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The University of Southern Mississippi

DEVELOPMENTAL STUDIES COURSES AND THE SUCCESS OF  
NON-TRADITIONAL STUDENTS AT A MAJOR PUBLIC  
UNIVERSITY IN THE SOUTHEAST

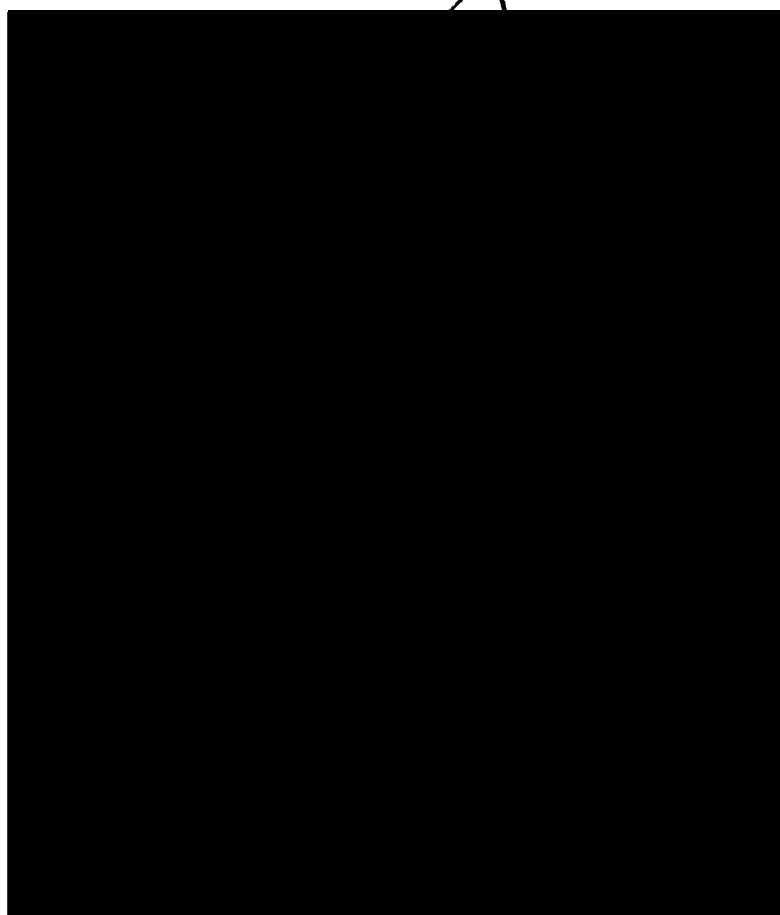
by

Charlotte Tagert Matthews

A Dissertation

Submitted to the Graduate Studies Office  
of The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

Approved:



August 2009

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The University of Southern Mississippi

DEVELOPMENTAL STUDIES COURSES AND THE SUCCESS OF  
NON-TRADITIONAL STUDENTS AT A MAJOR PUBLIC  
UNIVERSITY IN THE SOUTHEAST

by

Charlotte Tagert Matthews

Abstract of a Dissertation  
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ABSTRACT

DEVELOPMENTAL STUDIES COURSES AND THE SUCCESS OF  
NON-TRADITIONAL STUDENTS AT A MAJOR PUBLIC  
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by Charlotte Tagert Matthews

August 2009

The main purpose of the study was to determine the effect of academic preparation in basic skills classes on the academic performance in subsequent college-level classes for non-traditional students. A secondary purpose was to determine if academic preparation in basic skills classes had a long-term effect on academic performance as measured by graduation GPA. A third purpose was to obtain the perspectives of non-traditional students about the effect of academic preparation in basic skills classes on academic performance in subsequent college-level classes.

Methodology included statistical comparisons of grade distributions and GPA using archival data from the Banner student record system, and a comparison of interview data for two groups: non-traditional students who took basic skills classes and Precalculus Algebra or English Composition I and non-traditional students who did not take basic skills classes but did take Precalculus Algebra or English Composition I.

Statistical analysis showed a significant difference in the grades of non-traditional students who had basic skills classes before taking Precalculus Algebra or English Composition I and non-traditional students who took Precalculus Algebra or English Composition I without taking basic skills classes. Non-traditional students with basic skills classes made better grades, passed at a higher rate, and withdrew at a lower rate

than students without basic skills classes, clearly demonstrating the benefit of basic skills classes for non-traditional students. Although the mean graduation GPA for non-traditional students with basic skills classes was greater than the mean graduation GPA for non-traditional students without basic skills classes, the difference was not statistically significant.

Non-traditional students with basic skills classes who were interviewed indicated that even though they would not have taken the basic skills classes without placement into them, they found these classes to be beneficial and would recommend them to other non-traditional students, especially non-traditional students with an extended lapse of time before enrolling in college. Study results confirmed that a review of basic skills can make college-level courses easier and improve grades for non-traditional students.

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## CHAPTER I

### INTRODUCTION

#### Background

The Developmental Studies Program (DSP) at a major public university began in 1981 as an Academic Opportunity Program with an initial enrollment of 24 students. The Developmental Studies Program consists mainly of traditional students who were admitted to the university with an ACT composite score of 15-18 and a high school GPA of 2.00 or greater. Students admitted to the Developmental Studies Program were provided an opportunity to strengthen the skills needed for academic success in college courses. The DSP curriculum consisted of classes in writing, mathematics, and study skills. Regularly admitted students who do not think they are prepared for English 101, Composition I, or MA 112, Precalculus Algebra, as well as those who need help with reading or study skills, can take classes offered in the Developmental Studies Department (DS).

Since Fall 2004, every entering student has been required to take a Math Placement Exam, and those placing into developmental mathematics have been required to take one or more of the DS mathematics courses. In Fall 2006, 130 first-time freshmen were admitted to DSP and 834 students were taught in DS classes. Prior to Fall 2006, 492 students admitted through the Developmental Studies Program graduated with 158 (32%) of the DSP graduates being non-traditional students. In a five year period, Fall 2001 – Fall 2006, 81 of the 212 DS students who took Precalculus Algebra (38%) were non-traditional students.

## Statement of the Problem

Working adults who want to be successful in their chosen profession are becoming the new majority among undergraduates in colleges in the United States according to the Council for Adult and Experiential Learning (CAEL, 2000). The National Center for Educational Statistics (NCES, 2005) found that in the year 2003-2004, 70% of the students enrolled in postsecondary schools were 24 years of age or older. Between 1990 and 2005, NCES reported an increase of 18% in enrollment of students 25 and older. NCES projects an increase of 21% in enrollment of students 25 and older between the years 2005-2016 (NCES, 2008).

Non-traditional students enter college for a variety of reasons. The changing job market and the use of technology have made job training in many vocations necessary and have eliminated other jobs. Postsecondary institutions are having to develop approaches to increase the likelihood that the non-traditional student will be successful in getting an education. In *Learning in the Fast Lane: Adult Learner's Persistence and Success in Accelerated College Programs*, (Wlodkowski, Maudlin, & Gahn, 2001 as cited in Wlodkowski, Maudlin, & Gahn, 2002) Wlodkowski et al. estimated that approximately 60% of adult students do not graduate from college. One of the ways to increase the success of adult learners in college is to provide resources to help them improve their academic skills before beginning their credit-bearing work towards a degree. Many institutions that focus on adult learners report that students who complete programs to increase their academic skills before beginning college classes perform better than students who do not enter programs to increase their academic skills (CAEL,

2000). One of the findings from *Learning in the Fast Lane* was that adult learners persisted in college if they had higher grades.

Students admitted to this university as non-traditional students do not have to meet the admission requirements of the traditional students. Many of the non-traditional students do not have the necessary skills needed for college-level courses. All entering students have to take the Math Placement Exam which tells the students the appropriate math course needed by the student. Prior to Summer 2009, the university did not have a placement test for English or a reading test level as a prerequisite for college-level courses. Beginning in Summer 2009, students admitted to the university as first-time freshmen will have to have an ACT English subscore greater than 18 to register for English 101 and an ACT Reading subscore greater than 20 to register for a History sequence. Non-traditional students will not be held to these prerequisite requirements and, therefore, still will not have to meet the same admission requirements as traditional students. Non-traditional students who realize their skill deficiencies can elect to take the necessary courses to give them the needed skills for the college-level courses. If they take the college-level courses without the necessary skills and have to withdraw or fail, many may become discouraged and drop out of the University.

#### Purposes of the Study

The main purpose of this study was to determine the effect of academic preparation in basic skills classes on the academic performance in subsequent college-level courses for non-traditional students. A secondary purpose was to determine if academic preparation in basic skills classes had a long-term effect on academic performance as measured by graduation GPA. A third purpose was to analyze the

perspectives of non-traditional students about the effect of academic preparation in basic skills classes on academic performance in subsequent college-level classes. With this information, advisors will be able to give better advice to the non-traditional advisees.

Specifically, the study aims to

- Purpose 1. compare grade distributions in MA 112, Precalculus Algebra, and EH 101, English Composition I, of the non-traditional students who took developmental studies courses and the non-traditional students who did not take developmental studies courses.
- Purpose 2. compare the graduation GPA of non-traditional students who took developmental studies courses and non-traditional students who did not take developmental studies courses.
- Purpose 3. through an interview process, obtain non-traditional students' perceptions of their preparation for a beginning college-level mathematics course (MA 112) or a beginning college-level English course (EH 101) by interviewing non-traditional students with and without previous developmental studies class preparation.

#### Statistical Null Hypotheses

- H<sub>1</sub> There is no statistical significant difference in the grade distributions in MA 112, Precalculus Algebra, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.
- H<sub>2</sub> There is no statistical significant difference in the grade distributions in EH 101, English Composition I, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

H<sub>3</sub> There is no significant difference in graduation GPA between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

#### Definitions

Academic self-efficacy	personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances (Zimmerman, 1995, p. 203).
Accelerated learning	an organized approach to teaching the whole person, containing specific core elements that, when used together, enable students to learn faster, more effectively and joyfully (DePorter, 2001).
Active learning	learning involving students directly and actively in the learning process itself. Students are receiving, participating and doing to gain information (Felder & Brent, 1997).
Banner	a digital student record system.
Developmental Studies (DS)	a department at this major university producing courses and instructional support services that address the needs of students in their preparation for collegiate study and students in transition to the University. The courses and services offered provide students opportunities to strengthen the

basic skills necessary for academic success; to explore career options and preparation; and to access campus activities, programs, and services (Undergraduate and Graduate Bulletin, 2006, p. 128).

Developmental Studies Courses	courses whose curriculum includes skills normally learned in high school Pre-Algebra, Algebra I and Algebra II and high school composition courses.
DS Non-Traditional Student	a non-traditional student who has taken DS classes.
EH 101 Composition I	a course that prepares students for diverse types of college writing. This course covers the writing process, general criteria used to evaluate writing, collaborative writing, and rhetoric, especially audience analysis ( <u>Undergraduate and Graduate Bulletin</u> , 2006, p. 179).
Instructional scaffolding	the implementation of a support system to promote learning when concepts and skills are being first introduced to students, or when students are struggling (Educational Policy Improvement Center (epic), 2009).
Knowledge economy	an economy based on creating, evaluating, and trading knowledge (BusinessDictionary.com, 2007).



MA 112 Precalculus Algebra	a study of the use of variable quantities to interpret information about relationships that can be expressed in mathematical terms. Topics covered include linear, polynomial, absolute value, rational, exponential and logarithmic functions with emphasis on numerical, graphical and algebraic properties and applications used in modeling real world situations ( <u>Undergraduate and Graduate Bulletin</u> , 2006, p. 202).
Non-traditional student	a student admitted whose age is 23 or greater.
Scaffolding	a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts (Woods, Bruner, & Ross, 1976, p. 90).
Self-efficacy	people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 1994, p. 71).

#### Delimitations

This study includes non-traditional students who were enrolled at one major university from Fall Semester 2003 through Summer Semester 2008. The grade information used for course performance analyses was the information obtainable from the student record keeping system, Banner. Information about non-traditional students'

perceptions of their preparation for a beginning college-level course came from interviews with a sample of non-traditional students enrolled Spring 2009.

#### Limitations

Generalizability of results may be limited in the following ways. The grade information used in the study was from a variety of instructors. The textbooks and names of the courses changed in the period Fall Semester 2003 through Summer 2008. The non-traditional students who volunteered for the interview might have given socially expected answers to the questions. The non-traditional students who volunteered for the interview might have responded differently from students who had not volunteered.

#### Assumptions

An assumption was made that the intellectual capacity of non-traditional students is sufficient for them to be successful in college. A second assumption was that non-traditional students are motivated to be successful in college. A third assumption was that the time lapse between courses was the minimal time necessary for success.

#### Justification

Several factors have contributed to an increase in the number of non-traditional students in postsecondary institutions. Federal policies to provide financial assistance to students have increased the access to postsecondary education for many students who previously would not have attended college. Institutions changed their admissions policies to allow greater access (Reder, 1999). For example, the institution in which this study was conducted does not have any admissions criteria for those over 23.

Another factor creating an increase in the number of non-traditional students in postsecondary education is the demand for higher skills in the United States workforce. It

is predicted that between the years 2004 and 2014, 24 of the 30 fastest growing occupations will require people with postsecondary education or training. Twenty-five million workers who are in the age range of 18 to 64 do not have a high school diploma or GED. Fifty-two million adults do not have any postsecondary education. In order to meet the demand for skilled workers, more adults in the age range of 18 to 44 with a high school diploma or less need to gain postsecondary degrees or certificates (Strawn, 2007).

One of the consequences of having greater access to postsecondary education is that many students with lower skills or students needing a review of basic skills are admitted to colleges or universities. The percentage of students taking developmental classes has remained stable, but the number of undergraduates has grown, increasing the number of students who need to take remedial courses. Forty-three percent of students attending public two-year colleges reported that they were required to take a remedial course. Twenty-nine percent of students enrolled in a public four-year institution reported that they had been required to take a remedial course (Perkins-Gough, 2008). According to a report from The Institute for Higher Education, 27% of the freshmen enrolled in remedial courses were 30 years of age or older. This fact demonstrates that remedial classes are not offered only for the recent high school graduate (Aycaster, 2001).

One recurring issue in the 1990s through the present time is whether remedial courses should be taught in postsecondary institutions and if they should be taught, which institutions should teach them (Schachter, 2008). This triggered research on the effectiveness of developmental studies, or remedial, courses. One study reported that students in a bachelor's degree program who passed at least one remedial course had a higher persistence rate in college than other students with low skills who did not take

remedial classes. The students with at least one remedial course were more likely to graduate after five years (Attewell, Lavin, & Levey, 2006). Another study conducted by Bettinger and Long followed 8,000 first-time freshmen in four-year colleges in Ohio from 1998-2002. One of the conclusions from this study was that if a student completes successfully a remedial mathematics course, the student's chance of graduating was improved (Bettinger & Long, 2004).

In Fall 2007, 36.5% of the undergraduate students at this university were non-traditional students. The Council for Adult and Experiential Learning (CAEL) states that adult learners who need academic help and commit to taking remedial classes before attempting college-level classes do better in the college-level classes than adult learners who do not commit to taking the remedial classes (CAEL, 2000). The study conducted at this university will contribute to the fields of research in both developmental studies and adult education because it focused on the effectiveness of developmental studies courses in preparing non-traditional students for their beginning college-level courses. If the study shows that completing developmental studies classes does have a significant effect on the success of non-traditional students in college, then recommendations for policy changes can be made, such as requiring placement procedures for non-traditional students as well as for traditional students to insure that the non-traditional students are placed in appropriate courses.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Developmental Studies

Because the United States has a democratic government, other countries have viewed our system as a model for them to follow as they strive to provide access to all learners who want an education. Students who were not prepared for a postsecondary education have been enrolling in institutions of higher learning for over 200 years. Institutions have struggled to develop and provide support needed in order for these students to be successful (Casazza, 1999). After the American Revolution, colleges had an open door policy for men who could afford to attend college. The colleges provided tutors for the students in need of remediation. In 1849, the first formal College Preparatory Department was formed at the University of Wisconsin (Dotzler, 2003). In 1871, Charles Eliot, then president of Harvard University, is quoted as saying “the freshmen entering Harvard had bad spelling, incorrectness as well as inelegance of expression in writing, and ignorance of the simplest rules of punctuation” (Casazza, 1999, p. 2; Weidner, 1990, p. 4). Harvard created an entrance exam which included a written composition. In 1879, 50% of the students applying for admission did not pass this exam. They were admitted “on condition” and Harvard offered classes to help prepare these students for college-level classes (Casazza, 1999; Weidner, 1990, p. 4). Many other institutions in addition to Harvard faced with the same situation were developing courses for the students who were not prepared for college (Casazza, 1999).

The legislature of the United States passed two bills that created a partnership between higher education and the federal government. The Morrill Act of 1862 provided

each state 30 thousand acres of land for each congressman to be sold to fund colleges that would teach agriculture and the mechanical arts. This act opened wider the doors of college for an even wider range of students. The second act, the Morrill Act of 1890, stated that federal funds would not be given to states that discriminated in higher education (Casazza, 1999).

At the beginning of the twentieth century, developmental courses were being offered by all levels of colleges and universities. The majority of these courses were called “remedial reading” or “study skills.” By 1909, courses for underprepared students were being offered by over 350 colleges (Casazza, 1999).

Students who had not had the opportunity to attend college were given a chance to attend. One of the larger groups of new students was the veterans returning after World War II. The legislature passed the GI Bill of Rights which allowed over one million veterans to attend college by the Fall of 1946. Colleges and universities used the money obtained as a result of the GI Bill to create academic support for the veterans. A diverse group of students then followed the veterans. This diverse group consisted of women, students with special needs, and students from impoverished backgrounds. Support systems consisting of courses, tutoring services, or guidance centers continued to grow to meet the needs of this new group of students (Casazza, 1999).

Historically, the support systems had various names like remedial or preparatory departments. The word “remedial” is the most common term used when discussing student weakness or deficiencies. These support systems were to be the “remedy” for these students. The courses were intended to correct students’ academic deficiencies. If

students still had a deficit, they could repeat the courses until the deficit was corrected or they gave up (Casazza, 1999).

Terminology in use today for the student support systems includes remedial courses, developmental studies courses, or transitional courses. Professionals working in developmental education will make an assessment of what is needed to help students meet their academic goals. Usually a diagnostic test to determine the academic skills needed will be given to each student as well as incorporating advising or counseling sessions with each student (Boylan, Bonham, & White, 1999). In 1998, the National Association for Developmental Education (NADE) defined developmental education as “a comprehensive process that focuses on the intellectual, social, and emotional growth and development of all students. Developmental education includes but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework” (NADE 2008 Fact Sheet). This term demonstrates a concern for the development of the student both academically and personally (Boylan, Bonham, & White, 1999). Remedial courses are still the most frequently used type of intervention. Remedial courses have the duration of the full term, but the content is considered to be less than college-level. The content of developmental courses such as study skills or freshman experience, however, is college-level. When a mathematics course or writing course is above high school level and is used to help the student transition into the college-level courses, it could be considered developmental rather than remedial (Boylan, Bonham, & White, 1999). The current trend is to change the name from developmental courses to transitional courses.

Services offered under the umbrella of developmental education such as tutoring are support services that could benefit any student. Research and statistics reported

generally reflect structured classes offered as remedial or developmental courses. One study, Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000, was conducted by the National Center for Education Statistics (NCES) to provide information about remedial courses on a national level. In this study, remedial courses were defined as “courses in reading, writing, or mathematics for college-level students lacking those skills necessary to perform college-level work at the level required by the institution” (U. S. Department of Education, 2003, p. iii). In 1995, NCES reported that 78% of higher education institutions provided remedial courses for the students who needed these courses. One hundred percent of public two-year colleges and 80% of public four-year institutions offered remedial courses. Twenty-nine percent of freshmen registered for at least one of the remedial courses. The NCES study in 2000 reported that 76% of the higher education institutions provided at least one of the remedial courses. Ninety-eight percent of public two-year colleges and 80% of public four-year institutions offered remedial courses. Twenty-eight percent of freshmen registered for at least one of the remedial courses. Twenty-two percent of the freshmen registered for the mathematics courses and 14% of the freshmen registered for the writing courses. NCES did not find any difference in the percentage of institutions providing at least one remedial course or the percentage of freshmen taking the remedial courses between the years 1995-2000. The average length of time students spent in remediation courses increased between the years 1995-2000 (U. S. Department of Education, 2003).

