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Identifying Best Practices for Student Success in Developmental Education in Georgia

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IDENTIFYING BEST PRACTICES FOR STUDENT SUCCESS IN
DEVELOPMENTAL EDUCATION IN GEORGIA

by

RODNEY B. CARR

(Under the Direction of Teri Denlea Melton)

ABSTRACT

Two-year colleges have long enrolled students who are academically underprepared. A key component of the mission of the two-year college is open-access. This overarching mission drives more than 60% of enrollment in developmental education. The national successful completion rate of required developmental education coursework is less than 60%. This study identifies institutions within the University System of Georgia with more than 60% of total student enrollment in developmental education and with an overall successful completion rate of more than 60% as well as the practices that guide these developmental education programs. Two highly effective institutions (HEI) were identified and evaluated on administrative and organizational components, instructional practices, and student support services that led to student success.

INDEX WORDS: Developmental education, Research-based best practices in developmental education

IDENTIFYING BEST PRACTICES FOR STUDENT SUCCESS IN
DEVELOPMENTAL EDUCATION IN GEORGIA

by

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Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

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May 2012

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DEVELOPMENTAL EDUCATION IN GEORGIA

by

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May 2012

DEDICATION

I would like to dedicate my education and this dissertation to my father Gene Carr. He never asked for much, but he did ask that I finish college. He and my mother graciously and sacrificially paid for my undergraduate degree. But my one regret is that my father passed away before I graduated the first time.

I am not sure if this is what he meant, this is for you dad, I finished.

ACKNOWLEDGMENTS

It is often said to be careful when you say thank you because you may leave someone out. However, I must throw caution to the wind and express my unyielding gratitude to several individuals.

First, Dr. Teri Ann Melton, I am certain words will fall short; however, I will attempt to express my deeply sincere gratitude for your life changing inspiration that has literally changed my career path. It is not very often a person gets a glimpse of someone driven by passion. I have witnessed an incredibly inspiring passion in how you conduct your life. Your willingness to invest in your students is not simply awe inspiring but envelopes those around you. Thank you for igniting a passion in me to develop and invest in others. Thank you for the countless hours you have spent trying to guide perhaps your most stubborn student. Thank you for being a selfless educator of future leaders.

Second, I would like to acknowledge three men who have allowed me time to pursue this doctoral degree and have met with me each step of the way to keep me on track and to provide a push when needed. Thank you Dr. Richard Federinko for saying, “aim much higher, Chief,” telling me to pursue a terminal degree, and assisting me in enrolling. Thank you Dr. Mike Stoy for the countless times you encouraged me to keep writing. Thank you Dr. Richard Carvajal for having the willingness to take a chance and for being a source of encouragement and inspiration. I must also mention John McElveen, a dear friend who has helped in numerous ways.

I mention this group last, on purpose. Thank you to my family: to my mom who paid for the first round of my education; to my three children, Morgan, Allison, and Caleb, who endured my countless hours spent in class and in research; last to my

wonderful wife who knows me better than anyone and who has been a constant source of encouragement and reality. Lorre, I love you deeply. Thank you for earning this with me.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	6
LIST OF TABLES	8
LIST OF FIGURES	9
CHAPTER	
1. INTRODUCTION	11
Problem Statement	13
Research Questions	14
Importance of the Study	15
Procedures	16
Problem Statement Limitations, Delimitations, and Assumptions	18
Definition of Key Terms	18
2. REVIEW OF LITERATURE.....	21
History and Mission of Community College	24
Implications of Open Access to Post-Secondary Education	27
Profile of Entering Students	28
Developmental Instruction in Community Colleges	30
Effectiveness and Assessment of Developmental Education: National Perspective	35
National Best Practices for Student Success in Developmental Education	39
State Reviews of Developmental Education, Texas	47
Developmental Education in Georgia Two-year Colleges	51
Directions for Further Research	52

Chapter Summary	53
3. METHOD.....	55
Introduction	55
Research Questions.....	56
Research Design	56
Rationale for Case Study.....	58
Population, Sample, and Sampling	61
Instrumentation	63
Data Collection.....	64
Data Analysis	67
Reporting the Data.....	70
4. FINDINGS	74
Introduction	74
Research Design	75
Respondents	76
Findings.....	84
Organizational and Administrative Structures that Contribute to Success	86
Curriculum, Instructional Strategies, and Support Services	92
Summary	104
5. APPLICATION OF FINDINGS	109
Summary	109
Importance of the Study.....	111
Methods.....	112
Limitation, Delimitations, Assumptions	114

Analysis of Findings	114
Discussion of Findings.....	117
Comparison of National Best Practices	119
Conclusions	139
Recommendations and Implications for Practice	140
Implications for Further Research	141
Dissemination	143
REFERENCES.....	144
APPENDICES	
A SURVEY QUESTIONS.....	154
B FACE-TO-FACE INTERVIEW QUESTIONS	158
C CONSENT FORM.....	159
D QUALITATIVE ANALYSIS PROCESS FOR INTERVIEW TRANSCRIPTS	161

LIST OF TABLES

Table

4.1. Institutional Developmental Education Cohort Enrollment	76
4.2. Institutional Developmental Education Completion Rates	77
4.3. Demographic Data HEI-A	79
4.4. Demographic Data HEI-B.....	80
4.5. National Demographic Data.....	81
4.6. NCES National Race/ethnicity Data.....	82

CHAPTER 1

INTRODUCTION

The institution of higher education has long been a stable constant in American life. American higher education has literally helped build the foundation of this great nation. Higher education was once only accessible by the social elite and the wealthy; this environment created an academic superiority that excluded many citizens of the new world and created class separation. However, by the mid-1900s, with many of the barriers to a quality higher education having been eliminated, the post-secondary degree became a springboard to developing leadership positions.

Currently more than 80% of U.S. citizens believe a person should have access to higher education, and the desire to obtain higher education has grown (Attewell et al., 2006). This is truly a paradigm shift. Higher education is no longer thought of as a right for those of upper socioeconomic status; instead, it is thought to be a right, accessible by those who have the desire to obtain an education. The ability to access higher education opens the door to opportunities afforded by college education. The current economic crisis has further contributed to the paradigm shift. However, the desire for a college education and the right to access one creates a larger academic issue: Not every high school graduate is academically prepared for enrollment in a four-year institution.

According to the National Center for Educational Statistics (1996), slightly more than half of the graduating seniors had taken the essentials of a college preparatory curriculum; meaning slightly less than half did not take the academic courses necessary to prepare for higher education. Often, under-prepared students will need a bridge between high school and a four-year college curriculum; this bridge is frequently found at

a two-year institution. The need for students to obtain more knowledge prior to entering a four-year college/university is not a new phenomenon. In fact, the University of Michigan established the first two-year institution in the form of a college preparatory academy in the summer of 1848. Currently, more than 45% of students entering higher education will enter via a two-year institution (Marcus, 2005).

Two-year colleges provide an access point to higher education for many students in the United States who otherwise might not have access. Greene and Foster (2003) found that only 32% of students who graduate from high school are minimally prepared for higher education. The lack of academic preparation is one of the greatest challenges for students from a low socio-economic background (Bettinger & Long, 2007). Over the past decade, enrollment in two-year colleges has increased by more than 10%, and now more than 45% of undergraduates attend a two-year college (Marcus 2005).

A two-year institution is often referred to as a community college or a junior college. While these terms are used interchangeably, they are not the same in terms of mission and admission. Boss (1982) defined two-year colleges as open-door admission institutions or access mission institutions. In other words, two-year institutions admit the vast majority of applicants. Almost half of college-level students will enroll at a two-year college first. This population has many and varied needs, not the least of which is academic preparation, which often comes in the form of remediation.

According to Boylan (1999), 25% of all students who enter into higher education will take at least one developmental course. For students attending two-year institutions, the statistics are even more alarming, with approximately 60% of these students requiring remediation in the form of coursework. “The demand for developmental courses has

increased rapidly in recent decades, especially at community colleges, which have opened their doors to all students whatever their level of academic preparedness” (Levin & Calcagno, 2008, p. 1).

In Georgia, for fall 2008 (the most current data available at this time), 18,442 students were enrolled in two-year institutions throughout the state. Of those, 10,512 (57%) were enrolled in developmental courses at great expense to the state and federal governments, as well as the students. While there is a strong link between completion of developmental coursework and degree completion (Attewell et al., 2006), little research has been conducted in Georgia regarding the effectiveness of developmental coursework in moving students from developmental to college-level coursework. Therefore, a study of best practices in Georgia and comparison of those practices to national research-based best practices is critical to the future of developmental education in the University System of Georgia.

Problem Statement

Two-year colleges offer access to higher education to students who otherwise might not be offered an opportunity to expand their educational knowledge base. Unfortunately, many of these students come to the two-year institution lacking the academic preparation to be successful, which has resulted in a large population enrolled in developmental or academic support coursework. This developmental coursework comes at great expense in terms of time and money to a variety of constituents.

Reporting mechanisms indicate that completion rates for developmental coursework are extremely low. While some research has explored effective developmental programs, little to no research has been conducted in Georgia, which

hosted 18,442 first-time enrolled freshman students for fall 2008, in which a reported 9,851 students, slightly more than 50%, were enrolled in remedial courses.

While a research-based best practices study was conducted in Texas, other states, including Georgia, have not requested or attempted a review of developmental programs. Simply stated, research on effective developmental programs in two-year institutions that have a higher completion rate than other institutions is truly nonexistent in Georgia. In addition, there has been no analysis or evaluation of two-year institutions in Georgia identified as having more effective developmental programs.

This gap in the research demonstrates the neglectful response to a rising crisis in higher education. Enrollment continues to rise in developmental programs, yet the effectiveness of these programs is not being assessed nor has it been evaluated. Therefore, the purpose of this study is to identify two-year higher education institutions in Georgia with at least 60% of entering students enrolling in at least one academic support course and with at least a 60% successful completion rate of academic support coursework, and to evaluate the identified programs in terms of faculty, curriculum, and support resources offered to students who require remedial coursework.

Research Question

The overarching research question that guides this study is: What are the factors that contribute to student success in terms of completion of developmental coursework at two-year colleges in Georgia?

In order to answer this question, it was necessary to identify two-year higher education institutions in Georgia with at least 60% of entering students enrolling in at least one academic support course and with at least a 60% successful completion rate of

academic support coursework. Once these institutions were identified, the researcher investigated the practices of the successful institutions in terms of remediation completion. Characteristics examined included faculty, curriculum, and support resources. Three sub-questions were used to support the overarching research question and enhance exploration of the factors that contribute to successful student completion of academic support coursework:

1. What organizational and/or administrative structures contribute to student success for students enrolled in developmental education programs?
2. What curriculum and instructional strategies contribute to successful completion of the development education curriculum?
3. What support resources offered to students enrolled in developmental education programs contribute to success?

Importance of the Study

The two-year colleges in the University System of Georgia have enrolled more than 120,000 students in remedial coursework over the past 10 years. Completion rates have averaged, for the most part, less than 50%, meaning that more than 60,000 students did not successfully complete developmental requirements and did not continue toward degree completion. Research on effective developmental programs in two-year institutions that have a higher completion rate than other institutions is almost non-existent and truly nonexistent in Georgia. In addition, there has been no analysis or evaluation of two-year institutions in Georgia identified as having more effective developmental programs. This gap in the research demonstrates the neglected response to a rising crisis in higher education. Enrollment in developmental programs continues to

increase yet the effectiveness of these programs is not being assessed nor has it been evaluated.

This study will not impact just retention for two-year institutions; it will also impact the state's economy. College degree holders have greater earning potential. Degree completion increases the value of human capital by increasing the earning and spending potential of each successful student. Industry, technology, service arenas, and governmental agencies all benefit from an educated workforce.

Procedures

The method selected for this research was a sequential case study. Quantitative data identified institutions with the highest completion rates, and clearly defined the number of students enrolled in developmental coursework. The qualitative aspect of the research identified defined practices and allowed open and thorough responses to the research questions. Case study design answers the question of how or why. At the heart of this study is the question: How are identified institutions retaining more underprepared students through developmental coursework leading to college-level coursework.

The study replicated the Texas study conducted by Saxon and Boylan in 2005. Therefore, this study used a combination of qualitative and quantitative data based on numerical data provided by the University System of Georgia and information gathered from responses to a qualitative instrument from two-year institutions that demonstrate success in developmental coursework. Interviews with directors, coordinators, and faculty from two-year colleges with successful developmental programs provided substantial data, not just enrollment and success data, but also information about aspects of the programs that have proven successful.

The research used a sequential case study approach utilizing quantitative methods to identify institutions that met enrollment and completion criteria, and qualitative methods to identify the factors that influence the success of those institutions. The researcher accessed and analyzed enrollment data for the 16 two-year units in the University System of Georgia. The researcher calculates the overall percentage of enrollment in developmental education to identify institutions with at least 60% of total student enrollment in at least one developmental course. To be considered successful in terms of developmental programming, an institution must show that at least 60% of students enrolled in developmental coursework complete all required coursework.

Data needed for this analysis were housed in a publicly accessible database archived at the University System of Georgia central office. Institutions with a successful completion rate of 60% were identified as candidates for the study

Once successful institutions were identified, the researcher utilized a qualitative methods approach to evaluate each institution's developmental program using Boylan and Bonham's (2011) survey for evaluation of developmental programs and the survey questions used by Dr. Boylan and Dr. Saxon for the Texas study.

Limitations, Delimitations, and Assumptions

As with many studies, this research was conducted only within a specified geographic region, Georgia; therefore, it could be argued that the results in developmental education may differ in the study and may not be generalizable to all two-year colleges within the United States. Additionally, the research was limited to developmental coursework that is below college credit level coursework in reading,

English, and math at the two-year college-level. These courses are regularly referred to as developmental courses, remedial courses, or learning support courses.

The research was delimited to two-year colleges. Four-year colleges and universities that offer developmental courses were not included in this research. The research was drawn from 16 two-year colleges in Georgia that met study criteria.

The researcher assumes that the survey instrument used to collect the qualitative data measures the requested data accurately and that the instrument is reliable and valid as stated by the developer, Boylan (1999) of the National Center for Developmental Education. The researcher assumed that answers provided in responses to the survey were honest and accurate.

Definition of Key Terms

Two-year college. A two-year college is an institution of higher education that offers associate degrees and certificates for workforce development. Two-year colleges have an access mission and may offer limited four-year degrees. Two-year colleges are also referred to in the literature as junior colleges and or community colleges.

Student success. For the purposes of this study, student success is defined as the completion of all required developmental coursework by passing the COMPASS exit exam as required by the University System of Georgia.

Remediation. For the purpose of this study, remediation is defined as the level of coursework offered at a two-year institution that precedes college-level coursework in math, reading, and English. Remediation is also referred to in the

literature as learning support courses, developmental courses, and remedial courses.

Developmental courses. Developmental courses are courses offered at a two-year college that are not granted college-level credit and are numbered below the 100 or 1,000 mark. For example, English 097, 098, 09; math 097, 098, 099; and reading 097, 098, 099.

CHAPTER 2

REVIEW OF THE LITERATURE

The institution of higher education has long been a stable constant in American life. American higher education has literally helped build the foundation of this great nation. Higher education was once only accessible by the social elite and the wealthy; this environment created an academic superiority that excluded many citizens of the new world and created class separation. However, by the mid-1900s, with many of the barriers to a quality higher education having been eliminated, the post-secondary degree became a springboard to developing leadership positions.

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remediation in the form of coursework. “The demand for developmental courses has increased rapidly in recent decades, especially at community colleges, which have opened their doors to all students whatever their level of academic preparedness” (Levin & Calcagno, 2008, p. 1).

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This review of the literature regarding developmental education discusses three main topics: the history and mission of two-year colleges; developmental education in two-year colleges; and developmental education in Georgia. The history and mission of two-year colleges develops the definition of open access to higher education, the impact of open access, and the profile of students who enroll in two-year colleges. Several aspects of developmental education throughout the United States have drawn the interest of researchers: the cost, effectiveness, and best-practices, to name the most popular. Texas has conducted research through the National Center for Developmental Education to identify research-based best practices, and identified several promising practices that have yet to be tested through research.

History and Mission of Community Colleges

Academic support and a need to remediate has been a part of higher education in the United States since the first college was founded. Harvard College now Harvard University, was established during the mid-1600s to prepare young men for ministry. A key component of the curriculum was study of the Greek and Hebrew languages in the original text of the scriptures. The study of these complex languages generated the need for tutors and academic assistance (Breneman & Harlow, 1998); hence, the beginning of remedial education.

Some 200 years later, the University of Michigan established a college preparatory academy in summer 1848. Then, in 1905, the University of Wisconsin established what is now known as developmental courses for higher education. The University of Wisconsin was the first university to offer remedial courses in three major curriculum areas: reading, math, and writing. The beginning of the new century brought about the spread of the two-year college movement.

The rise of the community college was driven by two overarching precepts: first, was the need for a more educated workforce in a developing country, and second, was the need to better prepare students for the rigor of the pursuit of higher learning. Many of the first institutions were founded through local school boards and established usually as part of a high school (Hasslebach, 1999). During the early part of the 20th century, two-year colleges separated from local school districts, becoming a part of higher education and establishing a more precise mission. During the middle of the century, returning war veterans, equipped with the new G.I. Bill that provided funding for education and vocational training, along with an increasing number of high school graduates

overwhelmed the national higher education system. Two-year colleges were there to assist in relieving the pressure (Hasslebach, 1999). Further, the Civil Rights movement increased enrollments in higher education because minority students were no longer restricted to the few all Black colleges and now had access to various institutions of higher education. By the mid-20th century, following World War II, more than 100,000 students were enrolled in two-year colleges. Today, more than 12 million students are enrolled in 1,167 two-year institutions throughout the U.S. (American Association of Community Colleges, n.d.).

While there are variations from state to state, the main purpose of the two-year college is to provide access to higher education and to provide workforce development. One example of this is found in the University System of California which is configured in a manner that separates students into three distinct categories. The first is the University of California system which was established as the state's primary research institution and accepts the top undergraduates of the state. Second is the California State system which was established to accept the top one third of all high school graduating classes. Last is the California Community College system, established to accept all others and to offer workforce development for the state by region (Melguizo, Hagerdorn, & Cyper, 2008). The common design of the California Community College system defines the mission of the two-year institutions and the countrywide student need for access to higher education through a community college.

Cohen and Brawer (1996) described the six core functions of a two-year college as: (a) student services, (b) career education, (c) developmental education, (d) community education, (e) transfer and liberal education, and (f) general education. Vaughan (1997)

listed seven aspects at the core of the two-year college mission: (a) public support, (b) open access, (c) commitment to teaching, (d) an identified service area, (e) community-based programs, (f) comprehensive programs, and, (g) support services. Vaughan gave open access a critical role in the mission of the two-year college. At an initial glance the core function lists by these two authors may appear to vary widely; however, the core functions in each list are similar, merely phrased differently.

Cohen and Brawer (1996) list student services and career education; Vaughan (1997) has the same two core functions listed as community-based programs and support services. The career education and community-based education are methods used to meet the industrial needs for the area served by the institution. Support services are services provided by the institution to the student population, such as tutoring, career advising, and career placement assistance.

Although Vaughan (1997) names open access as a core function, Cohen and Brawer (2003) list developmental education as a core function. Open access to students generates the need for developmental education coursework. The wording is different, yet the two functions are difficult to separate as a core function. Cohen and Brawer (1996) state the core functions as transfer and liberal education; Vaughan defines this same core function as comprehensive programs. Comprehensive programs are two-year degree transfer programs such as associate degree programs where the coursework credits transfer to four-year degree granting institutions.

