table 3

Summary of Gender for Students in Cohort

Gender	<i>N</i>	%
Female	180	60.2
Male	119	39.8
Totals	299	100.0

Table 4 summarizes the student cohort based on race/ethnicity. The majority were white, comprising 200 of the students, or 66.9% of the cohort. Hispanics were the next highest proportion of students, totaling 33 students or 11% of the cohort. A high

frequency of students listed their ethnicity as unknown, that is, 28 students or 9.4% of the cohort. American Indians constituted 16 students or 5.4% of the cohort. Asians constituted 16 students or 5.4% of the cohort. Blacks constituted 6 students or 2% of the cohort.

Table 4

Summary of Race/Ethnicity for Students in Cohort

Race / Ethnicity	<i>N</i>	%
White	200	66.9
Hispanic	33	11.0
Unknown	28	9.4
American Indian	16	5.4
Asian	16	5.4
Black	6	2.0
Totals	299	100.0

Table 5 summarizes the distribution of the student cohort that enrolled in at least one developmental education course in English, math and/or reading. The majority of students, totaling 193, or 64.5% of the cohort, enrolled in at least one developmental education course during the 2007 Fall semester. A smaller number, 106 students or 35.5% of the cohort, did not enroll in a developmental English, math and or reading course.

Table 5

Summary of Developmental Course Enrollment for Students in Cohort

Developmental Course Enrollment	<i>N</i>	%
Yes	193	64.5
No	106	35.5
Totals	299	100.0

Table 6 summarizes persistence rates for students in the cohort. Four levels of persistence were analyzed: associates degree completion, continued enrollment, transfer, and no longer enrolled in college within the three year time limit of this study. The number of students achieving an associate's degree was 55 or 18.4% of the cohort. The number of students still enrolled at the college was 92 or 30.8% of the cohort. The number of students who transferred to another institution of higher education was 82 or 27.4% of the cohort. The number of students who were no longer enrolled in college was 70 or 23.4% of the cohort.

Table 6

Summary of Persistence Rates for Students in Cohort

Persistence	<i>N</i>	%
Associates degree	55	18.4
Continued enrollment	92	30.8
Transfer	82	27.4
No longer enrolled in college	70	23.4
Totals	299	100.0

Table 7 summarizes the distribution of the student cohort that completed the ACCUPLACER assessment. The number of students who completed the assessment was 242 or 80.9% of the cohort. The number of students who did not complete the assessment was 57 or 19.1% of the cohort.

Table 7

Summary of Completion/Non-Completion of ACCUPLACER for Students in Cohort

ACCUPLACER	<i>N</i>	%
Yes	242	80.9
No	57	19.1
Totals	299	100.0

Table 8 summarizes the distribution of the student cohort that enrolled in How to Succeed in College. The number of students who enrolled in the course was 56 or 18.7% of the cohort. The number of students that did not enroll in the course was 243 or 81.3% of the cohort.

Table 8

Summary of How to Succeed in College Course Enrollment for Students in Cohort

Enroll	<i>N</i>	%
Yes	56	18.7
No	243	81.3
Totals	299	100.0

Summary of the Quantitative Analysis

Cross tabulation and a Chi Square Test were utilized in order to examine possible differences between groups as determined by selected independent and dependent variables. The independent variables of this study were completion or non-completion of the ACCUPLACER, enrollment and non-enrollment in developmental English, math, and/ or reading coursework as identified by the ACCUPLACER testing scores, and enrollment and non-enrollment in a college student success skills course. The dependent variable was persistence, which was comprised of four levels associates degree completion, continued enrollment, transfer, and no longer enrolled in college. Tables 9 through 13 summarize the analysis of the quantitative research questions, which included the selected initial course enrollment data, which was extracted from the academic transcripts of the student cohort. Figures 1 through 10 display selected numeric results from tables 9 through 13. Descriptive statistics were utilized to report, summarize, and interpret the data. Of the six research questions for this study, questions 2 through 6 guided the quantitative analysis.

2. Are there differences in persistence rates between groups of community college students who take the ACCUPLACER placement test versus those who do not?
3. Are there differences in persistence rates between groups of community college students who use placement testing results for initial English enrollment versus those who do not?
4. Are there differences in persistence rates between groups of community college students who use placement testing results for initial math enrollment versus those who do not?

5. Are there differences in persistence rates between groups of community college students who use placement testing results for initial reading enrollment versus those who do not?
6. Are there differences in persistence rates between groups of community college students who enroll in a college student success skills course in their first semester versus those who do not?

Results of the Quantitative Analysis

Research Question 2

Are there differences in persistence rates between groups of community college students who take the ACCUPLACER placement test versus those who do not?

Table 9 summarizes the cross tabulation results for research question 2. In total, 242 or 80.9% of the students completed the ACCUPLACER, while 57 or 19.1% of students in the cohort did not. The number of students who achieved an associate's degree and who completed the ACCUPLACER was 44 or 18.2%, while 11 or 19.3% of the students who achieved an associate's degree did not complete the ACCUPLACER. Of those students who were still enrolled at the college, 79 of them, or 32.6%, completed the ACCUPLACER while 13, or 22.8%, did not. Of those students who transferred to a different college, 66 or 27.3% completed the ACCUPLACER and 16, or 28.1%, did not. Of those students who were no longer enrolled in college, 53 or 21.9% completed the ACCUPLACER and 17 or 29.8% did not. The Chi Square Test was utilized in order to determine if there were statistical differences between the persistence statuses of students who completed the ACCUPLACER versus those who did not.

Table 9

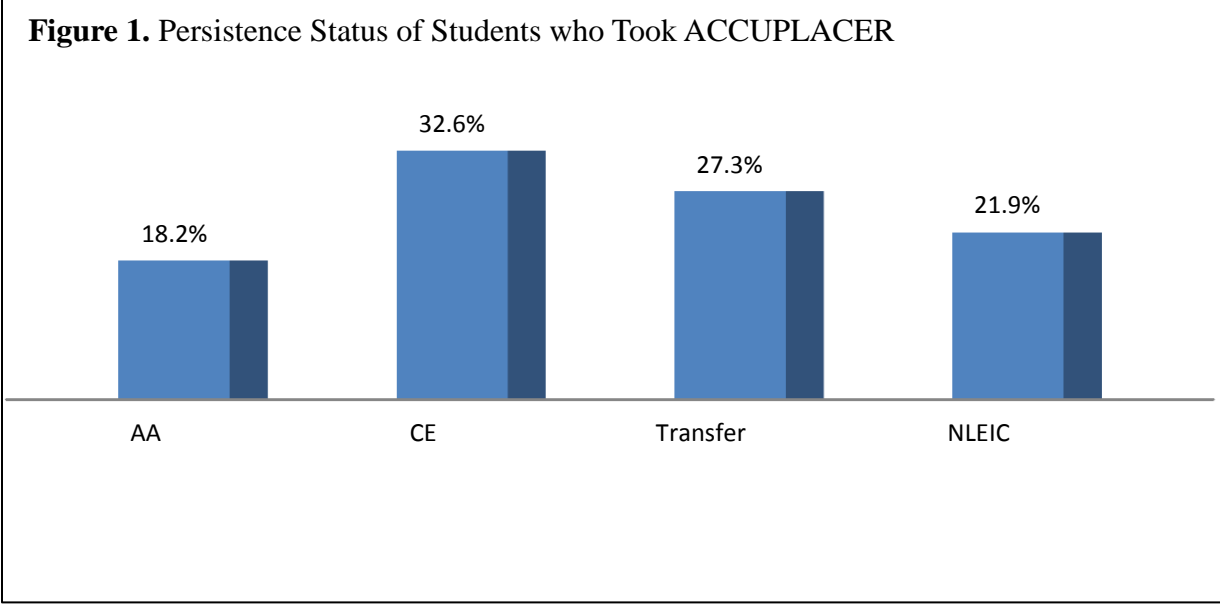
Frequency Distributions for Persistence Status and ACCUPLACER Testing

ACCUPLACER	Persistence				Total
	AA	CE	Transfer	NLEIC	
Yes (number)	44	79	66	53	242
Yes (%)	18.2%	32.6%	27.3%	21.9%	100.0%
No (number)	11	13	16	17	57
No (%)	19.3%	22.8%	28.1%	29.8%	100.0%
Total (number)	55	92	82	70	299
Total (%)	18.3%	30.7%	27.4%	23.4%	100.0%

Note 1: The Chi-Square Test was not significant [χ^2 ($df = 3, N = 299$) = 2.730, $p = .435$].