An increased availability of access to college has allowed students who previously would not have gone to college to now attend a postsecondary institution. Educators have conducted studies and looked at the data to determine why students are



not prepared for postsecondary education. One factor for recent high school graduates is the level of coursework completed in high school. Students who meet the minimum requirements for graduation will usually have to complete remediation courses if they pursue a college degree (Russell, 2008). The authors of *Diploma to Nowhere* reported that of the 688 students registered in remedial courses in Spring 2008, the majority indicated on a survey that they had taken challenging courses offered by their high school and had a good GPA, and about 80% thought they were prepared for college (Perkins-Gough, 2008). Longitudinal studies conducted by NCES found that many of the students needing remedial education courses were from the lowest socioeconomic status. Delayed entry into postsecondary education is another factor in the number of students needing remediation (Perkins-Gough, 2008). One study reported that 46% of the freshmen in remedial courses are older than 22, and 27% of the freshmen in remedial courses are older than 30 years of age (IHEP, 1998).

Who should offer remedial courses or even if they should be offered in postsecondary institutions became hot topics in the 1990s. Education researchers began to conduct studies to see if remedial education was effective in postsecondary institutions. Clifford Adelman, Senior Research Analyst in the Institute of Education Science, analyzed data from three cohort longitudinal studies carried out by the National Center for Education Statistics. These three were High School Class of 1972 which followed twelfth graders through 1986, High School and Beyond Longitudinal Study of 1980 which followed sophomores and subgroups to 1992, and The National Education Longitudinal Study of 1988 which began with a sample of eighth graders and followed subgroups to 2000. After looking at transcripts of these students, he reported that students

who took remedial courses in college had a lower graduation rate than those who did not take remedial courses (Adelman, 2004). Another finding was that when the high school transcripts were analyzed, he found that having a poor academic background in high school was the factor that decreased the student's chance of graduation from college rather than taking the remedial courses (Adelman, 1998). When he compared the class of 1982 with the class of 1992, he reported that the number of students taking remedial courses in college was less in 1992. The number in community colleges remained about the same but the number taking remedial courses in four-year colleges had declined. He also reported that students who needed several remedial courses and with low reading skills were less likely to graduate from college. However, he stated that students with a mild deficiency improved their skills and graduated from college (Adelman, 2004).

Bettinger and Long conducted a study that used the longitudinal data set from the Ohio Board of Regents to determine the characteristics of math remediation, look at the participation in remedial courses, and evaluate the effect of remediation on educational outcomes (Bettinger & Long, 2004). The researchers were able to look at applications, standardized test scores, and college transcripts of about 8000 first-time freshmen of traditional age enrolled in nonselective four-year colleges from Fall 1998 to Spring 2002. Because they were looking at a system, they were able to determine if a student transferred to another institution in Ohio or dropped out (Bettinger & Long, 2004).

One result the researchers found was that remediation seems to make the rate of transferring down or dropping out higher within that first year. Remediation did not keep students from transferring to a more selective college or obtaining a degree (Bettinger & Long, 2004). Another finding was that "students who complete their remediation courses

are less likely to drop out of college than similar, non-remediated students, suggesting that getting basic skills increases persistence” (Bettinger & Long, 2004, p. 30).

In a follow up study, Bettinger and Long (2005) used data from the Ohio Board of Regents to track about 28,000 full-time traditional-age freshmen at public college over a five year period. The researchers were attempting to determine the impact of remediation on college performance and persistence. They used information in the data set to control for variation in placement policies and location of college affecting the choice of selection of college attended. In this study using the data from both two-year colleges and four-year colleges, the researchers found that remedial courses did have a positive effect on the educational outcomes of underprepared students. Students who complete remedial courses are more likely to persist in college when compared to students with similar educational backgrounds who do not take remedial courses. Students who complete remedial courses are also more likely to transfer to a higher-level college and obtain a bachelor’s degree (Bettinger & Long, 2005).

Attewell and his team (2006) constructed a model to evaluate the effectiveness of remedial education that could evaluate the interaction of several variables. This was important because colleges each have different definitions of college-level courses and what constitutes a remedial course. Different instruments and cut-off scores are used to place students in remedial courses. Attewell et al. used the data and transcripts from The National Education Longitudinal Study (NELS: 88). This study began in 1988 with the selection of a representative sample of eighth grade students and the collection of information about their family and academic background. The students were given a test in the eighth, tenth, and twelfth grades to evaluate their reading and mathematics skills.

The researchers continued to follow the students as they entered college and through the following years. When Attewell et al. did his evaluation, the survey on this sample was updated in 2000. Forty percent of the college students from the NELS: 88 survey enrolled in at least one remedial course. Twenty-eight percent of the students took a remedial mathematics course. Eighteen percent of the students took a remedial writing course. Remediation at the two-year colleges occurred at a higher rate (58%) than at four-year colleges (31%). Contrary to publicized belief, only 5% of the traditional students took more than three remedial courses (Attewell et al., 2006).

Attewell et al. reported that the data from the NELS: 88 study showed that students needing remediation were from diverse geographical areas. The geographical locations for these students were 40% of students from rural areas, 38% of students from suburban areas, and 22% of students from urban areas. Students needing remediation ranged from lower socio-economic status to the higher socio-economic status. There was also variability in the academic skills used to determine if a student needed remediation. When family background, academic skills, and performance in high school were controlled, three independent effects were found. These three effects were: “Students who enter two-year colleges are more likely than equivalent students in four-year colleges to enroll in remedial courses; students who enroll in public colleges are more likely than academically equivalent students in private college to take remedial coursework; and African American students are significantly more likely than otherwise similar non-Hispanic White students to enroll in remedial courses” (Attewell et al., 2006, p. 903).

Attewell et al. next looked at the effects of taking remedial courses on the graduation rate and the time to degree. The statistical models that he used showed no negative effects for a two-year student to obtain a degree. However it did show that the graduation rate was lowered about 6% or 7% for a four-year college student. Thus it lowered the graduation rate slightly, but given a longer period of time, it did not prevent students who took remediation from graduating (Attewell et al., 2006).

The next thing that Attewell et al. wanted to examine was the effect of taking three or more remedial courses on the graduation rate and time to get a degree. For students taking remedial courses in a two-year college, when the academic preparation from high school was controlled, taking multiple remediation courses did not reduce the chance of graduation. Rather, it was the weak preparation in high school that reduced the chance of graduation. For students in a four-year college taking multiple remediation courses, the graduation rate was lower for these students than for comparable students with similar background. Still, one in three students did graduate after 8 years or longer, overcoming many barriers (Attewell et al., 2006).

The researchers next questioned if one remedial course affected graduation more than other courses. For students who took remediation courses at four-year colleges, courses in remedial reading had a negative effect on graduation, courses in remedial mathematics had no effect or a weak effect, and courses in remedial writing did not have any effect on graduation. For students who took remediation courses in two-year colleges, remedial courses in writing and reading increased the chance that the student would graduate, but remedial courses in mathematics slightly lowered the graduation rate (Attewell et al., 2006).

Attewell et al. finally wanted to find out if successful completion of remedial courses had positive or negative outcomes. Students successfully completing remediation courses in two-year colleges were compared with students who did not enroll in remediation courses but were equivalent otherwise. Successfully passing remediation courses had a positive educational outcome for students enrolled in two-year colleges. There was no significant difference for students who successfully passed remedial courses in four-year colleges when compared to students with similar background and skills who did not take remediation courses (Attewell et al., 2006).

Peter Bahr wrote that postsecondary remediation demonstrates the “Matthew Effect” (Bahr, 2007, p. 695) which basically means that students who need the most remediation are the least likely to be successfully remediated, and the students who need the least remediation will probably be successfully remediated. For this research study, he used a nested logistic regression model to determine if “accounting for the multiplicative interaction of math deficiency and English competency improved the accuracy of prediction of successful mathematics remediation over models that assume simple additive effects of math deficiency and English competency” (Bahr, 2007, p. 696). Bahr used a data population consisting of 55,530 students who took remedial math courses in 107 community colleges and observed the students’ academic progress for 6 years. In order to be in this cohort, the students had to have also taken a college-level mathematics course before the Summer term of 2001 and one non-ESL English course in the period analyzed (Bahr, 2007). Successful remediation was defined by this researcher as passing a college-level math course with a grade of A, B, C, D, or Credit. Bahr used the skill-level of the first math course and the first English course to determine the math

deficiency and English competency. He also controlled for other variables such as sex, race, age, socioeconomic status, grade in first math class, grade in first English class, and academic advising (Bahr, 2007).

The researcher did find that if a student had weak English skills, then a math skill deficiency had a larger negative effect on the successful remediation in mathematics. Bahr thought the most important finding was that if a student had low math skills, the probability of that student passing the college-level course was very low. If a student had low skills in both English and math, the student had almost no chance of passing the college-level course. In conclusion, the lower a student's math skills are at the beginning of college, the less effect English competency has on math deficiency and successful remediation in mathematics (Bahr, 2007).

Another study analyzed data to determine if students who were successful in remediating their math deficiency demonstrate academic outcomes comparable to those of students who did not require remediation in math (Bahr, 2008). The study had a data set that consisted of a cohort of first-time freshmen in Fall 1995 enrolled in any of California's 107 community colleges. The data set was analyzed for 6 years through Spring 2001, and the information was updated for credentials earned or to see how many students transferred to a four-year college. Control variables at the student level from previous research that had been found to be predictors of success were included in this study. He also controlled for several variables that pertained to the colleges such as college size, level of math competency of the first-time freshmen, and the college goal (Bahr, 2008).

Results of this study with the cohort of first-time freshmen at community colleges found that “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” (Bahr, 2008, p. 442). Successful attainment in this study was defined as obtaining credentials or transfer to a four-year college. The troubling concern is that three out of four students do not successfully remediate their math deficiencies. Eighty-four percent of the first-time freshmen who did not receive credentials or transfer were students who took remedial math courses unsuccessfully. Because successful math remediation did show positive academic outcomes in this study of community colleges, future research should be conducted to determine how to improve the number of students successfully remediating math skills (Bahr, 2008).

Denise Crews and Steven Aragon conducted a study to determine the relationship between students taking a developmental writing course the first semester enrolled in a community college and successful completion of courses, the number of semesters enrolled, and completion of degree and/or transfer rate (Crews & Aragon, 2007). One variable described in this study was participation. Participants were defined as students who successfully completed the developmental writing course their first semester at the community college. Nonparticipants were defined as students who should have taken developmental studies writing the first semester but did not follow the requirement from the entrance test. The researcher followed this cohort for three years (Crews & Aragon, 2007).



The researchers had several interesting findings. Initial participants had a higher percentage of completed credit hours than the nonparticipants. At the end of three years, there was no significant difference in the mean of the total semesters enrolled in this community college between initial participants and nonparticipants. In addition there was no significant difference found between degree/certificate or transfer completion between initial participants and nonparticipants (Crews & Aragon, 2007).

Some state policymakers reacting to debates in the decade of the 90s about the high cost of remediation in postsecondary institutions limited remedial courses to reduce the burden to taxpayers (Russell, 2008). The ASHE/Lumina Policy Brief (2007) reported that about 22 states have reduced or eliminated remedial courses specifically in four-year colleges. Several actions were used to accomplish the reduction or elimination of remedial courses. These actions consisted of increasing the admission standards at certain institutions, limiting the funding of remedial courses at four-year colleges, restricting the number of remedial courses a student can take or the length of time a student can take remedial courses, and other actions whose purpose was to reduce taxpayers' costs (Parker, 2007). The actual cost of remediation varies by institution and state from 1% to 4%. Information from Ohio indicated that the cost of remediation is less than 4% of the undergraduate instructional cost (Russell, 2008). Robert McCabe (2000) reports that this cost is low when you look at the number of students enrolled in remedial courses.

McCabe states that for community colleges:

the average public expenditure per remedial student would be \$1,312. Since 40 to 50% of students are successfully remediated, using the high expenditure estimate, the cost for each success would be between \$2,624 and \$3,280. The cost-

effectiveness of remedial education is apparent when compared with expenditures on other programs. The nation's prison population has grown to the highest per capita in the world – 1.1 million in jail and 5.5 million under corrections supervision. Each prisoner generates an expense of \$25000 to \$35000 per year. Ten students can have the foundation for their future built through remedial education for the same cost as incarcerating one person for a single year.

Remedial programs are a far more productive use of public funds. (p. 40)

McCabe (2000) also reported that when students who have completed remediation are analyzed nine years after they completed the remedial coursework, 98.5% were employed with 90% in occupations above entry level. He indicated that these results were better than for the general population.

Many of the states have limited or prevented four-year colleges from offering remedial courses. In a qualitative study conducted by Duranczyk, she asked non-traditional students how they would have felt if they were required to take the remedial courses at a community college instead of the four-year college that they were attending (Duranczyk & Higbee, 2006). The students interviewed felt that taking remedial courses at the four-year college was not stigmatizing them. They looked at remedial courses as an opportunity to build their mathematics proficiency. Several of these students enrolled in three or more math classes beyond the remedial math course. One strategy used by some public four-year colleges is to require students to take the remedial courses at a local community college. One problem with this process is that students cannot drop from a course in which they do not have the skills to be successful and enroll in a lower level course because the remedial course is offered at the community college. Dropping the

course or failing the course could result in lost financial aid or dropping out of college (Duranczyk & Higbee, 2006).

McCabe (2000) stated that the emphasis should be placed on improving the remedial courses in order for more students to pass remedial courses. Researchers have identified policies and practices that improve and innovate remedial courses. McCabe listed these techniques or policies that help to build successful remediation programs:

- Implementation of mandatory assessment and placement
- Establishment of clearly specified goals and objectives for developmental programs and courses
- Use of mastery learning techniques in remedial courses
- Provision of a high degree of structure in remedial courses
- Use of a variety of approaches and methods in remedial instruction
- Application of sound cognitive theory in the design and delivery of remedial courses
- Provision of a centralized or highly coordinated remedial program
- Use of a formative evaluation to guide program development and improvements
- Establishment of a strong philosophy of learning to develop program goals and objectives and to deliver program services
- Provision of a counseling component integrated into the structure of remedial education
- Provision of tutoring performed by well-trained tutors
- Integration of classroom and laboratory activities

- Establishment of an institution wide commitment to remediation
- Assurance of consistency between exit standards for remedial course and entry standards for regular curriculum
- Use of learning communities in remedial instruction
- Use of supplemental instruction, particularly video based
- Provision of supplemental instruction to support remedial courses
- Provision of courses or workshops on strategic thinking
- Provision of staff training and professional development for those who work with underprepared students
- Provision of ongoing student orientation courses
- Integration of critical thinking into the remedial curriculum (p. 45)

Postsecondary institutions need to commit to improving remediation instead of restricting or eliminating it. The knowledge of how to improve the programs is available. It should no longer be acceptable to do less than our best. One important goal has to be to improve the completion rate of students in remedial courses (McCabe, 2000).

#### Education for the Global Economy

Information technology is changing the world rapidly. The economy of the 21<sup>st</sup> century will be constructed on industries that depend on highly skilled workers. Unfortunately, many young Americans do not have the education to be employed in the 21<sup>st</sup> century (McCabe, 2000). “Eighty percent of new jobs will require some postsecondary education; unfortunately, only 42% of students leave high school with the necessary skills to begin college-level work. A third of those who enter college are underprepared” (McCabe, 2000, p. vii).

In the 21<sup>st</sup> century, the United States of America will be a changing nation. In 1998, the Hispanic population was around 30 million, about 11% of the total population. Because they have a higher birth rate and constitute the majority of the people who immigrate to the United States, the percentage of Hispanics in the total population is expected to continue to increase (McCabe, 2000). One projection is that by the year 2050, Hispanics will be approximately 25% of the total population of the United States. Other minorities will also have an increase in their percentage of the total population. By 2050, African-Americans who are non-Hispanic will be 13.6% of the total population, and Asians and Pacific Islanders who are non-Hispanic will be 8.2% of the total population (McCabe, 2000).

If the previous projections actually occur, by 2050 the United States will have almost a majority of its population made-up of minorities, creating a very diverse nation. Non-Hispanic whites are projected to be 53% of the total population instead of the 75% in 1998. The population of immigrants is expected to consist of a large percentage of academically underprepared people (McCabe, 2000). There are large gaps in educational achievement between white non-Hispanics and groups such as African-Americans, Hispanics, and Native Americans. Progress has been made in expanding access to education for these groups, but the rates for postsecondary achievements still fall behind those of whites and Asians (Kelly & Prescott, 2007). The college-age Hispanic population receives a lower number of postsecondary degrees. Unless changes are made, workers replacing the ones leaving the workforce will be workers with less education. Because 80% of the Hispanic population is in eight states, an effort should be made in these states to close the educational achievement gap. The data show that Hispanics

usually attend postsecondary institutions close to home. Postsecondary institutions that are in areas with a large concentration of Hispanics should develop strategies to recruit and retain Hispanic students. It will be crucial to the success of the United States in the global economy to increase the rate of educational achievements in minority groups, especially Hispanics (Kelly & Prescott, 2007).

The other demographic that will affect the workforce in the 21<sup>st</sup> century is the large number of Baby Boomers who will be retiring. It is projected that by 2040, 25% of the American population will be over 65 (McCabe, 2000). The average life expectancy is projected to increase to around 85. The retirement of older adults will decrease the number of skilled workers in the workforce (McCabe, 2000). The generation that replaces the Baby Boomers is trained at the same level, but the number of trained workers in this generation will not be as large (Davenport, 2006). Business and industry experts knew the demographics of a declining birth rate in the West and the retirement of Baby Boomers would be factors in creating a skills-gap in the workforce. They did not anticipate the other two developments that would intensify the skills-gap predicament (Carminati, 2008). The first development is that a lot of emerging markets did not have a decline in birth rate. Also many students from other countries earn degrees in the West, but instead of remaining in the West to work, they are returning to their home country to work. The second development is that three different generations are working at the same time: Baby Boomers, Generation X, and Generation Y. Each generation has different values, expectations, and beliefs about work. The businesses that understand how the generations are different and design training and career experiences for each generation

will be able to maximize their ability to be innovative, creative, and productive (Carminati, 2008).

By the end of the twentieth century, jobs had begun to change, requiring more technology. The majority of jobs, approximately 60%, were jobs that required unskilled workers. Twenty percent of the available jobs in 1950 needed basic information skills and another 20% needed professional training (McCabe, 2000). By 1990, the need for unskilled workers had decreased to 35% and the need for skilled workers had increased to 65%. This trend will continue. The need for skilled jobs is expected to increase to 80% as the United States enters the 21<sup>st</sup> century (McCabe, 2000). The United States is changing to a knowledge-based economy. This change is creating millions of new jobs that have high wages but also require workers with more education. The transition of the United States to a knowledge-based economy is creating a skills-gap. This skills-gap is created because the skills of the new jobs are at a higher level than the skills of many in our workforce (Chao, 2006). The document, *A Nation at Risk*, published in 1983, stated that our nation was at risk of losing its place in the global economy. The writers of this document stated that the low-skilled jobs would relocate out of the United States, and American workers would have to be better educated and be willing to work harder in order to maintain their life-styles (Meadows, 2007).

Because the jobs will require skilled workers, the need for postsecondary education will increase. It is projected that 32 states will not be able to graduate enough traditional students to attain the level necessary for global competitiveness of 55% with postsecondary credentials. The United States will have to rely on enrolling non-traditional students into postsecondary education (CAEL, 2008). Adults who have the

skills necessary and the education will be able to develop this opportunity of the new economy into a career that has good wages and benefits (Comings, Reder, & Sun, 2001).

Another type of education needed as a result of an increase in technology is technology education. Technology education is fundamental in accomplishing competency in the workplace. Competencies for the workforce incorporate skills such as critical thinking, solving problems, and reasoning. The professionals in technology education need to design programs that will improve the practices of the profession in order to improve the workforce of the 21<sup>st</sup> century (Bybee & Starkweather, 2006). One area in technology education is computer literacy, which is a high priority of employers because more than 80% of new jobs require some use of technology (McCabe, 2000). Approximately 51% of the workforce is expected to use a computer to perform tasks using mathematics, reading, or writing. Workers will have to use computers and technology to the best advantage: “ Simple jobs are becoming high performance, thus requiring workers to reason through complex processes rather than follow rote behavioral instructions for how to complete discrete steps of larger processes” (McCabe, 2000, p. 21).

To stay competitive, companies have raised the skill level of the requirements for jobs and seek to hire employees who have the level of competency that the company needs for the jobs. The following list demonstrates the amount of education needed for jobs in the 21<sup>st</sup> century:

#### Attitudes and Personal Characteristics

- Adaptability, flexibility, resiliency, and ability to accept ambiguity
- Common sense and ability to anticipate downstream consequences
- Creativity
- Empathy



Positive attitude, good work ethic, and ability to self-manage  
 Reliability and dependability  
 Responsibility, honesty, and integrity

#### Essential Skills

Computers for simple tasks (word processing)  
 Interpersonal skills, team skills  
 Numeracy and computation skills at a ninth-grade level, including basic money skills  
 Reading at a ninth-grade level  
 Speaking and Listening  
 Writing

#### Integrative and Applied Skills

Application of technology to tasks  
 Critical thinking  
 Customer contact skills  
 Information use skills  
 Presentation skills  
 Problem recognition/definition and solution formulation  
 Reasoning

#### Premium Skills

Ability to understand organizational and contextual issues (legal, environmental)  
 Basic resource managements, budgets  
 Ethics  
 Foreign language fluency  
 Globalism, internationalism skills  
 Multicultural-competence skills  
 Negotiation skills  
 Project management and supervision  
 Systems thinking (McCabe, 2000, p. 22).