Vaughan (1997) does not define a specific service area in the way Cohen and Brawer (1996) have listed six core functions. Two-year colleges have similar missions; however, the one distinct difference is the defined service area. Some two-year colleges

have a service area as defined by the state or two-year college system, and other two-year colleges serve a broad area and are more defined by the program offerings as opposed to the service area. This difference in service area definition, however, does not change the core open access mission of the two-year college.

Implications of Open Access to Post-Secondary Education

The open door admission policies of two-year colleges provide a pathway for many students at different levels of academic preparedness to have access to higher education. Many students accepted into two-year colleges are underprepared for the rigor of coursework at the higher level. The under-preparation of these students is in the academic foundations of learning, such as skills used in mathematics, reading, and writing. Most students who are enrolled in remedial education programs are enrolled in programs at two-year institutions because many states have eliminated remedial programs at four-year universities (Pulley, 2008). The increasing enrollment of these students has generated an increased demand for remedial courses at community colleges.

Two-year colleges have opened their doors to all students with any level of academic preparedness or unpreparedness (Levin & Calcagno, 2008). The enrollment numbers in these programs are truly amazing. Sixty percent of the students who enroll at a two-year college enroll in at least one remedial course (Attewell, Lavin, Domina, & Levey, 2006; Bailey, 2009). According to Gleazer (as cited in McCabe, 2003), two-year institutional leaders intrinsically know an open door admissions policy that invites all high school graduates and those who may benefit from the programs will generate the need for remediation. The invitation of two-year colleges for access to higher education clearly establishes a roll for remedial coursework at the two-year college-level. Recent

graduates and those who have decided to return to higher education after an extended absence are afforded acceptance to post-secondary education with the prospect of obtaining higher education and increasing their personal human capital. This opportunity carries with it an obligation for preparing the student for the academic rigor of higher education.

Many two-year colleges do not require a national college preparedness test to be taken prior to admittance. The ACT and SAT are not standard admission requirements at many two-year colleges. Students who have a desire to enter a two-year college will provide transcripts from secondary schools attended and will take a placement exam. The placement exam demonstrates the student's proficiency in reading, writing, and math. The student's score on the placement exam determines credit applied to the appropriate courses or defines placement into remedial courses (Boroch et al., 2010; Cohen & Brawer, 1997).

Profile of Entering Students

Students who enroll at two-year colleges range from students who have performed poorly in all high school subjects to students who are deficient in just a single subject to some students who are academically prepared for the rigor of higher education. Some are older students who performed satisfactorily in their high school studies but who have rusty skills because of disuse; others may have poor study habits or have mild to serious learning disabilities that must be addressed. Finally, many community colleges have significant immigrant populations comprised of students who may possess the underlying academic skills for college-level work but who have difficulty with English.

According to the American Association of Community Colleges 2011 fact sheet, there are 1,167 community colleges in the United States, of which 993 are public institutions. Total headcount in all public and private two-year colleges, including non-credit seeking students, was 12.4 million for fall 2011. Of those 12.4 million students, 5.0 million were non-degree seeking, 4.9 million were enrolled full time, and the average age was 28 years with a median age of 23 years. Slightly more than 5.0 million of the students were first generation college students; the majority was female and minority. These basic demographics demonstrate the varied characteristics of students who attend a two-year college.

The number of students who need developmental coursework at the collegiate level has risen over the past 20 years and has accelerated in the past decade (Perin, 2006). In 1971, it was estimated that as few as 30% of students who entered a community college lacked the basic skills required for college-level coursework. This estimation was based on the number of students taking at least one course in a remedial program at a community college. In 1992, almost all community colleges offered remedial coursework in English, mathematics, and reading. By the end of the 1990s, 60% of the students who entered community colleges were taking remedial coursework. Despite the immense population taking remedial courses, very little effort was made to assess remedial programs or establish a strategic method of producing successful exit from remediation (Pulley, 2008).

In the first decade of the 21st century, the number of students in remediation classes continued to rise. Approximately 60% of students who enter higher education through a community college enter through the remedial program. The under-

preparedness of students continues to be at the forefront of concern for community colleges whose very mission is to grant access to anyone interested in higher education and to meet the needs of the neediest students. A significant number of the remedial coursework participants are non-traditional students (students over age 25) who are returning to school to begin or complete a college education. In the case of non-traditional students, the most common remedial course is mathematics (Bahr, 2008). Math is not a skill that can be left by the wayside for several years then dusted off and put back into full motion. It is likely that non-traditional students will enroll in a math remedial course during the first two semesters of matriculation due to common practices of advisement. These non-traditional students will have increased tuition costs for the remediation before entering credit coursework (Attewell et al., 2006).

Developmental Instruction in Community Colleges

According to the National Education Longitudinal Study (NELS, 1988), more than 60% of first-time college students attending a two-year college took at least one remedial course. The current data from 2008 remains consistent with data from 1988. Remedial courses have been a critical component of the curricula in two-year colleges since these institutions first appeared in postsecondary education (Cohen & Brawer, 2003). Every two-year college offers some level of remedial coursework. The courses offered for developmental studies are the same three subject areas established in 1849 by the University of Wisconsin: writing, math, and reading. Remediation is increasingly falling to two-year colleges, as many states have begun to direct students who need remedial education to two-year colleges by discontinuing remedial offerings at public four-year institutions (Cohen & Brawer, 2003).

Some four-year institutions may offer limited remediation for students who do not pass a course in a critical core area, but they do not have separate developmental study programs or divisions for remediation. Four-year universities may offer a semester of remediation for students who may not pass a math course or English course; however, universities do not have a designated department or division with a comprehensive developmental curriculum. The shift over the past decade, as pointed out by Cohen and Brawer (2003), is not comprehensive or all-inclusive of four-year institutions. However, all two-year institutions offer remedial coursework, and many have a separate division for remediation. The division or department may be called *learning support*, *developmental studies*, or have a more creative name such as *student success*; however, the function of this department or division is consistent across two-year schools.

The percentage of students enrolling in at least one remedial course at two-year colleges is relatively consistent across institutions, approximately 60%. In 2000, there were 5,697,388 students enrolled in public two-year colleges (NCES, 2008), which equated to approximately 3.7 million students in remediation at two-year colleges. In 2008, the number of students enrolled at two-year colleges was 6,225,120; therefore, more than 3.7 million students were enrolled in remediation at two-year colleges. The number of students needing remediation in 2008 accounted for more than half the population for all four-year public institutions in America (NCES, 2008). Remediation is not just at the core of the mission of two-year colleges; it impacts a large population of students enrolled in higher education.

Institutions that offer remedial coursework, whether it is mandatory or optional, all have some type of assessment to measure the preparedness of incoming students in

math, writing, and reading. Instead of requiring SAT or ACT scores, two-year institutions use an initial placement assessment in order to determine the academic readiness of a new student for higher education coursework. The two most prominent assessments are the ACCUPLACER and COMPASS tests used for assessment of basic skills and placement into or exemption from developmental coursework. All two-year institutions in Georgia use the COMPASS test. However, how the remedial courses are offered, the number of credit hours allotted or assigned to each course, and the frequency of class meetings is not consistent throughout the nation or within Georgia.

The scores used for placement into remediation also vary from state to state and vary from institution to institution within the same system. The variance is generated by different standards for remediation and various levels of remediation coursework offered at the two-year institutions. Those institutions offering multiple levels of remediation may have separate scores corresponding to the various levels of remediation. The institution may or may not have a mandatory placement parameter established for the test scores. Most institutions that use a placement assessment tool have mandatory remediation requirements for certain test scores. Placement scores and placement levels are not consistent from state to state nor are the various levels of remediation. However, the three core content areas are consistent (Boroch et al., 2010, Boylan, 2002).

Another consistency from state to state is the debate over the cost of remediation. The direct impact of remedial education is estimated between \$1 billion and \$2 billion per year (Bahr, 2008). The indirect cost to education is estimated at nearly \$17 billion (Bahr, 2008); the taxpayer absorbs this cost. Most taxpayers express concern for having to pay for educational opportunities in college that should have been covered as basics in

high school. In addition to the high cost to the community college system and the community, there is the additional cost to the student. The average student who enters higher education at the two-year level and enters through the remedial program pays, on average, \$3,000 more for a two-year degree than a student who did not take remedial courses (Melguizo et al., 2008).

Several million state dollars, possibly up to \$1 billion (Bailey et al., 2008), are spent each academic year on developmental education coursework at two-year colleges (Levin & Calgano, 2007). The cost is based on all aspects of institutional involvement in developmental education: administrative costs, instructional costs, and costs associated with support services. The money, however, is not merely being spent to re-teach basic principles to the previous spring's graduating seniors, many of whom believed they were prepared for college-level coursework (Bailey et al., 2008). Instead, according to the Association of Community Colleges 2011 fact sheet, the median age of students at two-year colleges is 23 years of age, indicating that non-traditional students are returning to higher education seeking certificates and degrees and needing to refresh basic skills.

Remedial education across the public and private sectors of two-year post secondary education is far greater and perhaps a better indicator of true cost. As previously stated, the national direct cost of public postsecondary remedial programs is estimated to be \$1 billion to \$2 billion annually; however, the total direct and indirect cost is estimated at nearly \$17 billion annually (Bahr, 2008; Breneman & Haarlow, 1998; Phipps, 1998; Saxon & Boylan, 2001). The cost of remediation is not borne by just one particular group; students bear only a small portion of the cost of developmental education to the institution.

Students who enroll in remedial coursework in higher education do not earn college credits for the courses. The students pay tuition for the courses, most of which are at least three credit hours; however, when the course is completed, the student has not earned transferable college credit. The institution uses a considerable amount of resources providing remediation coursework. Tuition for the course is only a small part of the overall cost of the course offerings. Hence, developmental education is costly to the student and the institution.

States have begun to restrict remediation to two-year institutions. Shifting remedial coursework to the two-year colleges can result in substantial savings for students because it is less costly to offer remediation to students at two-year institutions than at four-year institutions (Levin & Calcagno, 2008). Many two-year institutions have developmental studies divisions that administer the remedial course offerings. The separate division generates leadership costs, faculty costs, and the cost of assistance centers that may accompany remedial coursework. All of these costs are under even greater scrutiny now due to the economic recession.

Effectiveness and Assessment of Developmental Education Programs: National Perspective

Remediation in higher education has been a topic that has been discussed from the local coffee shop to the hallowed halls of state legislative bodies. However, the empirical research has not kept pace with the discussions. Over the past several decades many studies have been performed, yet the validity and methodology have been called weak (Levin & Calcagno, 2007). While much has been written regarding the controversy about remedial education, there are large gaps in the data (Attewell et al., 2006). According to

Merisotis and Phipps (2000), research regarding the effectiveness of remedial education programs has been sporadic and often inconclusive. Grubb (2001) added that “. . . there have been relatively few evaluations of remedial programs and many existing evaluations are quite useless They fail to show what the program does” (p. 4).

Program evaluations have not been plentiful, and those that have been performed have substantial validity issues according to Bahr (2008). The most common issues evident in these works are: (a) reliance on simple bivariate analyses or other methods using minimal statistical controls, (b) data from a single college or too small of a sample size; (c) short observation periods; and, (d) not separating students who complete remediation successfully from those who fail to complete remediation. Put simply, most prior evaluative research cannot speak clearly concerning the efficacy of remediation (Bickley et al., 2001; Crews & Aragon, 2004; Curtis, 2002; Illich et al., 2004; Overby, 2003; Seybert & Soltz, 1992; Southard & Clay, 2004; Weissman et al., 1997b; Worley, 2003),

Several studies in the past have indicated that students who remediate successfully have similar graduation rates as students who entered higher education more prepared (Crews & Aragon, 2004; Overby, 2003). Yet, other studies have shown that students who remediate successfully have a lower graduation rate than the more prepared students (Curtis, 2002; Worley, 2003), making a strong case for or against remediation difficult. However, there have been two more recent studies that used more sound methodology, larger sample sizes, and multiple institutions.

Bettinger and Long (2004) studied multiple institutions in Ohio, analyzing data gathered by the Ohio Board of Regents. The data included enrollment information on

two-year students from 1998 through 2003. The data did not include private two-year enrollments, and was gathered only from institutions in Ohio. Those two aspects were clearly identified in the study. However, the student data were consistent with other states across the nation and the results should be generalizable. The study discovered:

It is clear from these results that students in remediation do not perform worse than similar individuals who do not enroll in remedial courses.

Simple comparisons of the two groups mask this effect by comparing dissimilar students. When we compare students with similar characteristics, we find that remediation does not appear to have a negative effect. In fact, math remediation appears to improve some student outcomes. (p. 24)

A study performed by Attewell et al. (2006) using the National Educational Longitudinal Study findings indicated that at two-year and four-year institutions there was no significant difference in program completion between students who successfully completed remediation and those who did not enroll in remedial courses. Attewell et al. concluded from the results that, “In sum, there was evidence that students who successfully completed remedial coursework in two-year colleges gained from that coursework. There was no such positive evidence about remediation in four-year colleges” (p. 906).

The Attewell et al. (2006) study concluded that students at two-year colleges enrolled in remedial courses did benefit from the courses and the extra coursework did not inhibit their completion of a degree program. This conclusion was based upon the quantitative analyses of the data collected for the National Educational Longitudinal Study. The study did eliminate certain student variables for background, socioeconomic

differences, and academic preparedness based on high school performance. The study did not, however, distinguish between effective and less effective programs.

Bahr's (2008) study of the community college system of California is an example of a recent comprehensive study. Bahr used data collected by the Chancellor's Office for the Community College System of California. Bahr collected data from the 1995 cohort and observed the enrollments of this cohort throughout a 6-year period. This study was extensive and used a narrow definition of remedial math courses for the most generalizable results.

Bahr (2008) identified the use of the whole population as a strength of the study, but also identified five weaknesses: (a) placement into remedial math was not constant across the university system; (b) there was no accounting for transfer from the semester system-based community colleges to quarter system-based community colleges or to private community colleges and the variations in the credit hours earned in the remedial course load; (c) those who delayed their first math class for several years were not accounted for in this study; (d) employment and course load were not addressed as variables; and, (e) the use of a population in the California system may not be generalizable across the nation.

The weaknesses are clearly stated in the study and seem to be consistent with other comprehensive studies of higher education remediation. Nonetheless, Bahr (2008) found that:

Within the context of the community college, students who remediate successfully in math exhibit attainment that is comparable to that of students who achieve college math skill without the need for remediation, and this finding

generally holds true even across the various levels of initial math skill deficiency. In fact, the two groups effectively are indistinguishable from one another in terms of credential attainment and transfer, with the minor exception of small differences in the likelihood of completing a credential prior to transfer. (p. 421)

The most recent studies (Attewell et al., 2006; Bahr, 2008; Calcagno & Levin, 2007; Boylan, 2002; Boroch et al., 2010), have been given more validity by those who have researched the topic of developmental education in higher education. These studies have found that students who enroll in remedial courses in two-year colleges do not perform lower, persist less, transfer less, or graduate less than students who do not enroll in remedial coursework. The validity of the programs has been only one part of the debate. Even the studies that have proven to be more internally and externally valid based on statistical analyses (Attewell et al., 2006; Bahr, 2008; Calcagno & Levin, 2007) did not identify the practices or curriculums of institutions that appear to be more effective in remediation. Boylan (2002) identified the best-practices identified through research from the National Center for Developmental Education.

National Best Practices for Student Success in Developmental Education

The National Center for Developmental Education (NCDE), the Continuous Quality Improvement Network (CQIN), and the Research and Planning Group for California Community Colleges (RP) have conducted research and developed research-based best practices that have shown success in obtaining higher completion rates in developmental education. The three institutions produced manuals of the research findings. The National Center for Developmental Education (date) conducted research and produced the *National Study of Developmental Education*. The Continuous Quality

Improvement Network through the NCDE produced the manual *What Works: Research-Based Best Practices in Developmental Education* in 2002, and the Research and Planning Group for California Community Colleges produced the manual *Student Success in Community Colleges, A Practical Guide to Developmental Education* in 2010. These research-based manuals provide the standards for student success in developmental education by which all programs are compared.

The three studies identified three major areas that have a direct impact on student success in developmental education. The three major areas identified are organizational and administrative structures, program components or instructional practices, and support services and strategies (Boroch et al., 2010; Boylan, 2002; Boylan & Bliss, 1997). Organizational and administrative structures focused on the overall location, placement, coordination of coursework, assessment and evaluation, prioritizing developmental education, and funding. Instructional practices focus on faculty status, instructional strategies, program alignment to college-level coursework, and communication. Support services focused on tutoring, academic support, mentoring for students, tutor training, and career advisement.

Several organizational and administrative structures and components have been identified through research as contributing to student success. The components identified through each of the studies are a clearly defined mission and prioritizing developing education programs. Second, developing education programs are centralized and administration manages the hiring and professional development of the developmental education faculty (Boylan, 2002). Last, administrators monitor, assess, and develop

faculty and student expectations and outcomes in developmental education (Boroch et al., 2010).

Developmental education is a vital part of a two-year college. Approximately 60% of students enrolled at a two-year college will be enrolled in at least one remedial course. Two-year colleges, as stated previously, have an open access mission and must have a clearly defined mission and philosophy for developmental education (Boroch et al., 2010; Boylan & Bliss, 1997). Programs need to have mission statements, goals, objectives, and a shared overarching philosophy (Boroch et al., 2010; Boylan & Bliss, 1997). Programs with clearly defined missions, goals, and philosophies have higher successful completion rates and better retention rates (Boylan, Bonham, Claxton, & Bliss, 1992; Boylan & Saxon, 1998).

A centralized developmental education program “places the delivery of all remedial courses, programs, and services in a separate department, supervised by a dedicated administrator, with its own identified line of budgetary and other resource support” (Boroch et al., 2010, p. 21). Aspects of the model that were cited include greater accessibility, integrated support services, and motivated faculty (Boroch et al., 2010; Perin, 2002). Centralized programs add to student retention and passage rates in developmental education (Boylan & Bliss, 1997).

The other model, defined as *mainstreaming*, relegates the developmental courses to the various academic departments. This model allows for open communication from developmental education faculty to other faculty members in the same academic division and better course outcome alignment from developmental courses to college-level courses (Boroch et al., 2010). The centralization of developmental education allows for

seamless design of the developmental education curriculum to regular academic coursework. The curriculum transition from one developmental course to the next level developmental course, for example, the transition from Math 097 to Math 099, would be designed intentionally to assist students. The transitions are designed so that the last unit of Math 097 is the first unit of Math 099.

Institutions that have shown greater student success in developmental education have demonstrated the ability to manage expectations of faculty and students regarding developmental education (Boroch et al., 2010; Boylan, 2002). “Successful developmental programs make the goals and objectives of developmental education explicit and take actions to insure that faculty and students understand the goals and objectives” (Boylan, 2002, p.14). The open and frequent communication of clear expectations of faculty and students through administrative avenues provides for understanding by the faculty and students and an acceptance of exactly what actions are necessary for successful completion of developmental coursework.

Organizational and administrative practices are certainly one key component to student success at two-year colleges, but administration can only provide the framework, facilities, or funding for success. The program components or institutional practices provide the direct impact to students and fill the void between administrative offices and the classroom. Program components described in the literature have four main aspects that have demonstrated a positive impact on student success. The four areas are: (a) orientation, assessment, and placement; (b) counseling and tutoring; (c) monitoring student performance; and, (d) regular program evaluation (Boroch et al., 2010; Boylan & Bliss, 1997). These four broad-based components provide various contributing factors to

student success and the completion of developmental coursework and are well represented in the literature (Boroch et al., 2010; Boylan & Bliss, 1997; Roueche & Roueche, 1999).