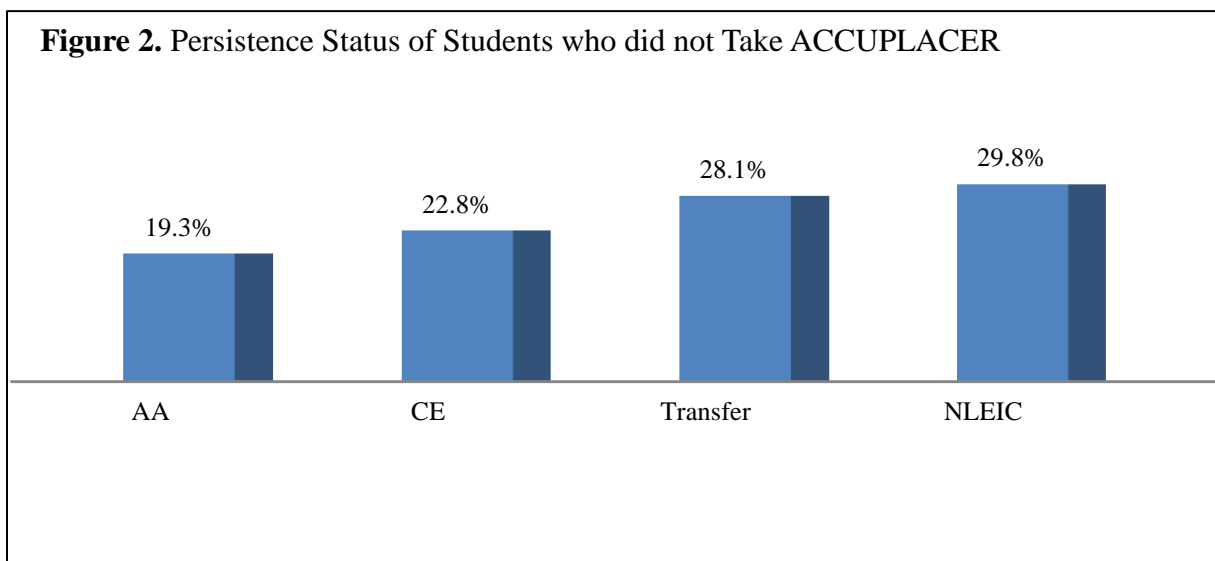
Note 2: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 1 is a graphical representation of the frequency distributions from table 9 based upon the persistence status of the students who completed the ACCUPLACER. This analysis indicated that 21.9 % of the students were no longer enrolled in college, while 78.1% of students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 2 is a graphical representation of the frequency distributions from table 9 based upon the persistence status of the students who did not complete the ACCUPLACER. This analysis indicated that 29.8% of the students were no longer enrolled in college, while 70.2% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Research Question 3

Are there differences in persistence rates between groups of community college students who use placement testing results for initial English enrollment versus those who do not?

Table 10 summarizes the cross tabulation results for research question 3. In total, 165 students or 55.2% of the cohort enrolled into developmental English coursework. Of those students who achieved an associate's degree, 12 or 14.5% enrolled in an English course based upon ACCUPLACER results while 13 or 15.9% who achieved an associate's degree did not enroll in an English course based upon ACUPLACER results. Of those students who were still enrolled at the college, 31 or 37.3% enrolled in an English course based upon ACCUPLACER results and 26 or 31.7% did not. Of those students who transferred to a different college, 20 or 24.1% enrolled in an English course based upon ACCUPLACER results and 22 or 26.8% did not. Of those students who

were no longer enrolled in college, 20 or 24.1% enrolled in an English course based upon ACCUPLACER results and 21 or 25.6% did not. A Chi Square Test was utilized in order to determine if there were statistical differences between the persistence statuses of students who enrolled in a developmental English course based upon ACCUPLACER results versus those who did not.

Table 10

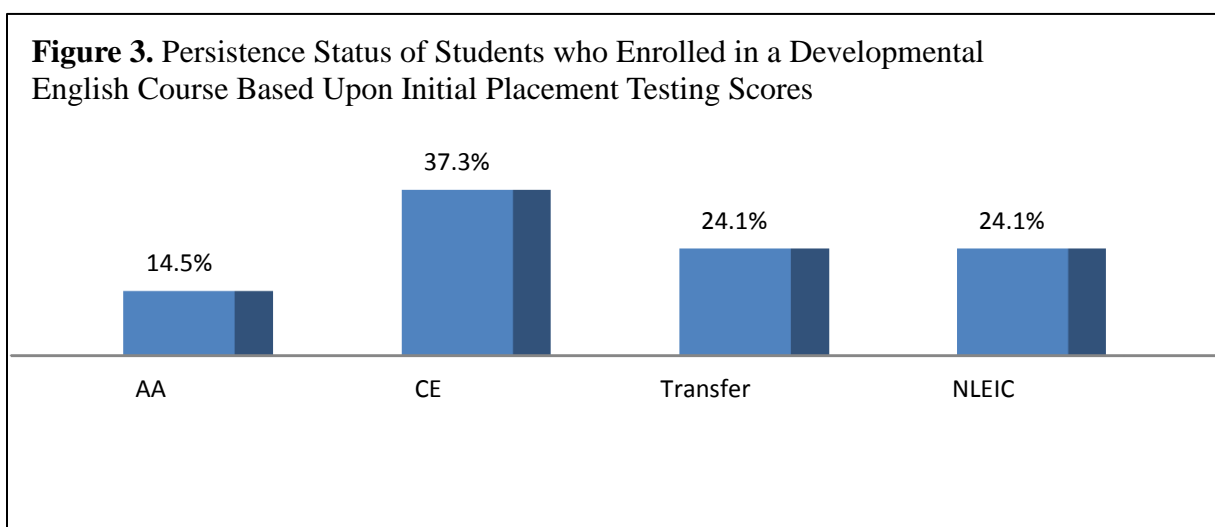
Frequency Distributions for Persistence Status and Developmental English Enrollment

English	Persistence				Total
	AA	CE	Transfer	NLEIC	
Yes (number)	12	31	20	20	83
Yes (%)	14.5%	37.3%	24.1%	24.1%	100.0%
No (number)	13	26	22	21	82
No (%)	15.9%	31.7%	26.8%	25.6%	100.0%
Total (number)	25	57	42	41	165
Total (%)	15.1%	34.5%	25.4%	24.8%	100.0%

Note 1: The Chi-Square Test was not significant [$\chi^2 (df = 3, N = 165) = .592, p = .898$].

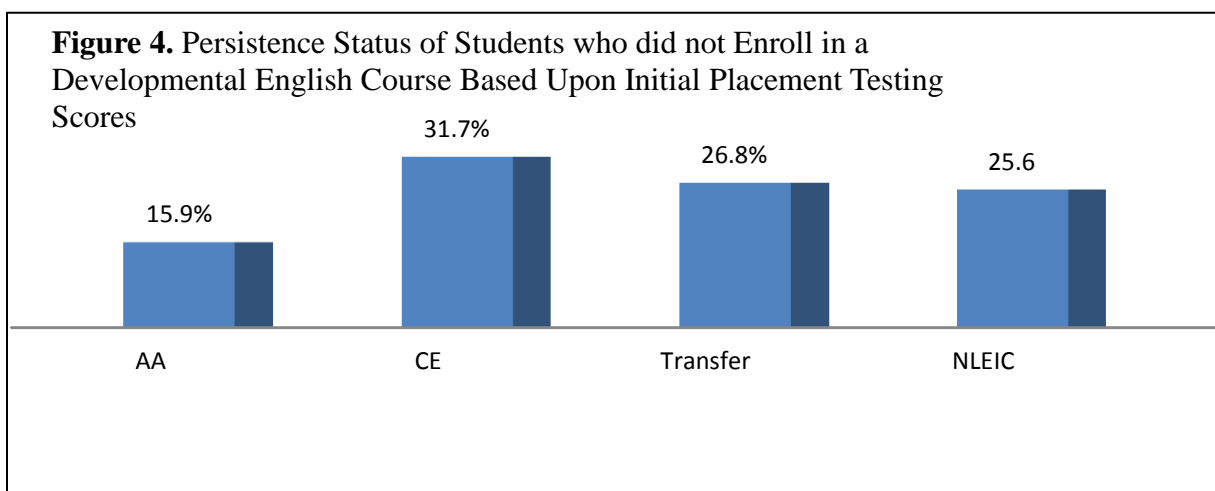
Note 2: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 3 is a graphical representation of the frequency distributions from table 10 based upon the persistence status of students who enrolled in a developmental English course as determined by initial placement testing scores. This analysis indicated that 24.1% of the students were no longer enrolled in college, while 75.9% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 4 is a graphical representation of the frequency distributions from table 10 based upon the persistence status of students who did not enroll in a developmental English course as determined by initial placement scores. This analysis indicated that 25.6% of the students were no longer enrolled in college, while 74.4% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Research Question 4

Are there differences in persistence rates between groups of community college students who use placement testing results for initial math enrollment versus those who do not?