Business and industry in the United States will have to find solutions to the need for skilled workers. One solution used by business, which began in 1990, is to recruit foreign-born highly skilled workers to perform the jobs. In 1998, with pressure from business and industry, Congress expanded the number of six-year visas from 65,000 to 115,000 per year (McCabe, 2000). After 9/11 the United States developed tighter

immigration laws. The number of visas in 2000 had been increased to 800,000. By 2005, the number of visas had decreased to 80,000 (Davenport, 2006). With improvement in the economy and standard of living in countries such as China or India, many of the people from these countries living in the United States have returned to their homeland. The cost of living in China or India is lower than living in the United States. For the same amount of money, a person could live in an apartment in the United States, whereas in China or India, a person could live in a big house with servants (Davenport, 2006).

Another solution to the problem of the shortage of skilled workers implemented by business industry is to relocate the company. Companies are moving their plants to a less-developed nation where workers receive lower wages (McCabe, 2000). However, due to concerns with the quality of the work, many companies are limiting the jobs that can be offshored. Companies coined the word “offshoring” to describe the event of the company relocating part or all of its operations to locations not on the soil of the United States (Davenport, 2006). Other companies relocate their operations to a different region of the United States. When the number of skilled workers gets small, due to competition of all the businesses in a region, many companies will relocate to regions that have not been industrialized. Some companies have relocated to the South as a result of looking for skilled or educated workers where an untapped pool of skilled workers exists (Davenport, 2006).

Some experts in business make the point that one of the contributing reasons for the shortage of skilled workers is that companies stopped training newly hired employees. It was more economical to hire people who had been trained by other companies. It became a problem when the majority of companies stopped training

workers. Businesses would like future employees to have the skills necessary for a job and be already trained. As skilled employees leave or retire, companies are having a difficult time replacing them. There is a difference between what a company wants for the jobs and what they are willing to do about the problem (Davenport, 2006). The government cannot solve the skills-gap. It can provide incentives to business and industry to train or retrain employees. Government can also design programs that allow for greater access to postsecondary education for adults who need to increase their education level (Davenport, 2006).

Jobs in the knowledge-based economy will require a higher level of education attainment. One statistic is that 23 of the 30 fastest-growing occupations will have an associate's degree or a bachelor's degree as the minimum requirement for that job. In addition, 16 of the 18 fastest-growing occupations have a minimum requirement of an associate's or bachelor's degree in the areas of science, computers, engineering, and health care (Kelly & Prescott, 2007). A follow-up study to *A Nation at Risk* conducted in 2000 by the National Commission on Mathematics and Science Teaching makes several points connecting the economy and science and math education: 1) our country's future depends on educating our children in mathematics and science; 2) our children are behind in the study of mathematics and science; and 3) teaching is the influential instrument to create change (Meadows, 2007). The commission reported that the changing economy is loaded with technology and innovations in technology, and preparation for more education in math and science will create a successful change from the old economy to the new economy. Another change in the economy will be a dramatic increase in the number of high-tech jobs that American students will not have the math and science

education necessary to perform. Finally if American students are not prepared to perform these jobs, global economic pressures will have business and industry moving these jobs to countries with a workforce that can perform these jobs (Meadows, 2007).

The future for our nation will depend on developing knowledge industries, which requires building a workforce of highly skilled and productive workers. “Brain power and technology can multiply individual productivity, thus compensating for higher wages and helping the U.S. retain global competitiveness” (McCabe, 2000, p. 23). America has to keep the lead in innovation if it wants to continue to have new high-wage jobs. The capability to be innovative will be the most important factor contributing to the success or failure of any company or nation (CPGE, 2007). The National Association of Manufacturers stated that using immigrant workers, using disadvantaged workers, and delaying retirement will all be parts of a solution to the skills-gap. To accomplish shrinking the skills-gap, the United States needs to focus on the education of future generations, training and educating the existing workforce and increasing the age of retirement (Davenport, 2006). The government of the United States is under pressure to expand access to higher education to stay globally competitive. India, China, Russia, and other industrialized countries have had significant growth in their numbers of college graduates, particularly in the fields of engineering and technology. Groups such as first-generation, low-income students should be given access to postsecondary education as an opportunity for them to have a better economic life (Williams & Swail, 2005).

The global economy is filled with different competitors and different challenges. Unexpected issues are constantly becoming new priorities in the economy. One example of an issue that is becoming a priority is the economic crisis that is affecting and

demonstrating how interconnected the global economy is for business (Carminati, 2008). All nations in the global economy are joined as all nations are dependent on the economic growth of other countries. It is in America's interest for other nations like China, India, or Japan to be successful. The United States has to be competitive and maintain the lead in the global economy in order to keep the citizens of the United States enjoying the economic well-being of the global economy (CPGE, 2007).

#### Adults in Postsecondary Education

One definition of adult education which seems to encompass all the meanings of adult education is given by Darkenwald and Merriam:

Adult education is concerned not with preparing people for life, but rather with helping people to live more successfully. Thus, if there is to be an overarching function of the adult education enterprise, it is to assist adults to increase competence, or negotiate transitions, in their social roles (worker, parent, retirees, etc.), to help them gain greater fulfillment in their personal life and to assist them in solving personal and community problems. (1982, p. 9)

The report "Adult Learning in Focus" prepared by the Council for Adult and Experiential Learning (CAEL) states that postsecondary education is now necessary for many entry-level jobs and certainly needed for high-skills and high-wage jobs. As the nation replaces old industries with new industries, the need for a different kind of worker emerges that is adaptable and with skills that allow the worker to be retrained. In 1950, 80% of the jobs were "unskilled." In contrast today 85% of the jobs are "skilled" (CAEL, 2008). In the United States, 30% of the adult population has not taken classes or courses in postsecondary education. At the time that this report was written, the United States was

ranked tenth in the percentage of adults age 25-34 that have credentials from postsecondary institutions. The number receiving credentials has not declined in the United States but the other nations have increased the number of workers that have credentials surpassing the United States (CAEL, 2008).

The United States will have to have a goal of 55% of the workforce obtaining at a minimum an associate's degree instead of the present 34% to keep-up with the standards of the other leading nations. To reach the goal of 55% of the workforce having a minimum of an associate's degree by 2025, the United States has to get adults to re-enter the education system and obtain college degrees (CAEL, 2008). Adult education professionals should be forming a plan to help close the gap between the number of workers who have attained postsecondary education in this nation and other leading countries. The nation cannot depend on recent high school graduates to meet the growing demand for skilled workers (CAEL, 2008).

Adults who have a high school diploma or GED need to obtain a postsecondary education. Those adults who do not have a high school diploma or a GED should first be given the opportunity to obtain the high school diploma and then work toward getting the postsecondary degree (CAEL, 2008). Stephen Reder of the National Center for the Study of Adult Learning and Literacy (2007) states his opinion that adult basic education's mission should be expanded to raise the skill levels of the adults it serves beyond the passing level of the GED in order for these students to be successful in postsecondary education. The GED was introduced as a means for GIs returning from World War II to obtain the equivalence of a high school diploma. Today it is seen as a tool for entrance to postsecondary education. It is a proven credential for a high school diploma but it has not

been proven as a standard for college readiness (Reder, 2007). Reder proposes a restructuring of adult education to include three groups as the target population:

1. Adults without secondary credentials needing improved basic skills to pass the GED, essentially the current target population for adult education.
2. Adults with or without secondary credentials needing improved basic skills to complete a 2-year college degree.
3. Adults who already have the necessary skills to complete a 2-year college degree but may need other skills or persistence supports to succeed in college.

(2007, p. 4)

In the third group, 29.2% of adults never went to college and 19.4% of adults did attend college but did not obtain a degree. Adults in this group need some refreshing of skills and encouragement to complete their degree (CAEL, 2008). These adults have the skills to be successful in postsecondary education but do not have the support needed to persist to degree completion. To assist this group, adult education should develop a separate component that includes support for persistence. Longitudinal studies need to be conducted to understand how to help adults transition into postsecondary education, persist in postsecondary education and improve outcomes (Reder, 2007). The target group in the second group includes adults who have a high school diploma or a GED but who do not have a college degree. Their level of skills is not adequate for being successful in college. The mission of adult education for this group of students should be to increase their skills to a college-ready level. Currently there is not one instrument used to determine if a non-traditional student is college-ready. An instrument similar to the GED should be developed to establish certification for college-ready skills. To carry out

this mission, adult education and developmental /remedial professionals in postsecondary education should collaborate (Reder, 2007). Reder's first group is made up of 13.3% of adults who do not have a high school diploma or GED. These adults need the most assistance and thus are the most difficult to get to the goal of obtaining credentials from a postsecondary institution (CAEL, 2008).

The GED is the instrument used to certify that the learner in adult education has the knowledge equivalent to learners who graduated from high school. Data collected in the adult education system revealed that 20% of native-born learners in the adult education system already had a diploma from high school but did not have skills necessary for postsecondary education. The percentage was larger for students not born in the United States who had a high school diploma but did not have language skills or basic skills necessary to be successful in postsecondary education. Reder recommended that adult education should still have the current traditional mission but should expand the role of adult education to include the two new target groups of adults (2007).

Adult learners in college as undergraduates are becoming the new majority. In 1996, using the traditional criterion of 25 years or older to define non-traditional students, 43% of the undergraduates were adult learners (CAEL, 2000). Between 1990 and 2005 traditional students' enrollment increased by 33%. For the same time period, adults 25 and over have an enrollment increase of 18%. This trend of increasing non-traditional student enrollment in postsecondary education is predicted to continue. From 2005 to 2016 the National Center for Education Statistics (NCES) projects an increase of only 15% in enrollment for traditional students and a 21% rise in enrollments for adults 25 and over (NCES, 2008).



Lessons for improving postsecondary education for adults need to be shared with institutional leadership and policymakers at the postsecondary institutional level:

1. There is no typical learner.
2. A key area of adult learning is poorly understood. A vast world of site-based and online, short-term, non-credit classes now serve millions of learners.
3. The well-worn path will not work for most adult learners.
4. To find the right path, adult learners need a guide. (Pusser, Breneman, Gansneder, Kohl, Levin, Milam, & Turner, 2007, p. 4)

Leaders of institutions and policymakers need to understand that adult learners are a group of adults consisting of a variety of different individuals with different demographics, social status, dreams and levels of preparation. The types of classes mentioned in the second lesson do not receive state allocations and thus the training and course work in these classes are not understood by policymakers. This type of learning for adults is crucial to our nation's future with the demands of the knowledge economy (Pusser et al., 2007). Policymakers should evaluate which non-credit classes would be important in the knowledge economy and provide state resources for these classes. The third lesson for institutional leaders and policymakers in postsecondary education is that adaptations should be made to the where, how and length of programs offered for adults. Many adult learners choose non-traditional programs that are convenient, part-time, and designed for adults due to constraints placed on the students by their job, dependents and other responsibilities. These specialized programs cannot meet the needs of all adult learners or the goals of adult education required for the global economy. Finally postsecondary institutions need to provide counselors who understand the needs of adult

learners and give the students a plan to complete their degree, advice, and counseling when necessary. Adult learners need support in their academic career and personal counseling to be successful in postsecondary education (Pusser et al., 2007).

One of the researchers on the Emerging Pathways project developed a typology of non-traditional learner characteristics that can be used to determine the degree of risk of failure in postsecondary education. His typology begins with a learner who is at minimal risk. This learner would have one characteristic that limits success in a postsecondary setting such as being a first-generation college student. The next level is the non-traditional student who is at moderate risk. This student has two or three of the characteristics that affect success in a postsecondary education which could include being a re-entry student, enrolling part-time or needing financial aid (Pusser et al., 2007). The high-risk or ultra high-risk adult learner is the one in need of the most support. High-risk students have many characteristics that would limit their success in college. Ultra-high risk students stay at the edge of higher education. They enroll in programs outside the mainstream of higher education. These learners may earn a few credits but since they do not receive the support needed, drop in and out of programs. Colleges and universities can give these high-risk or ultra high-risk students help at a basic level by offering them specific student support programs like work-study, tutoring, peer networks or learning communities. These students also need support from administrators and faculty to achieve policy changes for the adult learners (Pusser et al., 2007).

In conducting the Emerging Pathways study, Pusser and other researchers held 80 interviews at 20 four-year institutions and collected 500 institutional and 900 student

surveys to find out what four-year institutions could do to increase adult learner success.

They found the following actions were needed:

1. Develop pre-baccalaureate, career-related certificate programs that incorporate academic credit that can be counted toward a degree.
2. Provide part-time degree programs.
3. Create year-round, accelerated and convenient programming.
4. Facilitate degree mapping. (Pusser et al., 2007, p. 11)

In general, adult learners do not enroll continuously in postsecondary education. Courses taken at a community college as career-related should also have academic credit to allow adult students to work toward the goal of obtaining a baccalaureate degree. Because many non-traditional students work full-time and support families, they may only attend college part-time. These students need flexible financial aid that allows a student to be less than half-time, and they need institutions to develop other strategies creating part-time study (Pusser et al., 2007). The third action would have the institutions offering a variety of options for taking classes such as evening classes, weekend classes, hybrid or on-line courses, and accelerated classes. Adult learners are looking for courses that would be convenient to their schedule. Other factors that are important to adult learners are continuous admissions and enrolling in a course during the first week of class without any financial penalties. The fourth and final action needed is to create a degree map for adult learners, who benefit from this type of structure. The degree map should list the sequence of courses needed for a program of study with the length of time estimated to earn a degree. With this tool, a student knows exactly what is required in a program of study and can see the ultimate end of obtaining the degree (Pusser et al., 2007).

CAEL lists eight Principles of Effectiveness for Serving Adult Learners that can be used by institutions who desire to meet the needs of adult learners: “Outreach, Life and Career Planning, Financing, Assessment of Learning Outcomes, Teaching-Learning Process, Student Support Systems, Technology, and Strategic Partnerships” (CAEL, 2000, p. 5). Postsecondary institutions provide outreach by creating access to courses at times and places that serve the adult learner. The principle of Life and Career Planning is accomplished by the institution helping students achieve their goals. The principle of Finance is met by the institution when payment options are made available to the students. Institutions that give academic credit by assessing life/work experience as well as curriculum, are meeting the principle of Assessment of Learning Outcomes. Faculty employing several methods of instruction when teaching a course to help connect objectives in the curriculum to practical knowledge and skills illustrates an institution meeting the principle of Teaching-Learning Process. The principle of Student Support Systems is met as institutions provide effective academic courses and other support systems to assist students in becoming independent and life-long learners. The principle of Technology is achieved when the institution uses information technology to give information and to increase learning. The last Principle of Strategic Partnerships is accomplished through institutional relationships, partnerships and collaborations with employers that assist students in locating job opportunities (Flint, 2005). This research study focused on one aspect of the principle, Student Support Systems: the effect of having prior basic skills courses on the success of adult learners in college-level courses. CAEL found that providing adult learners an opportunity to learn or refresh basic skills before entering credit-bearing courses increased the success of the adult learners (2000).

Reder (2007) desires to expand adult education into postsecondary education. The remedial courses taught in postsecondary education are non-credit basic skills classes often called developmental education or transitional courses. Nineteen percent of students with high school diplomas take at least one basic skills class. Twenty-five percent of students with a GED take at least one basic skills class. A basic skills class in math is the course that both groups have to take most frequently (Reder, 2007).

At the request of CAEL, Hunter Boylan, Director of the National Center for Developmental Education (NCDE) at Appalachian State University, conducted a project to determine the relationship between adult education and community colleges. NCDE was asked to identify:

- (a) what types of collaboration currently exist among community college adult and developmental education programs,
- (b) conditions that support such collaboration, and
- (c) promising practices in collaboration between community college adult and developmental education programs (Boylan, 2004, p. 1).

Developmental studies classes are offered at 98% of the community colleges and more than one-third of adult education classes are offered at community colleges in the United States. Data on collaboration between adult and developmental education programs for this study were collected by mailing a survey instrument to people who were informed about the activities of adult and developmental education on campus and by conducting site visits to campuses that had collaboration between adult and developmental education programs (Boylan, 2004).

Adult education and developmental education programs have similar goals, objectives and student populations. Adult and developmental educators believe in

educational opportunity for all students and that the underprepared student has the chance to be successful in college. The two programs could complement each other. Adult education can offer remedial classes containing the skills below that of college preparatory without a cost to the student. Developmental education programs could facilitate the transition into the college curriculum (Boylan, 2004).

Certain characteristics were reported as common to 65% of the respondents in this study. The characteristic that was reported the most frequently is that adult education students are recruited for other college academic programs such as certification or college transfer programs. Another characteristic when collaboration exists is that the qualifications of adult and developmental education faculty are similar. For the institutions surveyed in this study approximately 46% reported that faculty taught courses in both programs. Programs that are collaborating also share the computer equipment and facilities. Institutions that collaborated were striving to have consistency of the exit standards for adult education and the entry standards for developmental education. In programs that collaborate, students can move between the two programs depending on the skills they need to upgrade. The faculty in both programs have regular meetings to coordinate and communicate with each other about the problems and how to improve the programs (Boylan, 2004).

Respondents reported several conditions that supported collaboration between the two programs. One of these is the capability of the institution to track students as they exit adult education and enroll in college and job training programs. Another condition that supports collaboration is the adult learners' ready access to the same support services as the developmental education learners. Providing professional development

opportunities for adult and developmental educators is another condition that supports collaboration. Having institutional policies in place that support collaboration encourages collaboration between the two programs. Adult and developmental education programs using comparable instruments to assess students at entry and exit is another condition that supports collaboration. Finally having the same supervisor for both programs supports collaboration between the programs (Boylan, 2004).

Forming an effective collaboration between adult education and postsecondary education requires that an adjustment of the content and the goals of adult education be made. The end goal can no longer be just having skills that are equivalent to those indicated by a high school diploma. The end goal now must be having skills that are necessary to receive postsecondary certification. Content has to be changed to allow lower-skilled students to transition into postsecondary education and be successful. Other support systems need to be incorporated into each program to increase persistence (Strawn, 2007).

## Theoretical Foundation

### *Instructional Scaffolding*

Non-traditional students entering this public four-year university without the necessary skills for college-level courses need some preparatory courses to prepare them for the college-level courses. Scaffolding is a theory of learning that can be used to explain the importance of developmental studies courses to the non-traditional student. Cognitive psychologist Jerome Bruner introduced the concept of sequencing steps in learning that he called *scaffolding*. Wood, Bruner, and Ross (1976) described a learning observation in which a tutor interacted individually with small children to teach them a

task by using modeling. Wood et al. (1976) described scaffolding as a “process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts” (p. 90). Cazden (1983) used the term scaffolding to mean support given by an adult to a child’s language development. She expanded the method from a parent or tutor to the teacher in a classroom setting. Cazden divided scaffolding into two types, vertical scaffolding and sequential scaffolding. In vertical scaffolding, the student is asked for new information after each comment or question. In sequential scaffolding, the adult provides dialogue in a sequential structure using routine situations such as bath time or certain games. In the beginning, adults will answer their own questions when carrying on a conversation with a child, but gradually the child begins to answer the questions. Another example is an adult playing peek-a-boo with a child. Initially, the adult does the action of hiding, asking the questions, and answering the questions. The child gradually begins to perform portions of the game and finally can do it all as a solo performance (Cazden, 1983).

The concept of scaffolding has now evolved to the term *instructional scaffolding*. Instructional scaffolding is defined as “the implementation of a support system to promote learning when concepts and skills are being first introduced to students or when students are struggling” (epic, 2009). A scaffold is a structure, which implies that educational scaffolding is forming structure for the students as they strive to complete a task or understand an objective. The problem is to provide structure without stifling the student’s creativity (McKenzie, 1999). Foley (1993) gives five criteria for effective scaffolding: (a) students make contributions to the learning activity as it progresses, (b) instructional tasks build on previous knowledge but are at a level such that learning takes



place, (c) the instructor provides students with strategies that can be applied to the task, (d) students work with others to perform the task, and (e) as a student becomes more competent in completing the task, the student is given more responsibility in completing the task. When the learner takes more responsibility in completing the task, the instructor then begins gradually taking down the scaffold for that task.

One of the reasons to use instructional scaffolding is to provide a helpful and encouraging atmosphere for the student to learn. The instructor who implements the method of instructional scaffolding takes on the role of a facilitator in the classroom, which allows the student to assume a more active role in the learning experience (Instructional Scaffolding, 2008). When the instructor becomes aware that a student does not understand a specific concept or is not able to perform certain tasks, the instructor can begin to construct a scaffold (Instructional Scaffolding, 2008).