New incoming freshman students who have taken the SAT or ACT are able to provide a demonstrated comprehension of basic skills based upon a minimally established score. However, students who have not taken the national standardized tests for college admission may enroll at a two-year college. The mandatory assessment of basic skills enables the institution to place students who may need more work on basic skills into developmental education coursework. “In order to serve underprepared students, it is necessary to identify them and determine their skill levels” (Boylan, 2002, p. 35). Mandatory placement and assessment contribute to student success (Boylan, 2002; Roueche & Roueche, 1999; McCabe, 2000). Mandatory assessment followed by voluntary placement in developmental education disconnects the link of assessment as a contributor to student success (Boylan, 2002). Mandatory assessment and placement has increased over the past several years and, according to Boylan (2002), 26 states now require mandatory assessment of incoming students.

Mandatory assessment and placement in developmental education courses must be partnered with counseling, mentoring, and/or tutoring. Counseling and mentoring provide a mechanism for students to seek motivation and encouragement from other students who have completed the designated coursework. Tutors are identified in the literature as a key component contributing to student success (Boylan, 2002; Boylan & Bliss, 1997; Roueche & Roueche, 1999; McCabe, 2000). “Regardless of what sort of tutoring is being provided or where it is housed, the most important aspect of successful

tutoring is tutor training” (Boylan, 2002, p.49). Casazza and Silverman (1996) stated that a well-trained tutor, as opposed to a marginally trained tutor, separates a successful tutoring program from a mediocre tutoring program. According to Boylan (2002), well-trained tutors need a basic understanding of learning theory, metacognition, motivation, counseling and interviewing, group dynamics, and adult learner models. Well-trained tutors placed in visible learning centers have a demonstrated positive impact on student success (Boylan, 2002; Boylan & Bliss, 1997; Roueche & Roueche, 1999; McCabe, 2000). While tutoring is essential to success, identifying a student who needs tutoring is also a vital component.

According to Cassazi and Silverman (1996), monitoring a student’s performance is a key component to student success. “Faculty can identify students’ needs for tutoring, study skills, or drill and practice” (Boylan, 2002, p. 58). Identified students’ advisors can assist by identifying the best resources for students’ academic needs and direct students to the resources provided (Boylan, 2002; Boylan & Bliss, 1997). Casazza and Silverman (1996) stated that early identification and intervention contribute directly to student success in completing developmental coursework. Identifying the needs of a student early in the semester provides greater opportunity to allocate resources and/or increase current provisions used by the student. Clearly stated in the literature, early detection and immediate intervention increases the probability for successful completion of developmental coursework (Boylan, 2002; Casazza & Silverman, 1996).

The last practice of program components or institutional practices identified in the literature for student success in developmental education is the regular and consistent evaluation of developmental education programs (Boroch et al., 2010; Boylan, 2002;

Casazza & Silverman, 1996). As Boylan (2002) stated, “Time and again, research has shown that developmental programs undertaking regular and systematic evaluation are more successful than those that either fail to evaluate their activities or evaluate them erratically” (p. 39). The literature calls for a regular, systematic approach to the evaluation process and widespread dissemination of the data collected (Boroch et al., 2010; Boylan, 2002). Most programs collect various data; however, institutions with a higher student success rate collect three different levels of data and disseminate the data to different groups.

According to Boylan (2002) and Boroch et al. (2010), data should be collected on three different levels to have the greatest impact on student success. The first level collects descriptive data on the number of developmental courses offered, the number of tutoring hours, and the number of students served. These data provide an overall view of what is actually occurring in developmental education (Boylan, 2002). The second level of data collects short-term outcomes including grades in developmental courses, completion rates, and semester-to-semester retention rates. These data provide insight into the effectiveness of developmental education in the short term (Boroch et al., 2010; Boylan, 2002). The third and final level of data collection includes long-term data such as overall GPA, retention, and graduation rates. These data provide the long-term success rate of developmental education (Boroch et al., 2010; Boylan, 2002).

Collecting the correct data is merely the initial step. Following collection of the data, the information is used as part of a formative evaluation for program improvement (Boylan, 2002). In the formative evaluation process, faculty and staff who are directly involved in the day-to-day operations of course offerings and support are the “people

who control what is done as a result of the evaluation” (Boylan, 2002, pp. 43-44).

Institutions that use the formative evaluation process, the collection of data and wide-spread dissemination of data used for program improvement, have higher student success rates. The data are used to impact and improve instructional practices in the classroom.

The formative evaluation process drives instructional practices in the classroom. The data collected and analyzed are used to inform and transform the instructional practices of faculty and impact the actions of support staff. The instructional practices identified in the research are integrated into the program components, whereby collected data informs continuous improvement for greater student success. The instructional practices are: (a) developmental educational design that aligns exit skills to college-level coursework in the various disciplines; (b) teaching learning techniques and strategies, and teaching critical thinking skills using varied instructional methods; (c) using supplemental instruction with modern technology in moderation, and (d) active learning techniques and learning communities (Boroch et al., 2010; Boylan, 2002; Boylan & Bliss, 1997).

Although it may seem a given that a second course in a sequence would align with the first course, the alignment must be intentional, hence the need to identify the alignment of the coursework in the literature. Boroch et al. (2010) and Boylan et al. (1992) have stated that programs with intentional alignment between exit level skills and the entry-level skills needed for the next sequenced course have a higher student success rate in the second sequential course.

Second, instructors in developmental education in institutions with higher student success rates use various instructional methods to teach students learning strategies,

critical thinking skills, and use technology in moderation. Institutions with higher rates of student success in developmental education use various instructional methods to teach basic skills to students; methods include: (a) distance learning and computer-based technology in moderation, (b) self-paced instruction, (c) individualized instruction, (d) peer review of student work, (e) collaborative learning, (f) mastery learning, (g) small-group work, and (h) active learning techniques (Boroch et al., 2010; Boylan, 2002; Boylan & Bliss, 1997).

Last, the literature describes the use of learning communities at institutions with higher student success rates. Tinto (1997) stated that learning communities allow students to encounter learning as a group, or as a shared experience, not an isolated event or experience. Learning communities are labor-intensive and may not benefit all students in the same manner. Boylan (2002) warned that learning communities involve extra hours for faculty in planning and may not meet the learning needs of all developmental education students. Despite the warning, institutions that use learning communities show higher rates of student success in developmental education.

The research-based practices identified in these national studies serve as the standard by which other developmental programs could be measured. The practices have been tested and have demonstrated over time continued effectiveness and positive impacts on student success at the two-year college-level. These practices have been applied to at least one published study of developmental education in an individual state.

State Reviews of Developmental Education, Texas

Developmental education and remedial coursework have been a part of higher education since the early beginnings of colleges and universities in the United States.

Texas is considered one of the most proactive states in assessing best practices in developmental education (Boylan & Saxon, 2005). The first two national studies of developmental education cited and recognized several Texas institutions for excellence in developmental education programs.

In 1987, the Texas legislature established the Texas Academic Skills Program; the program was the most progressive for evaluation and identification of best-practices in developmental education at the time (Boylan & Saxon, 2005). The program assessed incoming freshman, measuring abilities in English, math, and reading. Students who fell below standard cut off scores were placed in developmental coursework and remained in the developmental coursework until completing the assessment successfully. This program remained in place until 2003 when the Texas legislature replaced the program with the Texas Success Initiative (TSI). TSI grants individual institutions the ability to design and implement programs that meet the unique needs of students who attend the institution.

Texas has placed a state-wide priority on evaluating developmental education programs and services (Boylan & Saxon, 2005). The Texas Higher Education Coordinating Board gathers data on an ongoing basis and has commissioned three external studies through the National Center for Developmental Education to assess the outcomes and impact of developmental education. These initial studies were performed in 1995-1996 and in 1998. The initial two studies addressed the strengths and weaknesses of the programs (Boylan & Saxon, 2005). The Texas Association of Community Colleges commissioned a third study with funding provided by National Education Systems to identify and affirm best practices and discover promising practices in developmental

education in Texas. The study, entitled *Affirmation and discovery: Learning from successful community college developmental education programs in Texas*, was designed to add to the former two studies in assessing the outcomes of developmental education and identifying new emerging practices that had a positive impact on successful completion rates of students in developmental education.

Data gathered from the Texas Higher Education Coordinating Board (Boylan, 2002) were used to identify 10 institutions with the highest post-developmental education pass rates over a 3-year period (2000-2003). Passage rates were gathered for the exit assessment and the next level subject area. Institutions with the highest passage rates for the overall study period were selected for data collection and study. The study considered size, location, and student diversity in order to ensure generalizability to other two-year colleges. Five of the top 10 institutions were selected to participate in the study due to the generalizability of the results to other two-year colleges.

The report identified practices used by the institutions and categorized the findings as research-based best practices and promising practices. Boylan and Saxon (2005) described the criteria for the research based practices as: (a) grounded in research and have been cited in three other studies; (b) present in a majority of the institutions visited; and (c) considered by faculty and administration as important factors in the institutional efforts in developmental education. The promising practice criteria were described as: (a) factors considered important by the faculty and administration; (b) factors supported by local data; and (c) factors resonating with the previous experience and observations of the researchers.

The research conducted at the five institutions supported research-based practices established through prior research conducted by the National Center for Developmental Education. The research-based practices discovered at a majority of the five institutions studied were: (a) flat organizational patterns, (b) servant leadership styles, (c) strong leadership support, (d) required assessment/placement/advising, (e) learner-centered philosophy of operations, (f) consistent formative evaluation, (g) careful hiring of developmental education faculty, (h) ongoing communication with developmental education faculty and staff, (i) limited use of adjunct faculty, and (j) aggressive professional development for developmental education faculty and staff. These 10 practices met the three criteria established by the National Center for Developmental Education for research-based practices.

Flat organizational structures as described in the Texas study of the five institutions limited the number of bureaucratic layers between administration and faculty. The ability to gain or have access to administration allowed for a perception of value added to ideals and pedagogy adjustments to curriculum. The institutions studied had one layer between the faculty and the dean or vice president of instruction for the institution. The faculty perceived a greater commitment from the administration in the flat organizational structures. The administration placed priority on developmental education and played a more active role (Boylan, 2002).

The administration of each institution in the study exhibited a servant style of leadership. Administration worked directly with the faculty to resolve issues, considered faculty members as colleagues, and responded to input from faculty. Servant leadership is the second aspect of the three key factors that impact success in regard to administration;

the third aspect is strong support from leadership (Boylan, 2002). Each administrator placed developmental education as one of the major priorities of the institution. This support was exemplified through the facilities that house the developmental education department, administration involvement in hiring new faculty, and faculty receiving the same status and salary as faculty in other academic departments (Boylan, 2002).

The second group of research-based best practices identified in the study by Boylan (2002) was student focused. All the institutions used tools to assess student skill levels and used the results from the assessments to place students in the proper developmental coursework. Institutions in Texas may use additional tools and assessments to qualify the initial results, and most of the institutions in the study used at least three tools for placement. The institutions placed a high priority on a learner-centered philosophy. All decisions made must provide a positive impact on student learning.

The three studies and assessments of developmental education in Texas have not been matched throughout the United States. However, the studies provide a sound research-based foundation for creation of other state-wide studies of developmental education.

Developmental Education in Georgia Two-year Colleges

Developmental educational programs are accessed by more than half the students attending a two-year institution. For instance, the population at two-year institutions in the University System of Georgia for 2007 was 72,866 students. Sixty percent of those students, or 43,720, were enrolled in at least one remedial course; 75% of the students

enrolled in remedial coursework, or 32,790, did not complete the remedial coursework requirements to enter degree programs.

There are 16 two-year institutions in the University System of Georgia. Each of the 16 institutions offers remedial courses. Each institution, in the absence of a satisfactory SAT or ACT score, uses a placement assessment called COMPASS which evaluates three different areas: reading, writing, and math. The assessment for math includes sections for pre-algebra, algebra, and trigonometry. The institutions have the ability to mandate various minimum scores for the three placement areas and subsequent levels. The remedial courses usually center on the three core areas and have two levels of course offerings. For example, Math 097 and Math 099; Reading 099; and, English 097 and English 099. Scores for each institution may vary for placement, yet the University System of Georgia sets a low end-line score that establishes the mandatory need for remediation.

The University System of Georgia collects data through the Board of Regents (BOR) office located in Atlanta, Georgia. The BOR office collects the number of students enrolled at each of the two-year institutions, the number of students enrolled in remedial courses, and the number of students who complete remediation. The information is stored in a database accessible to University System employees. Data indicates that Georgia's completion rate for remediation is consistent with completion rates throughout the United States.

Directions for Further Research

The three major studies of remediation in higher education (Attewell, 2006; Bahr, 2007; and Bettinger & Long, 2005) have provided much of the same analysis that earlier

studies with less reliable methods have shown. The three studies have shown that students who successfully complete developmental education coursework may not graduate at the same rate as students who do not enroll in developmental coursework; but, at less than 10% in these studies, the differences are minor. The studies considered background information, preparedness, socioeconomic status, race, and gender as variables to the study. The studies used statistically solid methodology and can be considered reliable. The information provides an overall look at developmental education in two different states (Boylan, 2002; Borocho et al., 2010) and one national-level study (Boylan & Saxon, 2005). The studies stated that remedial students, overall, perform only marginally less effectively than their counterparts. However, the studies do not identify the institutions or the methods used by institutions that may have slightly higher averages for completion.

A study of remediation in the University System of Georgia has not been conducted in the last 10 years since data collection began. The database for the system indicates that, in terms of overall averages, the system is in line with other states and other two-year institutional systems. However, there has not been a program evaluation to discover institutions that have better than average completion rates. Those institutions have not been identified, nor has there been a concerted effort to discover what works and what does not work in remediation in the two-year colleges in Georgia.

National studies within the past decade have not identified practices that are more effective than others at the national level. It is difficult to verify that a practice in an urban two-year college with a large Latino population will be effective in a rural south Georgia setting with a larger population of white middle class students. However,

gathering the average completion rates and stating the need for remediation does not assist in attempting to increase completion rates. The studies have shown that students who successfully complete the coursework are graduating and transferring at almost the same rate as other students. Therefore, a study of best practices in Georgia and comparison of those results to national research-based best practices is critical to the future of developmental education in the University System of Georgia.

Chapter Summary

Developmental education is not a recent topic of research or a recent phenomenon in higher education. The most recent research has identified research-based best practices and even several promising practices. The study of developmental education in Texas is the most current research examining a state-wide developmental education program and serves as the cornerstone of this study of developmental education.

CHAPTER III

Introduction

This sequential case study focuses on identifying research-based and promising practices of two-year colleges with a higher student success rate in developmental education. This study uses limited basic quantitative methods and descriptive qualitative methods in the case study tradition as a means of identifying the practices used by purposively selected institutions with higher student success rates in developmental education. The research uses a limited sequential mixed methods approach with a primary focus on the descriptive qualitative aspect.

Creswell (1998) defined qualitative research as “an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem” (p. 15). Creswell (1998) also defines qualitative research as a complex and holistic picture of the social or human problem. The qualitative study relies on a few cases with many variables. The selection of qualitative methods in this study is supported by Creswell’s selection of method because the research questions of this study ask *how* questions. According to Yin (2003), a case study model should be considered when the focus of the study is to answer *how* questions and you cannot manipulate the behavior of those involved in the study.

This descriptive model allows the researcher the broadest approach to collect and analyze the data. The descriptive study by Stake (1995) of the Harper School provides a template for the study. However, the matter is significant to leadership of two-year colleges in Georgia. The issue of this research is student success in developmental

education at two-year colleges in the University System of Georgia.

Research Questions

The overarching research question guiding this study is: What are the factors that contribute to student success in terms of completion of developmental education coursework?

In order to answer this question, it was necessary to identify two-year higher education institutions in Georgia with at least 60% of entering students enrolling in at least one academic support course and with at least a 60% successful completion rate of academic support coursework. Once these institutions were identified, the researcher investigated the practices of the successful institutions in terms of remediation completion. Characteristics examined included faculty, curriculum, and support resources. Three sub-questions were used to support the overarching research question and enhance exploration of the factors that contribute to successful student completion of academic support coursework:

1. What organizational and/or administrative structures contribute to student success for students enrolled in developmental education programs?
2. What curriculum and instructional strategies contribute to successful completion of the development education curriculum?
3. What support resources offered to students enrolled in developmental education programs contribute to success?

Research Design

The research entails a sequential mixed methods case study approach utilizing quantitative methods to identify institutions that meet the enrollment and completion

criteria and the qualitative method to identify factors that influence success for those institutions. The quantitative data needed for the research is located and stored in a University System of Georgia database. Data are archival in nature and are a matter of public record.

The researcher accessed and analyzed enrollment data from the 16 two-year units of the USG to calculate the overall percentage of enrollment in at least one remedial course in order to identify the institution(s) that have at least 60% of the total number of students enrolled in at least one remedial course. In order to accomplish this, the researcher began by dividing total enrollment by the number of students enrolled in at least one remedial course and multiplying that numeric answer by 100. For example, for a total student enrollment of 3,000 with 1,800 students enrolled in at least one remedial course, the formula would be: $1,800 / 3,000 = .6$; Step 2: $.6 \times 100 = 60$; therefore, 60% of the population is enrolled in at least one remedial course. The analysis identified the institutions with at least 60% of the total number of students enrolled in at least one remedial course.

The institutions were then evaluated using criteria stipulating that at least 60% of all students enrolled in remedial coursework successfully complete the coursework. Again, data needed for this analysis were housed in a database at the USG central office. These data are a matter of public record and are archival in nature. The researcher requested the data from the Vice Chancellor of Research with the USG central office. Once the data were obtained, they were analyzed in a method similar to the procedures used previously to evaluate the institutions for the first criteria. The data for each institution showing the number of students who successfully completed remediation were

divided into the total number of students enrolled in remediation at the institution and multiplied by 100. For example, for an institution with 1,800 students enrolled in remediation and 1,080 students successfully completing remediation, the formula would be: $1080 / 1,800 = .5$; Step 2: $.5 \times 100 = 50$ or 50%.

Two institutions meeting the study criteria (60% of total student enrollment in at least one remedial course with 60% of students in remedial coursework successfully completing the remedial coursework) were identified, the researcher utilized a qualitative methods approach, specifically the case study approach to evaluate both institution's remedial program using Boylan and Bonham's (2011) survey for evaluation of developmental programs.

Qualitative research methodology that includes the nature of human experiences was better suited to this study because it attempts to discover the subtle nuances of lived experiences and to explore the collective experience and voice of those involved. Interviewing people and engaging them in conversations about their lived experiences allows the researcher to gather descriptive senses, including complex ideas, issues, and conditions, and allows for clarification of interpretations and understanding of collective experiences (Rubin & Rubin, 2005). By exploring the collective meanings and interpretations that people construct to account for their behavior, the researcher was able to understand the collective experience. Qualitative research methods, specifically the case study approach to social science research, is best suited for identifying and comparing best practices in developmental education to the identified research-based best practices.

Rationale for Case Study

Merriam (2002) stated that a case study is not just an object of a study as was the contention of Stake (1995). As Creswell (1998) stated, “a case study is an exploration of a bounded system or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context” (p. 61). The bounded system is the case being studied and is bound by time and place. The case being studied can be an event, activity, individuals, or program (Creswell, 1998). One major concern of a case study approach is the ability for the results to be generalized to other similar areas being studied. In this case, this concern is paramount. “There is clearly a scientific value to gain from investigating some single category of individual, group, or event simply to gain understanding of that individual, group, or event” (Berg, 2004, p. 259). However, if a case study is conducted properly and sufficient information is provided, the case study should provide an understanding of other similar individuals or groups (Berg, 2004).