Table 11 summarizes the cross tabulation results for research question 4. In total, 110 students, or 36.8% of the cohort, enrolled into developmental math coursework. Of those students who achieved an associate's degree, 8 students, or 11.4%, enrolled in a math course based upon ACCUPLACER results while 8 students or 20.0% who achieved an associate's degree, did not enroll in a math course based upon ACCUPLACER results. Of those students who were still enrolled at the college, 27 or 38.6% enrolled in a math course based upon ACCUPLACER results and 10 or 25.0% did not. Of those students who transferred to a different college, 10 or 31.4% enrolled in a math course based upon ACCUPLACER results and 10 or 25.0% did not. Of those students who were no longer

enrolled in college, 13 or 18.6% enrolled in a math course based upon ACCUPLACER results and 12 or 30.0% did not. A Chi Square Test was utilized in order to determine if there were statistical differences between the persistence statuses of students enrolled in a developmental math course based upon ACCUPLACER results versus those who did not.

Table 11

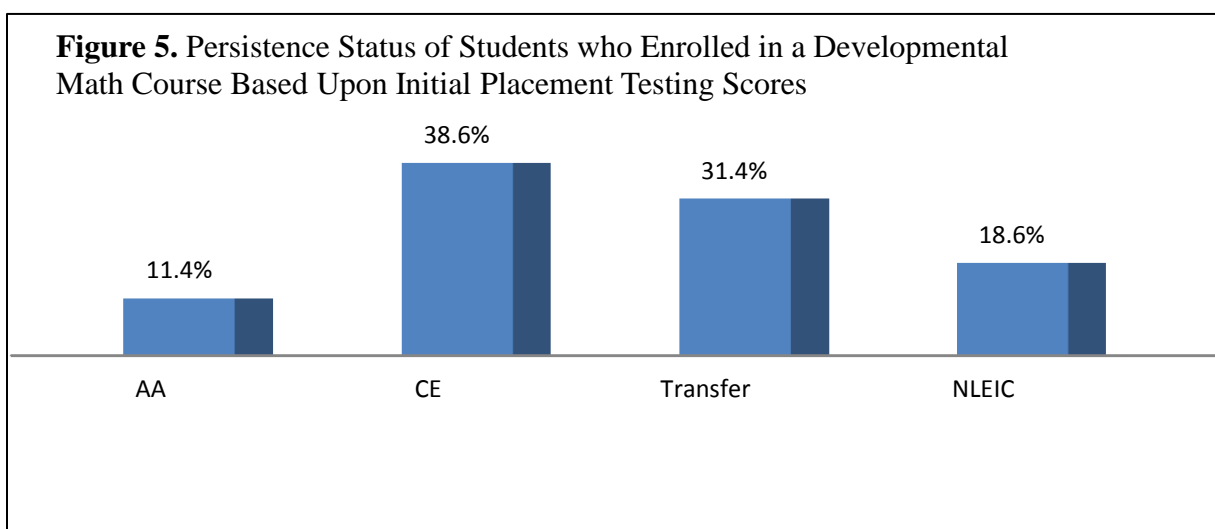
Frequency Distributions for Persistence Status and Developmental Math Enrollment

Math	Persistence				Total
	AA	CE	Transfer	NLEIC	
Yes (number)	8	27	22	13	70
Yes (%)	11.4%	38.6%	31.4%	18.6%	100.0%
No (number)	8	10	10	12	40
No (%)	20.0%	25.0%	25.0%	30.0%	100.0%
Total (number)	16	37	32	25	110
Total (%)	14.5%	33.6%	29%	22.7%	100.0%

Note 1: The Chi-Square Test was not significant [$\chi^2 (df = 3, N = 110) = 4.504, p = .212$].

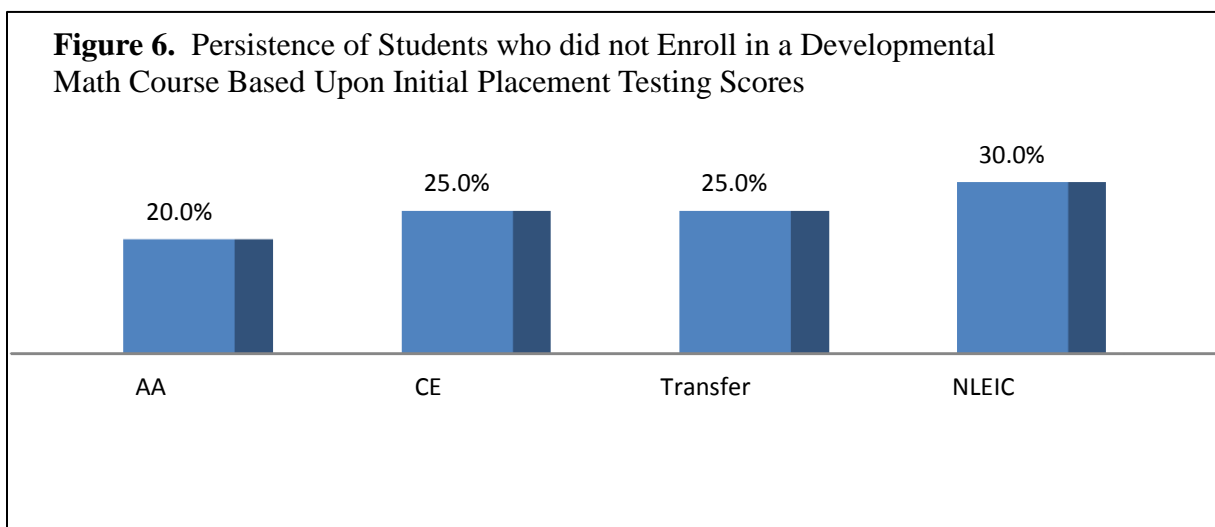
Note 2: AA=; Associates degree; CE=Continued enrollment at the college; Transfer = transferred to a different college; NLEIC= No longer enrolled in college within the three year time limit of this study.

Figure 5 is a graphical representation of the frequency distributions from table 11 based upon the persistence status of the students who enrolled in a developmental math course as determined by initial placement scores. This analysis indicated that 18.6% of the students were no longer enrolled in college, while 81.4% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 6 is a graphical representation of the frequency distributions from table 11 based upon the persistence status of the students who did not enroll in a developmental math course as determined by initial placement scores. This analysis indicated that 30.0% of the students were no longer enrolled in college, while 70.0% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Research Question 5

Are there differences in persistence rates between groups of community college students who use placement testing results for initial reading enrollment versus those who do not?

Table 12 summarizes the cross tabulation results for research question 5. In total, 207 students, or 69.3% of the cohort, placed into developmental reading coursework based upon ACCUPLACER results. However, students are not required to take reading, which may be the reason why only 34 students in the cohort enrolled into reading coursework. Of those students who achieved an associate's degree, 4 or 11.8% enrolled in a reading course based upon ACCUPLACER results, while 26 or 15.0% of the cohort did not enroll in a reading course based upon ACCUPLACER results. Of those students who were still enrolled at the college, 12 or 35.3% enrolled in a reading course based upon ACCUPLACER results and 63 or 36.4% did not. Of those students who transferred

to a different college, 8 or 23.5% enrolled in a reading course based upon ACCUPLACER results and 48 or 27.7% did not. Of those students who were no longer enrolled in college, 10 or 29.4% enrolled in a reading course based upon ACCUPLACER results and 36 or 20.8% did not. A Chi Square Test was utilized in order to determine if there were statistical differences between the persistence statuses of students who enrolled in a reading course based upon ACCUPLACER results versus those who did not.

Table 12

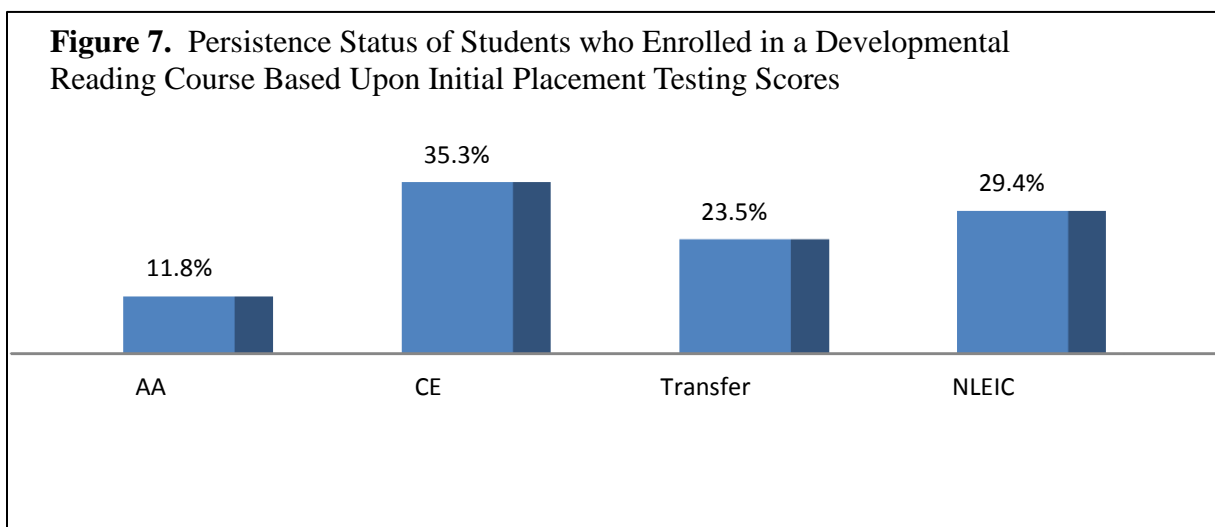
Frequency Distributions for Persistence Status and Developmental Reading Enrollment