The basic structure of the scaffolding method is constructed using four points. In 1998, Ellis and Larkin (as cited in Larkin, 2002, p. 1) stated that “first, the instructor does it; second, the class does it; third, the group does it; fourth the individual does it.” There are several different types of scaffolds that can be used in an educational setting, like advance organizers, cue cards, real-life examples, handouts, hints and prompts, and question stems. Advance organizers can be used to begin new material about certain topics such as Venn diagrams and flow charts. Cue cards, containing material such as vocabulary words or formulas, can be prepared in advance to help students in their discussion about a subject. Examples can be used that are specimens or illustrations of real objects or problems that stand for something. Handouts can be created that contain information on a topic but do not give all the details and leave room for the students to

take notes. Hints and prompts can be used to give clues or help students recall previous knowledge. Question stems that are sentences in which students fill in the blanks or questions that stimulate the student to think by asking ‘What if’ can be written (Instructional Scaffolding, 2008).

As techniques and methods of using instructional scaffolding have developed, different categories and characteristics of scaffolds have emerged. Dodge (2000) categorizes scaffolds into three categories: reception scaffolds, transformation scaffolds and production scaffolds. The reception scaffold helps learners to gather and to organize information. Some examples of reception scaffolds are listening guides, glossaries, timelines, and charts (Dodge, 2000). The transformation scaffold helps students to change information into a different form, thereby establishing structure on the information. Some examples of transformation scaffolds are Venn Diagrams, features chart, and weighted sum chart (Dodge, 2000). The production scaffold helps students make something that shows what they have learned. Examples of production scaffolds are presentation outlines, play structure, and multimedia templates (Dodge, 2000). McKenzie describes eight characteristics of scaffolding: “(1) provides clear directions, (2) clarifies purpose, (3) keeps students on task, (4) offers assessment to clarify expectations, (5) points students to worthy sources, (6) reduces uncertainty, surprise and disappointment, (7) delivers efficiency and (8) creates momentum” (1999, pp. 2-4).

Instructional scaffolding is an effective tool that can maximize learning for students, but it is also a very challenging type of instruction. One challenge of using scaffolding is to know when it is appropriate. The instructor should provide a scaffold to students who need it but only when they need it (Larkin, 2002). Another challenge is for

the instructor to be knowledgeable about the subject matter. The instructor needs to know the difficulty of the material and the tasks required of students in order to know when and how much support is needed by a student. The instructor also needs to have multiple prompts and different wordings for the hints in case the first prompt or hint fails (Larkin, 2002). The final challenge given by Larkin is for the instructor to keep a positive attitude, be patient, and display a caring attitude if the first efforts at scaffolding are not successful (Larkin, 2002).

When the instructor uses scaffolding in the classroom, the activities and tasks in which students participate would also be considered active learning. Active learning is “engaging students in doing something besides listening to a lecture and taking notes to help them learn and apply course material” (Felder & Brent, 1997, p. 1). Students are involved in activities that incorporate the discovery of information, processing of information, and applying information. A few examples of activities that are considered active learning are think-pair-share, games, making a video, analyzing a video, keeping a journal, concept mapping and World Wide Web assignments (McKinney, 2009).

Puntambekar and Hubscher (2005) discuss the evolution of the term scaffolding. Originally the expert established what the student should learn and motivated the learner, but currently the task is part of the learning environment. Today instructors use tools such as software, peers, or other resources instead of having one person provide all the support. Use of tools such as software is not changing the support for the individual learner. The support is basically the same for each learner and generally does not get dismantled as the student progresses. Creating software that can *fade* the support is very difficult and requires a lot of time to construct. A better alternative is to provide multiple

tools so that students not needing a specific tool for support can replace or drop that tool altogether (Puntambekar & Hubscher, 2005).

For educators using technology to provide scaffolds, the scaffolding facilitates active learning and allows students choices among their activities. When instructors use technology to build a scaffold, students need to be more independent learners. Scaffolding used in this manner allows the student to be independent but receive support when needed (Starr, 2000). Structure is provided by using web-based research lessons. The lessons are prepared giving step-by-step directions for the students. McKenzie (1999) states the “operating concept here is the ‘Teflon lesson’, a learning experience that has been well tested in advance so that anything that might go wrong is considered in advance and eliminated if possible” (p. 2).

Courses in developmental studies offer a support system to non-traditional students. The students learn the basic skills needed and can take the college-level courses with a greater chance of success. In the developmental studies courses, non-traditional students have support from many people, including instructors and tutors. Instructors strive to provide a comfortable, caring atmosphere in class. Students also have access to Learning Labs in which tutors can assist them, and they can use technology to gain an understanding of concepts. After they have obtained the basic skills, they will need less of a support system to be successful.

#### *Academic Self-efficacy*

Another theory of learning that supports advising non-traditional students to take developmental studies courses is self-efficacy. Bandura (1994) defines perceived self-efficacy as “people’s beliefs about their capabilities to produce designated levels of

performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave” (p. 71). People who believe in their capabilities confront difficult tasks as challenges to conquer rather than threats. If they do fail, then they fail from lack of effort or a skill which they can acquire. People who do not believe in their capabilities try to avoid difficult tasks. They will give up quickly because they do not expect to be successful (Bandura, 1994). Bandura discusses four main sources of influence for building belief about a person’s efficacy. The four main sources of influence are “mastery experiences, vicarious experience provided by social models, social persuasion, and somatic and emotional states” (Bandura, 1994, p. 72). Each phase of life brings new challenges of competence in performing tasks successfully and affecting the person’s perceived self-efficacy (Bandura, 1994).

Bandura (1997) states that “mastery experience” is the source of self-efficacy beliefs that has the most influence on the learner. Mastery experience is thought of as how a learner interprets the result of an experience. Successful experiences will strengthen a person’s self-efficacy, whereas failures will decrease a person’s self-efficacy. If success is easy for a person, he or she will expect everything to be easy and will be easily discouraged when obstacles are encountered. Difficulties give people opportunities to find out how to turn failure into success. When people believe they can succeed, they persevere in times of difficulty (Bandura, 1997). For example, if students have a good score on a math test and make high grades in math, they will have confidence in their math ability. The students will then enroll in additional math courses and will work hard when faced with difficulty. On the other hand, if students have low

test scores and poor grades in math, they will not have confidence in their math ability. Students with low self-efficacy will avoid any additional math classes and not try when faced with a difficulty (Pajares, 2002). In the academic setting, teachers should provide experiences for the student to be successful, raising the student's confidence and competence (Pajares, 2000).

The second source of influence on self-efficacy beliefs is vicarious experience. Vicarious experience is the effect brought about by the actions of other people. Students who have a positive role model will develop a positive belief in themselves. People have to judge their capabilities by examining the attainments of others. When a student receives a score of 115 points on a test, the student does not know if this is a good performance unless the student knows how other students performed. People generally compare themselves to their associates in similar situations. If a student surpasses the performance of classmates, the student's efficacy will increase. If the classmates outperform the student, the student's efficacy will decrease (Bandura, 1997).

Bandura (1997) describes the "four subprocesses governing observational learning as attentional processes, retention processes, production processes and motivational processes" (p. 89). Attentional processes decide which modeling influence is selected and what information can be gleaned from the modeling events. A person has to recall modeling influences for them to have an effect on efficacy. Retention processes involve changing and restructuring information in order for events to be placed in memory. The third subprocess is the production process. This process allows the conception of a modeling event to be translated into appropriate actions. The fourth subprocess is the motivational process. People will more likely demonstrate modeled

behavior if the behavior yields a reward or positive outcome than if the behavior yields an unrewarded or negative outcome (Bandura, 1997).

A social message from other people is the third source of influence. It is less difficult to maintain a sense of efficacy when people whose opinions you value have confidence in your capabilities instead of doubting your capabilities (Bandura, 1997). When people express confidence in your abilities, you will try harder to succeed and if you are successful, your self-efficacy will be increased. If you have an increase in unrealistic belief in your capabilities that results in failure, your self-efficacy will be lowered. Schunk (1984, as cited in Bandura, 1997) and his colleagues conducted a study with children who had a deficit in mathematics or reading. The children were told that they had the capability to perform regardless of their actual performance. They were also told that they were working hard, which improved their capabilities. Their efficacy improved with both types of feedback but the improvement in their efficacy was greater when they received feedback confirming their ability to do the activity (Schunk as cited in Bandura, 1997). The way that criticism is given to another person also affects self-efficacy. Disapproving criticism will lower a person's self-efficacy. Positive and helpful criticism upholds a sense of self-efficacy. Students who are told that they do not have the capabilities to be successful will not attempt the more challenging activities or courses (Bandura, 1997). Students who are told that they cannot perform an activity well will lose confidence in themselves. It is easier to lower self-efficacy beliefs than to build the beliefs (Pajares, 2002). In order for an instructor to build efficacy successfully, the instructor needs to design situations for the student to be successful and not attempt something prematurely (Bandura, 1995).

Finally, the fourth source of influence on self-efficacy beliefs is a person's somatic and emotional states. A person's level of stress, anxiety, fatigue, or mood can affect a person's confidence in completing a task. In order to strengthen self-efficacy, people should improve their physical status, decrease stress and negative emotional feelings, and understand how to interpret the bodily states (Bandura, 1997). For example, a student is nervous about speaking before a group. The stress and anxiety felt might negatively influence the student's best effort. The poor performance could affect the perception of his or her capabilities (Pajares, 2002).

Researchers conduct studies to determine the relationship between self-efficacy beliefs and career selection, motivation, or academic performance. Academic self-efficacy is measured by using an instrument that asks students to rate their confidence that they can solve a particular mathematics problem, read a certain passage, or write a paragraph or essay. The statements should use the word *can* because students are judging their capabilities and not the word *will*, which implies students are judging their intentions (Pajares, 2002).

Self-efficacy research has centered on three areas of study in academic motivation. The first area researchers have studied is the connection between efficacy beliefs and the student's decision on a college major or career choice. College majors or career decisions are made in the areas that the student feels most competent (Pajares, 2002). Earlier studies focused on how self-efficacy influenced the content of career choices. More recent studies focus on how efficacy influences the process of career decision making or how a person evaluates career options to make a career decision (Hackett, 1995). "Students who are confident of their abilities to succeed academically



persist in demanding college majors and achieve higher levels of academic success than students with weaker efficacy beliefs” (Hackett, 1995, p. 2).

In another area of research, a correlation was reported between a student’s self-efficacy beliefs and motivation, academic performance, and achievement. Self-efficacy beliefs have a connection to effort, persistence, and perseverance. Because the students persist, they will have an increased memory of the learned activity. Pajares (2002) reported that in one research study students who had high self-efficacy in math, when given problems in math, regardless of their math ability, did more problems correctly and corrected problems that they had missed. Pajares (2002) reports that the “results of the these investigations demonstrate that acquisition of cognitive skills, modeling effects, attributional feedback, and goal setting influence the development of self-efficacy beliefs and that these beliefs, in turn, influence academic performances” (Pajares, 2002, p. 19). An important conclusion that can be made from the studies conducted by the researcher is that teachers should examine students’ self-beliefs regarding their academic capabilities as these could help with motivation and academic achievement (Pajares, 2002). Research does give validity to the role of perceived academic self-efficacy as a cause in certain academic functions such as level of motivation, performance achievements, and the students’ ability to regulate their own learning (Zimmerman, 1995).

Spitzer (2000) reported on a study that looked at predictors of college success by performing a comparison of traditional and non-traditional age students. Many researchers have looked at traditional age college students to predict academic performance and career development. This particular study “sought to predict the collegiate goals of GPA and career decidedness for both traditional and non-traditional

full-time undergraduates” (Spitzer, 2000, p. 83). The participants of the study consisted of 355 full-time undergraduates with 267 traditional students and 88 non-traditional students. Students were asked to participate in one session during scheduled classes where they answered a packet of questionnaires and a sheet on demographic information. The questionnaires used were Self-Perception Profile for College, CDMSE – Short Form, Social Provisions Scale, Motivated Strategies for Learning Questionnaire, Career Decision Scale. GPA was asked on the demographic sheet and was confirmed with the registrar. This study found that high academic self-efficacy, self regulation, and social support were predictors of higher GPAs for all students. Lower GPAs were predicted by higher social acceptance and self-worth for all students. Intrinsic motivation was not a leading predictor of GPA but correlated with academic self-efficacy and self-regulation (Spitzer, 2000).

There were three conclusions made from this study. The first conclusion is that adult students and females perform better academically and know more about their career goals. The second conclusion states that academic success and career development are two processes that happen at the same time but are not dependent on each other. Programs need to be developed for students to develop in each area. Finally, the predictors for academic success and career decidedness are not different for traditional and non-traditional students. Colleges will not need to develop different programs for traditional and non-traditional students (Spitzer, 2000).

### Conclusion

Remedial courses in postsecondary education have been offered since 1636 for underprepared students. The need for these courses will continue to be present as long as

students are not prepared for college in high school and students delay entry to college (Boylan, Bonham, & White, 1999). Remediation is a significant component of higher education, providing education to these underprepared students. Emphasis should be placed on improving remedial courses and programs that offer remedial courses to increase their pass rates. Current research shows that remedial courses do improve student outcomes. Further research needs to be conducted, however, to clarify the best practices and help educators understand what is necessary to improve course completion rates for students who need remediation (Long, 2005). Research should be conducted to gain knowledge about the policy approaches and institutional practices that are most beneficial and obtain the best results for students (Russell, 2008).

In the information and technology based society of today, it is imperative that the United States of America have a skilled workforce. It is projected that 80% of jobs in the 21<sup>st</sup> century will require either certification or a degree. Postsecondary institutions have to provide the necessary programs to meet this requirement. The title of Robert McCabe's report, *No One to Waste*, is a reflection of how political and postsecondary leaders should view the problem of the need for skilled and educated workers. America needs to make sure that postsecondary education has the funding necessary to help adults succeed in postsecondary institutions (McCabe, 2000). Postsecondary institutions need to develop programs that address the non-traditional students' needs. Classes should be offered on various days of the week and for differing lengths of time to accommodate family and work schedules. Many non-traditional students need to be able to receive financial aid, even though they are enrolled in fewer class hours than the minimum number of hours currently required to receive financial aid.

As adult learners enter the postsecondary setting, many lack the confidence and skills needed for college-level courses. Success in courses builds the perceived self-efficacy of non-traditional students. Mastery experience, which is one source of self-efficacy beliefs, is used by a learner to interpret the results of an experience (Bandura, 1997). If they succeed in the basic skills classes, non-traditional students will believe that they can be successful in future courses and will work harder to be successful. Pajares (2002) found that a student's self-efficacy beliefs have a connection to the student's effort, persistence, and perseverance which influence academic performance.

The developmental studies classes serve as "scaffolding" or support for these students. Instructors of developmental studies course strive to provide a comfortable non-threatening environment that encourages students to learn. The non-traditional students are encouraged to ask questions and receive individual help on particular skills not acquired. Larkin (2002) states that instructors who use instructional scaffolding should maintain a positive attitude, be patient and display a caring attitude. These are characteristics demonstrated by the faculty in developmental studies classes. Students in developmental classes have many types of support to provide the scaffolds to help them learn. Techniques used in the classroom by the instructors demonstrate different types of scaffolds that can be used in an educational setting like cue cards, handouts and question stems. Students also have the support of tutors and technology in the Learning Lab and from on-line material furnished by the textbook publisher. Given the support needed to build confidence and competence, non-traditional students will have a greater likelihood of being successful in college.

## CHAPTER III

### METHODOLOGY

#### Purposes and Procedures

The main purpose of the study was to determine the effect of academic preparation in basic skills classes on the academic performance in subsequent college-level classes for non-traditional students. A secondary purpose was to determine if academic preparation in basic skills classes had a long-term effect on academic performance as measured by graduation GPA. A third purpose was to analyze the perspectives of non-traditional students about the effect of academic preparation in basic skills classes on academic performance in subsequent college-level classes.

The methodology included statistical comparisons of grade distributions in the subsequent college-level classes and graduation GPAs using archival data from the university's student record system for two groups: non-traditional students who took basic skills classes and MA112 or EH 101 and non-traditional students who did not take basic skills classes but did take MA 112 or EH 101. The methodology also included a comparison of interview data from a sample of three non-traditional students who took basic skills classes and MA 112 or EH 101 and a sample of three non-traditional students who took MA 112 and EH 101 without having prior basic skills classes.

The population for the study consisted of non-traditional college students. For the collection of archival data from the student record system, information came from two groups: non-traditional students who took basic skills classes and MA 112 or EH 101 and non-traditional students who took MA 112 or EH 101 but did not take the basic skills classes. Information retrieved from the student record system by the Computer Service

Center included the time period of Fall Semester 2003 through Summer Semester 2008. It listed 54 non-traditional students who had taken a DS math class and MA 112, and 311 non-traditional students who had not taken a DS math class prior to taking MA 112. For the same time period Fall Semester 2003 through Summer Semester 2008, a list was generated that included 13 non-traditional students who took a DS English class before taking EH 101 and 1019 non-traditional students who did not take a DS English class before taking EH 101. For the interviews, a sample of three non-traditional students who took basic skills classes and then took MA 112 or EH 101 and a sample of three non-traditional students who took MA 112 or EH 101 without taking basic skills classes were selected from a list of non-traditional students in each category.

Data were collected in two ways for the study. Data for the comparisons of grade distributions and graduation GPAs were obtained from reports generated by the student record system. Because this major public university began using the current student record system during Fall Semester 2003, data were collected for the time period Fall Semester 2003 through Summer Semester 2008. Data for the interviews were collected by conducting individual interviews with non-traditional students in the two samples selected. Interviews were conducted from March 7, 2009 through March 10, 2009. Participation in the interview was anonymous and no identifying information was collected. Participants made an appointment to sit for an interview with the researcher in the university office. They selected a suitable time for them within the times that the interviewer was available. The interviews were approximately 20 minutes to 30 minutes in length. Participants were given a \$10.00 gift card to MacDonald's as a small compensation for making time to sit for the interview. Each interview was recorded, with

permission from the student being interviewed. The interviews were conducted using a semi-structured method. The researcher used a list of questions to guide the discussion during the interview. The Interview Protocol is included in Appendix A. Permission was obtained from the major public university's Institutional Review Board and from the University of Southern Mississippi's Human Subjects Protection Review committee prior to conducting the interviews. Copies of both approval forms from the committees and the documentation sent to the committees are included in Appendix B.

### Data Analyses

Data were analyzed in an appropriate method for the type of data the variables represented. Data for the grade distributions were analyzed by computing a chi-square statistic to test statistical hypotheses  $H_1$  and  $H_2$ .

$H_1$  There is no significant difference in the grade distributions in MA 112, Precalculus Algebra, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

$H_2$  There is no significant difference in the grade distributions in EH 101, English Composition I, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

Graduation GPA data were analyzed using a t statistic to test the statistical hypothesis  $H_3$ .

$H_3$  There is no significant difference in graduation GPA between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

The recorded interviews were transcribed fully. The researcher analyzed the material in the transcribed interviews to obtain non-traditional students' perceptions of their preparations for MA 112 or EH 101 with previous developmental studies classes or their perceptions of their preparations for MA 112 or EH 101 without previous developmental studies classes. Material was organized using the cross-interview analysis method. Responses to each question were grouped by the people interviewed and analyzed for the different perspectives of the participants and trends in the information obtained.



## CHAPTER IV

### RESULTS

#### Introduction

This chapter provides the results obtained from analyzing the data to test three statistical hypotheses and from the cross-interview analysis of the interviews.

The main purpose of the study was to determine the effect of academic preparation in basic skills classes on the academic performance in subsequent college-level classes for non-traditional students. A secondary purpose was to determine if academic preparation in basic skills classes had a long-term effect on academic performance as measured by graduation GPA. A third purpose was to analyze the perspectives of non-traditional students about the effect of academic preparation in basic skills classes on academic performance in subsequent college-level classes.

Specifically, the study aims to

- Purpose 1. compare grade distributions in MA 112, Precalculus Algebra, and EH 101, English Composition I, of non-traditional students who took developmental studies courses and non-traditional students who did not take developmental studies courses.
- Purpose 2. compare the graduation GPA of non-traditional students who took developmental studies courses and non-traditional students who did not take developmental studies courses.
- Purpose 3. through an interview process, obtain non-traditional students' perceptions of their preparation for a beginning college-level mathematics course (MA 112) or a beginning college-level English course (EH 101) by

interviewing non-traditional students with and without previous developmental studies class preparation.