A case study approach to identifying the best practices in developmental education in two-year colleges in the University System of Georgia is transferable throughout the University System and to other two-year colleges. According to Berg (2004):

The logic behind this (case study) has to do with the fact that few human behaviors are unique, idiosyncratic, and spontaneous. In fact, if this were the case, the attempt to undertake any type of survey research on an aggregate group would be useless. In short we accept the notion that human behavior is predictable—a

necessary assumption for all behavior science research—then it is a simple jump to accept that case studies have scientific value. (pp. 259-260)

The predictability of human behavior allows application of the research to the specific geographic region of this study. Although Georgia has various cultural dynamics across the state, urban to rural, various socioeconomic levels, and differing ethnic and cultural influences, the ability to apply the research to all cross sections of the state should follow Berg's analysis.

The case study approach allows for gathering of data and the best application of the data (Yin, 2003). However, the analysis of the data within the case study approach is best defined by Patton (2002) as *summative evaluation*. According to Patton (2002), the purpose of the summative evaluation is to determine effectiveness of human interventions and actions (programs, policies, personnel, products). Patton defined the desired results of a summative evaluation as the formation of judgments and generalizations about effective types of interventions and the conditions under which those efforts were effective. The purpose of this study is to identify the best practices of two-year colleges in developmental education, allowing formation of judgments and generalizations about the effectiveness of the most successful programs identified. Patton (2002) states that the key assumption about the summative evaluation is that “what works one place under specified conditions should work elsewhere” (p. 224).

The summative evaluation process uses the proven case study approach and takes data from institutions identified as having higher student success rates and analyzes that data for the best practices of those institutions (Patton, 2002). The analysis of data collected using the summative evaluation method provides for the narrative description of

the results and the overall final evaluation report. The final evaluation report includes the best practices identified within two-year colleges within the University System of Georgia and compares those results to the national research-based best practices identified in the four major studies identified in Chapter II.

Population, Sample, and Sampling

The purpose of the research guides all decisions relative to the study; as such, the research question(s) serve as the primary guide for site or population selection.

According to Berg (2004), the selection of a population should meet the following four criteria: (a) entry or access is possible, (b) the appropriate people are likely to be available, (c) the study's focus, process, people, programs, and structures are available to the researcher, and (d) the research can be conducted effectively by an individual or individuals during the data collection phase of the study.

The University System of Georgia is made up of 35 institutions of higher education, which consist of four research universities, two regional universities, 13 state universities, 14 state colleges, and 2 two-year colleges. The 14 state colleges are two-year colleges with an access mission and can offer limited four-year degrees.

The other 19 institutions do not have developmental education departments and a specific curriculum for underprepared students in three different academic areas. The four-year institutions may offer remediation in mathematics or English; however, the coursework is not designed to develop the basic skills of students to obtain college-level coursework. Therefore, four-year institutions in the University System of Georgia were not included in the study.

The 14 state colleges and 2 two-year colleges served as the population for the study. Each of the 16 institutions offers developmental education coursework. The institutions for this study were selected because of the open access mission, the developmental education program offerings, and the designation as a two-year college by the University System of Georgia. While there is no sample per se for the quantitative component of the study, archival data was collected from these 16 institutions relative to students enrolled in developmental education courses in cohorts that began from fall 2005 through fall 2007 (most current data available). Publicly accessible data collected by the institution and submitted to the Board of Regents for the University System of Georgia was collected from all 16 institutions to identify the institutions with the highest successful (60/60) completion rates in developmental education. Once institutions were identified that met the 60/60 selection criteria, those institutions were contacted to participate in the qualitative part of the study. A particular sampling technique was not used to select or limit the participating institutions; instead, the study was designed to include all institutions with the highest successful completion rates in developmental education.

Since the research focused on administrative practices, instructional practices, and program components of student success practices, the two institutions identified as having the highest successful completion rates participated in a survey designed by the National Center for Developmental Education and in face-to-face interviews. The survey was sent to the president of the institution, the vice president of academic affairs, the department head for developmental education, division chairs for math and English, and to the director of student support services for developmental education. In addition, these

same individuals, with the exception of the institution president, were invited to participate in face-to-face interviews scheduled for a date, time, and location of their choice. Participation of the institutions resulted in identifying the institutional practices being measured and compared to national research-based best practices, granting validation of the institutional practices in developmental education.

Instrumentation

The National Center for Developmental Education has conducted statewide reviews of best practices in developmental education in Texas over the past 6 years. The studies have used an open-ended survey as an initial tool and then utilized face-to-face interviews to follow up on responses to the initial survey. The purpose of the Texas study was to identify research-based best practices and new emerging best practices in developmental education. The instrument used in the Texas study answers the overarching research question of this study as well as the sub-questions of the study. The survey (Appendix A) was used with the permission of Dr. Patrick Saxon of the National Center for Developmental Education. Since this survey was designed to collect descriptive data, no psychometrics were established.

In addition to the survey, face-to-face interviews were conducted with key individuals at the identified institutions. The interview questions were developed to obtain further information that would identify the research-based best practices present in the two-year institutions identified through the quantitative analysis. The interview questions (Appendix B) were piloted at a two-year institution with approximately 45% of the student population enrolled in developmental education. The pilot was sent to division chairs who oversee the developmental education department, faculty who teach

in developmental education, and to support staff who serve students in developmental education.

The pilot study revealed that the questions answered the overarching research questions. The feedback provided minor modifications to three of the questions to clarify understanding and the ability to target the answer to the overarching research question and sub-questions.

Data Collection

To fully examine the impact of various components of successful institutions with the highest completion rates in developmental education in the University System of Georgia, it was necessary to first identify the successful institutions in Phase I. In Phases II and III, the components of the developmental education program in institutions identified as successful were explored further using a survey and interviews.

Phase I

All two-year colleges in the University System of Georgia have reported data to the University System office for more than 10 years. Data for the 2007 cohort is the most current data available. All 16 two-year colleges submitted data for cohorts that began in the 2005, 2006, and 2007 academic years. The data analyzed is stored in a publicly accessible database accessed by a link on the USG website under the header *Policies and Reports*. The data is stored under the *Enrollment* link, and labeled *Learning Support*. Reports can be generated for enrollment in developmental education and successful completion rates by semester for all 35 institutions in the University System of Georgia. However, the parameters of this study were limited to USG's 16 two-year colleges.

The data for enrollment in developmental education is accessible under

Learning Support Placement. The data is labeled *Learning Support Requirements for First-time Freshmen* and is displayed by institution, system required placement in learning support (developmental education), institutionally required placement, and voluntary placement in learning support. The last column is the percentage of students enrolled at the institution not placed into developmental education.

Analysis of data to identify institutional enrollment in developmental education was drawn from data collected for academic years 2001 to 2008. Data reported to the Board of Regents for the University System of Georgia were used to establish the percentage of developmental education enrollment for the 16 two-year colleges. The non-developmental education enrollment subtracted from the total enrollment of first-time freshman at the 16 two-year colleges was used for evaluation of the percentage of students enrolled in developmental education

The second step in data collection was to identify institutions with the highest completion rates in developmental education. Any two-year institution with a developmental education enrollment percentage of 60% or higher was identified for collection of completion rates of developmental education coursework. Using institutions with higher percentages of developmental education enrollments made the results more generalizable to other institutions with lower percentages of developmental education enrollment.

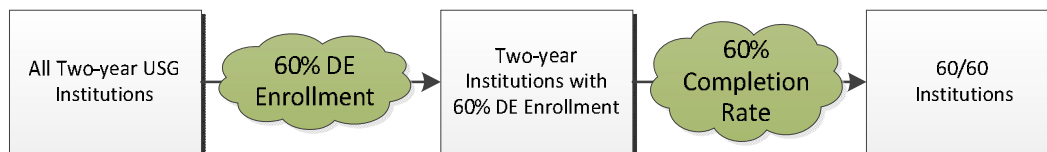


Figure 1. Methodology for identifying two-year institutions for Phase II of the research study.

Data is archived through the University System of Georgia database and is accessible through the University System of Georgia website under the link for *Policies and Reports*. Data for completion rates are accessed via the link labeled *Learning Support Exit Rates by Semester*.

The data are labeled: *Number of Terms of Learning Support Enrollment Required to Exit Learning Support in (English/Math/Reading) Fall 2007 Cohort of First-Time Freshmen with System Learning Support Requirements in (English/Math/Reading) Tracked through Fall 2009 at Same Institution as First Enrollment*. All data evaluated were generated from the database in the three academic fields, math, English, and reading. The data were collected from the fall 2005, 2006, and 2007 cohorts. The cohorts were tracked throughout two academic years to allow for consideration of students who enrolled in the same developmental course more than once in order to complete the coursework. The percentage of completion for each attempt was tallied for a final percentage of completion for the specific academic discipline.

Phase II

In Phase II, a survey was sent to the institutions having more than a 60% successful completion rate in developmental education. The survey was sent to the president of the institution, the vice president of academic affairs, the department head for developmental education, division chairs for math and English, and to the director of student support services for developmental education, or any designee stated by the aforementioned participants.

The survey was created and available on SurveyMonkey™. The survey was set up to allow access by all participants identified for input on developmental education. The

online, open-ended questionnaire designed by the National Center for Developmental Education (NCDE) was designed to generate participants' meaningful thoughts and feelings regarding their unique experiences in developmental education in the University System of Georgia. The process took no more than 2 hours to complete, and participants were able to log out of the survey site and then return to complete the survey at a later date/time, if necessary. Rubin and Rubin (2005) highlighted the value of the researcher asking follow-up questions regarding unexpected responses. Therefore, the survey site asked participants to voluntarily provide a contact email address and time frame for the researcher to ask follow-up questions vis-à-vis face-to-face interviews.

Phase III

In Phase III an interview was conducted as a follow up to the initial survey. The interviews were conducted face-to-face with key personnel in developmental education at the identified institutions who voluntarily agreed to participate. The interviews were conducted by the researcher, recorded by digital recorder, and transcribed by the digital transcription company GMR investing three hundred dollars. The interviews did not take longer than one hour and interviews were scheduled at a time and location convenient to the participants. Informed consent forms (Appendix C) were provided in advance and signed at the onset of the interview.

The purpose of the face-to-face interviews was to clarify the research-based best practices and identify other promising practices of the successful institutions. The interview questions (Appendix B) focused on clarifying answers to the overarching research questions and sub-questions. The promising practices identified in surveys of the identified institutions were compared to promising practices identified by the

National Center for Developmental Education in the Texas study with a focus on similarities and differences. The results of the comparison are listed in the promising practices section of the results from the initial survey. Practices identified by the institutions that are not represented in the research-based best practices identified by the National Center for Developmental Education are labeled as promising practices within the three major areas of the research-based best practices.

Data Analysis

Qualitative data analysis is a systematic search for a consistent meaning. It is an overarching way to process qualitative data so that the information gained through the research can be communicated to others in a manner that can be understood and used. Analysis means organizing data in a manner that will allow a researcher to see patterns, identify themes, develop explanations, and make interpretations (Berg, 2004; Creswell, 1998; Huberman & Miles, 2002; Patton, 2002).

Moustakas (1994) recommended a constant comparison of participants' responses to be ongoing throughout the data analysis process. This researcher sorted data within categories as defined by the NCDE research and re-sorted through each of the categories looking for emergent patterns within the data by clustering similar data, counting the number of times data and themes occurred, and looking for supporting patterns. The researcher further enhanced analysis of the data by refining and clarifying themes, looking for verification of patterns, contradictions to research-based best practices, identifying significant themes, and drawing conclusions. Data was reviewed to extract particular comments and/or quotes from the respondents that would indicate evidence of these themes (Moustakas, 1994). A textural description of what happened was developed,

as well as a structural description. The development of the descriptions lead to developing an overall description of the experience—the essence (Creswell, 1998, 2003; Miles & Huberman, 1994; Patton, 2002).

Since there were three phases to data collection, there also existed three phases to data analysis. Phase I was a limited quantitative data collection and analysis; phases II and III of data collection and analysis used the aforementioned process to analyze all qualitative data gathered.

Phase I

The data for the past three cohorts (2005, 2006, and 2007) were collected and analyzed using the same process: data were collected from the cohorts from 2005, 2006, and 2007 in all three academic disciplines. The averages for each cohort in each discipline were added together resulting in an overall average for the institution for successful completion of developmental education coursework. Institutions with successful completion rates above 60% were considered for the study.

Phases II and III

Survey data was collected through SurveyMonkey™ and analyzed by the qualitative analysis procedures designed for this study (Appendix D). Face-to-face interviews were conducted to gather additional data and were recorded using a digital recorder and then transcribed.

The researcher utilized Moustakas' (1994) four steps to phenomenological data analysis as a means to group, reduce, and eliminate data. The four steps included: (a) horizontalizing data, (b) listing meanings, (c) creating clusters, and (d) writing textural and structural descriptions (Creswell, 1998; Janesick, 2000). According to Moustakas,

during the first step, horizontalizing, the researcher divides the data into statements relevant to inquiry topics and views them as having “equal value” (p. 118). Meanings and meaning units are listed (Moustakas, 1994). In the third step, statements are placed in clusters including themes and phenomenological concepts. Finally, the researcher links the clusters together to provide a rich description of the participants’ experiences, as understood by the researcher (Creswell, 1998). As Moustakas (1994) described this process: “From the textural descriptions, structural descriptions and an integration of textures and structures into the meanings and essences of the phenomenon are constructed” (p. 119). Appendix D describes the detail of transcription analysis in detail. The same process was used for the survey and for face-to-face interviews.

Reporting the Data

According to Wolcott (2001), there are three options for organizing and presenting qualitative data: description, analysis, and interpretation. Wolcott argued that all three are present to some degree in all qualitative studies. With descriptive findings, the data, as presented, essentially speak for themselves. The goal is to present the data in a manner that will represent the data and allow the reader to conclude, as far as possible, what is going on in the particular contexts. Wolcott (2001) recognized that it is impossible to provide pure description because the observer will always have some interpretive input based upon experience and observation therefore making choices about what to describe.

Analysis, for Wolcott (2001), means transforming data by searching for relationships and key factors that can be supported by evidence in the data. The products of analysis are essential features or relationships, and for accuracy, the generalizations are made using excerpts from the data. Interpretation involves a mental process through

which the researcher goes beyond the data and analysis and begins to probe what is to be made of them (Wolcott, 2001). The goals of interpretation, in this study, were to transform the data into a comparison of current practices in developmental education in the University System of Georgia with the research-based best practices identified by prior research conducted by the NCDE. Interpretive work is not undertaken without regard for the data; the interpretation comes from the researcher's ability to use the data to make his or her interpretations (Hatch, 2002).

Phase I data is reported in table format and includes graphs to allow for a quick descriptive view of the quantitative data. The table includes data from all 16 institutions excluding names of the institutions. Data from Phases II and III are presented as themes that emerged through analysis in response to the overarching research question and sub-questions that guided the study.

Chapter Summary

The quantitative data identified institutions with higher developmental enrollments and higher successful completion rates in developmental education for the study. The selected institutions were asked to participate in the study to identify the best practices for successful completion in developmental education for the betterment of the University System of Georgia. The results of this study have the potential to impact countless thousands in the near and distant future.

CHAPTER IV

REPORT OF DATA AND DATA ANALYSIS

This case study is designed to identify the factors that contribute to student success in terms of completion of developmental education coursework. In order to do this, it was necessary to identify the two-year institutions in the University System of Georgia (USG) with at least 60% of their students enrolled in at least one academic support course and having at least a 60% successful completion rate of all developmental education requirements. These institutions, as identified, provided the best practices in developmental education in the University System of Georgia. The identified institutions provided data regarding successful remediation completion in terms of administration practices, faculty, curriculum, and support resources.

The overarching research question that guided this study was: What are the factors that contribute to student success in terms of completion of developmental education coursework? The three sub-questions enhanced exploration of the factors contributing to successful student completion of developmental education coursework, supporting the overarching research question. The sub-questions were:

1. What organizational and/or administrative structures contribute to success for students enrolled in developmental education programs?
2. What curriculum and instructional strategies contribute to successful completion of developmental education curriculum?
3. What support resources offered to students enrolled in developmental education programs contribute to success?

Research Design

The research utilized a sequential case study approach applying quantitative methods to identify the institutions that met the enrollment and completion criteria, and qualitative methods to identify the factors that influenced success for those institutions. The quantitative data required for the research were stored in a University System of Georgia database. Data are archival in nature and are a matter of public record. The researcher accessed and analyzed enrollment data for 16 two-year units of the USG, calculating the overall percentage of enrollment in at least one remedial course and identifying institutions with at least 60% of total enrollment in at least one remedial course.

Analysis of the 2005, 2006, and 2007 cohorts in the two-year colleges began by dividing the total number of first time freshmen by the number of first time freshmen enrolled in at least one remedial course, and multiplying the numeric answer by 100. For example, for a first time freshman enrollment of 3,000 and an enrollment of 1,800 students in at least one remedial course, the formula would be: $1,800 / 3,000 = .6$; Step 2: Using the value gained in the first step, .6 in this case, and multiplying that value by 100 gave the percentage of the population enrolled in developmental education. In the example, first time freshman enrollment in developmental education equaled 60; therefore, 60% of the population was enrolled in at least one remedial course. This analysis identified the institutions with at least 60% of total enrollment in at least one remedial course.

The second criteria required at least a 60% successful completion rate by students enrolled in remedial coursework. Again, data needed for this analysis were archived in a

database at the USG central office. These data are a matter of public and were requested from the USG Vice Chancellor of Research. Once obtained, data were analyzed in a method similar to the procedure used to identify the institutions satisfying the first criteria. The number of students who successfully completed remediation was divided into the total number of students enrolled in remediation for each institution. This simple mathematical formula established the overall percentage of completion.

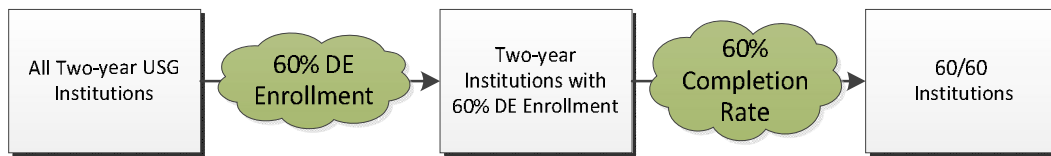


Figure 2. Methodology for identifying two-year institutions for Phase II of the research study.

Once institutions meeting the 60/60 criteria were identified, the researcher utilized a qualitative methods approach, specifically the case study approach, to evaluate the institution's developmental education program using Boylan and Bonham's (2005) survey for the evaluation of developmental programs as well as face-to-face interviews.

Respondents

Highly Effective Two-Year Colleges in Georgia

The 2005, 2006, and 2007 cohorts at the 16 USG two-year institutions each averaged approximately 69,000 students, for a total of approximately 261,000 students. The 2007 cohort for the two-year colleges was the highest of the three cohorts with approximately 73,000 students.

Seven of the two-year colleges had an average of more than 60% of first time incoming freshman enrolled in at least one developmental education course. HEI-A and HEI-B were in the top four institutions for the highest percentages of developmental

education enrollments and had the second and third highest developmental enrollment percentages, respectfully.

Four institutions had more than a 60% completion rate in developmental education. However, two of the four institutions had less than 60% enrollment in developmental education and two had 60% or higher enrollment in developmental education. The two meeting the 60/60 criteria were selected as the highly effective institutions for developmental education completion in the University System of Georgia.