Reading	Persistence				Total
	AA	CE	Transfer	NLEIC	
Yes (number)	4	12	8	10	34
Yes (%)	11.8%	35.3%	23.5%	29.4%	100.0%
No (number)	26	63	48	36	173
No (%)	15.0%	36.4%	27.7%	20.8%	100.0%
Total (number)	30	75	56	46	207
Total (%)	14.4%	36.2%	27%	22%	100.0%

Note 1: The Chi-Square Test was not significant [$\chi^2 (df = 3, N = 207) = 1.352, p = .717$].

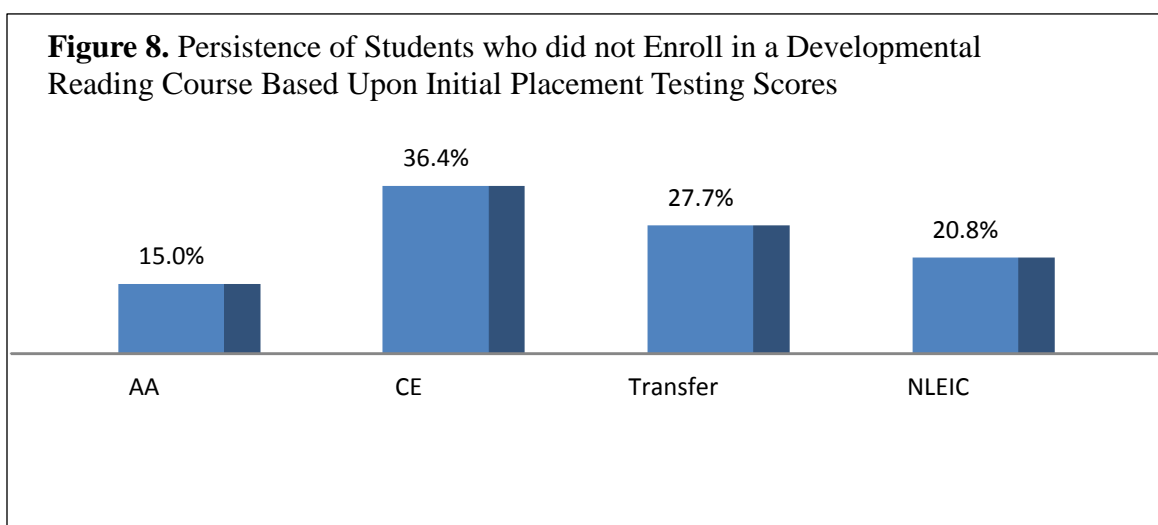
Note 2: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 7 is a graphical representation of the frequency distributions from table 12 based upon the persistence status of the students who enrolled in a developmental reading course as determined by initial placement scores. This analysis indicated that 29.4% of the students were no longer enrolled in college, while 70.6% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 8 is a graphical representation of the frequency distributions from table 12 based upon the persistence status of the students who did not enroll in a developmental reading course as determined by initial placement testing scores. This analysis indicated that 20.8% of the students were no longer enrolled in college, while 79.2% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Research Question 6

Are there differences in persistence rates between groups of community college students who enroll in a college student success skills course in their first semester versus those who do not?

Table 13 summarizes the cross tabulation results for research question 6. In total, 56 or 18.7% of the students enrolled into How to Succeed in College (CAPS 122), while 243 students or 81.3% of the cohort did not. The number of students who achieved an associate's degree and enrolled into How to Succeed in College was 8 or 14.0%, while 47 students who achieved an associate's degree or 19.4% of the cohort did not. Of those students who were still enrolled at the college, 15 or 26.3% enrolled into How to Succeed in College and 77 students or 31.8% of the cohort did not. Of those students who

transferred to a different college, 19 or 33.3% enrolled into How to Succeed in College and 63 students or 26.0% of the cohort did not. Of those students who were no longer attending college, 15 or 26.3% enrolled into How to Succeed in College and 70 students or 22.7% of the cohort did not. A Chi Square Test was utilized in order to determine if there were statistical differences between the persistence statuses of students who enrolled into How to Succeed in College versus those who did not.

Table 13

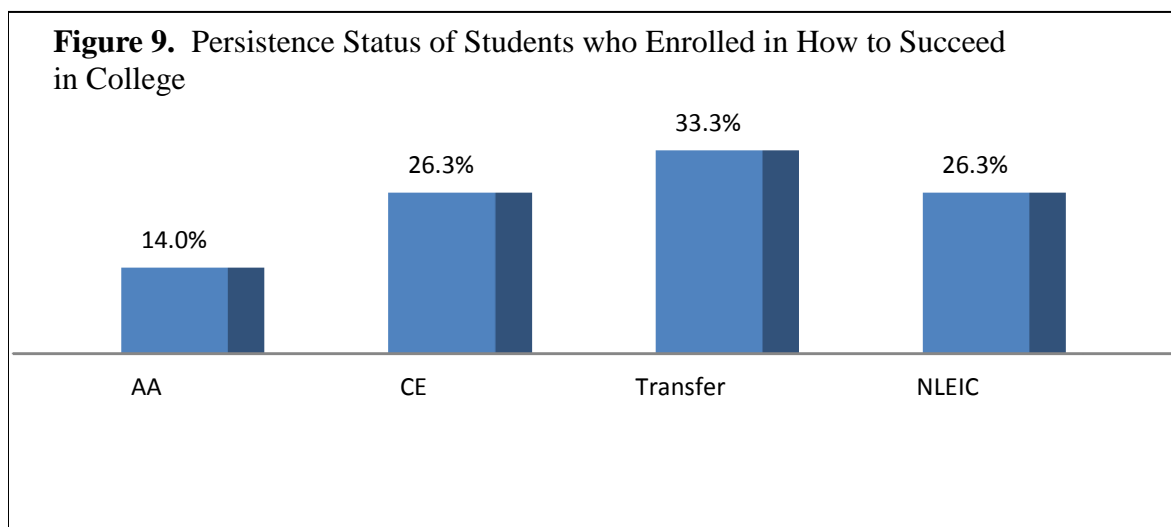
Frequency Distributions for Persistence Status and CAPS 122 Enrollment

EPY 150	Persistence				Total
	AA	CE	Transfer	NLEIC	
Yes (number)	8	15	19	15	57
Yes (%)	14.0%	26.3%	33.3%	26.3%	100.0%
No (number)	47	77	63	55	242
No (%)	19.4%	31.8%	26.0%	22.7%	100.0%
Total (number)	55	92	82	70	299
Total (%)	18.3%	30.7%	27.4%	23.4%	100.0%

Note 1: The Chi-Square Test was not significant [χ^2 ($df = 3, N = 299$) = 2.332, $p = .506$].

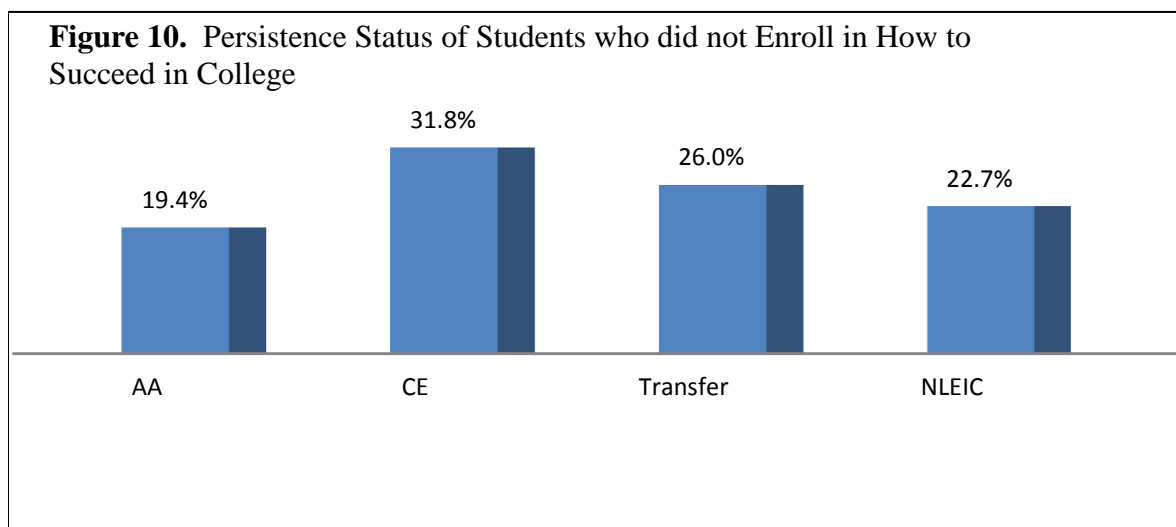
Note 2: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 9 is a graphical representation of the frequency distributions from table 13 based upon the persistence status of the students who enrolled in How to Succeed in College. This analysis indicated that 26.3% of the students were no longer enrolled in college, while 73.7% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Figure 10 is a graphical representation of the frequency distributions from table 13 based upon the persistence status of the students who did not enroll in How to Succeed in College. This analysis indicated that 22.7% of the students were no longer enrolled in college, while 77.3% of the students persisted within the three year time limit.