#### Statistical Null Hypotheses

- H<sub>1</sub> There is no significant difference in the grade distributions in MA 112, Precalculus Algebra, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.
- H<sub>2</sub> There is no significant difference in the grade distributions in EH 101, English Composition I, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.
- H<sub>3</sub> There is no significant difference in graduation GPA between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

#### Statistical Data Analysis

A spreadsheet with information requested from the Computer Service Center and retrieved from the student record system for the period of Fall Semester 2003 through Summer Semester 2008 contained the information requested by the researcher. Table 1 and Table 3 give the distribution of grades for the non-traditional students who met the criteria given to the Computer Service Center by the researcher. The criteria for the student information from the Computer Service Center was

- 1) For the time period Fall 2003-Summer 2008, list the grades of non-traditional students (age  $\geq$  23 when entering this university) who took DS 084 or DS 090 and then MA 112 or who did not take DS 084 or DS 090 but did take MA 112

- 2) For the time period Fall 2003-Summer 2008, list the grades of non-traditional students (age  $\geq$  23 when entering this university) who took DS 014 or LAS 100 and then EH 101 or who did not take DS 014 or LAS 100 but did take EH 101.
- 3) List of the non-traditional students who graduated meeting the above criteria and the GPA of those who graduated.

Table 2 and Table 4 give the percentage for each category in Table 1 and Table 4, respectively.

To analyze the data for Hypothesis 1, the chi-square ( $X^2$ ) statistic was used. The statistical null hypothesis,  $H_1$ , is

$H_1$  There is no significant difference in the grade distributions in MA 112, Precalculus Algebra, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

Table 1

*Frequency of Grades in MA 112 for Non-traditional Students With DS Classes or Without DS Classes*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>(Pass)</b>	<b>F</b>	<b>W</b>	<b>Total</b>
MA 112 With DS	18	12	17	1	(48)	1	5	54
MA 112 Without DS	52	56	58	28	(194)	33	84	311
Total	70	68	75	29	(242)	34	89	365

A chi-square statistic was computed on the information in Table 1. The statistical null hypothesis of no difference in the MA 112 grade distributions for non-traditional students with and without DS courses was rejected, with  $X^2(N=365, df=5) = 23.4, p < .001$ , indicating there is a statistically significant difference in the grade distributions of non-traditional students who took DS classes prior to taking MA 112 and non-traditional students who did not take DS classes before taking MA 112.

Table 2

*Percent of Grades in MA 112 for Non-traditional Students With DS Classes or Without DS Classes (N = 365)*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>(Pass)</b>	<b>F</b>	<b>W</b>
MA 112 With DS N <sub>1</sub> = 54	33.3%	22.2%	31.5%	1.9%	(88.9%)	1.9%	9.2%
MA 112 Without DS N <sub>2</sub> = 311	16.7%	18.0%	18.7%	9.0%	(62.4%)	10.6%	27.0%

The percentages given in Table 2 reflect where the differences in the grade distributions occurred. The percentage of successful MA 112 grades is much greater for non-traditional students with DS classes than for non-traditional students who did not take DS classes. There is a substantial difference in the percentage of non-traditional students who received an A in MA 112, with 33.3% of the 54 who had DS classes receiving an A compared to 16.7% of the 311 who did not take a DS class.

Another substantial difference is found in the percentage of non-traditional students who made a C in MA 112, with 31.5% of those who had DS classes making a C compared to 18.7% of those who did not have DS classes. Overall, A and B grades in MA 112 were

earned by 55.5% of non-traditional students with DS classes vs. 34.7% of non-traditional students without DS classes, and A, B, and C grades were earned by 87.0% of non-traditional students with DS classes versus 53.4% of non-traditional students without DS classes.

The percentage of unsuccessful F and W MA 112 grades is much less for non-traditional students with DS classes than for non-traditional students who did not take DS classes. Only 11.1% of non-traditional students with DS classes did not pass MA 112, whereas 37.6% of non-traditional students without DS classes did not pass MA 112. The percentage of withdrawals shows a major difference, with only 9.2% of non-traditional students who had a DS class withdrawing from MA 112 compared to 27.0% of those who did not take DS classes. Finally, looking at how many students passed reflects the substantial difference between the MA 112 grade distributions for non-traditional students with and without DS classes, as 88.9% of non-traditional students who had a DS class passed compared to 62.4% of those who did not take DS classes. In conclusion, non-traditional students who had DS classes before taking MA 112 made better grades, passed at a higher rate, and withdrew at a lower rate than students without DS classes.

A chi-square statistic was also used to analyze the data for the statistical null hypothesis  $H_2$ :

$H_2$  There is no significant difference in the grade distributions in EH 101, English Composition I, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

Table 3

*Frequency of Grades in EH 101 for Non-traditional Students With DS Classes or Without DS Classes*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>(Pass)</b>	<b>U</b>	<b>W</b>	<b>Total</b>
EH 101 With DS	3	9	0	(12)	1	0	13
EH 101 Without DS	281	293	175	(749)	150	120	1019
<b>Total</b>	<b>284</b>	<b>302</b>	<b>175</b>	<b>(761)</b>	<b>151</b>	<b>120</b>	<b>1032</b>

A chi-square statistic was computed on the information in Table 3. The statistical null hypothesis of no difference in the EH 101 grade distributions for non-traditional students with and without DS classes was rejected, with  $X^2$  (N=1032, df=4) = 11.5,  $p < .05$ . There is a statistically significant difference in the grade distributions of non-traditional students who took DS classes prior to taking EH 101 and non-traditional students who did not take DS classes before taking EH 101.

Table 4

*Percent of Grades in EH 101 for Non-traditional Students With DS Classes or Without DS Classes (N = 1032)*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>Pass</b>	<b>U</b>	<b>W</b>
EH 101 with DS N <sub>1</sub> = 13	23.1%	69.2%	0%	92.3%	7.7%	0%
EH 101 Without DS N <sub>2</sub> = 1019	27.6%	28.8%	17.2%	73.5%	14.7%	11.2%

The percentages in Table 4 reflect where the differences in the grade distributions occurred. The percentage of successful EH 101 grades is much greater for non-traditional students with DS classes than for non-traditional students who did not take DS classes. Of the 13 non-traditional students with DS classes, 92.3% received a grade of A or B in EH 101 versus 56.4% of the 1019 non-traditional students without DS classes. This substantial difference between the two groups is accounted for by the difference in the percents receiving a grade of B in EH 101, with 69.2% of non-traditional students with DS classes receiving a grade of B in EH 101 vs. 28.8% of non-traditional students without DS classes receiving a grade of B in EH 101. No non-traditional students with DS classes received a grade of C in EH 101 compared to 17.2% of non-traditional students who did not take DS classes, also reflecting a major difference.

The percentage of unsuccessful U and W EH 101 grades is much less for non-traditional students who took DS classes than for non-traditional students who did not take DS classes. Only 7.7% of non-traditional students who took DS classes did not pass EH 101, whereas 25.9% of non-traditional students who did not take DS classes did not pass EH 101. A substantial difference is found between the percent of U grades for the two groups, with 7.7% of non-traditional students with DS classes making a U compared to 14.7% of non-traditional students without DS classes. Finally, the zero withdrawal rate for non-traditional students who took DS classes is substantially different from the withdrawal rate of 11.2% for non-traditional students who did not take DS classes. In conclusion, the pass rate for non-traditional students who took DS classes is 92.3% compared to 73.5% for those who did not take DS classes. Overall, non-traditional

students who took DS classes outperformed non-traditional students who did not take DS classes in EH 101.

To analyze the data for the statistical null hypothesis,  $H_3$ , the  $t$  statistic was used:

$H_3$  There is no significant difference in graduation GPA between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes.

To see if there was a statistically significant difference in the graduation GPA means of non-traditional students with and without DS classes, a  $t$ -test was conducted. Results of the  $t$ -test should be interpreted with caution, however, because of the small sample size for one of the groups. Five non-traditional students who took MA 112 and had taken DS classes graduated in the period considered (Fall Semester 2003 through Summer Semester 2008). This small sample size limits the generalizability of results. Fifty-five non-traditional students who took MA 112 and had not taken DS classes graduated in the period considered (Fall Semester 2003 through Summer Semester 2008). None of the non-traditional students who took EH 101 and DS classes graduated in the period considered (Fall Semester 2003 through Summer Semester 2008). The mean graduation GPA of non-traditional students who took MA 112 and completed DS classes was 3.26 with a standard deviation of 0.365. The mean graduation GPA of non-traditional students who took MA 112 but did not take DS classes was 3.13 with a standard deviation of 0.432. The calculated  $t$  statistic, with 58 degrees of freedom, was 0.6487. Although the mean graduation GPA for non-traditional students with DS classes was slightly greater than the mean graduation GPA for non-traditional students without DS classes, this difference was not statistically significant at the .05 significance level. The statistical null



hypothesis of no difference in graduation GPA means between non-traditional students who took MA 112 and completed DS classes and non-traditional students who took MA 112 and did not take DS classes was not rejected.

### Interview Procedures and Analysis

The third purpose of this study was

Purpose 3. through an interview process, obtain non-traditional students' perceptions of their preparation for a beginning college-level mathematics course (MA 110 or MA 112) or a beginning college-level English course (EH 101) by interviewing non-traditional students with and without previous developmental studies class preparation.

Six non-traditional students were interviewed in the time period of March 7-March 10 of 2009. All six of the interviewees were female volunteers who varied in age. Three of the non-traditional students had taken developmental studies, or basic skills, classes prior to taking MA 110 or MA 112 or EH 101. The three non-traditional students with developmental classes had developmental math and English classes. Two of these followed their developmental classes with MA 112. All three took EH 101 after their developmental studies English class. Of the three non-traditional students who did not have any basic skills class, one took MA 112 and the other two non-traditional students without developmental studies classes took MA 110. Two of the non-traditional students who did not have developmental studies classes took EH 101. The other non-traditional student who did not take developmental studies classes already had EH 101 previously but she did take EH 102 when she reentered college. MA 110, Finite Mathematics, is a course for students who are not required to have the skills from MA 112, Precalculus, in

their course of study. MA 110 was discussed in the interviews if this was the course that the student completed in college. Two of the interviewees began their college career at this major university but the other four attended another college prior to attending this university.

To gain the perceptions of their preparation for MA 110, MA 112 or EH 101, the interviewees were asked questions about their preparation. The transcription of the interviews is located in Appendix C. A separate group of questions was asked depending on whether or not the non-traditional student being interviewed had taken basic skills classes before enrolling in MA 110, MA112 or EH 101. When scheduling appointments, the researcher asked participants if they had completed any basic skills classes so that two interview groups could be established: non-traditional students with DS classes and non-traditional students without DS classes. Because some of the non-traditional students interviewed could have taken developmental classes or the equivalent at other universities, the term basic skills classes was used instead of developmental classes in the interview questions. The Interview Protocol is located in Appendix A. The researcher gave each person interviewed an opportunity to elaborate on each question.

#### *Results for Non-traditional Students with Basic Skills Classes*

The following questions were asked in various forms: (a) Why did you enroll in the basic skills classes? (b) Were you advised or placed in the basic skills classes? Three non-traditional students, named in this study Amy, Betty, and Carol, had taken basic skills classes. Amy and Carol took their basic skills classes at a community college where they were given a placement test to determine the classes they would need. Betty was advised by the Admissions Office to begin classes in the Developmental Studies

Department because of her ACT score. Amy, Betty and Carol had to take basic skills classes in math and English before taking EH 101 and MA 112 or MA 110.

The follow-up question was “How did you feel initially about taking basic skills classes?” The response from all three was that initially they did not feel they needed the basic skills classes. Betty said

I took a lower skill class and it definitely kinda just progressed to where it prepared me a lot more because I didn't think that I had, well I thought that I didn't need them still I started taking them then I found out that I did need them because I just don't remember too many things about too much stuff.

Even though initially the students didn't think they needed the classes, once they began to take the classes, they realized that they did need the classes as indicated in Betty's response.

The next question asked was “Did you feel prepared to take MA 112 or EH 101 after completing the basic skills classes?” All three responded that they did think the classes helped. Amy responded by saying about MA 110

Yes, cause like I said the first time I got an IP, I was totally lost and the second time I took it, I knew I had to be focused and I can honestly say that just from failing it the first time that I was able to take the same teacher, but even if I hadn't been able to, just how she broke it down, the steps, the way it carried over algebra one. .... So it definitely helped me...

Betty's response about MA 112 was

Yeah, I mean after your class I was thinking it was gonna be even like an 82 and even progressed into 90. I thought 90 and didn't know there was a 110. I thought

it was gonna progress like that and just kinda smooth transition, but I was prepared for a lot of the stuff he went over.

Her response about being prepared for EH 101 was

I came out with a “B” in it. I had to get back into the mindset to write the papers and it just helped me out with that because there was a lot of stuff that you just kind of forget over time.

Carol said about being prepared for both MA 112 and EH 011

I think so because it helped me refresh because I had been out for so long and you have to tell yourself that even though you are not getting credit, it served its purpose. It did make it easier to refresh my skills.... I think so, I was more prepared for it.

The responses all three gave reinforce the idea that initially they did not think they should be in basic skills classes, but after they took the class, they thought it had helped them pass and earn a better grade.

All three of the interviewees had taken MA 110, MA 112, or EH 101 immediately after taking the basic skills class or as a sequence, with no time in between, as the faculty recommended. They all passed on the first attempt. Amy took MA 110, which has topics not covered in the basic skills math class and, therefore, she stated she did not feel prepared for MA 110:

No ma'am because I took the math 100, then I got IP, then I got an A or B, then I got a D.... I think that she just gave me the D.

She made a grade of D in MA 110. The other interviewees made a grade of A or B in their MA 112 or EH 101 class.

The final questions asked were

After completion of MA 112 or EH 101, did you think that it had been beneficial to take the basic skills classes? Would you recommend or have you recommended to other non-traditional students taking basic skills classes before attempting MA 112 or EH 101?

All three thought that the basic skills classes helped prepare them for MA 112 or EH 101. They also responded that they had talked to others about the benefits of taking basic skills classes. Amy stated

There was one girl who used my calculator and I told her that I took those other classes, but they didn't help me to program my calculator. So I did tell her.

Carol responded

I think that I could have done it, but would have spent more time with it.

Betty said

Yeah, cause I probably would have been having C grades instead of high B or even some A or would have had the lower ones....

Yeah, I have actually had and gotten a couple people that I work with or old students that have children in some classes and tell them that they need to take the DS classes because it has been so long since they have been in classes. They have barely got off the cut off line so that it is not starting this semester. I have mentioned to definitely take classes cause you have been out so long.

The overall perception that the interviewees gave was that even though they would not have taken the classes without placement into the basic skills classes, they found them to be beneficial.

*Results for Non-traditional Students without Basic Skills Classes*

Three non-traditional students who had not taken any basic skills classes, named in this study Donna, Emily, and Fran, were interviewed to obtain their perceptions of their preparation for MA 112 or EH 101. Donna is a senior AIS major. She started at this university over 20 years ago, which is when she took EH 101. When she returned to the university, she had to take EH 102. Emily is a non-traditional student who had previously attended the University of Southern Maine in the early 1980s. Her husband was in the merchant marines and as a consequence, they moved frequently. She is now able to attend college and finish her degree. Fran is the youngest of the three. She attended another university for two years on scholarship. She did not attend any university for about two years before she enrolled at this university. She has changed her major several times but now thinks she has found the right major.

The question asked of these interview participants after the introductory phase was, “Were you advised to take a basic skills class?” Donna and Fran had not been advised to take a basic skills class, but Emily had been advised to do so. Fran had a strong academic high school background and did not place into basic skills classes at the first university she attended. Donna was not advised to take a basic skills class but thought it might have made the transition into college and taking EH 102 easier if she had taken a refresher course before attempting EH 102. When asked, “Did you have to take English 102 after you came back? Did you find that difficult with the lapse between 101 and 102?” Donna said

Very difficult. I did I find it difficult because so many years of not writing and not knowing what a citation is I was lost with it at first.

Emily was advised to take a basic skills class in math. She replied

Yeah and they actually thought the 110, the basic math, finite math it was called, would be too much for me and they said get it just to get prepped for it. But I said I think I can do and there was an online test that you could take.

So you took the university's Math Placement Exam (UTM)?

Yeah, and I did fine with it.

That was my other question. Where did the UTM place you?

The 110 then, I made enough to get that.

If Emily had been required to take MA 112 in her major, she would have been required to take basic skills classes. She owns her own business currently. She gave the impression of being intelligent and a hard worker, which is why she succeeded in MA 110. She did say

I own my own business and really wanted to get my degree in geology but there was too much math involved. I am a gemologist by trade. I appraise diamonds and gemstones. I have my own business so I thought going back to school for a geology degree would tie in gemology, earth sciences and rocks, and I have my own business so the business management.

Her three concentrations are Geology, Business Management and Adult Interdisciplinary Studies which is what she was referring to in her response. She also made the statement that she was scared of math but found that she could be successful in a math course. She felt prepared for EH 101 and did well in this class and found it enjoyable.

Fran enrolled in the first university she attended immediately following high school. When the interviewer asked "Did you feel prepared to take MA 112 or EH 101?"

Fran's response was

Yes

And you felt adequately prepared?

Yes

And was it the 112 or . . . ?

It was the equivalent I don't know the number. I had precalculus and calculus college credit, but for some reason, it did not transfer over to this university and that is why I had to take the math over again. I did not do it in enough time, so I am academically inclined.

When the interviewer asked "What about your English class? Did you think that you were prepared for that one?" Fran responded

Of course over time you learn how to write better. Of course the way I write now is totally different from when I began writing essay papers. I found it difficult because they were trying to prepare us on what to expect, the kinds of things the professors would want from you in college. So I had a foundation. I found some aspects more difficult than others, but I did pretty well.

Fran actually stated that she had served as an English tutor to students in the basic skills English class. She is an academically prepared student who dropped out of college after the basic two years because she did not know what she wanted as her major.

The next question asked was "Do you think that you might have been more successful if you had taken basic skills classes prior to enrolling in MA 112 or EH 101?" Fran was academically prepared and did well in MA 112 and EH 101. Emily did well in EH 101 and thought that she was prepared to take EH 101 without any additional



preparation. She worked hard but did well in MA 110. She would not have been prepared for MA 112. Donna was successful in EH 102 but thought that she might have had an easier time in the class if she had first taken the developmental course LAS 100, Language Arts and Skills. Donna's answer about being successful in EH 102

Not necessarily, I think it may have made it easier, but I think my grade was still decent and may have made the work a little easier, but I don't think it would have made my grade any higher. Does that make sense?

Donna took MA 110 and was successful. She would have needed to take a basic skills class in algebra if she had been required to take MA 112 in her major.

The final questions asked were

Would you make the same decision regarding basic skills classes after taking MA 112 or EH 101? Would you recommend to other non-traditional students to take basic skills classes before attempting MA 112 or EH 101?

When the interviewer asked

"If someone had talked to you about taking it, do you think you would have taken it?" Donna said

Possibility yes, I would have.

She felt very positive about taking basic skills classes. Her response to the last question was

I think having those classes available after being out so long is very beneficial. And having a teacher that is on your level and enjoys what they are doing makes it easier.

In summary, Donna returned to college after more than 20 years. She thought that basic skills classes could have made EH 102 easier. She was not required to take MA 112 for her major. If she had been required to take MA 112, she would have needed to take basic skills classes in algebra. Emily felt prepared for EH 101. Even though she had been advised to take a basic skills class before attempting MA 110, she decided to take MA 110 without the basic skills class. She had to work hard in the MA 110 class but was successful. If she had been required to take MA 112 in her major, she would have needed the basic skills class. Fran was academically prepared from high school. She did not have an extended time lapse between high school and college.

The perceptions of the non-traditional students interviewed were very positive toward basic skills classes. The non-traditional students who took basic skills classes initially thought they did not need basic skills classes, but after they were enrolled in the classes, they thought that they did need them after all. They thought they were better prepared for MA 112 or EH 101 after taking the basic skills classes. The non-traditional students who had an extended time lapse between high school and college felt the greatest need for the basic skills review and indicated that basic skills classes could provide a better preparation for MA 112 or EH 101.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### Summary

##### *Statement of the Problem*

Working adults who want to be successful in their chosen profession are becoming the new majority among undergraduates in colleges in the United States according to the Council for Adult and Experiential Learning (CAEL, 2000). The National Center for Educational Statistics (NCES, 2005) found that in the year 2003-2004, 70% of the students enrolled in postsecondary schools were 24 years of age or older. Between 1990 and 2005, NCES reported an increase of 18% in enrollment of students 25 and older. NCES projects an increase of 21% in enrollment of students 25 and older during the years 2005-2016 (NCES, 2008).

Remedial courses in postsecondary education have been offered since 1636 for underprepared students. The need for these courses will continue to be present as long as students are not prepared for college in high school and students delay entry to college (Boylan, Bonham, & White, 1999). Remediation is a significant component of higher education, providing education to these underprepared students. Current research shows that remedial courses do improve student outcomes (Long, 2005).