Table 4.1

Institutional Developmental Education Cohort Enrollment

Institution	Developmental Education Enrollment Percentage 2005	Developmental Education Enrollment Percentage 2006	Developmental Education Enrollment Percentage 2007	Three year Cohort Average Developmental Education Enrollment Percentage
A	49	56	56	53.7
B	82	83	82	82.3
C	28	59	55	47.3
D	41	50	45	45.3
E	57	63	93	71.0
F	72	68	60	66.7
G	60	56	54	56.7
H	51	51	50	50.7
I	63	63	61	62.3
J	62	61	66	63.0
K	55	54	55	54.7
L	68	72	68	69.3
M	51	57	60	56.0
O	57	64	61	60.7
P	49	35	33	39.0

The institutions as identified in Table 4.1 as I and L (labeled Highly Effective Institution A (HEI-A), and Highly Effective Institution B (HEI-B) for the remainder of the study) were two of the four institutions with a completion rate of more than 60% for the 3-year cohort average. HEI-A and HEI-B had three cohort enrollment averages in developmental education at or above 60% and a three cohort average successful completion rate at or above 60%. Table 4.2 displays data for all three cohorts. Completion rate for the cohort is calculated for all three curriculum areas by adding the designated length for completion (three attempts) and dividing by three for the overall mean.

Table 4.2

Institutional Developmental Education Completion Rates

Institution	Institutional Average Percentage for Developmental Education Completion 2005	Institutional Average Percentage for Developmental Education Completion 2006	Institutional Average Percentage for Developmental Education Completion 2007	Overall Averages for Successful Completion of Developmental Education 2005, 2006, 2007
A	66.0	58.0	51.0	58.0
B	4.5	18.3	34.3	19.0
C	24.2	27.8	37.9	30.0
D	53.0	54.2	52.1	53.1
E	52.1	49.3	47.1	49.5
F	43.0	46.7	44.0	44.6
G	53.4	54.2	52.4	53.3
H	67.5	65.0	64.0	65.5
I	49.0	71.0	60.3	60.0
J	59.4	53.3	46.0	52.9
K	67.4	58.8	53.4	59.9
L	64.8	64.6	54.6	61.3
M	60.0	55.4	45.8	53.7
N	60.5	60.9	50.9	57.4
O	36.9	58.6	26.0	40.5

The two highly effective institutions were contacted by letter (Appendix C) and agreed to participate in the study. The president, vice president of academic affairs, the department head for developmental education, and division chairs for humanities and mathematics from both institutions participated in the online survey and face-to-face interviews. The demographic data from these two highly effective institutions provided critical information to assist in establishing generalizable results that can be implemented in similar institutions. The demographic data is reported in two general variables, one is minority percentage and the other is gender percentage.

Table 4.3

Demographic Data for Highly Effective Institution A

Enrolled Demographic Data	2005	2006	2007
Minority	609	654	735
Non-Minority	3,208	3,279	3,611
Total	3,817	3,933	4,346
% non-minority	16%	17%	17%
Male	494	562	624
Female	753	716	795
Total	1,247	1,278	1,419
% Female	60%	56%	56%

Table 4.4

Demographic Data for Highly Effective Institution B

Enrolled Demographic Data	2005	2006	2007
Minority	2,695	2,834	2,877
Non-minority	3,455	3,410	3,584
Total	6,150	6,244	6,461
% Non-minority	44%	45%	45%
Male	512	532	480
Female	886	1,109	1,087
Total	1,398	1,641	1,567
% Female	63%	68%	69%

The demographic data for each institution is consistent with institutions of higher education throughout the United States. Tables 4.5 and 4.6 demonstrate the generalizable demographics by gender and ethnicity of the two highly effective institutions in Georgia in comparison to national two-year college enrollment demographics.

Table 4.5

National Demographic Data—Gender by Institution Sector

Gender	Male	Female	Total
Total	43%	57%	100%
Institution sector			
Public 4-year	47%	53%	100%
Private not-for-profit 4-year	44%	56%	100%
Private for-profit	31%	69%	100%
Public two-year	44%	56%	100%
Others or attended more than one school	39%	61%	100%

Note. From . . . U.S. Department of Education, National Center for Education Statistics, NPSAS: 2008 Undergraduate Students

In order to provide a complete foundation for comparing the data gathered by this research to other two-year institutions, race/ethnicity is an essential aspect of the demographic data. The National Center for Educational Statistics also provided data regarding race for higher education institutions.

Table 4.6

National Demographic Data—Race/ethnicity by Institution Sector

Race/ethnicity	White	Non-White	Total
Total	62%	38%	100%
Institution sector			
Public 4-year	67%	33%	100%
Private not-for-profit 4-year	68%	32%	100%
Private for-profit	47%	53%	100%
Public two-year	60%	40%	100%
Others or attended more than one school	60%	40%	100%

Note: From . . . Source: U.S. Department of Education, National Center for Education Statistics, NPSAS:2008 Undergraduate Students.

The general demographic makeup of both highly effective two-year institutions in Georgia is consistent with national statistics in terms of gender. However, one of the two highly effective two-year institutions in Georgia had more than a 10% higher enrollment of non-white students and the other had more than a 20% higher enrollment of non-white students in comparison to other two-year colleges nationally during the 3 years for which data was analyzed for this study. The difference, although significant, does not lessen the generalizability of the findings to institutions with higher or lower non-white enrollment data.

Several participants were selected from the two highly effective institutions to complete the survey and participate in face-to-face interviews. Participants from HEI-A

were the president, vice president for academic affairs; five developmental education faculty members, and a staff member from student support services. Participants from HEI-B were the president; associate vice president in the academic division; dean of the developmental education department; and three developmental education faculty members including one adjunct faculty member.

Findings

The National Center for Developmental Education has conducted statewide reviews of best practices in Texas over the past 6 years. The studies used an open-ended survey as an initial tool and then employed face-to-face interviews to follow up on responses to the initial survey. The purpose of the Texas study was to identify the research-based best practices and new emerging best practices in developmental education. The instrument used in the Texas study answers the overarching research question of this study and answers the sub-questions of this study as well. The survey (Appendix A) was used with the permission of Dr. Patrick Saxon of the National Center for Developmental Education. Since this survey was designed to collect descriptive data, no psychometrics were established.

In addition to the survey, face-to-face interviews were conducted with key individuals at the identified institutions. Interview questions were developed to obtain additional information about the research-based best practices present in the two-year institutions identified through the quantitative analysis. The interview questions (Appendix B) were piloted at a two-year institution with approximately 45% of the student population enrolled in developmental education. The pilot was sent to division chairs who oversee the developmental education department, faculty who teach in

developmental education, and to support staff who serve students in developmental education. Appropriate amendments were made based on the feedback received.

The data collected from HEI-A and HEI-B are presented by institution. The data collected from the online survey are presented alongside and in conjunction with data collected from the face-to-face interviews for ease of understanding and consistency of data presentation in response to the overarching research question and sub-questions.

The data collection survey requested information about placement of students into developmental education. The University System of Georgia uses one placement assessment system for all institutions that offer developmental education. The placement assessment software package is COMPASS by ACT. The software testing package includes all three academic areas that may be assessed during the evaluation. Core competencies in math, reading, and English are evaluated and the university system has established a set of minimal placement scores for all institutions that offer developmental education. Institutions may increase the minimum scores for placement but may not lower the scores. The minimum score to not be placed in developmental education for reading is 74, for English, 60, and for math, 37. However, students who score high enough not to be placed in a developmental course may elect to enroll voluntarily into a developmental course in preparation for college-level coursework. The COMPASS test provides a consistent foundation for placement in developmental education throughout the USG two-year institutions.

The three main areas of research for this study were: (a) administration and organization, (b) instructional practices, and (c) support services. The initial online survey gathered data in these areas from faculty and administrators involved in

developmental education at both institutions. The face-to-face interviews provided additional in-depth responses to the three areas of the survey. The data are presented holistically, connecting the research areas in a manner that stems from administration following a path through the classroom and interjecting the support services that support the specific responses.

Organization and Administrative Structures that Contribute to Student Success

A variety of survey and interview questions targeted the first overarching sub-question which asked about the organizational and/or administrative structures that contribute to student success in developmental education. Data analyses revealed four themes: (a) designated department; (b) structured leadership; (c) strategic planning; and, (d) hiring practices.

Highly Effective Institution A during the cohort years of 2005, 2006, and 2007 had a department designated solely to developmental education. The department was led by a division chair with administrative authority for the entire department of developmental education including all three academic disciplines. The department of developmental education had a designated budget and faculty. This organizational structure was in place throughout all three cohorts and was in place until July 2011. The department was located in the same area, and all developmental education faculty were located in that same area. The division held division-wide meetings about student academic needs, and strengths and weaknesses were communicated openly.

During the same cohort years HEI-B also had a designated developmental education department. The department was led by a department head whose responsibilities included responsibility for developmental education courses, faculty, and

support services. The department head demonstrated a passion for developmental education and student success. Participants from HEI-B stated that the department head was passionate about all of the students and sought various methodologies to generate student success. All faculty and support services staff met on a regular basis to discuss current issues in the classroom, particular student needs, and various methods that demonstrated success.

Although neither institution had a written mission statement or philosophy for the developmental education department, both stated that the unwritten philosophy among all faculty and department leaders centered on being creative and finding ways to connect to the students and generate success. Regarding a guiding philosophy for the developmental education department, one HEI-B administrator stated that the department strives to see the “importance of success in learning support as success for the college.” This support creates a connection between the individual student and the entire institution. When one student is successful, the institution benefits from the individual’s success through retention and graduation.

Several faculty members emphasized the strong structural leadership of the developmental education chair and the chair’s passion for underprepared students and the faculty assigned to teach the courses. One faculty member stated: “The division chair understood developmental education. The chair knew our students, understood the student’s needs, and encouraged collaboration among developmental faculty.”

Each faculty member emphasized various aspects of focusing on developmental education, each aspect centered on the student, and how to meet the needs of the students in their courses. This focus was maintained through a close knit relationship described

by two members as family within the developmental education department. The relationship of the various academic disciplines to one another provided a system of constant communication and information sharing that enabled the faculty to focus on individual student needs across disciplines. The centralized structure of the department of developmental education enhanced the faculty's ability to share information and granted ease of access to each other in order to share vital information.

The developmental education department at HEI-A was led by a strong advocate for developmental education. The department head was heralded by the faculty and the administration as the developmental education champion for the institution. A senior administrator for HEI-A stated: "The department chair person built a culture of success with the students and the faculty." HEI-B had a similar department head. Faculty spoke highly of the administrator's passion for developmental education and the person's promotion of the department. Faculty commented on the culture of striving for student success championed by the department head.

Through the encouragement and inspiration of the department head of HEI-B, students and faculty were provided an opportunity and an environment to succeed. The administration encouraged all developmental faculty to attend conferences designed specifically for developmental educators. The encouragement for professional development was centered on a desire to seek new techniques, curriculum, pedagogy, and technology for student success in developmental education. The department of developmental education created an identity established through inspirational leadership and a common vision. Through the common vision, a culture of success was established for the entire division.

The organizational structure of the institution, and particularly the developmental education department, allowed the entire department to have instrumental input into the strategic planning process. The faculty and administration established a strategic plan to enable a pattern of student success in underprepared students. The overarching consideration for the strategic plan centered on increasing completion rates and overall preparedness for college-level coursework. A major part of the strategic plan included assessment of goals and outcomes within the plan. HEI-B assessed completion rates and exit rates from developmental education and in the next level courses as well. However, the institution did not assess only the next level courses in English and math; faculty assessed former students who successfully completed developmental education completers in science and social science courses as well.

HEI-A and HEI-B placed a priority on professional development through the institutional strategic plan and the plan allowed the developmental education department to continue the institutional priority of professional development throughout the developmental education programs. Attendance at annual conferences offered by nationally recognized organizations, including the National Center for Developmental Education, were strongly encouraged and well attended prior to budget reductions. Institutional meetings, state level conferences, and webinars are a part of the existing development strategy for each institution. Senior level administrators all expressed frustration regarding the desire and need for professional development and the ability to fund training for faculty.

Professional development within HEI-A consisted of meeting on a regular basis and faculty would discuss instruction and curriculum issues they faced. The faculty

developed a consistent approach for students identified as at risk and discussed various methodologies and pedagogy. Faculty mentioned the meetings were effective for identifying problems in reading that might inherently transfer to the English and math courses. Communication between faculty in different academic areas played a vital role in the institutions' success. Communication was integrated as an expectation of the developmental education department. The meetings may have been defined as professional development, yet each participant stated the effectiveness of the meetings directly impacted student success.

The developmental education faculty in HEI-A and HEI-B met with faculty assigned to instruction in the initial transition courses in the two major academic areas of English and math. Faculty interaction developed a seamless transition from one level of coursework to the next designated level of coursework. Faculty communication regarding competency levels from one core academic area to the next level provided a unified and consistent approach. The developmental courses in math used the same textbooks for all levels of developmental math. The institutional approach was intentional for consistency for the students and certainly for the curriculum. Both institutions assessed successful students in the next level courses, and HEI-B assessed various other courses outside the designated curriculum areas.

An additional theme that emerged during data collection showed similar developmental education faculty hiring practices in both highly effective institutions. Both institutions hired faculty as instructors for developmental coursework. Position announcements were specific and required skills necessary for the institution to successfully move students through developmental education coursework to college-level

coursework. Both institutions hired faculty as primary developmental education course instructors. The senior administrator at HEI-B described hiring developmental education faculty as the most critical initial step in establishing an environment of student success in developmental education. HEI-B had eight full-time faculty in the developmental education department. The department also housed academic support services. The administration sought creative faculty who demonstrated a passion for students' success. A senior administrator of HEI-A stated, "We had a very effective hiring process. We made sure we only hired faculty who could handle the stress and problems that come with teaching learning support classes." Hiring the right faculty who can effectively teach and connect to developmental students is a cornerstone of success and is demonstrated in the actions and words of the faculty. One faculty member from HEI-A stated:

I think one reason why we were successful is that we had, for the most part, quality instructors who taught their classes, and cared enough about their students and their progress. It wasn't necessarily teaching the class and walking away from them. It was actively seeking some of the students out that disappeared, or actively seeking out those that started off really well and kind of sank a little bit.

Having the right faculty with the right skill set, the right classroom management style, and adaptability, places faculty at the center for student success. Both institutions had developmental education departments with strong passionate leaders in place, and both were integrated into the overall strategic plan, budgets for the department, and still greater, both described the key component to the administration of a successful developmental education program as an effective hiring practice.

Hiring the right faculty was described as a crucial initial step. Once faculty are in place, the next step for student success in developmental education is an effective transition from the administrative office into the classroom. Respondents all described various aspects of their programs that demonstrate dynamic methodologies and techniques of instruction that resonate with developmental education students.

Curriculum and Instructional Strategies and Support Services

A variety of survey and interview questions focused on the second and third overarching sub-questions, which asked specifically about the instructional practices and support services provided for the developmental education program. The original format of the research had curriculum and instructional strategies separate from support services. The themes that emerged through data collection were dynamic, yet one interesting overarching lesson emerged from the responses. This overarching lesson was that the curriculum and instructional practices could not be separated from the support services. Both institutions and an overwhelming majority of respondents, including all faculty respondents, stated that support services offered for the developmental students were an integral part of their success. Therefore, curriculum and instructional strategies are presented in conjunction with the lesson that emerged from data collection regarding the third research sub-question about support services. The identified key lessons learned and perceived best practices are presented by overall strategy. The overall categories are: classroom and student management and support services. The themes that emerged are presented as strategies and will be referred to as strategies from this point forward.

The ability to increase student success through developmental education is a topic that has been researched throughout the distant and recent past. Student success has

become a critical point for all institutions, and both highly effective two-year institutions in Georgia identified in this study defined that critical point as the interaction between the faculty, student support services, and the student. The institutions' developmental faculty demonstrate the ability to transform theory into daily practice. Through this connection, the faculty have developed various key instructional practices that seem to offer greater successful outcomes. The developmental education faculty were asked to describe some of the key lessons they have learned over the cohort years and to identify several best practices that have generated greater success. Faculty identified several areas that have proven successful in their interaction with students in this level of coursework.

The initial category, defined as classroom and student management, addresses how the faculty integrated policies inside the classroom and managed the myriad of distractions in a student's life. Several participants spoke about the faculty hired for and assigned to developmental instruction. The faculty with stronger completion rates had common traits. They looked for innovative ways to meet student's academic needs at their starting point, not the starting point of the curriculum. The ability to seek innovation and the temperament of the faculty member were mentioned as strengths. In speaking about a colleague, one HEI-A faculty member stated: "If one approach doesn't work, they're quite flexible in adapting some other measure to try to get the material across to the student. Still, that all resides in the faculty member as the greatest strength, the flexibility, innovative teacher methodologies, and temperament."

The freedom inside the classroom to discover various techniques and instructional methods was a common theme at both institutions. Faculty use diagnostic tests, such as the Schmidt Metacognitive Index, to explore the needs of the students and design the

curriculum for the semester to meet student needs. An administrator at HEI-B stated, “I try to emphasize to instructors that they should teach with whatever method works best for them. We have some instructors using more active learning, some utilizing more technology in the classroom, and still others who are mostly using a traditional lecture format. We have no across-the-board format.” The faculty’s ability to discover what works best for the faculty member translates into a practice of exploration in the classroom to discover the best path for student success in that particular class with that set of particular students. This type of exploration and connection with the students also allows the faculty to develop a better understanding of their students from a more holistic approach, including distractions of life outside of the classroom.

The participating faculty often spoke to the difficult balance of a student’s life outside and inside the classroom. The student’s life outside of the classroom had a significant impact on student performance. Two participants specifically mentioned the ability to assist in outside distractions was an effective part of classroom and student success management. Two HEI-A faculty members spoke about the importance and the benefits of building a strong relationship with students. One faculty member stated, “We are very student focused. Faculty members are very approachable and students feel comfortable asking for academic assistance as well as sharing problems they are having in the individual lives.” One humanities faculty member shared: “It is just shocking the number of problems there are . . . for example, getting kicked out of an apartment, it’s terrible what they face.” The outside distractions have a direct impact on what occurs inside the classroom and on student performance.

The faculty interviewed spoke of building relationships with their students and, through the relationship, building a sense of trust and offering advice on developing balance in a student's life. The faculty consider the difficulties of the modern student, traditional age and non-traditional age, and the complexities of both groups. The practices often used a holistic approach, not one centered just on the academic world inside the four classroom walls. As stated by one faculty member from HEI-A, "Our students have difficulty managing school and personal commitments. Most importantly, we routinely afford second chances to students who fall behind due to having difficulty managing their academic requirements with their personal commitments." The second chance philosophy was apparent in both highly effective institutions. However, the second chances were earned by the students, and were designed to allow students to keep their motivation and strive for course completion.

Some faculty would offer a retest for students in order to replace the lowest grade in the class. The ability to replace a low grade motivated students to stay enrolled in the class and successfully complete coursework as opposed to failing the course through loss of interest. This prevented students with low grades from developing a sense of defeat and either physically withdrawing from the course or mentally withdrawing from learning the material.

The second category of key strategies was derived from the direct involvement of support services for students. Both highly effective institutions discussed student support services in direct connection with the academic courses, often overlaying the two as if the two components were one. The services offered to students involved coordination of services addressing various disabilities, counseling, learning skills, and tutoring. Students

who received early assistance and academic support in their courses demonstrated higher success rates. HEI-A and HEI-B introduced the support services into initial class meetings. Faculty for developmental education courses at HEI-A would take the class to the institution's Academic Resource Center (ARC) for a tour and to introduce the students to several of the staff and tutors in the center. Both institutions provided tutoring to students free of charge and offered online tutoring.