Note: AA = Associates degree; CE = Continued enrollment at the college; Transfer = transferred to a different college; NLEIC = No longer enrolled in college within the three year time limit of this study.

Summary

Chapter 4 provided an analysis of the interviews and statistical data, which guided the six research questions. The qualitative component of this study provided an in-depth perspective of the history of developmental education in addition to initial placement policy and practices at the college. Each interviewee spoke to the importance of developmental education and initial placement as they related to college access and success. Throughout the interviews, two themes emerged institutional struggle with the right to fail philosophy and ambivalence towards/questioning of the validity of assessment testing instruments. For the quantitative component of this study, the cross-tabulation results and figures provided a detailed visual summary of the numeric differences between the variables under study.

The Chi Square Test indicated that there were no statistically significant differences between groups as determined by selected independent and dependent variables. That is, it was found that students who took the ACCUPLACER, or who had enrolled in developmental English, math, and or reading coursework based upon initial placement testing scores, were just as likely to have persisted as those students who did not. The same was the case for enrollment and non-enrollment in a college student success skills course. Overall, the quantitative results of this research study did not support the research findings of other studies discussed in chapter 2. It is of note that while 18.4% of the cohort graduated with an associate's degree, additionally 58.2% of the cohort either transferred to another institution of higher education or were still enrolled at the college within the three year time limit of this study.

CHAPTER FIVE

SUMMARY AND RECOMENDATIONS

The purpose of this single institutional case study using a mixed methods research was to explore the relationship between student persistence rates and developmental education policy. Specifically, this study examined how assessment testing, placement policy, institutional practice, and initial course enrollment patterns related to student success. Interviews of seven key administrators and faculty were conducted to provide a historical context for the college's placement policies and practices. The academic transcript records of 299 students comprising the 2007 Fall cohort were analyzed to determine if there was a relationship between developmental education policy and persistence rates.

Findings indicated that there was no significant difference in persistence rates between students who followed ACCUPLACER cut scores and enrolled in developmental English, math and or reading coursework based upon placement recommendations versus students who did not follow the recommendations. This lack of significance, however, is better understood with the addition of data from the interviews conducted. Indeed, a history of developmental education at the institution being studied provided contextual insight.

As indicated in chapter 4, the most intriguing finding of this study was that students in the cohort who followed assessment and placement guidelines based upon institutional recommendations were no more likely to persist than those who did not. Hughes and Scott-Clayton (2011) suggested that "overall, better outcomes do not seem to result for the students who are assigned on the basis of these assessments to remediation"

(p. 20). However, a great amount of the research on accurate assessment and the relationship of placement on student success suggest otherwise (Bailey, 2008; Bonham, & Bliss, 1994; Boylan, 2002; Collins, 2009; McCabe, 2000; Roueche & Roueche, 1999; Roueche & Snow, 1977). Similarly, some researchers found that higher persistence rates were associated with enrollment into a college student success skills course (Boudreau & Kromrey, 1994; Derby, 2007; O'Gara et al., 2009; Schnell & Doetskott, 2002-2003; Zeidenberg et al., 2007). The results of this study veer from the preponderance of research studies, which speaks to why understanding institutional culture can be useful.

A common viewpoint among the interviewees was the importance of accurate assessment and placement. However, the interviews also revealed that ambivalence existed regarding the merits of placement tests, in general, and the ACCUPLACER, in particular. While no assessment is perfect, numerous interviewees questioned whether the ACCUPLACER was appropriate for the community college under study. The observation made by participants further matches recent research that indicated the predictive power of the ACCUPLACER is not as strong as desired (Mattern & Packman, 2009; Hughes & Scott-Clayton, 2011).

The original planning documents for this community college included the concept of “right to fail” that is in opposition to the current student success model, which relies upon mandated assessment and placement into appropriate coursework. Right to fail was especially prevalent in community colleges during the 1970s (Hughes & Scott-Clayton, 2011). The philosophy of right to fail allows for students to enroll in college courses, regardless of academic preparation. Advocates of right to fail favored the viewpoint that students should be allowed to use their own judgment regarding their educational choices

(Rounds & Andersen, 1985; Zeitlin & Markus, 1996). However, the progression away from right to fail began in the 1980s when legislators and educators became concerned with the high costs associated with drop out from higher education (Rounds & Anderson, 1985). In the environment of higher education today, accountability measures are more pronounced (Burke, 2005; Dougherty & Hong, 2007). Therefore, the principles associated with right to fail seem detrimental to student and institutional success.

Findings from this study revealed that the remnants of right to fail persist at this institution and appear to influence the current developmental education policies and practices. Institutional policy highly recommends that students take the ACCUPLACER and follow the results, but this policy is not strictly enforced. Thus, there was an organizational culture in place that afforded students the flexibility to enroll in any level of developmental courses, regardless of their placement score. For example, in 2007, a student placing into English 090, the lowest level of developmental English, could choose to enroll in English 098, the highest level of developmental English. Similarly, a student could place into Math 091, basic math, and choose to enroll in Math 096, an intermediate Algebra course.

There was a perspective among some of the interviewees that developmental English and math enrollment restrictions could impede student progress and success. The implication that mandating placement impedes student progression has also been supported by research; the more remedial courses a student is required to take decreases the likelihood of college persistence (Adelman, 2004; Attewell et al., 2006; Hawley & Harris 2005-2006). In contrast, some interviewees suggested that mandated placement actually improves student persistence outcomes. There is limited data to support either of

these positions; the institution has not explored the relationship between levels of development coursework and subsequent student success.

Based upon the interviews, implementing mandatory assessment and placement has been a controversial issue for decades at the institution being studied. The differences surrounding ACCUPLACER revolved around whether it influenced student success, but there was also attention placed on how it could affect the business aspects of the college. Mandating assessment and placement could alienate a segment of the student population seeking to attend the college for reasons other than to seek a degree or a certificate. For example, many students attend college for personal enrichment, recreational, vocational, and continuing education purposes. This could create an access issue, as well as oppose lifelong learning and workforce development missions. As a result, a loss of student enrollment could occur, negatively affecting institutional budgets. This institution may have chosen a policy of “highly recommended” assessment and placement into developmental education coursework, but did not require it because funding was driven by student enrollment.

The results of this study suggest organizational conflict. Internal organizational conflict is not a rare occurrence. In their book, *Reframing Organizations: Artistry, Choice, and Leadership*, Bolman and Deal (2008) indicated that most all groups, institutions, and organizations encounter conflict. The authors suggested this is because of differences in goals, perceptions, preferences, and beliefs. Furthermore, Bolman and Deal indicate, “conflict has a tendency to resurface again and again” (p.184). The organizational conflict found in these results revolved around the convergence of past and present philosophical viewpoints and practices. The concept of right to fail continues to

be an important consideration for faculty and administrators; however it was in direct opposition to the current student success model. A distinct vision of assessment and placement programming, as characterized by the institution's history of developmental education policy and practice, was not clearly defined within the organizational culture.

In his report, Collins (2009) indicated that too few states have clearly defined college readiness standards for K-12. "A logical first step toward decreasing the need for developmental education is reaching a common understanding of college readiness around which to align high school exit and college entrance requirements" (Collins, 2009, p. 4). The demographic profile of the students in this study included 86.3% of students in the cohort under the age of 19, suggesting that they were recent high school graduates. Furthermore, 64.5% of the cohort enrolled in at least one developmental education course during their first semester in college. This supports Collin's argument for the need for improved communication with K-12 of expectations for college readiness.

In June 2010, the chancellor of the state's higher education system established the Fresh Look at the State's Community Colleges Task Force for determining how the state's community colleges can meet the future needs of their communities. One recommendation of the task force was to "remake" remedial education, which is a goal consistent with past research. The task force report indicated that "there is a lack of alignment in courses between the state's high schools and colleges; high school students earning high grades in some subject areas find themselves unprepared for the follow-on college courses" (p. 10).