In the information and technology based society of today, it is imperative that the United States of America have a skilled workforce. It is projected that 80% of jobs in the 21<sup>st</sup> century will require either certification or a degree. Postsecondary institutions have to provide the necessary programs to meet this requirement. The title of Robert McCabe's report, *No One to Waste*, is a reflection of how political and postsecondary leaders should

view the problem of the need for skilled and educated workers. America needs to make sure that postsecondary education has the funding necessary to help adults succeed in postsecondary institutions (McCabe, 2000).

### *Methodology*

The main purpose of the study was to determine the effect of academic preparation in basic skills classes on the academic performance in subsequent college-level classes for non-traditional students. A secondary purpose was to determine if academic preparation in basic skills classes had a long-term effect on academic performance as measured by graduation GPA. A third purpose was to obtain the perspectives of non-traditional students about the effect of academic preparation in basic skills classes on academic performance in subsequent college-level classes.

Population for the study consisted of non-traditional college students. The methodology included statistical comparisons of grade distributions and GPA using archival data from the Banner student record system for two groups: non-traditional students who took basic skills classes and Precalculus (MA 112) or English Composition I (EH 101) and non-traditional students who did not take basic skills classes but did take MA 112 or EH 101. The methodology also included a comparison of interview data from a sample of three non-traditional students who took a basic skills course and MA 112 or EH 101 and a sample of three non-traditional students who took MA 112 or EH 101 without having prior basic skills classes.

### *Results*

The first null hypothesis is that there is no significant difference in the grade distributions in MA 112, Precalculus Algebra, between non-traditional students who

successfully completed DS classes and non-traditional students who did not take DS classes. A chi-square statistic was computed on the information obtained from the spreadsheets from the Computer Service Center. The study found that the statistical null hypothesis of no difference in the MA 112 grade distributions for non-traditional students with and without DS courses was rejected, with  $p < .001$ , indicating there is a statistically significant difference in the grade distributions of non-traditional students who took DS classes prior to taking MA112 and non-traditional students who did not take DS classes before taking MA 112. The percentage of successful MA 112 grades is much greater for non-traditional students with DS classes than for non-traditional students who did not take DS classes. In conclusion, non-traditional students who had DS classes before taking MA 112 made better grades, passed at a higher rate, and withdrew at a lower rate than students without DS classes.

A chi-square statistic was also used to analyze the data for the statistical null hypothesis,  $H_2$ , that there is no significant difference in the grade distributions in EH 101, English Composition I, between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes. The statistical null hypothesis of no difference in the EH 101 grade distributions for non-traditional students with and without DS classes was rejected, with  $p < .05$ . There is a statistically significant difference in the grade distributions of non-traditional students who took DS classes prior to taking EH 101 and non-traditional students who did not take DS classes before taking EH 101. In conclusion, non-traditional students who took DS classes outperformed non-traditional students who did not take DS classes in EH 101.

To analyze the data for the statistical null hypothesis,  $H_3$ , the t statistic was used. The statistical null hypothesis,  $H_3$ , that there is no significant difference in graduation GPA between non-traditional students who successfully completed DS classes and non-traditional students who did not take DS classes was tested with a t-test. Results of the t-test should be interpreted with caution, however, because of the small sample size for one of the groups. There were only five non-traditional students who successfully completed DS classes and graduated within the time period of this study. This small sample size limits the generalizability of results. Although the mean graduation GPA for non-traditional students with DS classes was greater than the mean graduation GPA for non-traditional students who did not take DS classes, the two were not significantly different at the .05 significance level. The statistical null hypothesis of no difference in graduation GPA means between non-traditional students who took MA 112 and completed DS classes and non-traditional students who took MA 112 and did not take DS classes was not rejected. No statistically significant difference in the graduation GPA means between the two groups was found at the .05 significance level.

The third purpose of this study was to obtain non-traditional students' perceptions of their preparation for a beginning college-level mathematics course (MA 112) or a beginning college-level English course (EH 101) by interviewing non-traditional students with previous developmental studies class preparation and without previous developmental studies classes. Six non-traditional students were interviewed in the time period of March 7-March 10, 2009. Three of the non-traditional students had taken developmental studies or basic skills classes prior to taking MA 112 or EH 101 and three

of the non-traditional students took EH 101 or MA 112 without taking basic skills classes prior to taking the college level classes.

The non-traditional students with developmental studies classes initially did not think that they needed the basic skills classes but after enrolling in the classes realized that they did need the basic skills classes. They thought that they were better prepared for EH 101 or MA 112 after taking the basic skills classes. The overall perception that the interviewees gave was that even though they would not have taken the basic skills classes without placement into the basic skills classes, they found them to be beneficial and would recommend other non-traditional students to take them.

Three non-traditional students who had not taken any basic skills classes were interviewed to obtain their perceptions of their preparation for MA 112 or EH 101. Only one of these three non-traditional students had been advised to take a basic skills class, which was a math class. She did not take the basic skills math class but was successful in the college-level math class that she did take. If she had been required to take MA 112 for her major, she would have been required to take the math basic class. If there were an extended lapse of time before enrolling in college, a review of basic skills for non-traditional students could be helpful in making the courses easier and improve the grades in the course. As one interviewee said,

“I think having those classes available after being out so long is very beneficial.

And having a teacher that is on your level and enjoys what they are doing makes it easier.”

## Discussion

Colleges have offered remedial courses since the founding of our country.

Remedial courses or support services were offered to adults who were able to attend a postsecondary institution but who did not have the basic skills necessary for success. The first formal College Preparatory Department was established in 1849 at the University of Wisconsin (Dotzler, 2003). The Merrill Acts of 1862 and 1890 opened the doors to even more students who were not prepared for college (Casazza, 1999). The GI Bill of Rights allowed over one million veterans to attend college. Colleges and universities created academic support for the veterans. The veterans were non-traditional students attending college to obtain a job with a better salary to improve their standard of living (Casazza, 1999). Remedial or developmental studies courses were offered to veterans and other adults as they entered college to increase their chance of success.

Remedial or developmental studies courses are offered at 76% of the higher education institutions in this country. Ninety-eight percent of public two-year colleges and 80% of public four-year institutions offered remedial courses (U.S. Department of Education, 2003). Longitudinal studies conducted by NCES found that delayed entry into postsecondary education is one reason students need remediation (Perkins-Gough, 2008). Another study reported that 46% of the freshmen in remedial courses are older than 22, and 27% of the freshmen in remedial courses are older than 30 years of age (IHEP, 1998). Providing education to the underprepared students is a significant component of higher education. Institutions should place their emphasis on improving remedial courses and programs that offer remedial courses in order to improve the pass rates of the remedial courses. Additional research needs to be conducted to clarify the best practices



and help educators understand what is necessary to improve course completion rates for students who need remediation (Long, 2005).

Postsecondary education is now necessary for many entry-level jobs and for many high-skills and high-wage jobs. The nation now needs a different kind of worker who is adaptable and with skills that allow the worker to be retrained (CAEL, 2008). Recent high school graduates cannot meet the growing demand for skilled workers. Adult education professionals should be forming a plan to increase the skills level of adults who do not have the credentials from postsecondary (CAEL, 2008). Stephen Reder would like to see adult education expand its traditional role into postsecondary education (Reder, 2007). Adult education and developmental education programs have similar goals, objectives, and student population. A collaboration between the two programs can create an environment for students to be successful. Adult education can offer remedial courses for adults with the skills below college level without a cost to the student and developmental studies programs could offer the courses for adults to transition into the college curriculum. Additional support services, such as tutoring and counseling, can be offered through both programs.

This study focused on the effect of having prior basic skills courses on the success of adult learners in college-level courses, which is one aspect of the principle of Student Support Systems that was reported in a study by CAEL (2000). CAEL found that providing adult learners an opportunity to learn or refresh basic skills before entering credit-bearing courses increased the success of the adult learner (2000). This research study supported the conclusion of CAEL at this four-year public university. The statistical analysis showed that non-traditional students who had taken the basic skills

classes had significantly better grades in Precalculus Algebra or English Composition I than the students who had not taken the basic skills classes. There was a significant difference in the grades for non-traditional students with developmental classes and non-traditional students without developmental studies classes. Looking at the number of students who passed indicates the substantial difference between the MA 112 grade distributions for non-traditional students with and without DS classes, as 88.9% of non-traditional students who had a DS class passed compared to 62.4% of those who did not take DS classes. Fifty-five percent of non-traditional students with DS classes earned grades of A or B in MA 112 versus 34.7% of non-traditional students without DS classes. Bettinger and Long (2005) found that there was a positive outcome for students who complete remedial courses, an outcome in agreement with the results of this study, which found that the non-traditional students with developmental studies classes had better grades and passed at a higher rate than the non-traditional students who did not have developmental studies classes. The results of this study also agree with an outcome reported in a study by Bahr (2008) that students who are successful in remediating their math skills attain success in college courses comparable to students who did not need remediation.

Non-traditional students who had a DS Composition class prior to taking English Composition I (EH 101) had a higher pass rate and better grades than non-traditional students who had not taken a DS Composition class. Of the 13 non-traditional students with DS Composition classes, 92.3% received a grade of A or B in EH 101 versus 56.4% of the 1019 non-traditional students without DS Composition classes. The pass rate for non-traditional students who took DS Composition classes was 92.3% compared to

73.5% for those who did not take DS composition classes. Non-traditional students who took DS composition classes outperformed non-traditional students who did not take DS composition classes in EH 101.

Non-traditional students who were interviewed also perceived that developmental studies courses improved their preparation for Precalculus Algebra or English Composition I. The non-traditional students who had completed basic skills classes reported that Precalculus Algebra or English Composition I was easier and their grades were better than they would have been if they had not taken the basic skills classes. These findings indicate that the effect of academic preparation in basic skills classes on the academic performance in subsequent college-level classes for non-traditional students is positive.

The t-test showed that the mean graduation GPA of non-traditional students who had a math basic skills class was not significantly different from the mean graduation GPA of non-traditional students without basic skills classes. Having a small sample size of non-traditional students who took math basic skills classes and graduated within the time period of the study limits somewhat the generalizability of these results. It does appear, however, that for non-traditional students needing remediation, the long-term effect of completing basic skills classes may be that these preparatory classes allow them to perform academically throughout college on the same level as non-traditional students who did not need remediation. The fact that those who needed basic skills classes had approximately the same mean graduation GPA as non-traditional students who did not need basic skills classes has practical significance. Non-traditional students who needed basic skills classes upon entering college would be expected to have a lower mean

graduation GPA than that of non-traditional students who did not need the basic skills classes. This study found, however, that non-traditional students with basic skills classes succeed as well as non-traditional students without basic skills classes, supporting the findings of long-term positive effects in current literature on the success of basic skills classes. Bettinger and Long (2005) found that students who completed remedial courses were more likely to persist in college, when compared to students with similar educational backgrounds who did not take remedial courses. They also concluded that they were more likely to obtain a bachelor's degree than students with similar backgrounds who did not take remedial courses. Attewell et al. (2006) found that given a longer period of time, remediation courses did not prevent students who took remediation from graduating.

The six non-traditional students who were interviewed represent a sample of the diversity of the non-traditional students returning to college. Three of those interviewed had a delayed entry to college for various reasons. They returned to college to obtain the degree that would allow them to work in a field requiring the college degree, nursing or social work. The others had an extended length of time before they enrolled in college. They mainly wanted to increase their opportunities in their current career.

The interview responses of those with developmental studies courses also illustrate how developmental studies classes serve as scaffolding and increase the non-traditional students' self-efficacy. Instructional scaffolding serves as a support system for students when skills are first introduced or when students are struggling to learn the skills (epic, 2009). Instructors of developmental studies courses strive to provide an environment that encourages students to learn. Instructional scaffolding techniques are

used such as handouts, Venn diagrams, and questioning (Instructional Scaffolding, 2008). Larkin (2002) states that when using instructional scaffolding, it is important for the instructor to maintain a positive attitude, be patient, and display a caring attitude, all of which are characteristics of faculty in the Developmental Studies Department at this four-year university. Betty and Carol both had the basic skills math and English classes. They commented that the courses helped them to remember and built up their skills. When they took the college-level classes, MA 112 or EH 101 seemed like the next step in the progression. The developmental studies courses gave support to the students to allow them to master the skills forgotten or never learned. This is how scaffolding serves the student. Amy mentioned attending study sessions and being tutored. Both are ways to use scaffolding. The non-traditional students also learn to seek the scaffolding support as they enroll in MA 112 or EH 101 and other college-level classes.

Academic self-efficacy is defined as “people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994, p. 71). One source of self-efficacy beliefs that has influence on a learner is mastery experience. Mastery experience is used by a learner to interpret the results of an experience (Bandura, 1997). Students who succeed in developmental studies courses gain confidence in their ability to succeed in Precalculus Algebra or English Composition I. When students believe they can succeed, they persevere in times of difficulty (Bandura, 1997). The non-traditional current college students interviewed after successfully completing the basic skills courses all expressed the idea that they think they could handle the math or English now, which means they will take the courses needed to finish the degree. Pajares (2002) found a correlation between a student’s self-

efficacy beliefs and motivation, academic performance, and achievement. Self-efficacy beliefs have a connection to effort, persistence, and perseverance which influence academic performance (Pajares, 2002). Success builds up the self-efficacy of the non-traditional students. If they are not prepared for a college-level class, they may think that they cannot do the work and drop out of the class and maybe the university.

### Limitations

Generalizability of results may be limited in the following ways. The grade information used in the study was from a variety of instructors. The textbooks and names of the courses changed in the period Fall Semester 2003 through Summer Semester 2008. The non-traditional students who volunteered for the interview might have given socially expected answers to the questions. The non-traditional students who volunteered for the interview might have responded differently from students who had not volunteered. A small sample was obtained for the GPA analysis at graduation. This could possibly limit the generalizability of the study. A five year period was not sufficient for non-traditional students to graduate.

### Recommendations

#### *Policy and Practices*

1. The non-traditional students at this university currently have to take the University Placement Exam for mathematics. If not prepared for MA 112, then the non-traditional students must take the developmental math course specified on the placement exam results sheet. This policy should continue because this study confirmed that taking the developmental classes helps the non-traditional students

to have higher grades and pass at a higher rate than those who take MA 112 without developmental studies classes.

2. Non-traditional students are not required to submit standardized test scores for admission. Non-traditional students with an ACT English subscore, however, should follow the same prerequisite guidelines as traditional students follow. This study showed that taking the developmental studies classes before taking EH 101 improved the grade for non-traditional students and that non-traditional students passed at a higher rate than those who took EH 101 without developmental studies classes.
3. For non-traditional students without an ACT English subscore, a required placement instrument should be developed to establish the skills of the non-traditional students. One example of a placement instrument is a writing sample. Non-traditional students without scores would have to do a writing sample to determine if they are prepared for EH 101.
4. If a placement instrument is not required for non-traditional students, advisors should recommend to non-traditional students that they take a placement instrument to determine if they are prepared to take EH 101. Until the policies become mandatory, this would have to be a recommendation to non-traditional students. As this study demonstrated, non-traditional students who have been away from school for an extended period of time will benefit from a review.
5. Research should be conducted to gain knowledge about the policy approaches and institutional practices that are most beneficial and obtain the best results for students (Russell, 2008).

6. Research should be conducted to examine different schedules and delivery methods of offering developmental studies courses to determine the most effective way to offer developmental studies classes to non-traditional students.

#### *Further Research*

1. Research on the effectiveness of the developmental studies classes should continue.
2. Research on the completion rate of non-traditional students in the developmental studies classes should be conducted. Developmental studies classes, also called basic skills classes or remedial classes, nationally have a low pass rate. These classes have positive outcomes for completers. It is critical that non-traditional students complete the developmental studies classes to increase their chance of success in college-level courses and persist until they graduate. Research should be conducted to clarify the best practices and help educators understand what is necessary to improve course completion rates for students who need remediation (Long, 2005).
3. Analyze information from student record systems to determine if the number of courses required of non-traditional students affects the completion rate of developmental courses and persistence of the non-traditional students.
4. Compare the graduation rate and the graduation GPA of non-traditional students who completed developmental studies classes to non-traditional students who needed developmental studies classes but did not take the developmental studies classes.



5. Compile data on persistence, graduation rate, and GPA of students who enroll in a university with a GED score to determine the success rates in college level courses and degree completion. Use the results to determine if criteria for placement and additional prerequisites for college courses should be established.

APPENDIX A  
INTERVIEW PROTOCOL

**Sample Interview Questions for Non-Traditional Students Who Took  
Developmental Studies Classes.**

1. Why did you enroll at the University of South Alabama?
2. Why did you enroll in the basic skills classes? Were you advised to take the classes or were you placed in the basic skills classes?
3. How did you feel initially about taking basic skills classes?
4. Did you feel prepared to take MA 112 or EH 101 after completing the basic skills classes?
5. Did you take MA 112 or EH 101 immediately after taking the basic skills classes? If the answer is no, do you think the delay affected your success in MA 112 or EH 101?
6. When you were taking MA 112 or EH 101, did you feel as prepared as the other students in your class or more prepared than the other students in your class?
7. After completion of MA 112 or EH 101, did you think that it had been beneficial to take the basic skills classes?
8. How many times did you take MA 112 or EH 101?
9. Would you recommend or have you recommended to other non-traditional students taking basic skills classes before attempting MA 112 or EH 101?

**Sample Interview Questions for Non-Traditional Students Who Did Not Take Developmental Studies Classes.**

1. Why did you enroll at the University of South Alabama?
2. Were you advised to take a basic skills class? If the answer is yes, why did you decide not to take the basic skills class?
3. Did you feel prepared to take MA 112 or EH 101?
4. Do you think that you might have been more successful if you had taken basic skills classes prior to enrolling in MA 112 or EH 101?
5. Because you did not take the basic skills classes prior to taking MA 112 or EH 101, do you think that the courses were more difficult?
6. How many times did you take MA 112 or EH 101?
7. Would you make the same decision regarding basic skills classes after taking MA 112 or EH 101?
8. Would you recommend or have you recommended to other non-traditional students taking basic skills classes before attempting MA 112 or EH 101?

Title of project: Developmental Studies Courses and the Success of Non-Traditional Students

Name of Principal Investigator: Charlotte T. Matthews

Contact Information: 251-460-7383 e-mail: cmatthew@jaguar1.usouthal.edu

You are invited to voluntarily participate in a research project for my Dissertation at the University of Southern Mississippi. I would like to interview students who are 23 years of age or older that have taken Developmental Studies courses and subsequently took MA 112 or EH 101 and students who are 23 years of age or older who took MA112 or EH 101 without taking Developmental Studies courses.

The purpose of the study is to determine if non-traditional students should be required to take Developmental Studies courses if their skills are deficient in mathematics or writing. The interview should not take longer than one hour. Participation will remain anonymous and no identifying data will be collected.

Volunteers will make an appointment with me in my office. The interview will be recorded instead of the interviewer taking notes. You will not be asked your name or any other identifying questions. You have the right to refuse to answer any questions that you do not wish to complete and/or answer.

If data from the study determines that it is beneficial to non-traditional students to refresh or increase their knowledge of basic skills before attempting college level courses, prerequisites for the college courses can be established. This could result in higher grades in MA 112 or EH 101 and non-traditional students increasing their self-efficacy.

A \$10.00 gift card to a local restaurant will be given to each volunteer that is interviewed to compensate for the time spent doing the interview. All responses will be kept in a secure locked cabinet for a minimum of three years after all data have been collected and the dissertation is completed. All information will be used for research purposes only.

If you agree to participate, you must be at least 23 years of age. This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS, 39406-0001, (601) 266-6820. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice or loss of benefits. Any questions about the research should be directed to Charlotte Matthews at 251-460-7383.

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Signature of Person Giving Oral Presentation

---

Date

## APPENDIX B

## INSTITUTIONAL REVIEW BOARD APPROVALS

HUMAN SUBJECTS REVIEW FORM  
 UNIVERSITY OF SOUTHERN MISSISSIPPI  
 (SUBMIT THIS FORM IN DUPLICATE)

Protocol # 29011502  
 (office use only)

Name Charlotte Matthews Phone 251-460-7383

E-Mail Address cmatthew@jaguar1.usouthal.edu

Mailing Address 207 AHE, Developmental Studies Department, University of South AI, 36688  
 (address to receive information regarding this application)

College/Division Education and Psychology Dept Adult Education

Department Box # 5154 Phone 601-266-4621

Proposed Project Dates: From Dec. 10, 2008 To March 27, 2009  
 (specific month, day and year of the beginning and ending dates of full project, not just data collection)

Title Developmental Studies Courses and the Success of Non-Traditional Students

Funding Agencies or Research Sponsors \_\_\_\_\_

Grant Number (when applicable) \_\_\_\_\_

New Project

Dissertation or Thesis

Renewal or Continuation: Protocol # \_\_\_\_\_

Change in Previously Approved Project: Protocol # \_\_\_\_\_

Charlotte J. Matthews 12/18/08  
 Principal Investigator Date

W. Lee P. 1/5/09  
 Advisor Date

W. Lee P., acting chair 1/5/09  
 Department Chair Date

## RECOMMENDATION OF HSPRC MEMBER

- Category I, Exempt under Subpart A, Section 46.101 ( ) ( ), 45CFR46.  
 Category II, Expedited Review, Subpart A, Section 46.110 and Subparagraph (1).  
 Category III, Full Committee Review.