Both institutions also developed early alert systems that generated red flag alerts for various parameters determined by the faculty that could prevent successful completion of coursework. Students who received an early alert were contacted by the ARC for assistance. The system has proven to be effective at both HEI-A and HEI-B. The faculty practiced early intervention through the alert system and through meetings with the students to generate motivation towards course completion. The ability to intervene with students who show signs of academic difficulty early was a recurrent theme. One HEI-A faculty stated: "It is very important to meet with students as soon as they begin to fall behind in course. It is also imperative to stay on them about getting to class on time and doing homework. Many of our students require close supervision with respect to meeting course requirements." Contacting students early and offering second chances should not be misconstrued as lowering academic standards or offering unlimited chances to succeed. As explained by one HEI-A faculty member:

Early on in my career, I think I was too lenient with my students. It is very important to meet with students as soon as they begin to fall behind in a course. It is also imperative to stay on them about getting to class on time and doing homework. Many of our students

require close supervision with respect to meeting course requirements. Else, they fall further and further behind and end up failing their courses.

The ability to balance second chances with the desired outcome for student success is not always as clear-cut as just offering a second chance on an exam. It often involves the ability to look at the much larger picture of success for the student. The University System of Georgia allows three attempts to exit a developmental education curriculum area. There are situations when a student may need to drop a course and attempt the course at a later time; however, the student must be advised of the consequences of withdrawing from the course. A HEI-B faculty explained the difficulty of this balance:

We all want our students to succeed, but sometimes failing is the best thing that can happen to a student. It's a necessary and painful lesson that we sometimes have to watch as instructors. I have had several instances in the last two years where I have told a student, 'this doesn't seem to be your time.' They need more time to mature and take things seriously.

In both institutions the faculty adhere to a culture of success and are often challenged by this very balance. However, the overall final success of a student is the ultimate goal. HEI-A and HEI-B operated with the ultimate success of the student as the main consideration. If the student would have more opportunity for success by withdrawing from a course without significant penalty to their federal aid, the student

was advised to withdraw. Participants all seemed to agree that it was important to keep the students' ultimate goal of graduation in mind, not just course completion.

The balance forced painful decisions and discussions, yet the students benefited from the ability of the institutions to properly maintain that balance. One faculty member for HEI-B spoke about several students who had dropped a course because of poor performance and attendance and were taking the course again stated that "one even thanked me for telling it to him straight. They're all excelling at the moment because they are now ready. Failing provided the perspective they needed to finally commit to their education." The ability to develop a path to success for the student is centered on the relationship between faculty to students and the ability of students to trust the institution for overall success. Being able to focus on overall student success is a transformational aspect for both institutions which led to focusing on the critical steps.

Participants were asked to identify the most critical steps the institution had taken to establish the developmental education program as a success and to discuss what steps had been taken to ensure the program will continue to be a success. The steps defined by the participants can be categorized in the following areas: (a) faculty hiring, (b) communication, (c) student support services, and (d) student/faculty relationships. The four categories were described by both institutions' participants as critical to student success by the individual faculty and/or the institution as a whole. The faculty described various methodologies, and how a variety of student support services are used to assist students for success.

Hiring the right faculty to meet the demanding needs of underprepared students was and is still currently a critical component to successful programs. The right faculty,

those hired to teach the developmental education courses, stated that the ability to connect students to effective support services was the greatest influence on success outside the classroom. HEI-A student support services consist of two main offices or services. One is the Academic Resource Center (ARC) and the second is the Academic Advising Center (AAC). The ARC performed all tutoring tasks at no cost to students, and also had professional tutors available at a minimal cost. The ARC uploaded videos used in the courses as well as those used to highlight study skills. Students could view the videos from remote locations.

The AAC was the central location for academic advising for developmental education students, undeclared majors, and transfer students with less than 30 hours of completed coursework. The AAC worked with students to establish career and academic goals and develop a path for completion. The AAC worked to get students enrolled during early registration and also assisted the Disability Services (DS) Coordinator with identifying students who may need services through the DS program.

HEI-B student support services include a tutorial center, advising, and disability services, along with counseling. The tutoring area is located near the centralized location for all of developmental education courses. Tutoring is provided by professional tutors and a limited number of students at no cost to current students. Career services, advising, and disability services are also provided to students. Many at-risk students face difficult challenges academically and may need the services of a counselor to aid in dealing with the challenges of facing higher education and balancing outside distractions.

The support areas for HEI-A and HEI-B serve as the main source for notification through the early alert report system from faculty, and these two units are responsible for

contacting students receiving alerts. At HEI-A, students who were assigned to the AAC and received an early alert were contacted, and the student advisor would develop resources to meet the student's current academic need. The ARC notified all students of the available resources through tutoring, computer assistance, streaming video, and extra practice for various skill sets. The two programs, working together through the early alert system, integrated the support services into the developmental education program.

HEI-B also uses an early warning system to identify at risk students. Those with low attendance and low first test scores are entered into the system. The Tutorial Center contacts the students, and faculty members encourage the students to use the available resources.

The institution uses professional part-time tutors. The administrator for the developmental education department oversees all aspects of student academic support services and meets with students who have missed more than 15% of the course. The administrator counsels the student regarding excessive absenteeism, and discusses the importance of going to class. The meeting is designed to assist the student in finding motivation to continue in the course with assistance from available resources or design an exit strategy that will not harm the student's opportunity to retake the course. The student signs an agreement with the administrator to adhere to the designed path for successful course completion. HEI-B is committed to identifying at risk students early and developing a pathway for success. This is not a written philosophy, yet it seemed to permeate through all respondents.

Faculty and administrators at HEI-A and HEI-B were asked to identify the aspects of their curriculums that contributed most to successful developmental education.

Participants responded to the question by providing what they identified as key aspects that lead to success in the three areas of developmental education. Faculty members reported various methodologies in the classroom, curriculum alignments, and the ability to integrate support services into each of these components. Administrators often reported various aspects of the support services.

Faculty respondents in English at HEI-A and HEI-B mentioned the amount of writing performed by the students. Students' writing assignments all received some aspect of feedback. Not all writing assignments were graded formally; but, students received feedback on structure, grammar, continuity, and overall ability to answer or discuss the topic. One developmental English faculty member from HEI-A stated:

I called it rumination at first, and it has now evolved into something, I just call it informal writing. I have clearly separated formal writing from informal writing and students have a chance to really experiment and explore their own style, their own voice in writing without fearing a bad grade.

The ability to allow for experimentation and exploration in writing provided an avenue for positive constructive writing feedback from the instructor. The overall goal was to allay students' fear of writing for a grade and open the door for a creative voice within the assignment. The English faculty used multiple writing assignments and varied the writing assignments from journals through formal graded assignments. Multiple assignments created more opportunities for feedback and helped prepare students for multiple levels of graded assignments.

Allowing students the ability to start at a comfortable skill level and providing informal, non-graded feedback proved to have positive results. Faculty at both HEI-A and HEI-B also integrated a slower, step-by-step approach. Faculty made no assumptions about previous skill sets learned, and at HEI-B they started with writing paragraphs, not a full essay. The paragraphs blended into the final essay. The technique was used to teach formation of an essay and allow for opportunities for early success. One instructor described this approach as “delivering the course material in a progressive fashion, for example starting with the instruction of paragraph writing, then moving to out-of-class essays and finally to in-class timed essays, on which the students’ successful completion of the course partially rests.” The ability to provide multiple opportunities for success emerged as an overarching strategy throughout the discussions regarding developmental English courses.

Faculty respondents for developmental education reading courses at HEI-A and HEI-B cited various methodologies used in the classroom setting that have demonstrated success. Students taking developmental reading truly struggle in academic courses across disciplines. Reading is the core of all other coursework; therefore, reading courses are essential for student success. Key aspects mentioned by faculty at HEI-A were motivating students to participate early and often during class, generating opportunities for early success, using a diagnostic tool to identify areas in need of improvement, and adapting the curriculum to meet the student’s needs. One HEI-B reading faculty stated, “I use the Schmidt Metacognitive Index assessment tool to identify the needs of the class and design the curriculum for the semester based upon that particular group of students’

needs.” In other words the curriculum was adapted to meet current needs and readjusted for each course and from semester-to-semester.

Faculty participants from HEI-A and HEI-B expressed the need for more active learning methodologies in the classroom. Methods varied from open discussions to arranging the room in a small group setting using round tables to promote interaction. Many participants discussed the ability to use social learning as a tremendous tool for developmental students. Creating an environment where students felt comfortable enough to engage and interact was paramount. Faculty from HEI-A involved students in creating the plan for the semester and establishing guidelines for the course. An HEI-A faculty member in reading provided an example of a method used to engage students in participation and discussion: “I’ve discovered that the best way to engage them is through doing rather than observing in the classroom. Even on the first day of class, the students are encouraged to participate in introductions and goal setting and establishing classroom rules. This encourages dialogue with others.”

Early involvement and participation in class discussions generated a more comfortable environment allowing students to share openly. Many of the developmental reading students read their first novel as part of the course assignment. Faculty for HEI-A and HEI-B also utilized small discussion groups to discuss the reading assignments and students would write summaries of the assignments and the group discussions.

Students are assessed at the end of each skill set in order to perform a diagnostic assessment of the skill obtained or identify remaining weaknesses. The

students work through the skills in order to master the current skill and then advance to a higher level and a new skill set. An HEI-B faculty member stated:

I have implemented a Mastery Learning system in my classroom. I am assessing skills that are essential to an effective reader throughout the semester. Students who score 80% or above are *masters* and have mastered the skill. Students who have scored 70-80% are considered to be *accomplished*. These students have a good foundation but need extra practice. Students who score below 70% are considered to be *in progress*. These students need the opportunity to re-learn the skill practice as much as possible with the instructor or tutor. There are two dates set aside during the semester for students to re-take any assessment in which they scored below the 80th percentile.

The online assessment assists in preparing students for the final online exam that students must pass to exit the developmental course. The online assessment helps the student become familiar with reading comprehension assessment on the computer and lessens anxiety for the final online exam.

Faculty for developmental math cited various methodology and pedagogy variations used in the classroom that seemed to generate better success in course completion and exit rates. When asked to give an example of one aspect that they believed created student success, the answers ranged from exit exam workshops to teaching math as a language. An HEI-A math faculty member discussed teaching math as a language:

Our DE mathematics curriculum is very closely aligned with the skills tested on the exit COMPASS. We provide workshops and COMPASS review class sessions to help students transition from the way math problems are worded in a textbook to the way they are worded on the COMPASS. We have begun requiring students to take a Bridge to College Mathematics course. We found that the curriculum needed for students to be successful on the COMPASS did not adequately prepare students to take Math Modeling.

Various methodologies were apparent in the math classrooms of both HEI-A and HEI-B. Some instructors used lecture style learning coupled with several examples and assigned students several problems for homework. Others used teaching math as a language. One HEI-A faculty member stated,

I've never taught algebra in the traditional sense, as a process, a bunch of steps that you do to get from beginning to end. I've always taught it as a language. I've always made sure my students could learn to read algebra as a language. So when they looked at an algebra problem, they could identify what type of problem it was, and what they needed to do to solve that problem.

Other faculty members chose a more traditional route and placed higher expectations on students' ability to develop the skills needed to exit the developmental courses and succeed in college-level coursework. An HEI-B math instructor stated, "What I feel works best for me is clear, detailed and mathematically accurate explanations and lots of examples, examples, examples. I also think respecting the

students' intelligence and setting high standards are important.” This instructor also discussed the importance of exploring what works best for the instructor and the students. At both institutions, instructors placed importance on working with various methods and adapting pedagogy to develop an overall positive experience for faculty and students.

Summary

Two institutions were identified as being highly effective meeting the 60/60 criteria. Both institutions had centralized departments of developmental education. HEI-B also placed student support services under the same department. Both departments had budgets and were responsible for strategic planning and assessing measurable outcomes. Both administrations hired full-time and part-time faculty for developmental instruction only. Toward the last cohort, some crossover between instruction at the developmental level and college level had occurred. The crossover was not by intentional design, but seemed to be a product of extensive budget reductions. The centralized departments have one administrative position that is charged with oversight of all developmental education areas for the institution. Both institutions agreed that the leadership position was vital to the institutions' overall success in developmental education.

HEI-A and HEI-B faculty members all responded with various methodologies and techniques used in the classroom to promote student success. Diagnostic assessments, pre-tests, and other tools used to discover the general starting point for the semester were a common tactic. Instructors used mastery learning models, emporium models, whether defined as such or defined by method. Social learning and the use of group activities were also common categories.

Perhaps one of the most important tactics cited by participants was the ability of the instructor to connect with the student and help provide a way to balance life and college. Participants often described the ability to connect with students and the importance of building relationships with students. Instructors also offered several opportunities to obtain grades and offered second chances on at least one exam. Instructors found ways to use technology to assist students' learning and reduce the anxiety for the exit COMPASS test that is given online. COMAPSS test practice was an integral part of both highly effective institutions. These techniques plus others contributed to the overall high student completion rates for developmental education.

Support services were absolutely vital to student success at both HEI-A and HEI-B. Both institutions had an early alert system in place and designed intervention methods for students identified as at risk through the early alert systems. The systems promoted tremendous communication between faculty and support services staff and opened the doors for a united effort to assist students in completing the program. The early alert program strengthened the departments of developmental education and generated success through the active engagement of faculty at both HEI-A and HEI-B.

Both institutions use tutoring centers with paid tutors that provide services to students at no cost. The centers are open during class hours and have evening hours as well. Online tutoring, streaming video lectures, and podcasts are all tools available in the centers. Students are given tours of the tutoring centers or the developmental faculty invite the tutoring center coordinators into the class during the first week or two to connect students to the center and inform students of available resources.

Support services are such a vital part of student success that participating faculty stated that support services were integrated into the classroom and into instructional methods. One administrator stated that the program could not function without the support services of the institution and the students depended heavily on the resources of the support centers at both institutions.

HEI-A and HEI-B both provided qualitative data answering the research questions. Both institutions used intentional administrative and organizational structures intentionally designed for greater student success. The highly effective institutions gathered data and evaluated various methods for instruction and support services. The institutions promoted creative exploration by faculty through various methods and pedagogy, generating a culture of success for the department and institution. HEI-A and HEI-B are effective in developmental education completion through the use of research-based practices and through additional strategies generated by active, passionate faculty and administrators.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

The institution of higher education has long been a stable constant in American life. American higher education has literally helped build the foundation of this great nation. Higher education was once only accessible by the social elite and the wealthy; this environment created an academic superiority that excluded many citizens of the new world and created class separation. However, by the mid-1900s, with many of the barriers to a quality higher education having been eliminated, the post-secondary degree became a springboard to developing leadership positions,.

Currently more than 80% of U.S. citizens believe a person should have access to higher education, and the desire to obtain higher education has grown (Attewell et al., 2006). This is truly a paradigm shift. Higher education is no longer thought of as a right for those of upper socioeconomic status; instead, it is thought to be a right, accessible by those who have the desire to obtain an education. The ability to access higher education opens the door to opportunities afforded by a college education. The current economic crisis has further contributed to the paradigm shift. However, the desire for a college education and the right to access one creates a larger academic issue: Not every high school graduate is academically prepared for enrollment in a four-year institution.

According to the National Center for Educational Statistics (1996), slightly more than half of the graduating seniors had taken the essentials of a college preparatory curriculum; meaning slightly less than half did not take the academic courses necessary to prepare for higher education. Often, under-prepared students will need a bridge

between high school and a four-year college curriculum; this bridge is frequently found at a two-year institution. The need for students to obtain more knowledge prior to entering a four-year college/university is not a new phenomenon. In fact, the University of Michigan established the first two-year institution in the form of a college preparatory academy in the summer of 1848. Currently, more than 45% of students entering higher education will enter via a two-year institution (Marcus, 2005).

Two-year colleges provide an access point to higher education for many students in the United States who otherwise might not have access. Greene and Foster (2003) found that only 32% of students who graduate from high school are minimally prepared for higher education. The lack of academic preparation is one of the greatest challenges for students from a low socio-economic background (Bettinger & Long, 2007). Over the past decade, enrollment in two-year colleges has increased by more than 10%, and now more than 45% of undergraduates attend a two-year college (Marcus 2005).

A two-year institution is often referred to as a community college or a junior college. While these terms are used interchangeably, they are not the same in terms of mission and admission. Boss (1982) defined two-year colleges as open-door admission institutions or access mission institutions. In other words, two-year institutions admit the vast majority of applicants. Almost half the population of college-level students will enroll at a two-year college first. This population has many and varied needs, not the least of which is academic preparation, which often comes in the form of remediation.

According to Boylan (1999), 25% of all students who enter into higher education will take at least one developmental course. For students attending two-year institutions, the statistics are even more alarming, with approximately 60% of these students requiring

remediation in the form of coursework. “The demand for developmental courses has increased rapidly in recent decades, especially at community colleges, which have opened their doors to all students whatever their level of academic preparedness” (Levin & Calcagno, 2008, p. 1).

In Georgia, for fall 2008 (the most current data available at this time), 18,442 students were enrolled in two-year institutions throughout the state; of those, 10,512 (57%) were enrolled in developmental courses at great expense to the state and federal governments, as well as the students. While there is a strong link between completion of developmental coursework and degree completion (Attewell et al., 2006), little research has been conducted in Georgia regarding the effectiveness of developmental coursework in moving students from developmental to college-level coursework.

Importance of the Study

The two-year colleges in the University System of Georgia have enrolled more than 120,000 students in remedial coursework over the past 10 years. Completion rates have averaged, for the most part, less than 50%, meaning that more than 60,000 students did not successfully complete developmental requirements and did not continue toward degree completion. Research on effective developmental programs in two-year institutions that have a higher completion rate than other institutions is almost nonexistent and truly nonexistent in Georgia. In addition, there has been no analysis or evaluation of two-year institutions in Georgia identified as having more effective developmental programs. This gap in the research demonstrates the neglected response to a rising crisis in higher education. Enrollment in developmental programs continues to

increase, yet the effectiveness of these programs is not being assessed nor has it been evaluated.

This study will impact more than retention for two-year institutions; it will also impact the state's economy. College degree holders have greater earning potential. Degree completion increases the value of human capital by increasing the earning and spending potential of each successful student. Industry, technology, service arenas, and governmental agencies all benefit from an educated workforce.

Procedures

The method selected for this research was a sequential case study. Quantitative data identified institutions with the highest completion rates, and clearly defined the number of students enrolled in developmental coursework. The qualitative aspect of the research identified defined practices and allowed open and thorough responses to the research questions. Case study design answers the question of how or why. At the heart of this study is the question: How are identified institutions retaining more underprepared students through developmental coursework leading to college-level coursework.

The study replicated a Texas study conducted by Saxon and Boylan in 2005. Therefore, this study used a combination of qualitative and quantitative data based on numerical data provided by the University System of Georgia and information gathered from responses to a qualitative instrument from two-year institutions that demonstrate success in developmental coursework. Interviews with directors, coordinators, and faculty from two-year colleges with successful developmental programs provided substantial data, not just enrollment and success data, but also information about aspects of the programs that have proven successful.

The research used a sequential case study approach utilizing quantitative methods to identify institutions that met enrollment and completion criteria, and qualitative methods to identify the factors that influence the success of those institutions. The researcher accessed and analyzed enrollment data for the 16 two-year units in the University System of Georgia. The researcher calculated the overall percentage of enrollment in developmental education to identify institutions with at least 60% of total student enrollment in at least one developmental course. To be considered successful in terms of developmental programming, an institution must show that at least 60% of students enrolled in developmental coursework complete all required coursework.