The state has also recently established a blueprint for K-12 educational reform, which included an initiative to develop college readiness standards for English Language

Arts and mathematics with the state system of higher education (Nevada's Promise, 2010). There is the potential to increase dramatically the number of students who are college-ready upon entrance into the community colleges directly following graduation from high school, through the implementation of these educational reforms in particular. A by-product could be increased persistence and degree completion rates for community college degree-seeking students.

Recommendations for Future Study

Developmental/remedial education has been a very significant component of higher education, as it addresses the foundational academic needs of underprepared students (Bettinger & Long, 2009). The community college mission to offer developmental education has provided millions of people the opportunity to enter college (McCabe, 2002). The literature reveals that the study of developmental education students and programming is critical. Despite the prevalence of students who take remedial courses at community colleges, there is surprisingly little definitive evidence on what makes for effective developmental education programming and practice (Bailey et al., 2008). This supports the need for further study.

This study examined initial course enrollment patterns of a 2007 student cohort. Since 2007, there have been three distinct policy changes for placement into developmental education. Therefore, it would be worthwhile to conduct a similar study to examine the impact of these policy changes in relation to student success. The evaluation of institutional policy is a critical step in the identification of institutional practices that improve student success outcomes.

Likewise, for comparative purposes, similar studies at community colleges where placement is mandatory are suggested. The residual effect of right to fail was evidenced at this institution, which had a relatively ambivalent policy toward placement. If the institution were to mandate assessment and placement, would that make a difference in the culture of the institution and persistence? The perception of what constitutes sound developmental education programming could be redefined with the implementation of mandatory services.

This study was conducted utilizing a cohort of first-time, full-time, degree-seeking students who enrolled at the institution in the 2007 Fall semester. The cohort was tracked for their persistence rates over a three-year period through the 2010 Spring semester. The results pertaining to research questions 2 through 6 did not support the research findings of other studies discussed in chapter 2. These results could be unique to this student cohort. Therefore, a longitudinal analysis replicating the quantitative portion of this study is recommended.

Implications for Practice

While colleges can have little impact upon the personal obstacles that challenge students, the literature suggests that federal, state and institutional initiatives and policies have the potential to make a positive difference in the educational outcomes of students. The state's higher education system invests heavily in developmental education. The costs associated with assessment instruments and the uncertainty surrounding the validity of the ACCUPLACER suggested that further investigation into the ACCUPLACER'S effectiveness at each one of the state's community colleges would be prudent. Furthermore, a great amount of institutional and state resources are required in order to

offer developmental English, math, and reading coursework for academically underprepared community college students. An ever increasing emphasis is being placed upon 3-year graduation rates and students in need of remediation are significantly less likely to persist when compared to students needing no remediation (Adelman 2004; Bailey, 2008). Thus, the results of this study suggested that a current review into developmental education programming, organization and policies would be a relevant course of action for the state higher education system.

Developmental education has been offered at the college under study for nearly four decades and thus, has a long-standing tradition at the college. However, through the course of this research, numerous questions emerged regarding the ideology, philosophical underpinnings and operational functions of assessment instrumentation and placement policy. The results of this study indicated the relevance of utilizing data-based decision making principles to address conflicting organizational values and the importance of building a shared vision. It was apparent that a need existed for members of the institution to work toward answering the question: what constitutes effective developmental education programming policy and practice?

Senge (1990) discusses the concept of shared vision. “Shared vision refers the ability of a group to form and hold a common picture of a desired future that its members seek to create” (Senge, 1990, p. 9). Significant modifications are projected for the future operations of community colleges in the state. In particular, there are methodological changes slated to address how developmental education is provided for community college students. Therefore, it would be prudent for members of the college to open a dialogue using specific symposiums with the intention of promoting a shared vision of

developmental education programming, practices, and policy. Then upon the development of that vision and related policies, an evaluation system that assures practices maximize student persistence could be aligned with educational outcomes particular to advancing the institution's mission.

Summary

The purpose of this single institutional mixed methods study was to explore the relationship between student persistence rates and developmental education policy. Specifically, this study examined how assessment testing, placement policy, institutional practice, and initial course enrollment patterns related to student success. Interviews of seven key administrators and faculty were conducted to provide a historical context for the college's placement policies and practices. Throughout the interviews, two themes emerged institutional struggle with the right to fail philosophy and ambivalence towards/questioning of the validity of assessment testing instruments. The academic transcripts of 299 students comprising the 2007 Fall cohort were analyzed. The Chi Square Test indicated that there were no statistically significant differences between groups as determined by selected independent and dependent variables. Overall, the quantitative results of this research study did not support the research findings of other studies.

References

- Adelman, C. (2004). *Principal indicators of student academic histories in postsecondary education, 1972-2000*. Washington, DC: U.S. Department of Education, Institute of Education Sciences.
- Adelman, C. (2005). *Moving into town—and moving on: The community college in the lives of traditional-age students*. Washington, DC: U.S. Department of Education.
- Achieving the Dream, (2010). *About achieving the dream* [website]. Retrieved from <http://www.achievingthedream.org/aboutatd/default.tp>
- ACT, (2010). *National collegiate retention and persistence to degree rates* [Website]. Retrieved from http://www.act.org/research/policymakers/pdf/retain_2010.pdf
- American Association of Community Colleges, (2010). *American association of community colleges* [Website]. Retrieved from <http://www.aacc.nche.edu/Pages/default.aspx>.
- Astin, A. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence on college remediation. *Journal of Higher Education*, 77(5), 886-924.
- Bahr, P. (2010). Revisiting the efficacy of postsecondary remediation: The moderating effects of depth/breadth of deficiency. *The Review of Higher Education*, 33(2), 177–205.

- Bailey, T. R. (2008). *Rethinking the role and function of developmental education in the community college* (CCRC brief No. 40). New York, NY: Community College Research Center, Teachers college, Columbia University. Retrieved from <http://ccrc.tc.columbia.edu/Publication.asp?UID=672>
- Bailey, T. R., & Alfonso, M. (2005). *Paths to persistence: An analysis of research on program effectiveness at community colleges*. Indianapolis, IN: Lumina Foundation for Education.
- Bailey, T. R., Jeong, D. W., & Cho, S. W. (2008). *Referral, enrollment, and completion in developmental education sequences in community colleges* (CCRC Working Paper No. 15). New York, NY: Community College Research Center Teachers College, Columbia University.
- Bailey, T. R., Leinbach, T., & Jenkins, D. (2005). *Community college low-income and minority student completion study: Descriptive statistics from the 1992 high school cohort*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Barbe, W. (1951). Reading-improvement services in colleges and universities. *School and Society*, 74(1907), 6-7.
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485-540.
- Bean, J. P., & Metzner, B. S. (1987). The estimation of a conceptual model of nontraditional undergraduate student attrition. *Research in Higher Education*, 27(1), 15-38.

- Berk, R. A., (2003) *Regression analysis: A constructive critique*. Newbury Park, CA: Sage Publications.
- Best, J. W., & Kahn, J. V. (2006). *Research in education* (10th ed.). Boston, MA: Pearson Education
- Bettinger, E. P., & Long, B. T. (2009). Addressing the needs of underprepared students in higher education: Does college remediation work? *The Journal of Human Resources*, 44(3), 736-771.
- Bogdan, R., & Biklen, S. K. (2003). *Qualitative research for education: An introduction to theory and methods* (4th ed.). Boston, MA: Allyn and Bacon.
- Bolman & Deal, (2008). *Reframing organizations: Artistry, choice, and leadership*. San Francisco, CA: Josey-Bass.
- Bonham, B., & Bliss, L. (1994). Characteristic components of developmental programs. *Research in Developmental Education*, 11(1), 1-4.
- Boudreau, C. A., & Kromrey, J. D. (1994). A longitudinal study of the retention and academic performance of participants in a freshman orientation course. *Journal of College Student Development*, 45, 444-449.
- Boyer, (2005). College student persistence of first-time freshmen at a mid-western university: A longitudinal study. *Research for Educational Reform*, 10(1), 16-27.
- Boylan, H. R. (2002). *What works: A guide to research-based best practices in developmental education*. Boone, NC: Appalachian State University, Continuous Quality Improvement Network and National Center for Developmental Education.