[Signature] 2/23/09  
 HSPRC College/Division Member DATE

[Signature] 3-06-09  
 HSPRC Chair DATE



## THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147  
 Hattiesburg, MS 39406-0001  
 Tel: 601.266.6820  
 Fax: 601.266.5509  
 www.usm.edu/irb

### HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **29011502**

PROJECT TITLE: **Developmental Studies Courses and the Success of Non-Traditional Students**

PROPOSED PROJECT DATES: **12/10/08 to 03/27/09**

PROJECT TYPE: **Dissertation or Thesis**

PRINCIPAL INVESTIGATORS: **Charlotte Matthews**


COLLEGE/DIVISION: **College of Education & Psychology**

DEPARTMENT: **Adult Education**

FUNDING AGENCY: **N/A**

HSPRC COMMITTEE ACTION: **Expedited Review Approval**

PERIOD OF APPROVAL: **02/27/09 to 02/26/10**

  
 \_\_\_\_\_  
 Lawrence A. Hosman, Ph.D.  
 HSPRC Chair

3-6-09  
 \_\_\_\_\_  
 Date



## THE UNIVERSITY OF SOUTHERN MISSISSIPPI

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Institutional Review Board

118 College Drive #5147  
Hattiesburg, MS 39406-0001  
Tel: 601.266.6820  
Fax: 601.266.5509  
[www.usm.edu/irb](http://www.usm.edu/irb)

TO: Charlotte Matthews  
207 AHE, Development Studies Department  
University of South Alabama, AL 36688

FROM: Lawrence A. Hosman, Ph.D.  
HSPRC Chair

PROTOCOL NUMBER: 29011502

PROJECT TITLE: Developmental Studies Courses and the Success of Non-Traditional Students

Enclosed is The University of Southern Mississippi Human Subjects Protection Review Committee Notice of Committee Action taken on the above referenced project proposal. If I can be of further assistance, contact me at (601) 266-4279, FAX at (601) 266-4275, or you can e-mail me at [Lawrence.Hosman@usm.edu](mailto:Lawrence.Hosman@usm.edu). Good luck with your research.

## UNIVERSITY OF SOUTH ALABAMA

COLLEGE OF MEDICINE



12/18/2008

TELEPHONE: (251) 460-6308  
 CSAB 138 \* MOBILE, AL. 36688-0002  
 FAX: (251) 461-1595

INSTITUTIONAL REVIEW BOARD  
 Initial Approval

Protocol #: <b>08-320</b>	Type: EXEMPT	Approved: 12/18/2008	Status: ACTIVE
Principal Invst: MATTHEWS, CHARLOTTE			
Protocol Title: DEVELOPMENTAL STUDIES COURSES AND THE SUCCESS OF NON-TRADITIONAL STUDENTS			

Category: 45 CFR 46.101 (2)

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior, unless:

- (i) information obtained is recorded in such a manner that human subjects can be identified directly or through identifiers linked to the subjects and
- (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

This panel, operating under the authority of the DHHS Office for Human Research and Protection, assurance number FWA 00001602, has reviewed the following items:

Protection of the rights and the welfare of human subjects involved. The methods used to secure and the appropriateness of informed consent. The risk and potential benefits to the subject.

On the basis of this review, we recommend:

Board Action	Cause for Action
<input checked="" type="checkbox"/> Approval                      ( ) Deferred <input type="checkbox"/> Pending <input type="checkbox"/> Denied	<input checked="" type="checkbox"/> Initial Review <input type="checkbox"/> Other (See Notes)

for the protocol and consent in terms of the University of South Alabama's statement of policy and procedure concerning the use of human subjects in the investigation.

The regulations require that the investigator not initiate any changes in the research without prior IRB approval, except where necessary to eliminate immediate hazards to the human subjects, and that all problems involving risks and adverse events be reported to the IRB immediately!

Advertisements for the recruitment of subjects must receive prior IRB approval. This and subsequent consent forms that have been approved will be certified with an IRB stamp on every page. You must use copies of the current consent form with the current IRB approval stamp unless consent has been waived. All subjects must receive a copy of the current consent form!

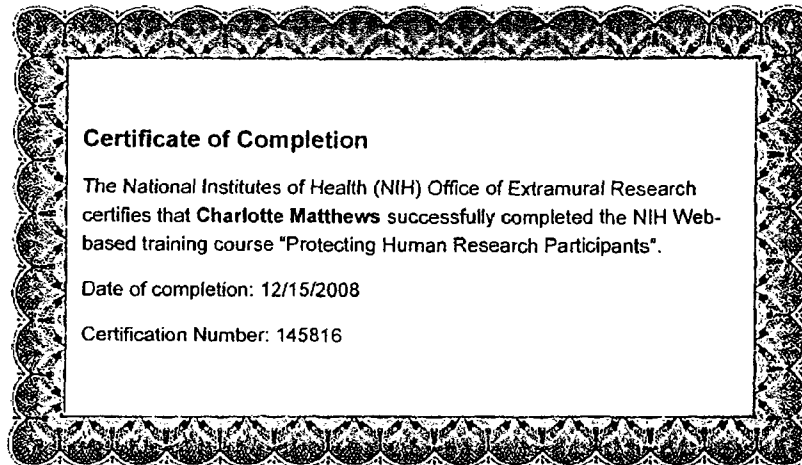
NOTES:

Protocol #: 08-320

  
 Chair, Institutional Review Board

12/18/08  
 Date





APPENDIX C  
TRANSCRIPTS OF INTERVIEWS

**Interview # 1**

**Saturday, March 7, 2009**

**Female Student from Dr. Lauderdale's class**

Interviewer: Why did you enroll in USA?

Interviewee: I was a student here many years ago out of high school and I quit. Being out in the market trying to get a good job determined that you need a degree to get a good job. So, back to school back to South, where I originally started.

Interviewer: Have you been anywhere else?

Interviewee: Other colleges? No.

Interviewer: But you started here years ago?

Interviewee: Right, I started here, like 20 something years ago, went about a year and quit then came back 14 years later. Job demands? Well, yeah because I had been interviewing and most places, to get a decent job wanted a degree and I did not have a degree. I knew that I would need that.

Interviewer: Are you currently working?

Interviewee: I am working full time.

Interviewer: What are your areas of discipline?

Interviewee: AIS is one, communications and business.

Interviewer: Communications and business?

Interviewee: Yes.

Interviewer: What do you hope to do once you finish get your degree?

Interviewee: Move up in my existing company. I love my job, I am fortunate, but maybe move higher up in the company. I am in sales and hope to move up to move into management.

Interviewer: That is how you are thinking you can use the business with your communications?

Interviewee: Absolutely. Yes and the communications for doing presentations.

Interviewer: This is interesting to me sometimes to see how students in that program put stuff together and what they are thinking they are gonna do with it. But that does seem logical one though. Were you advised to take a basic skills class? You said that you took English 101.

Interviewee: Yes.

Interviewer: Ok, were you advised to take any type of basic skills classes or did your advisor talk with you about the need for taking anything?

Interviewee: This would be originally, when I first started is when I took the English 101 and yes I was told to take that. But returning when I had my advisor in this AIS program I was advised to take the math and the English 102 you have to have.

Interviewer: You have a time lapse between the 101 and the 102. Right?

Interviewee: Yes.

Interviewer: Ok, for math it says that you have taken 110,

Interviewee: Yes the finite math 110.

Interviewer: Did you find that difficult?

Interviewee: Some areas of it, but not a lot of it, some of it is basic and the teacher I had was very good. She made it to where you could understand it. She actually taught elementary school and teaching it to us and yeah it was pretty easy, most of it.

Interviewer: Did you have to take English 102 after you came back? Did you find that difficult between the lapses of 101?

Interviewee: Very difficult. I did. I find it difficult because so many years of not writing and not knowing what a citation is I was lost with it at first.

Interviewer: So do you think it would have helped to take LAS 100 just to get back into the swing of writing paragraphs and papers?

Interviewee: I do. Right.

Interviewer: I don't know what grade you had in English 102, but do you think that you would have been more successful in that class if you had had that preparation prior to it?

Interviewee: Not necessarily. I think it may have made it easier, but I think my grade was still decent and may have made the work a little easier, but I don't think it would have made my grade any higher, does that make sense?

Interviewer: The English 102 is primarily writing a research papers, for most of the instructors. I have had a few students come back and tell me some of them do it a little different. So basically you took English 102 one time?

Interviewee: Yep.

Interviewer: And did not have to drop or redo it?

Interviewee: Nope.

Interviewer: Do you think that you would have made the same decision if somebody had told you for example about LAS 100 that is was a free elective credit course?

Interviewee: Mmm.

Interviewer: Even though you already had English 101 previously if you had somebody, right? Had talked to you about taking it, do you think you would have taken it?

Interviewee: Would I have taken it?

Interviewer: Do you think you would have still taken it?

Interviewee: Possibly. Yes. I would have.

Interviewer: Do you talk to any other non-traditional students?

Interviewee: Yeah, oh yeah.

Interviewer: Or any of the others? Have you expressed this concern with them? Have they had trouble?

Interviewee: I have one. Yeah and the girl that I talk to a lot, she and I started at the same time, but she loves to write and I think it is more beneficial for people like me who do not like to write. I find that area difficult, for her it's a breeze so she probably somebody like her would not have taken it where as me, yes, I would have benefited from it because I hate writing.

Interviewer: And you say the math MA 110 is your only one you don't have to take the MA 112

Interviewee: No. Thank God.

Interviewer: Even for that business?

Interviewee: No. I have never been told that. I had to take economics and statistics, but never had to a math, general math.

Interviewer: You don't have to take business calculus?

Interviewee: No.

Interviewer: I would have thought from the business end of it they would have cause usually they require MA 120 which is the business calculus then sometimes.

Interviewee: No.

Interviewer: Guess it depends which area business you are in?

Interviewee: Yeah.

Interviewer: I started in Marketing as my third discipline then looking at my classes taken they advised me it was better to go to business cause I had more classes under that than in the marketing side.

Interviewee: No. Calculus I would have died.

Interviewer: That is all of my questions. Do you have any would want to share or concerns?

Interviewee: I think have those classes available after being out so long is very beneficial. And having a teacher that is on your level and enjoys what they are doing makes it easier. I have been here 9 years and I don't remember much from the beginning.

**Interview #2****Monday, March 9, 2009****Female student having taken the English 101 and MA 110**

Interviewer: Why did you enroll at USA?

Interviewee: Well it was close to where I lived and I just wanted to go back to school and I didn't put much thought into like I should have when I moved here.

Interviewer: So, it was here when you moved here and it was here and you just decided to go back?

Interviewee: Yeah and there were a couple of friends where I worked who went here.

Interviewer: Have you previously attended any?

Interviewee: I went to school in the early 80's in Maine. University of Southern Maine.

Interviewer: At a university, but no degree?

Interviewee: No, but all of my credits transferred, that was cool and another reason why I really liked this school.

Interviewer: You had what 2 years?

Interviewee: Year and half.

Interviewer: So all of your basics?

Interviewee: Yeah.

Interviewer: So how long has it been between when you were attending?

Interviewee: About 20 to 23 years.

Interviewer: So what is your major now?

Interviewee: Business management, economics and geology.

Interviewer: You took 110 and not 112?

Interviewee: Right.

Interviewer: So the business economics?

Interviewee: Not economics, I'm business management geology and adult interdisciplinary studies.

Interviewer: Ok. I would have thought that one of those would have made you have math.

Interviewee: Right.

Interviewer: So how do you see putting together those 3 concentrations?

Interviewee: I own my own business and really wanted to get my degree in geology but there was too much math involved. I am a gemologist by trade. I appraise diamonds and gemstones I have my own business so I thought going back to school for a geology degree would tie in gemology earth sciences and rocks and I have my own business so the business management.

Interviewer: Ok so instead of going straight geology you added the business degree?

Interviewee: Yeah and in hindsight I don't know if you are gonna ask me these questions, but I would not have done the IAS, I would have bit the bullet and done just strictly the geology. I have friends that decided that. I wish. That after the fact you know.

Interviewer: I'm just curious how some IAS students fit the together their concentrations and what they are thinking cause sometimes I don't see any at all.

Interviewee: Do you see it with mine?

Interviewer: Yeah and the business.

Interviewee: I own a business and work with rocks all day.

Interviewer: Yeah, the kind I like.



Interviewee: Yeah, the sparkly ones.

Interviewer: The rocks and the earth sciences.

Interviewee: Mmm, you know the big emerald that they are trying to figure out what to do, I said just give me a piece of that one.

Interviewer: I do like emeralds. Were you advised to take any basic skills classes when you came in?

Interviewee: Yeah and they actually thought the 110 the basic math. Finite math it was called, would be too much for me and they said get it just to get prepped for it. But I said I think I can do and there was an online test that you could take.

Interviewer: So you took the UTM?

Interviewee: Yeah and I did fine with it.

Interviewer: That was my other question. Where did the UTM place you?

Interviewee: Where did it go to?

Interviewer: It should have told you that you could take the DS 068 maybe math 112.

There is no prerequisite for the 110.

Interviewee: The 110 then, I made enough to get that.

Interviewer: Says 35 Add 0 to 35 so.

Interviewee: That was one of the reasons that I didn't want to go back to school was the math. I was terrified of math and it's not that bad. I have a phobia of math. I had to get over it and I did good, got an 'A'.

Interviewer: That is one of the things that students have a really hard time in that class, it is not directly related to the calculus, it's not the algebra, it's a lot of different things. It's a lot of different math.

Interviewee: Yeah and I had a good teacher too.

Interviewer: Who did you have?

Interviewee: Boldajack.

Interviewer: Hmm.

Interviewee: I was looking at the faculty for this year and she's not on there.

Interviewer: Was she a daytime teacher?

Interviewee: Yes, she was very good and very thorough.

Interviewer: That's good to know because a lot of students ask who to take and I don't know as I'm not there anymore.

Interviewee: That's been 20 years now too.

Interviewer: So you felt like even though you were recommended in, now the UTM, but we've had trouble with that too. It does tell you if you needed that?

Interviewer: How long have you been back in school?

Interviewee: 2 years.

Interviewer: You graduate in August?

Interviewee: Yeah. Oh happy day. Well I am melancholy.

Interviewer: There is always graduate school. What about your English? Did you do well?

Interviewee: Yeah that is one of my forte and I did well I enjoyed it.

Interviewer: That is one of the questions. Do you think the classes were more difficult because you didn't take the basic?

Interviewee: Yeah it was very basic.

Interviewer: How many times?

Interviewee: Just once.

Interviewer: Did you talk to any other students?

Interviewee: In the math there were some who were struggling and quite few, some of us who just got it, but if you don't come to class...hello.

Interviewer: Yeah there is a big difference in traditional students and nontraditional students as far as work ethics.

Interviewee: Absolutely.

Interviewer: I have had a few nontraditional who didn't due to work ethics or too busy at work but usually

Interviewee: Older and wiser and I enjoyed it. Coming back for a purpose.

Interviewer: There are a lot of different ramifications as you look at the research that is one of the reasons why I asked the questions about how long it has been because one of the things that they talk about is why adult students are dropping in and out and the reentry into the program. There are a lot of reasons why.

Interviewee: Yeah, because you had a child or your husband got transferred. I would have come back sooner if my husband had not been in the merchant marines. He was always out to sea or something or another location. We've been all over the place and I had to say we are gonna stay here long enough for me to get my degree.

Interviewer: What about the 101 English? Did you hear any students in there?

Interviewee: That was last year...I heard a group of them and a couple didn't pass but I think it was because they didn't come. No reflections on the teacher or material.

**Interview 3****Monday, March 9, 2009****Female student AIS**

Interviewer: Are you taking 112?

Interviewee: Yes I have taken math 112

Interviewer: Did you take DS 084?

Interviewee: I am not sure. I had one developmental English and one developmental math when I first started, at junior college.

Interviewer: Not here?

Interviewee: No when I was at Faulkner.

Interviewer: Ok. One of the purposes is to see if it makes any difference when you take the basic skills then those classes, cause a lot of times with an adult or nontraditional student they or at least at South. Junior college is different cause South does not require the adults to take those classes. Sometimes they are recommended and they figure they are adults and they should know if they need it. That is true and sometimes it is not true and that is one of my contingences that they should be treated like anyone else. If you've got a prerequisite then there is a need for it and you need to take the prerequisite. In general that is what were are looking at in terms of the dissertation for AIS and DS. Why did you enroll?

Interviewee: Had my assoc degree from Faulkner and I wanted to continue too. I came to USA. I was thinking about the college of business first, but I like the idea of the AIS department because you can...

Interviewer: What are your 3 areas of concentration?

Interviewee: Sociology, Adult studies and business.

Interviewer: Business management or just business?

Interviewee: Business management because I am interested in HR, cause that is where I have been working at.

Interviewer: Sometimes I like to hear the areas of concentration and how you put those together. It doesn't always make sense to me on how they put those together, but in your case it does. There is usually a logical reason even though it doesn't always click to me. How long ago did you finish at Faulkner?

Interviewee: I finished in 03.

Interviewer: Was there a time lapse or another college?

Interviewee: No I took a couple of months off before coming here.

Interviewer: Did you go anywhere before Faulkner?

Interviewee: No after high school I went directly to work and after that I stayed at home with my kids while they were little and it was while they were school age it was that time that I decided to go back. I have always been a part time student.

Interviewer: So you said at Faulkner you were advised to take the basic skills class?

Actually a placement test, right? At junior colleges they do that.

Interviewee: That's where they told me I needed to start. I can't remember exactly, but it was one developmental English and one...

Interviewer: So here at USA did you take or have you taken pre Cal or English or did you do that at Faulkner?

Interviewee: No, I did all my English and literature at Faulkner.

Interviewer: So do you think that taking those basic skills classes helped you when you took those 'real' classes?

Interviewee: I think so because it helped me refresh because I had been out for so long and you have to tell yourself that even though you are not getting credit, it served its purpose. It did make it easier to refresh my skills.

Interviewee: I always tell them, 'so you don't get credit so you drop one or you fail it'. Which one is better?

Interviewer: So do you think that it actually made those classes easier?

Interviewee: I think so. I was more prepared for it.

Interviewer: So how many times did you have to take it? Just one?

Interviewee: Just one.

Interviewer: And the actual classes there?

Interviewee: Yeah just once.

Interviewer: Um, have you talked to any other or did you talk to any of them in those classes, the English or the math, the calculus, the 112? Of course at a junior college I guess it is different cause everybody they test you and everybody in there would have to take it. You wouldn't have anybody in there who wouldn't have to take basic skills?

Interviewee: Right. Ok, um?

Interviewer: You felt better prepared having taken the 112. How do you think you would have felt had you not taken the basic skills classes?

Interviewee: I think that I could have done it, but would have spent more time with it.

**Interview 4****Monday, March 9, 2009****Female student AIS**

Interviewer: Have you taken developmental studies classes?

Interviewee: No?

Interviewer: Have you taken English 101?

Interviewee: Yes.

Interviewer: Did you take math 112 or math 110 or have you taken a math?

Interviewee: I did take an algebra class at my previous university I took algebra and precal.

Interviewer: Why did you enroll at USA?

Interviewee: Long story short, the university I applied to previous did not have my desired major and I was not able to support myself financially in going to college and neither was my mother so I felt like it was a perfect opportunity and I attended a college for 2 years and took some basics. I looked at other colleges like Springhill and University of Mobile, but of course the tuition was astronomical. So I looked at USA and the reason why I came here primarily.

Interviewer: You had what a 2 and a half, 3 year lapse in the college you went to before and coming here?

Interviewee: It was about a year and a half.

Interviewer: So not that long?

Interviewee: No, not that long

Interviewer: In terms of nontraditional students or adult students.

Interviewee: Right, exactly.

Interviewer: So you are now in AIS?

Interviewee: I am.

Interviewer: So what are your areas of concentration?

Interviewee: My areas of concentration are sociology, social work and AIS studies.

Interviewer: So you have faded out of nursing area?

Interviewee: Yes, absolutely. I want to be in the health care profession as I want to be a social worker, more of a less clinical fashion and didn't wanna give blood and all of that and...

Interviewer: Did you try it?

Interviewee: Yes, but that is what other people wanted for so when I grew up and knew exactly what I wanted to be, I made the change my major.

Interviewer: That would not be an area for me. I would not have to go anywhere for very long for me to decide that is not where I want to be. I am not a caring person, well I am caring, but not that kind of caring.