Data needed for this analysis were housed in a publicly accessible database archived at the University System of Georgia central office. Institutions with a successful completion rate of 60% were identified as candidates for the study. Two institutions were identified as highly effective institutions (HEI).

Once successful institutions were identified, the researcher utilized a qualitative methods approach to evaluate each institution's developmental program using Boylan and Bonham's (2011) survey for evaluation of developmental programs and the survey questions used by Dr. Boylan and Dr. Saxon for the Texas study.

Analysis of Research Findings

The research identified several key components of the best practices utilized at both HEIs to generate greater student success. The research findings formed through the analysis of qualitative data will be presented in a manner consistent with the overall research question and the three sub-questions, and consistent with the survey instrument.

Therefore, organizational and administrative structures are presented first, and instructional and support services are presented next.

The data presented in this section answer the overarching research question and the three sub-questions. All data collected may not be reflected in the findings; only data that answered the research questions are presented.

Institutions HEI-A and HEI-B both had designated centralized departments of developmental education. HEI-B also placed student support services under the same department. Both departments had designated budgets and were responsible for strategic planning and assessing measurable outcomes. Both administrations hired full-time and part-time faculty in developmental education as instructors solely for the developmental courses. The hiring of the faculty centered on the skills, abilities and passion for reaching underprepared students. During the later years of the last cohort, some crossover between instruction at the developmental level and college-level had occurred. The crossover was not by intentional design, but seemed to be a product of extensive budget reductions. The centralized departments have one administrative position charged with oversight of all developmental education areas for the institution. Both institutions agreed that the leadership position was vital to the institutions' overall success in developmental education.

The centralized departmental structure allowed for open and constant communication among all of the developmental education faculty. The open communication among the faculty focused on student success but also contributed to the overall input of the departments into the institutional strategic plan.

HEI-A and HEI-B faculty members all responded with various methodologies and classroom management techniques used to promote student success. Diagnostic assessments, pre-tests, and other tools used to discover the general starting point for the semester were frequently used at both institutions. Instructors used mastery learning models, whether defined as such or defined by method. Social learning and the use of group activities were also common themes.

Perhaps the most prevalent theme cited by respondents was the importance of an instructor connecting with the student and helping the student balance life and college. Participants often mentioned the ability to connect with students and the importance of building relationships with them.

Instructors also offered several opportunities for students to obtain satisfactory grades and offered a second chance on at least one exam. Instructors found ways to use technology to assist student learning and to reduce anxiety about the exit COMPASS test that is given only online. COMAPSS test practice was an integral part of both highly effective institutions. These techniques contributed to the overall high student completion rates for developmental education at HEI-A and HEI-B.

Student support services were absolutely vital to student success at both HEI-A and HEI-B. Both institutions utilized academic resource centers containing free tutors and academic assistance software packages for core courses. The HEI's also utilized an early alert system in place and designed methods for intervening with students identified as at risk through the early alert system. The systems promoted communication between faculty and the support services staff, and opened the door for a united effort to assist students in completing the program. Student support services at both institutions

strengthened the developmental education programs, improved successful completion rates, and helped ensure active faculty engagement in the developmental education program.

Both institutions use tutoring centers with paid tutors that who provide free services to all students. The centers are open during class hours as well as during the evening. Online tutoring, streaming video lectures, and podcasts are all tools available in the centers. Students are given tours of the tutoring centers, or developmental education faculty invite the tutoring center coordinators into the class during the first week or two of classes to connect students with the center and inform students of the available resources.

Student support services are such a vital part of student success that faculty respondents stated they integrated support services into the classroom and the instructional methods. Administrations both stated the program could not function without the support services of the institution and students depended heavily on the resources of the support center.

Discussion of Research Findings

Two-year colleges have opened their doors to all students with any level of academic preparedness or unpreparedness (Levin & Calcagno, 2008). Enrollment numbers in these programs are truly amazing. Sixty percent of the students who enroll at a two-year college enroll in at least one remedial course (Attewell et al., 2006; Bailey, 2009). Further research shows that the number of students who need developmental coursework at the collegiate level has risen over the past 20 years and has accelerated in the past decade (Perin, 2006).

In 1971, it was estimated that as few as 30% of students who entered a community college lacked the basic skills required for college-level coursework. This estimation was based on the number of students taking at least one course in a remedial program at a community college. In 1992, almost all community colleges offered remedial coursework in English, mathematics, and reading. By the end of the 1990s, 60% of the students who entered a community college were taking remedial coursework. According to the National Education Longitudinal Study (NELS, 1988), more than 60% of first-time college students attending a two-year college took at least one remedial course, which remains consistent with data from 2008.

HEI-A and HEI-B had an average of more than 60% enrollment in developmental education courses for the 2005, 2006, and 2007 cohorts, which is consistent with national statistics for two-year colleges. Although the average is slightly higher at one institution, the other institution had an average of almost 70% enrollment in at least one remedial course. The University System of Georgia had an average of slightly more than 58% enrollment in at least one developmental education course during the cohort years for all 16 two-year institutions.

Research conducted by the National Center for Developmental Education (2005), the Continuous Quality Improvement Network (2003), and the Research and Planning Group for California Community Colleges (2010), found that mandatory assessment of basic skills enables the institution to place students who may need more work on basic skills in developmental education coursework. “In order to serve underprepared students, it is necessary to identify them and determine their skill levels” (Boylan, 2002, p. 35). Mandatory placement and assessment contribute to student success (Boylan, 2002;

McCabe, 2000; Roueche & Roueche, 1999). The ability to assess the skill levels of incoming students provides the foundation to begin instruction at the appropriate beginning point for the student.

The University System of Georgia uses one placement assessment system for all institutions that offer developmental education, the COMPASS test by ACT. This software testing package assesses all three academic areas during the evaluation: math, reading, and English.

Academic core competencies are evaluated and the university system has established a set of minimal placement scores for all institutions that offer developmental education. Institutions may raise the minimum scores for placement but may not lower the scores. The minimum score to avoid placement in developmental education for reading is 74, for English is 60, and for math is 37. However, students who score high enough to avoid mandatory placement in a developmental course may elect to enroll voluntarily into in preparation for college-level coursework. The COMPASS test provides a consistent foundation for placement in developmental education throughout the two-year institutions of the University System of Georgia.

Comparison of National Best Practices

The National Center for Developmental Education (NCDE), the Continuous Quality Improvement Network, and the Research and Planning Group for California Community Colleges developed research-based best practices that have shown success in obtaining higher completion rates in developmental education. The three institutions produced manuals of the research findings. The National Center for Developmental Education (date) produced the *National Study of Developmental Education*. The

Continuous Quality Improvement Network (date), through the NCDE, produced the manual, *What Works: Research-Based Best Practices in Developmental Education*; and the Research and Planning Group for California Community Colleges (2010) produced the manual, *Student Success in Community Colleges, A Practical Guide to Developmental Education*. These research-based manuals provide the standards for student success in developmental education by which all programs are compared.

The three studies identified three major areas that have a direct impact on student success in developmental education: (a) organizational and administrative structures, (b) program components or instructional practices, and (c) support services and strategies (Boroch et al., 2010; Boylan, 2002; Boylan & Bliss, 1997). Organizational and administrative structures focus on the overall location, placement, coordination of coursework, assessment and evaluation, prioritizing developmental education, and funding. Instructional practices focus on faculty status, instructional strategies, program alignment to college-level coursework, and communication. Support services focus on tutoring, academic support, mentoring for students, tutor training, and career advisement.

In this study, the tools used to gather data, an online survey and follow up face-to-face interviews, collected holistic data about developmental education but were designed to focus on the three main areas identified in the national research-based best practices described in the aforementioned studies. HEI-A and HEI-B demonstrated and practiced various aspects of the research-based best practices, yet also developed other practices proven to generate student success in developmental education.

Organizational and Administrative Structures

Several organizational and administrative structures and components that contribute to student success have been identified through research. The components identified through each of the studies include a clearly defined mission and prioritization of developing education programs. Additional components identified are designated developmental education departments, strong structured leadership of the department, collaborative strategic planning, and hiring the right faculty for the developmental education (Boylan, 2002). Last, administrators monitor, assess, and develop faculty and student expectations and outcomes in developmental education (Boroch et al., 2010). The leadership of the developmental education departments consistently monitored performance through the developmental education courses, and in addition, monitored performance in initial college level coursework.

Developmental education is a vital part of a two-year college. Approximately 60% of the students enrolled at a two-year college will enroll in at least one remedial course. Two-year colleges, as stated previously, have an open access mission, and must have a clearly defined mission and philosophy for developmental education (Boroch et al., 2010; Boylan & Bliss, 1997). Programs must have mission statements, goals, objectives, and a shared overarching philosophy (Boroch et al., 2010; Boylan & Bliss, 1997). Programs with clearly defined missions, goals, and philosophies have higher successful completion rates and better retention rates (Boylan et al., 1992; Boylan & Saxon, 1998).

Both participating institutions, HEI-A and HEI-B, have mission statements that clearly define the access mission of the institution. The developmental education departments at both institutions also had mission statements; however, neither department had a written philosophy statement. Participating faculty and senior administrators spoke

of a culture of success in the developmental education divisions, and one leader stated, “They are devoted and dedicated to the mission of developmental education and they are used as advisors for curriculum and program development.”

Although the philosophy statement was not written on paper, an overarching philosophy of striving for success through creative pedagogy and variation in methodologies existed within the departments. Casazza and Silverman (1996) call for a “well-defined mission statement and a set of program goals addressing specific areas” (p. 72). HEI-A and HEI-B had outcomes for regional accreditation purposes that defined outcomes for the departments, and an expressive philosophy statement existed in culture and practice but was not recorded in writing.

The second administrative or organizational structure identified to promote student success is a centralized developmental education program that “places the delivery of all remedial courses, programs, and services in a separate department, supervised by a dedicated administrator, with its own identified line of budgetary and other resource support” (Boroch et al., p. 21). Attributes of the model that were cited include greater accessibility, integrated support services, and motivated faculty (Boroch et al., 2010; Perin, 2002). Centralized programs add to student retention and passage rates in developmental education (Boylan & Bliss, 1997).

The other model, defined as *mainstreaming*, relegates developmental courses to various academic departments. This model allows for open communication between developmental education faculty and other faculty members in the same academic division and better course outcome alignment from developmental courses to college-level courses (Boroch et al., 2010). The centralization of developmental education allows

for seamless design of the developmental education curriculum and regular academic coursework. The curriculum transition from one developmental course to the next, for example, the transition from Math 097 to Math 099, would be designed to assist the students, and the transitions are created so that the last unit of Math 097 is the first unit of Math 099.

During the 2005, 2006, and 2007 cohorts, HEI-A had a department devoted solely to developmental education. The department was led by a division chair with administrative authority for the entire department including all three academic disciplines. The department had a designated budget and designated faculty. This organizational structure was in place throughout all three cohorts and until July 2011. All developmental education faculty were located in the same area. Department-wide meetings were held and there was open communication about student academic needs, strengths, and weaknesses.

HEI-B, during the same cohort years, also had a designated developmental education department. The department was led by a department head whose responsibilities included oversight of developmental education courses, faculty, and support services. The department head demonstrated a passion for developmental education and student success. All participants from HEI-B stated that the department head was passionate about all students and sought various methodologies to generate student success. All faculty and support services staff met on a regular basis to discuss current issues in the classroom, particular student needs, and various methods that demonstrated success.

Several faculty members emphasized the strong leadership of the developmental education chair and the chair's passion for underprepared students and faculty assigned to teach the courses. One faculty member stated: "The division chair understood developmental education. The chair knew our students, understood the student's needs, and encouraged collaboration among developmental faculty." Each faculty member emphasized various techniques for focusing on developmental education, each aspect centered on the student and how to meet the needs of the students in their courses. This focus was maintained through a close knit relationship within the developmental education department described by two members as "family."

The relationships between the various academic disciplines provided a system of constant communication and information sharing that enabled faculty to focus on individual student needs across disciplines. The centralized structure of the developmental education department enhanced the faculty's ability to share information and granted ease of access to each other for information sharing.

The developmental education department at HEI-A also was led by a strong advocate for developmental education. The department head was heralded by faculty and administration as the developmental education champion for the institution. Senior administrators commented on the culture of success created by the department or division chairperson for developmental education.

Through the encouragement and inspiration of the department heads, students and faculty were provided an opportunity and an environment to succeed. The administration encouraged all developmental faculty to attend conferences designed specifically for developmental educators. The encouragement for professional development was centered

on a desire for discovery of new techniques, curriculum, pedagogy, and technology for student success in developmental education. The department of developmental education created an identity by inspirational leadership and a common vision. Through the common vision, a culture of success was established within the division. This common vision was championed through the demonstrated passion of the administration.

The organizational structure of the institution and, particularly the developmental education department, allowed input by the entire department into the strategic planning process. The faculty and administration established a strategic plan to encourage a pattern of student success in underprepared students. The overarching considerations for the strategic plan centered on increasing completion rates and overall preparedness for college-level coursework. A major part of the strategic plan included assessment of goals and outcomes within the plan. HEI-B assessed completion and exit rates from developmental education and in the next level courses as well. However, the institution not only assessed the next level courses in English and math, it also assessed former developmental education students' completion of science and social science courses.

In the strategic plan, the institutions placed a priority on professional development. Annual conferences provided through nationally recognized organizations, including the National Center for Developmental Education, were strongly encouraged and well attended prior to budget reductions. Institutional meetings, state level conferences, and webinars are a part of the existing faculty developmental strategies for each institution. Senior level administrators all expressed frustration regarding the desire and need for professional development and the ability to fund training for faculty.

Professional development within HEI-A consists of meeting on a regular basis and faculty discussion of issues surrounding instruction and curriculum, development of a consistent approach for students identified as at risk, and discussion of methodologies and pedagogy. Faculty mentioned the meetings were effective for identifying problems in reading that might inherently transfer to English and math courses. The communication between faculty in different academic areas played a vital role in the institution's success. Integrated communication between the different academic areas was an inherent expectation within the developmental education department. The meetings may have been defined as professional development, yet each participant stated that the meetings directly impacted student success.

Developmental education faculty in HEI-A and HEI-B met with faculty assigned to instruction in the initial transition courses in the two major academic areas, English and math. Faculty interaction developed a seamless transition from one level of coursework to the next. Faculty communication about competency levels between core academic areas provided a unified and consistent approach for instruction.

Developmental courses in math used the same textbooks for all levels of developmental math. The institutional approach was intentional and provided consistency for the students and certainly for the curriculum. Both institutions assessed student performance in subsequent courses, and HEI-B assessed successful students' performance in other courses outside the designated curriculum areas.

The final theme that emerged during data collection was the hiring practices of the highly effective institutions. Both institutions hired faculty as instructors for developmental coursework. Position descriptions specifically required skills identified as

needed to promote successful completion of developmental education coursework by students at that institution. Both institutions hired faculty as primary developmental education course instructors.

The senior administration at HEI-B described hiring developmental education faculty as the most critical initial step in establishing an environment of student success in developmental education. HEI-B had eight full-time faculty in the developmental education department. The department also housed academic support services. The administration sought creative faculty who demonstrated a passion for student success.

Senior administrators ensured student success through effective hiring practices for developmental education. Located and acquiring the right person with passion for students in developmental courses. Hiring the right faculty who can effectively teach and connect with developmental students is a cornerstone of success and is demonstrated in the actions and words of the faculty. Faculty members from both highly effective institutions' agreed that quality instructors who taught classes, deeply cared about their students and their progress. It was actively seeking some of the students out that disappeared, or actively seeking out those that started off well and kind of sank a little bit.

Having the right faculty with the right skill set, the right classroom management style, and flexibility, places faculty as the centerpiece for student success. Both institutions had developmental education departments with strong passionate leaders in place, and both integrated developmental education into the overall strategic plan. Both institutions described effective faculty hiring practices as a key component in administration of a successful developmental education program.

Acquiring the right faculty was described as a crucial initial step. Once faculty are in place, the next step for student success in developmental education is effectiveness in the classroom. Respondents all described various aspects of their programs that demonstrate dynamic methodologies and techniques of instruction that resonate with developmental education students.

Curriculum, Instructional Practices and Student Support Services

Organizational and administrative practices are certainly one component to student success at a two-year college; but, administration can only provide the framework, facilities, and funding for success. Program components and instructional practices directly impact students and fill the gap between administrative offices and the classroom. Program components described in the literature have four primary aspects that demonstrate a positive impact on student success: (a) orientation, assessment, and placement; (b) counseling and tutoring; (c) monitoring of student performance; and, (d) regular program evaluation (Boroch et al., 2010; Boylan & Bliss, 1997). These four broad-based components are contributing factors to successful student completion of developmental coursework and are well represented in the literature (Boroch et al., 2010; Boylan & Bliss, 1997; Roueche & Roueche, 1999).

The University System of Georgia uses one orientation, placement, and assessment system for all institutions that offer developmental education, the COMPASS test by ACT. The minimum score needed to avoid placement in developmental education for reading is 74, for English is 60, and for math is 37. However, students who score high enough to avoid placement in a developmental course may elect to enroll voluntarily into a remedial course in preparation for college-level coursework. The COMPASS

assessment of incoming students meets the criteria established by research that states that mandatory placement and assessment contribute to student success (Boylan, 2002; McCabe, 2000; Roueche & Roueche, 1999).

Mandatory assessment and placement in developmental education courses must be accompanied by counseling, mentoring, and/or tutoring. Counseling and mentoring provide a mechanism for motivation and encouragement from other students who have completed developmental coursework.

Tutors are identified in the literature as a key component contributing to student success (Boylan, 2002; Boylan & Bliss, 1997; Roueche & Roueche, 1999; McCabe, 2000). “Regardless of what sort of tutoring is being provided or where it is housed, the most important aspect of successful tutoring is tutor training” (Boylan, 2002, p. 49). Casazza and Silverman (1996) stated that the well-trained tutor, as opposed to a marginally trained tutor, is the difference between a successful tutoring program and a mediocre tutoring program.

According to Boylan (2002), well-trained tutors need a basic understanding of learning theory, metacognition, motivation, counseling and interviewing, group dynamics, and adult learner models. Well-trained tutors placed in visible learning centers have a demonstrated positive impact on student success (Boylan & Bliss, 1997; McCabe, 2000; Roueche & Roueche, 1999). While tutoring is essential to success, identifying a student who needs tutoring is also a vital component.

According to Cassazi and Silverman (1996), monitoring a student’s performance is a key component to student success. “Faculty can identify students’ needs for tutoring, study skills, or drill and practice” (Boylan, 2002, p. 58). Once identified, a student’s

advisor can assist by identifying the best resources for the student's academic needs and directing the student to the resources provided (Boylan, 2002; Boylan & Bliss, 1997).

Casazza and Silverman stated that early identification and intervention contribute directly to student success in completing developmental coursework. Identifying the needs of a student early in the semester provides greater opportunity to allocate resources and/or increase current accommodations used by the student. Clearly stated in the literature, early detection and immediate intervention increases the probability for successful completion of developmental coursework (Boylan, 2002; Casazza & Silverman, 1996).

Faculty hired to teach the developmental education courses stated that the ability to connect students to effective support services had the greatest influence on success outside the classroom. HEI-A student support services consists of two main offices for services. One is the Academic Resource Center (ARC) and the second is the Academic Advising Center (AAC). The ARC performed all tutoring tasks free of cost to the students, and also had professional tutors at minimal cost to students. Using a streaming format that enables remote viewing, the ARC uploaded videos used in courses as well as those used to highlight skills necessary for specific areas of study.