- Boylan, H. R. (2009). Targeted interventions for developmental education students. *Journal of Developmental Education, 32*(3), 14-23.
- Boylan, H., & Bliss, L. (1997). Program components and their relationship to student performance. *Journal of Developmental Education, 20*(3), 2-8.
- Bradburn, E. M. (2002). *Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996–98* (NCES 2003-153). Washington, DC: U.S. Department of Education Office of Educational Research and Improvement.
- Brooks-Leonard, C. (1991). Demographic and academic factors associated with first-to-second- term retention in a two-year college. *Community/Junior College Quarterly, 15*, 57-69.
- Burke, J. C. (Ed.). (2005). *Achieving accountability in higher education: balancing public, academic, and market demand*. San Francisco: Jossey-Bass.
- Calcagno, J., & Long, B. (2008). *The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance*. New York, NY: National Center for Postsecondary Research
- Cofer, J. & Somers, P. (2000). Within-year persistence of students at two-year colleges. *Community College Journal of Research and Practice, 24*(10), 785-807.
- Cofer, J., & Somers, P. (2001). What influences student persistence at two-year colleges? *Community College Review, 29*(3), 56-76.
- Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4th ed.). San Francisco, CA: Jossey-Bass.

- Collins, M. L. (2009). *Setting up success in developmental education: How state policy can help community colleges improve student outcomes* (Achieving the Dream Policy Brief, 2009). Boston, MA: Jobs for the Future. Retrieved from <http://www.achievingthedream.org/aeb219f8-58b2-43fb-8cf7-ee42a3dee72a.asset>
- Consortium for Student Retention Data Exchange. (2009). *Consortium for student retention data exchange* [Website]. Retrieved from <http://csrde.ou.edu/web/index.html>.
- Creswell, J. W. (2002). *Research design qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Day, J. C., & Newburger, E. C. (2002). *The big payoff: Educational attainment and synthetic estimates of work-life earnings*. Retrieved from <http://www.census.gov/prod/2002pubs/23-210.pdf>
- Deegan, W. L., Tillery, D., & Associates (1985). *Renewing the community college: Priorities and strategies for effective leadership*. San Francisco. Jossey-Bass.
- Derby, D. C. (2007). Predicting degree completion: Examining the interaction between orientation course participation and ethnic background. *Community College Journal of Research and Practice*, 31(11), 883-894.
- Donnelly, C., & Van Doren, L. H. (1971). *State Plan for Community Colleges in the State of Nevada*. Report prepared by The Community College Division of the University System.

- Dougherty, K., & Hong, E. (2006). Performance accountability as imperfect panacea: The community college experience. In T. Bailey & V. S. Morest (Eds.), *Defending the community college equity agenda* (pp. 51-86). Baltimore, MD: Johns Hopkins University Press.
- Dougherty, K. J., & Reid, M. (2007). *Fifty States of achieving the dream: State policies to enhance access to and success in community colleges across the United State*. New York, NY: Community College Research Center Teachers College, Columbia University. Retrieved from http://www.achievingthedream.org/images/index03/DoughertyReid_Fifty_State_sofPolicy4907.pdf
- Dougherty, K., & Townsend, B. K., (2006) Community college missions: A theoretical and historical perspective. *New Directions for Community Colleges*, Winter2006(136), 5-13.
- Edgecombe, N. (2011). *Accelerating the academic achievement of students referred to developmental education* (CCRC Brief No. 55). New York, NY: Community College Research Center, Teachers College, Columbia University
- Educational Needs Index (2008). *Educational Needs State Report, Nevada*. Sponsored by Lumina Foundation for Education. Retrieved from <http://www.educationalneedsindex.com/reports-publications-v2.php>
- Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review*, 36(2), 68-88.

- Gerlaugh, K., Thompson, L., Boylan, H., & Davis, H. (2007). National study of developmental education II: Baseline data for community colleges. *Research in Developmental Education, 20*(4), 1-4.
- Griffith, A. S. (2011). Educational attainment: A model for maximizing earnings of the nontraditional student. *Journal of Continuing Higher Education, 59*(2), 85-91.
- Hagedorn, L. S. (2005). Square Pegs. *Change 37*(1), 22-29.
- Hauptman, H. (2007). *Strategies for improving student Success in postsecondary education*. Boulder, CO: WICHE Publications, Papers and Reports Retrieved from [www.http://wiche.edu/](http://wiche.edu/)
- Hawley, T. H., & Harris, T. A. (2005-2006). Student characteristics related to persistence for first-year community college students. *Journal of College Student Retention, 7*(1-2), 117-142.
- Hughes, K. L., & Scott-Clayton, J. (2011). *Assessing developmental assessment in community colleges* (CCRC Working Paper No. 19, Assessment of Evidence Series). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Iffert, R. E. (1958). *Retention and withdrawal of college students*. Washington, DC: U.S. Department of Health, Education, and Welfare.
- Institutional Research. (2010). [Research conducted at the institution].
- Jenkins, D. (2006). Institutional effectiveness and student success: A study of high- and low-impact community colleges. *Journal of Community College Research and Practice, 5*(3), 199-210.

- Johnson, B., & Christianson, L. (2000). *Educational research: Quantitative and qualitative approaches*. Boston, MA: Allyn & Bacon.
- Kelly, P. J., (2005). *As America becomes more diverse: The impact of state higher education inequality*. Boulder, CO: National Center for Higher Education Management Systems. Retrieved from <http://www.higheredinfo.org/raceethnicity/InequalityPaperNov2005.pdf>
- Kolajo, E. (2004). From developmental education to graduation: A community college experience. *Community College Journal of Research and Practice*, 28(5), 365–371.
- Kozeracki, C. A., (2002). Issues in developmental education. *Community College Review*, 29(4), 83-100
- Lenning, O. T., Beal, P. E., & Sauer, K. (1980). *Retention and attrition: Evidence for action research*. Boulder, CO: National Center for Higher Education Management Systems.
- Leppel, K. (2002). Similarities and Differences in the College Persistence of Men and Women. *The Review of Higher Education*, 25(4), 433-450.
- Mattern, K. D., & Packman, S. (2009). *Predictive validity of ACCUPLACER® scores for course placement: A meta-analysis* (Research Report No. 2009-2). New York, NY: College Board. Retrieved from: http://professionals.collegeboard.com/profdownload/pdf/09b_765_PredValidity_WEB_091124.pdf

- McCabe, R. H., & Day, P. (1998). *Developmental education: A twenty-first century social and economic imperative*. Mission Viejo, Calif.: League for Innovation in the Community College.
- McCabe, R. H. (2000). *No one to waste: A report to public decision-makers and community college leaders*. Washington, DC: Community College Press.
- McIntosh M., & Rouse, C. (2009). *The other college: Retention and completion rates among two-year college students*. Washington, DC: Center for American Progress. Retrieved from http://www.americanprogress.org/issues/2009/02/pdf/two_year_colleges.pdf
- McNeely, J. H., (1937). *College student morality* (Bulletin No. 11). Washington, DC: U.S. Office of Education, U.S. Government Printing Office.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.
- Mohammadi, J. (1996). Exploring retention and attrition in a two-year public community college. *VCCA Journal*, 10(1), 39-50.
- Morante, E. A. (1989). Selecting tests and placing students. *Journal of Developmental Education*, 13(2), 2-6.
- National Center for Educational Statistics, (2010). *Fast facts: Postsecondary education enrollment* [Electronic version]. Retrieved from [www.http://nces.ed.gov/](http://nces.ed.gov/)
- Nevada Career Information System, (2009). *Nevada career information system* [Website]. Retrieved from <http://www.nevadaworkforce.com/cgi/career>.
- Nevada's Promise. (2010). *Nevada's promise: excellence, rigor, and equity* [Website]. Retrieved from <http://www.nevadaracetothetop.org/>

- Nevada System of Higher Education (2011). *Fresh look at Nevada's community colleges task force* (Report to Chancellor Daniel Klaich). Reno, NV. Retrieved from <http://system.nevada.edu/tasks/sites/Nshe/assets/File/BoardOfRegents/Agendas/1/sept/main/BOR-11.pdf>
- Nippert, K. (2000-2001). Influences on the educational degree attainment of two-year college students. *Journal of College Student Retention*, 2(1), 29–40.
- Noel, L., Levitz, R., & Saluri, D. (Eds.). (1985). *Increasing student retention: Effective programs and practices for reducing the dropout rate*. San Francisco, CA: Jossey-Bass.
- O'Gara, L., Karp, M., & Hughes, K. (2009). Student success courses in the community college: An exploratory study of student perspectives. *Community College Review*, 36(3), 195-210.
- Organisation for Economic Co-operation and Development (2008). *Education at a glance, 2008 OECE indicators* [Website]. Retrieved from http://www.oecd.org/document/9/0,3746,en_2649_39263238_41266761_1_1_1_1_00.html
- Owens, R. T. (2003). Retention implications of a relationship between age and GPA. *College Student Journal*, 37(2), 181-189.
- Parr, F. W. (1930). The extent of remedial work in state universities in the United States. *School and Society*, 31(799), 547-548.