Interviewee: I tried it at first, but realized it wasn't for me. I had an incident and knew that was not where I wanted to be. This is where I want to be. I can make up my mind and I have.

Interviewer: That is also an area where I feel like the students whether traditional or nontraditional students, well they are usually already working in the field where they want to be. For the traditional students they think in their mind that this is where they wanna be and they go through the courses and graduate. Then they get out there and realize that they hate it. I've had some become accountants and they



just hate it. Most jobs they are stuck in an office alone and they hate it. For any area you should try it and see if you like it. That is why I like the career planning up to a where you can work as a master, because if you hate it then there is no reason to finish up a four year degree.

Interviewee: Right, exactly.

Interviewer: So were you, you said that you took a basic skills class, did you take algebra or you just went?

Interviewee: No Ma'am.

Interviewer: You just went directly into your algebra class?

Interviewee: Yes.

Interviewer: And you felt adequately prepared?

Interviewee: Yes.

Interviewer: And was it the 112 or...?

Interviewee: It was the equivalent I don't know the number. I had a pre calculus and calculus college credit, but for some reason, it did not transfer over to this university and that is why I had to take the math over again. I did not do it in enough time, so I am academically inclined, but for some reason

Interviewer: So you had all those classes as a high school student with a college credit and it just didn't transfer over?

Interviewee: Hmm?

Interviewer: Unfortunately if they don't get transferred, you have to take them again.

What about your English class, did you think that you were prepared for that one?

Interviewee: Of course over time you learn how to write better. Of course the way I write now is totally different from when I began writing essay papers. I found it difficult because they were trying to prepare us on what to expect, the kinds of things the professors would want from you in college. So I had a foundation. I found some aspects more difficult than others, but I did pretty well.

Interviewer: Yea, that is one of the things with writing because you do have to do that in a number of classes. When you were talking to people at Alabama State, did they test you? I'm sure they did?

Interviewee: I took a placement test to make sure that you are competent enough to get in. I was a tutor for their English developmental studies program, but I didn't tutor the math.

Interviewer: So you tutored if they were in the DS classes.

Interviewee: Yes ma'am.

Interviewer: You didn't follow them through?

Interviewee: We were not required too.

Interviewer: It wasn't like our writing lab where you would see them for a couple of semesters?

Interviewee: No.

Interviewer: Have you talked to any other students here who have been in DS who have taken English here or pre cal levels here?

Interviewee: I don't know that many students that are taking the basic courses. We are all right now taking the...

Interviewer: When do you graduate?

Interviewee: Summer.

Interviewer: Are you doing your senior project this summer?

Interviewee: Yes ma'am. I know that I have to start ahead, people are telling me not to,  
but I...

Interviewer: So are you going to do the graduate school in social work?

Interviewee: Yes ma'am.

Interviewer: They have that here to right?

Interviewee: They have a distance program housed under DHR, but...

Interviewer: How long have you been trying to do this last degree thing?

Interviewee: I started in 2005.

Interviewer: That is normal for adult student?

Interviewee: I graduated in 2001.

Interviewer: You said that you took off for a year and a half so. Are you going to school  
part time?

Interviewee: No, I am full time.

Interviewer: You are full time?

Interviewee: Yes ma'am.

Interviewer: Eh, you changed majors right?

Interviewee: Yes ma'am. Changed for the 3<sup>rd</sup> time.

Interviewer: Well you have 300 hours?

Interviewee: I know that I am at the end of my road here having 200 close to 300 hours.

Interviewer: That is one of the problems with adult students, in the research when you  
start looking at resistance or persistence. It is different because they are

nontraditional they go part time, they don't go full time. It is going to take longer because of that.

Interviewee: Right.

Interviewer: I do notice that with the traditional students that they have other outside burdens and that could be why it has taken so long.

Interviewee: I am full time and don't have any internal...

Interviewer: But if you are changing majors that will determine if you are traditional or nontraditional as far as the length of time?

Interviewee: Now I am nontraditional right?

Interviewer: Yeah. But, anybody but I think that is a good thing for AIS programs and you can take something from it and put it together to make something that make sense for you. That happened with me, I started out teaching middle school and found out quickly that was not for me. Can you think of anything else?

Interviewee: No.

**Interview # 5****Tuesday, March 10, 2009****Female adult student**

Interviewer: Why did you enroll At University of South Alabama?

Interviewee: To get my nursing degree...been out of school for about 13 years.

Interviewer: So you are back here trying to get still in or still trying to get a Nursing degree. Have you been accepted yet?

Interviewee: I'm not far enough along.

Interviewer: Because you gotta do what? Two years?

Interviewee: Two years, but I am going part time.

Interviewer: Did you attend any other universities?

Interviewee: No.

Interviewer: So you were in high school then you were working? Hmm, then decided there had to be, oh yeah, something. Um, and so you decided to come back to school?

Interviewee: Yes ma'am.

Interviewer: Ok. Um were you admitted through DS or were you just through the placement test or what got you taking the DS classes?

Interviewee: They said my transcripts, taking the ACT?

Interviewer: Um cause usually that is the admission criteria most of the time.

Interviewee: I made an 18 on it.

Interviewer: Um, well that is when we were doing DS that is one of the admissions, well even now with conditional students. 18 is usually 17 and 18 not making the 19.

Um ok. So did you take the English 100?

Interviewee: Yeah the writing course and the 82 then the second semester I took your DS 90 class.

Interviewer: Ok did you do LAS 100?

Interviewee: Yeah.

Interviewer: Then did you do have you since then taken, well you would have had taken English cause you are on the list and you would have had to, alright then have you had English 101 since then?

Interviewee: Um, last semester.

Interviewer: And how did you think you did with it?

Interviewee: I came out with a "B" in it. I had to get back into the mindset to write the papers and it just helped me out with that because there was a lot of stuff that you just kind of forget over time.

Interviewer: Um and ok how did you feel initially about taking the basic courses skill classes?

Interviewee: I took a lower skill class and it definitely kinda just progressed to where it prepared me a lot more because I didn't think that I had, well I thought that I didn't need them still I started taking them then I found out that I did need them because I just, just don't remember too many things about too much stuff...

Interviewer: That's the one where you did more research papers and stuff right?

Interviewee: Ma'am.

Interviewer: Um have you taken 112? The math 112?

Interviewee: Um, took it last semester.

Interviewer: And you did ok in that one?

Interviewee: I couldn't understand what he was saying so I did alright. There were things that he didn't clarify so much in that class that I came out with a B, a high B.

Interviewer: Um. Uh, ok so did you feel prepared to take those classes 112 and the English after you had taken your basic skills classes.

Interviewee: Yeah I mean after your class I was thinking it was gonna be even like an 82 and even progressed into 90. I thought 90 and didn't know there was a 110 I thought it was gonna progress like that and just kinda smooth transition, but I was prepared for a lot of the stuff he went over.

Interviewer: Actually 110 is a totally different course. Math 110 is.

Interviewee: Oh I didn't know.

Interviewer: It is sort of like something that if you didn't have to do calculus then you take the 110, but there is only a few majors like communications or criminal justice that count that. Some of them education, and I think nursing, yeah nursing, you have to take that the 110 and 112 probably better off with the 112 in the sense of your chemistry cause now they have a prerequisite on the chemistry that you have to actually at least be qualified to take 112 or have done it, so you are probably better off in general. Um, uh, ok so actually you took those courses immediately after you took your basic skills classes?

Interviewee: Ma'am.

Interviewer: There wasn't a time period of waiting?

Interviewee: Huh. I have to go all year long to stay in the program.

Interviewer: We always try to stress like don't wait a year or 2 if you have taken the 090 or the 112 or the same LES 100 because you are back to the same situation you were in from the beginning you've had too much time elapse in there.

Interviewee: Ma'am.

Interviewer: Ok, uh do you think you were as prepare in the math 112 AS THE other students that were taking it? Or do you feel that you were more prepared?

Interviewee: Um, there were some students that ...

Interviewer: Ok, what about your English do you think that you were as prepare or better prepared as some of the students>

Interviewee: Um I didn't have some of the same...I didn't quite have the ....

Interviewer: So basically do you think that it was beneficial after the fact for you take the basic skill classes?

Interviewee: Yeah cause I probably would have been having C grades instead of high B or even some A or would have had the lower ones.

Interviewer: Did you or have you recommend to other nontraditional or other student s to take these basic skills courses?

Interviewee: Yeah I have actually had and gotten a couple people that I work with or old students that have children in some classes, and tell them that they need to take the DS classes because it has been so long since they have been in classes. They have barely got off the cut off line so that it is not starting this semester. I have mentioned to definitely take classes cause you have been out so long



Interviewer: Now the LAS is a credit course or a free elective. Doesn't need core require.

As far as English goes, but if you have a major that you are allowed some elective hours in it does serve that purpose. Do you think that makes a difference in elective courses as far as 090 you had to take it to get in it although?

Interviewee: You had to take it to get in. Now next fall it will be a free elective

Interviewer: Would that made a difference in attitude and when you were first taking it?

Interviewee: Yeah if I would have known that paying all that money and it towards my degree or help my GPA it would have made it easier.

Interviewer: LAS counted that way did you do study skills CP150?

Interviewee: Ma'am.

Interviewer: That one also counts as elective credit. Anything that had a 100 the 080 or 090 are the only ones that didn't count that way. Do you have anything else?

Interviewee: No.

**Interview 6****Tuesday, March 10, 2009****Female Student**

Interviewer: Did you do any basic skills classes at Bishop?

Interviewee: Yes ma'am, I took a placement test and placed at the lowest level. I think it was 098, so I actually took it twice. The first time you get an IP or incomplete then the second time I took math 100. At Bishop it was finite math then I came over here.

Interviewer: Now you didn't do the 112 at Bishop just the 110?

Interviewee: No ma'am it was either or it was with 110 or 112. At the time I was gonna do nursing, so I did the math 098 twice then the math 100, then the math 110 or 112 either or, then I did the 112 with the finite math, and then I came here and took the 210.

Interviewer: Oh, I was thinking that was the reason you were struggling with statistics was because you took the 110 versus the 112.

Interviewee: I guess I just really didn't know which one to take.

Interviewer: Because the 110 is the finite math, well here it's the course that if you are not going the Algebra level you take the 110.

Interviewee: I didn't know.

Interviewer: Now nursing lets you substitute and I don't why they started letting you do that, because a lot of the science courses you take are courses where you take even in statistics you would need the 112 more, and I know the nursing here lets you do either one.

Interviewee: Yeah.

Interviewer: But here the 110 the finite math is a different course and is based some, but not totally on algebra. That is what we are gonna start teaching the math 100 the intermediate algebra here. That is what the 090 is gonna be.

Interviewee: Oh.

Interviewer: It is gonna turn into the summer and then the fall.

Interviewee: Probably the 098. Is that the pre-algebra or the beginning algebra?

Interviewee: Basically like problem solving and formula solving. I always struggle with math even in elementary school when they had chapter 1 or chapter 31 where they would bus you to get tutored. I don't know if they still have that. You could get help with math, reading or English and in fact at Bishop. I had a tutor and I went to the learning labs. How they have the students, but I found the tests hard, and the only thing that I found to work was to keep going over and over it, pounding it in my head. I found that the tests were totally different. Some of them had like 4 or 5 different formulas so if you didn't get one or missed one then you were lost.

Interviewer: Was that in your statistics or was that in ...

Interviewee: In the finite and the statistics. The most recent is what I remember the most, the 210 and the teacher. I hope this doesn't sound too mean, but the teacher I had, I couldn't really understand her because she was like from India or something, and I know people don't really understand me sometimes. But I would have to look at her to get an idea. I decided that if I had to take a math again, I would take it from an English teacher, because it was hard when you don't understand them, and I know she got frustrated, because the class would stop her because we were

all lost, but she would say that she had to keep going. And it was really frustrating.

Interviewer: That was in your statistics?

Interviewee: Yes Ma'am, in the 210.

Interviewer: Did you take the statistics in the AIS?

Interviewee: No Ma'am. I was doing social work, because when I first came to USA, I applied for the social work program, and because my graduation date was 2010 is when I changed to this and this is only my third semester in the AIS.

Interviewer: So what are your concentrations in the AIS?

Interviewee: They are Sociology, Psychology and Social work. The social work and sociology went hand in hand and then when I transferred I picked up 2 upper level psychology classes so that is the third is psychology.

Interviewer: Hmm.

Interviewee: That is good. That seems like I was telling some of the others that when you hear their concentrations, I am thinking ok.

Interviewer: Sometimes you wonder how they go together.

Interviewee: Yeah, you do, but those do seem to go together.

Interviewer: So you were attending Bishop? Did you get your Associates?

Interviewee: Yes Ma'am, associates in applied sciences and took just the basics because once I decided that I didn't want to do the nursing. I kinda didn't know what, so then I decided to do just the basics and found out that they had a social work program.

Interviewer: Ok, so were you right out of high school when you started Bishop?

Interviewee: No ma'am, I graduated in 98 and I went into the Army for 3 years, so I started at Bishop in 05. I was outta school from 98 to 05.

Interviewer: So you didn't like the military?

Interviewee: Half my unit was over there, but I never thought that I would be going to war. I know that sounds crazy, but...I was like I can't go. But when it was my time to get out, I just didn't get out. Some of my MOs' were there, but I actually probably would have stayed in, but I could go back as an officer, but I guess it just depends on if I'm too old or whatever, but I just don't want to go to war.

Interviewer: You took the placement at Bishop, was it for English or just for math?

Interviewee: Hum, we took a placement for English and math and I placed in the English 101 because I placed at the highest. And the math is where I had to take the...well, you don't have to take the Developmental studies classes, but I found out when I took it the first time, I didn't. I wasn't serious about it and thought I could just move one. So that is when I told my sister that I would recommend taking it. So I took the 098 twice. I was kinda upset then I took the math 100, but I thought that if I skipped it that I could move forward, but it really just kinda held me back because I was back where I started so I took it twice. What I try to do is to keep the same teacher. I would not take it until in the summer to get the same teacher.

Interviewer: Yeah, cause we don't always do that, like I only teach intermediate algebra here MTH 100. We have others who only teach the 082.

Interviewee: Oh, it is harder to do it here at USA that's why I kinda.

Interviewer: Some of them do both, but in our department that is sort of the way we work it.

Interviewee: So, it's hard sometime to get the same teacher for both.

Interviewer: Yeah, it is.

Interviewer: There are pros and cons you know and sometimes it does you good to get a different person. I know that once you get used to the way one person teaches, then you think, oh well, I just need to stay with them.

Interviewee: Yeah.

Interviewer: So it can go either way.

Interviewee: What I did kinda try to do is I try to find a class and usually take it with a friend who is in my major with me and if not, I try to get one student who kinda acts like they are interested too and hopefully we can both get something out of it from each other. And too most of the teachers, I know like in 210, she offered little study groups so I would go to those.

Interviewer: Hmm? Of what she did?

Interviewee: Yes ma'am, it would only be about 30 minutes or right before a test you go and study with her. And even if you asked her, sometimes we would go up to her office cause sometimes it would just get confusing. She would have some students who understood, and they were like yea, so she would go one, but we would be like confused. She would say to do the homework and that would kinda help, because I can say for her that the homework problems weren't exactly the same on the test, but they were the same type of problems.

Interviewer: Hmm.

Interviewee: And that kinda helped a little bit.

Interviewee: Well, when and you should be getting practice in the homework for what you do on the tests.

Interviewer: So did you take those in sequence when you were at Bishop or was there a time lapse?

Interviewee: Yes ma'am. I took them in sequence.. Math 098, math 100 and math 110 were all in a sequence for the degree plan and we had to go exactly how the degree plan goes. So that was the sequence. Now when I came to USA, I just took my statistics, this is 09? I took it in the fall of 07. So that was the lapse from Bishop when I graduated in 06 to the fall of 07. I am not quite sure for the master's, because I haven't decided if I really want to do the master's like a social work master's degree or like a psychology degree.

Interviewer: I think the master's in psychology; you have to have more math for the master's.

Interviewee: Ok.

Interviewer: Because what I would see students doing when I taught in the math department, I would have them in the undergraduate psychology where they didn't require them to take it and then in graduate school they had to have it. I guess mainly for statistical reasons and stuff like that for the research end of it. So they would be coming back while they were in the graduate school trying to take like the 112 to get like where they could do the other, and I'm thinking like you should just...if you know they are gonna need it, then you should just...

Interviewer: There is not much that you can do with psychology if you don't have a master's.

Interviewee: I know.

Interviewer: So if you know that, then to me you should design that undergraduate program, and they may have changed now, because it has been awhile. I don't know about sociology or social work.

Interviewee: I think what I said I was gonna do is apply like in the summer for like a real career job then see where I get a job at, and then determine if I would go to get my master's because they don't have a mater's down here. I could go and start. I mean I could take just one class anywhere at any University, right?

Interviewer: Hmm?

Interviewee: As long as it will transfer.

Interviewer: Have you worked in any of those areas to see if you are really gonna like them, like social work?

Interviewee: Well in the social work program we did. And the reason I chose social work is because I like helping people and that is also why I picked nursing, but with the math and chemistry and physics it was too much. Then I picked social work because I could work with children, abused women, homeless, men in prison, or whatever and not have to go back for another study so the social work has a whole semester like you do here, but you go and get hands on training wherever you want to work. But then they have like a semester where you pick and what I wanted to be is a trauma social worker so you would have to be, they put me at the USA hospital and I liked it. Now I know I can't do DHR I never liked it , I



never did or to be in a DHR setting, but I don't want to be like in an office so I know I can put that right out the door. Trauma social work has so many different aspects...ER to ICU, someone's room then the burn unit. So I know I will like it. If for some reason I don't then I can take a CE class and I won't have to go back to school for another 5 or 6 years.

Interviewer: Now with Social work I don't think that you have to have a master's.

Interviewee: You don't, In order to be a Social Worker you do have to have your Bachelor's in Social Work. So I actually can be a social worker. I can still do the same type of work, but for the pay assessment, I would have to go back and get my social work master's degree, but I think that what I want to do is work not necessarily with teens, but with women who have low self esteem issues or have 2 or 3 kids and staying in a shelter. I have 2 schools, one in Kentucky and one in Jacksonville that I was looking at.

Interviewer: That sounds good.

Interviewer: Let's think back to when you were at Bishop, did you feel as prepared in your other classes as some of the other students that were in there, and do you think that taking the basic skills classes helped you to be prepared?

Interviewee: Yes, cause like I said the first time I got an IP, I was totally lost and the second time I took it, I knew I had to be focused, and I can honestly say that just from failing it the first time that I was able to take the same teacher, but even if I hadn't been able to, just how she broke it down, the steps, the way it carried over algebra one. So it helped me, now I didn't take her for Statistics 112, and it was different, it was the same teacher, but it more complicated.

Interviewer: Hmm.

Interviewee: It just went way over my head.

Interviewer: Hmm.

Interviewee: So it definitely helped me, but I don't know if it is because math is not my forte or I don't know because nothing really helped me in 112. I had a tutor and everything.

Interviewer: Hmm. That was the statistics?

Interviewee: Hmm, but with the finite?

Interviewer: Now the finite is 110.

Interviewee: Oh and 112 is the statistics?

Interviewer: 112 is pre cal.

Interviewee: Oh ok, it was the 110 then.

Interviewer: 110 is a totally different type of...like your MTH 100 and sort of prepare you, but it is not really normally designed, you know...

Interviewee: So I shouldn't have taken it?

Interviewer: As a sequence? Like here there is no prerequisite. Anybody can take even if you do the placement. I don't know what they taught with it at Bishop. It should be with probability and logic.

Interviewee: I could use a calculator, but I couldn't program it.

Interviewer: Did you talk to other people in those other classes who didn't have the basic skills that didn't take those classes? I know at Bishop it would be different because you have to take the placement tests.

Interviewee: Going back to that, I could kinda tell the ones who just kinda got passed over because there was only like about maybe 5 or 6 people that were even showing up. I would answer questions, but I would get lost on the tests. The majority of the class was lost because they would just sit. You could tell that there were people who weren't getting it, and she would just say come on ya'll come on, let's pay attention. Well we were all paying attention, but we were like, we can't participate, because we weren't getting it. You know how as a teacher you're up on the board and no one is answering questions.

Interviewer: You took the 098 twice?

Interviewee: Yes.

Interviewer: Then after that you didn't have to, right?

Interviewee: No ma'am because I took the math 100, then I got IP, then I got an A or B then I got a D. I think that she just gave me the D.

Interviewer: They didn't transfer that in as D?

Interviewee: I didn't care.

Interviewer: You took the math 210?

Interviewee: I got a C in there.

Interviewer: Have you talked to any other nontraditional students to see if these classes helped?

Interviewee: There was one girl who used my calculator and I told her that I took those other classes, but they didn't help me to program my calculator so I did tell her.

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