The Academic Advising Center was the central location for academic advising for developmental education students, undeclared majors, and transfer students with less than 30 hours of completed coursework. The AAC worked with the students to establish career and academic goals and develop a path for completion. The AAC worked to get students enrolled during early registration and also assisted the disability services (DS) coordinator with identifying students who may need services through the DS program.

HEI-B student support services provide a tutorial center, advising and disability services, along with counseling. The tutoring area is located near the centralized location for all developmental education courses. Tutoring is provided by professional tutors, and a limited amount is provided to students at no cost. Career services, advising, and disability services are also provided to students. Many at-risk students face difficult challenges academically and may need the services of a counselor to aid them with balancing school and outside distractions.

The support areas for HEI-A and HEI-B serve as the main source for notification through the early alert reporting system, and these two units are responsible for contacting students receiving alerts. For students attending HEI-A who were assigned to the AAC and received an early alert, the student's advisor was the lead contact for the student and would develop resources to meet the student's current academic need. The ARC notified all students of available resources such as tutoring, computer assistance, streaming video, and extra practice for skill sets. The two programs, working together through the early alert system, integrated support services into the developmental education program.

HEI-B also uses an early alert warning system to identify at-risk students. Those with low attendance and low first test scores are entered into the system. The Tutorial Center contacts the students, and faculty encourage the students to use the available resources. The institution uses professional part-time tutors. The administrator for the developmental education department also oversees all aspects of student academic support services. The administrator meets with all students who have missed more than 15% of a course and counsels students about excessive absenteeism and the importance

of going to class. The meeting is designed to assist the student in finding motivation to continue in the course with the assistance of available resources or design an exit strategy that will not harm the student's opportunity to retake the course. The student signs an agreement with the administrator to adhere to the plan for successful course completion. HEI-B is committed to identifying at-risk students early and developing a pathway for success. This is not a written philosophy, yet all respondents appeared to adhere to it.

The last practice identified in the literature for student success in developmental education is regular and consistent evaluation of developmental education programs (Boroch et al., 2010; Boylan, 2002; Casazza and Silverman, 1996). As Boylan (2002) stated, "Time and again, research has shown that developmental programs undertaking regular and systematic evaluation are more successful than those that either fail to evaluate their activities or evaluate them erratically" (p. 39). The literature calls for a regular, systematic approach to the evaluation process and widespread dissemination of data collected (Boroch et al., 2010; Boylan, 2002). Most programs collect various data; however, institutions with a higher student success rate collect three different levels of data and disseminate the data to different groups.

According to Boylan (2002) and Boroch et al. (2010), data should be collected on three different levels to have the greatest impact on student success. The first level collects descriptive data on the number of developmental courses offered, the number of tutoring hours, and the number of students served. These data provide an overall view of what is actually occurring in developmental education (Boylan, 2002). The second level of data collects short-term outcomes including grades in developmental courses, completion rates, and semester-to-semester retention rates. These data provide the

effectiveness of developmental education in the short term (Boroch et al., 2010; Boylan, 2002). The third and final level of data collection includes long-term data, such as overall GPA, retention, and graduation rates. These data provide the long-term success rate of developmental education (Boroch et al., 2010; Boylan, 2002).

Collecting the correct data is merely the initial step. Following data collection, the information is used as part of a formative evaluation for program improvement (Boylan, 2002). In the formative evaluation process, the faculty and staff who are directly involved in the day-to-day operations of the course offerings and support are the “people who control what is done as a result of the evaluation” (Boylan, 2002, pp. 43-44). Institutions that use the formative evaluation process, the collection of data and wide-spread dissemination of data used for program improvement, have higher student success rates. The data are used to impact and improve instructional practices in the classroom.

The formative evaluation process drives the instructional practices used in the classroom. The data collected and analyzed are used to inform and transform the instructional practices of faculty and impact the actions of support staff. The instructional practices identified in the research are integrated into program components, whereby collected data informs continuous improvement for greater student success. The instructional practices are: (a) developmental educational design that aligns exit skills to college-level coursework in the various disciplines; (b) teaching learning techniques and strategies, and teaching critical thinking skills using varied instructional methods; (c) using supplemental instruction with modern technology in moderation; and (d) active learning techniques and learning communities (Boroch et al., 2010; Boylan, 2002; Boylan & Bliss, 1997).

Although it may seem a given that the second course in a sequence would align with the first course, the alignment must be intentional; thus, the need to identify the alignment of the coursework in the literature. Borocho et al. (2010) and Boylan et al. (1992) stated that programs with intentional alignment between exit level skills and the entry-level skills needed for the next sequenced course have a higher student success rate in the second sequential course.

HEI-A and HEI-B established guidelines for course evaluations. Students were asked to complete course evaluations and the students had to pass the COMPASS exit exam. Both institutions also used other assessment measures based on student success in the next college-level course. HEI-B expanded the assessment of student success to other college-level coursework. Assessments of successful developmental education were evaluated on performance in science courses, political science courses, and history courses. Data were collected and used to evaluate the transitional component of the remedial courses into college-level coursework. The evaluation process assists in curriculum design and implementation of various strategies or to confirm effectiveness of active learning techniques.

Second, developmental education instructors in institutions with higher student success rates used various instructional methods to teach students learning strategies, critical thinking skills, and used technology in moderation. Instructional methods include distance learning and computer-based technology in moderation, self-paced instruction, individualized instruction, peer review of student work, collaborative learning, mastery learning, small-group work, and active learning techniques (Borocho et al., 2010; Boylan 2002; Boylan & Bliss, 1997).

Faculty respondents in the English curriculum all mentioned the amount of writing performed by the students. Student writing assignments all received some aspect of feedback, but not all writing assignments were graded formally. However, the students received feedback on structure, grammar, continuity, and overall ability to answer or discuss the topic.

The ability to allow for experimentation and exploration in writing provided an avenue for positive constructive writing feedback from the instructor. The overall goal was to allay the fear of writing for a grade and open the door for a creative voice within the assignment. The English faculty used multiple writing assignments, and writing assignments varied from journals through formal graded assignments. Multiple assignments created more opportunities for feedback and levels of graded assignments.

Allowing students to start at a comfortable skill level and providing informal, non-graded feedback proved to have positive results. Faculty also integrated a slower, step-by-step approach. Faculty made no assumptions about students' previous skill sets, and started with writing paragraphs, not a full essay. The paragraphs blended into the final essay. The technique was used to teach formation of an essay and allow for opportunities for early success. The material was delivered in a progressive fashion, for example starting with the instruction of paragraph writing, then moving to out-of-class essays and finally to in-class timed essays. Providing multiple opportunities for success emerged as an overarching theme throughout the discussions regarding developmental English courses.

Respondents for developmental education reading courses also provided methodologies used in the classroom that have demonstrated success. Students taking

developmental reading truly struggle in academics across all disciplines. Reading is the core of all other coursework; therefore, reading courses are essential for student success. One key aspect mentioned by faculty was motivating students to participate early and often during class, generating opportunities for early success. A second tactic was using a diagnostic tool to identify areas in need of improvement and adapting the curriculum to meet the students' needs. Faculty used the Schmidt Metacognitive Index assessment tool to identify the needs of the class and could then design the curriculum for the semester based upon that particular group of students' needs. Therefore, adapting the curriculum to current needs and readjusting the curriculum for each course and from semester to semester helps each cohort of students succeed.

Faculty participants expressed the need for more active learning methodologies in the classroom. The methods varied from open discussions to setting the room in a small group setting using round tables to promote interaction. Many respondents discussed the use of social learning as a tool for developmental students. Creating an environment where students felt comfortable enough to engage and interact was paramount. Faculty involved the students in forming a plan for the semester and establishing guidelines for the course. Reading faculty used early participation exercises to introduce a more active learning style approach by engaging students on the first day of class by encouraging the students to participate in introductions and goal setting, and establishing classroom rules.

Early participation and class discussions generated a more comfortable environment allowing the students to share openly. Many of the developmental reading students read their first novel as part of the course assignment. Faculty also utilized small

discussion groups to discuss the various reading assignments and students would write summaries of the assignments and group discussions.

Students are assessed at the end of each skill set in order to perform a diagnostic assessment of the skill obtained or identify the remaining weaknesses. The students work to master each skill. Mastery Learning systems were critical aspects in the classroom. Students who score 80% or above are Masters and have mastered the skill. Students who have scored 70-80% are considered to be Accomplished. These students have a good foundation but need extra practice. Students who score below 70% are considered to be In Progress. These students need the opportunity to re-learn the skill practice as much as possible with the instructor or tutor. There are two dates set-aside during the semester for students to re-take any assessment in which they scored below the 80th percentile.

An online assessment assists in preparing students for the final online exam that students must pass to exit the developmental course. The online assessment familiarizes students with reading on the computer and has lessened anxiety about the online final exam.

Faculty for developmental math provided suggested methodology and pedagogy variations used in the classroom that seemed to generate better success in course completion and exit rates. When asked to provide one aspect they believed created student success, the answers ranged from exit exam workshops to teaching math as a language.

Various methodologies were apparent in the math classroom as well. Some instructors used lecture style learning coupled with several examples and homework assignments as well as teaching math as a language.

Other faculty members chose more traditional routes and placed higher expectations on students to develop the skills needed to exit the developmental courses and succeed in college-level coursework. Various instructors also choose various methods of instruction that not only fit the students' need but the instructors teaching strength. Some Math instructors chose to use more examples inside the classroom and raising the expectations of the students' abilities. The instructors explored different methods of instruction to generate success for the students. For the instructor, it was important to find the match and work with the various methods and adaptable pedagogy to develop an overall positive experience for faculty and students.

Conclusions

The research-based practices identified in the national studies served as the standard by which the HEI-A and HEI-B developmental programs were measured. The research-based best practices have been tested; over time, they have demonstrated continuous effectiveness and positive impacts on student success at the two-year college-level. This study determined that these research-based best practices have been applied to the daily practices of HEI-A and HEI-B. These successful institutions in Georgia have found creative ways to implement the research-based best practices and have used course evaluation and data assessments to adapt the courses into even more successful programs. This research has shown that research-based best practices can produce great results, and has demonstrated that creative implementation of the practices is key to success.

The overarching research question, what are the factors that contribute to student success in terms of completion of developmental coursework at two-year colleges in Georgia, has been answered through the research. The research was further supported by

answers to the three sub-questions that focused on key areas for student success in developmental education.

Recommendations and Implications for Practice

Based on the research-based best practices identified by the National Center for Developmental Education and the research performed for this study, the following recommendations were developed for student success in developmental education in two-year colleges in Georgia.

1. Institutions need an individual department that is assigned the function for developmental education at the institution.
2. The department must have a strong leader who is passionate about developmental education and student success.
3. Developmental education faculty must have the ability to be creative in methodology, pedagogy, and the ability to communicate openly with students and faculty across disciplines.
4. Social and active learning skills are essential to reach the modern student. Mastery learning methods and curriculum that builds from a similar model are highly effective. Social and active learning allows students to start at a similar point and interact with students in the same module. Active learning rather than formal lecture-style learning creates direct involvement in learning.
5. Early and intrusive interventions with at-risk students are paramount.
6. Student support services, tutoring, career services, and disability services are critical for student success and must be integrated into the developmental education curriculum.

7. Advising and instruction that identifies and enables early success promotes program completion. For optimum student success, instructors must find assignments that students can accomplish and receive higher grades while not lowering standards in the classroom. Early success generates student motivation.

Implications for Further Research

HEI-A and HEI-B are both exploring new methods and pedagogy in the developmental education curriculum. The main area of exploration is within math courses. HEI-A started a new format this past academic year and only has two semesters of data to measure. HEI-B also is using a new format, but only in a limited fashion. The new method is defined by some as the *emporium* model; others refer to the model as a new *mastery* model. The model uses technology for students to work through a module; the student must master the skill before being able to move to the next module. The work is done online and is often performed outside the classroom; however, students still have regularly scheduled class sessions. In the class session, the instructor assists students one-on-one and in small groups in progressing through the module.

Both institutions have seen some early success, yet the program has not been in place long enough to make a data-driven decision regarding completion rates of the current cohort. Therefore, future studies will need to examine the new emporium model to verify if this method will rise to the level of a research-based best practice. The exploration of this model has shown mixed reviews according to HEI-B; however, HEI-A has one semester of data that shows promise of higher completion rates.

A more accelerated path to completion is another emerging model for developmental education. Part of the accelerated model allows students to perform at a their own pace to complete a curriculum or module. Once the modules are completed the student can exit the program and enter college-level coursework. This model is literally in the discussion stage at two-year colleges. The goal of the model is to allow students to complete coursework and connect to credit-level college work as quickly as possible. The model is mentioned in current literature for Complete College of America. There is no significant research on the model and its application to developmental education.

Dissemination

Two-year institutions in the University System of Georgia and other two-year institutions that offer remedial education will be interested in this study. The study will be placed in the Georgia Southern Library and disseminated through online databases in Galileo. The researcher will present the findings at the fall SEM conference in Orlando, Florida. A copy of the research will be sent to the National Center for Developmental Education for possible publication in the semi-annual journal for developmental education.

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APPENDIX A
SURVEY QUESTIONS

NAME OF INSTITUTION _____

NAME/TITLE _____

DATE _____

ORGANIZATION AND ADMINISTRATION

1. Please describe the structure of your developmental education program, including how it receives funding, its placement within the organization's administrative structure, and any collaborative approaches/relationships with internal and external organizations.
 - Centralized developmental education program?
 - Highly coordinated developmental education program?

2. What are the greatest strengths of your DE program?

3. Describe how you integrate the various functions of your institution's DE program.

4. How is the developmental education program included in the institution's overall strategic planning process?

5. What amount of money is budgeted for the DE program? What % of
 - Institution's overall budget?
 - What is the cost/student?

6. Are there any key lessons that you have learned from your developmental education program?
 - Are there any lessons that may be of benefit to others?

7. What role does adjunct faculty play in your program? What type of orientation/professional development opportunities are they offered?

8. What innovations have you implemented that you consider "best practice?"

9. What are the five most critical steps your institution took to establish developmental education as a successful program? What steps is it taking to ensure its continued success?

10. What aspects of your developmental education curriculum contribute most to your program's success?

PROGRAM COMPONENTS

1. Is a systematic plan in place for the evaluation of developmental education courses and services? Do you collect data on faculty satisfaction with your DE program? Is it collected from dedicated DE faculty only, or from faculty members who also teach college-level courses? What methods are you using to collect this data? What have the results been? Please explain.
2. Is professional development available for developmental educators? What activities in this area have been the most successful and why? How are these opportunities typically provided (e.g., workshop format, in-service, ongoing informal sharing of resources, etc.)?
3. Is there a written philosophy statement that guides the provision of developmental education courses and services? What is it? Could you describe the values and beliefs that you believe are associated with your program?
4. Describe the curriculum development process for your DE program and how this process is supported by the institution (e.g., through faculty release time, curricular design assistance, technology support, etc.).
5. How is student performance monitored in your DE program for intervention purposes?

INSTRUCTIONAL PRACTICES

1. How does your institution assess learner skills and abilities? How are students placed in developmental education courses?
2. Why that particular instrument (the THEA in all cases according to our records)?
3. What do you do to ensure consistency between exit standards of developmental classes and curriculum entry classes?
4. What pedagogical approaches or methodologies have you found work best with developmental education students? Please explain.
 - Learning communities
 - Different instructional methods
 - Instructors regularly use active learning techniques
5. Describe all of the support services (academic and personal intervention) provided to students in your DE program? Which have contributed the most to the success of your institution's developmental education students?
6. What role does technology play in the overall structure of your developmental education program?
7. What % of DE students take classes on-line?

APPENDIX B

FOLLOW UP INTERVIEW QUESTIONS

Face-to-Face Interviews

- 1) What do you feel like is the most imperative component of the administration that aids in the success of students in your developmental education program?
 - a) What has changed in administration over the past three years to enhance student success in developmental education?
- 2) What do you feel like is the most imperative component of your instructional practices that lead to the high completion rates in developmental education?
 - a) What is the biggest difference maker for success in the classroom?
 - b) How is developmental education viewed by the faculty that teach the courses? By other faculty members?
- 3) What do you think is the most imperative component of the support services for students in developmental education?
 - a) What support service do students seem to take advantage of the most?
 - b) Which support service is more supported by the faculty?
 - c) Which service makes the greatest impact for student success?
 - d) How do you measure the answer to c?

APPENDIX C
INFORMED CONSENT

Dear Research Participant,

Your participation in a research project is requested. The title of the study is *Identifying Best Practices for Student Success in Developmental Education in Georgia*. I am seeking your assistance because your institution has been identified as an institution with a very high successful completion rate in developmental education.

Your participation will involve answering questions in a confidential online questionnaire to describe your unique experiences in developmental education at your institution. While this is not an anonymous study, the risks of involvement in this study are minimal. The study has been designed to ensure participant confidentiality. Your participation in this study is voluntary. If you elect not to participate, to discontinue your participation in the study, or decline to answer any part of the questions on the questionnaire, you may do so at any time without consequences. The results of the research study may be published, your name, nor the name of the institution would be published without written permission. Although there are no direct benefits to you, your participation in this study may help our understanding of the unique challenges and barriers facing the University System of Georgia in Developmental Education.

Findings will be presented in my dissertation project for completion of the degree of Doctor of Education in Leadership and Higher Education Administration from Georgia Southern University. The study is confidential. Please be assured that strict confidentiality will be maintained throughout this study. My handling of your data will be consistent with the standards of the Federal Policy for the Protection of Human Subjects (Federal Register, 1991) and the Ethical Principles in the Conduct of Research with Human Participants (APA, 1982). Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after five years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, via email at Rodney.carr@bainbridge.edu, or telephone me at (478) 296-2819. You may also contact my faculty advisor, Dr. Teri Melton at tamelton@georgiasouthern.edu or Georgia Southern University's Institutional Review Board point of contact [must give contact info].

Voluntary Consent

I acknowledge that I have been informed of the nature and purposes of this study by Rodney B. Carr; have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this study.

_____ Yes I consent

_____ No I do not consent.

Signature

Date

APPENDIX D

DATA ANALYSIS FOR INTERVIEW QUESTION TRANSCRIPTS

Data Analysis Procedures

Steps	Procedures	Actions
1.	Review original research questions	a. Review original research questions
2.	Review all data and generate general coding categories	a. Read and reread questionnaires. b. Consider emerging themes, concepts, and form broad categories or classifications that represent them. c. Sub-divide broad categories or classifications that represent them. d. Use convergent and divergent thinking. e. Collapse overlapping categories.
3.	Code all data within categories	a. Assign code, number, or abbreviation to each category. b. Develop clear, operational definitions for codes. c. Develop master list of coding system. d. Refine coding system, collapsing or expanding categories. e. Tag important quotes.
4.	Sort data within categories.	a. Sort data within categories.
5.	Resort through categories, looking for emergent patterns and themes	a. Cluster similar data. b. Count the number of times data occur. c. Look for supporting or contradictory evidence of patterns. d. See what data are left out and what to do with them.
6.	Refine analysis	a. Refine and clarify themes. b. Look for verification or contradiction of patterns. c. Note relationships between variables. d. Identify significant themes. e. Draw conclusions. f. Make metaphors and analogies.

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|-----------|------------------------------|---|
| 7. | Extract respondents | a. Extract respondents' comments as "evidence of themes." |
| 8. | Present themes as narratives | a. Cull thick, rich descriptions (quality not quantity).
b. Select supporting quotes |
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Note. Adapted with permission from the author, T. D. Melton (2002).