- Pascarella, E. T., Smart, J. C., & Ethington, C. A. (1986). Long-term persistence of two year college students. *Research in Higher Education*, 24(1), 47-71.
- Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education*, 51(1), 60-75.
- Pascarella, E., & Terenzini T. (2005). *How college affects Students: A third decade of research* (Vol. 2). San Francisco, CA: Jossey-Bass.
- Perin, D. (2005). Institutional decision making for increasing academic preparedness in community colleges. *New Directions for Community Colleges*, 129(1), 27-38.
- Price, D. V., & Roberts, B. (2008-2009). *Improving student success by strengthening developmental education in community colleges: The role of state policy* [Policy brief Winter 2008-2009]. Washington, DC: Working Poor Families Project.
- Retrieved from
http://www.workingpoorfamilies.org/pdfs/WPFP_policybrief_winter08-09.pdf
- Provasnik, S., & Planty, M. (2008). *Community colleges: Special supplement to the condition of education 2008* (NCES 2008-033). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Rai, N. (2008). *Shaping Nevada's future: What the state can do to invest in college access and success* [A report by the Institute for Higher Education Policy]. Washington, DC: Institute for Higher Education Policy. Retrieved from
<http://system.nevada.edu/tasks/sites/Nshe/assets/File/Publications/ShapingNevadasFutureRpt.pdf>

- Roueche, J. E., & Roueche, S. D. (1999). *High stakes, high performance: Making remedial education work*. Washington, DC: Community College Press.
- Roueche, J. E., & Snow, J. J. (1977). *Overcoming learning problems: A guide to developmental education in college*. San Francisco, CA: Jossey-Bass
- Roueche, J. E., & Wheeler, C. (1973). Institutional procedures for the disadvantaged. *Improving College and University Teaching*, 21(4), 222-225.
- Rounds, J. C., & Andersen, D. (1985). Placement in remedial college classes: Required vs. recommended. *Community College Review*, 13(1), 20-27.
- Salkind, N. (2000). *Exploring research*. Upper Saddle River, NJ: Prentice Hall.
- Schnell, C. A., & Doetkott, C. D. (2002-2003). First year seminars produce long-term impact. *Journal of College Student Retention*, 4(4), 377-391.
- Seidman, A. (2005). *College student retention: Formula for student success*. Westport, CT: ACE/Praeger.
- Senge, P. (1990). *The fifth discipline: The art and practice of a learning organization*. New York, NY: Currency Doubleday
- Shulock, N. & Moore, C. (2007). *Rules of the game: How state policy creates barriers to degree completion and impedes student success in the California Community Colleges*. Sacramento, CA: Institute for Higher Education Leadership & Policy, California State University, Sacramento.
- Shults, C. (2001). *Remedial education: Practices and policies in community colleges* (Executive summary, Research Brief AACC-RB-00-2). Washington, DC: American Association of Community Colleges.

- Sorey, K. C., & Duggan, M. H. (2008). Differential predictors of persistence between community college adult and traditional-aged students. *Community College Journal of Research and Practice*, 32(2), 75-100.
- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1, 64-85.
- Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model. *Interchange*, 2, 38-62.
- Spellings Report, (2006). *A test of leadership: Charting the future of U.S. higher education* [A report of the commission appointed by Secretary of Education Margaret Spellings]. Washington, DC: U.S. Department of Education. Retrieved from <http://www2.ed.gov/about/bdscomm/list/hiedfuture/reports/pre-pub-report.pdf>
- Sprinthall, R. C. (2003). *Basic statistical analysis* (7th ed.). Boston, MA: Allyn and Bacon.
- Strauss, L. C., & Volkwein, F. J. (2004). Predictors of student commitment at two-year and four-year institutions. *Journal of Higher Education*, 75(2), 203-227.
- Strong American Schools. (2008). *Diploma to nowhere*. Retrieved from [www.http://www.edin08.com/](http://www.edin08.com/)
- Summers, M. D. (2003). ERIC review: Attrition research at community colleges. *Community College Review*, 30(4), 64-84.

- Swail, W. (2004). *The art of student retention: A handbook for practitioners and administrators*. Educational Policy Institute. Texas Higher Education Coordinating Board 20th Annual Recruitment and Retention Conference Austin, TX June 21, 2004.
- The Nevada System of Higher Education, (2010). Retrieved from [www.http://system.nevada.edu/](http://system.nevada.edu/)
- Thornton, J. (1972). *The community junior college* (3rd ed.). New York, NY: Wiley.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *A Review of Educational Research*, 65, 89-125.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: The University of Chicago Press.
- Tinto, V. (2006-2007). Research and practice of student retention: What next? *Journal of College Student Retention*, 8(1), 1-19.
- Townsend, B. K., & Barnes, T. (2001). Tying transfer to type of associate degree: A tangled knot. *Journal of Applied Research in the Community College*, 8 (2), 125-133.
- Townsend, B. K., Donaldson, J., & Wilson, T. (2004). *Marginal or monumental? Visibility of community colleges in selective higher education journals*. Paper presented at the Conference of the Council for the Study of Community Colleges, Minneapolis, MN.

- U.S. Bureau of the Census. (1984). *Projections of the population of the United States, by age, sex, and race:1983 to 2080* [Current Population Reports, Series P-25, No. 952] Washington, DC: U.S. Government Printing Office. Retrieved from <http://www.census.gov/>
- U.S. Census Bureau, (2009). Information retrieved at <http://www.census.gov/>.
- Wachen, J., Jenkins, D., & Van Noy, M. (2010). *How I-BEST works: Findings from a field study of Washington State's integrated basic education and skills training program*. New York, NY: Community College Research Center, Teachers college, Columbia University. Retrieved from <http://ccrc.tc.columbia.edu/Home.asp>
- Walleri, D. R. (1981). *Student retention and attrition in the community college: A review and research design* [ERIC Document No. ED 210064]. Gresham, OR: Oregon Community College Deans of Students Consortium, Oregon State Department of.
- Wellman, J. V., (2002). *State policy and community college—baccalaureate transfer* [Report No 02-6]. Washington, DC: The National Center for Public Policy and Higher Education and the Institute for Higher Education Policy.
- Wild, L. & Ebbers, L. (2002). Rethinking student retention in community colleges. *Community College Journal of Research and Practice*, 26(5), 503- 519.
- Windham, P. (1995). *The relative importance of selected factors to attrition at public community colleges* [ERIC Document No. ED 373833).
- Yin, R. K. (2003). *Case study research design and methods*. Thousand Oaks, CA: Sage Publications.

Zachry, E. M. (2008). *Promising instructional reforms in developmental education: A case study of three achieving the dream colleges*. New York, NY: MDRC.

Zeidenberg, M., Jenkins, D., & Calcagno, J. C. (2007). *Do student success courses actually help community college students succeed?* [CCRC Brief No. 36]. New York, NY: Community College Research Center Teachers College, Columbia University.

Zeitlin, A. N., & Markus, T. C. (1996). Should remediation be mandatory in the community college? *Community Review*, 14, 27–33.

Zhai, L., & Monzon, R. (2004). *Community college student retention: Student characteristics and withdrawal reasons*. Paper presented at the 2001 California Association of Institutional Research Annual Conference, Sacramento, CA.

Appendix A

Personal Interview Questions

From your understanding, what is the purpose of developmental education at the college?

Why do you believe developmental education is important?

Walk me through time, could you describe the history of developmental education/policy at the college? Where did it begin? How has it changed? Who or what groups have influenced the changes; faculty, administrators, the system of higher education?

From your perspective, what are the societal and organizational influences that guide developmental education policy at the college? Would you describe the organizational processes that drive the implementation of developmental education policy?

What do you believe are the benefits and or drawbacks of mandated assessment and placement? Could you describe why accurate assessment and placement are important?

Today, the college highly recommends students to take the ACCUPLACER assessment for appropriate placement in English, math and or reading coursework. Has assessment testing always been highly recommended? If not, at what point in the college's history did it become highly recommended? From your understanding, why did this occur?

Who influenced the change; faculty, administrators, the system of higher education?

Has the college always utilized the ACCUPLACER assessment for placement? If not, what assessment test was utilized prior to the ACCUPLACER? Was there a time when no assessment instrument was utilized? If so, how did the college place students into developmental English, math and or reading coursework?

In 2009, the college instituted registration blocks on developmental math courses. This is a stark change in developmental education policy as it relates to placement. Prior to this date, students placing into lower level developmental math courses could choose to enroll in higher level developmental math courses. From your understanding, why and how did this change occur and who influenced it?

Unlike the math department, the English department hasn't instituted registration blocks on developmental English courses. From your perspective, could you describe the rationale behind this? Would you describe the English department's viewpoint on requiring developmental English course placement based upon assessment results?

Could you describe the differences between the English and math departments, as they relate to instituting registration blocks on developmental education courses?

Could you describe the history of reading coursework at the college? What is your viewpoint on requiring reading courses based upon assessment results? What do you believe are the benefits for students?

What are the benefits to students of enrolling in college student success skills coursework?