A Phenomenological Study Linking a College Success Course with a College Preparatory Mathematics Course

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A PHENOMENOLOGICAL STUDY LINKING A COLLEGE SUCCESS COURSE
WITH A COLLEGE PREPARATORY MATHEMATICS COURSE

By

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This dissertation is dedicated to my family:

To my husband Stephen,
with his great efforts to maintain
peace, patients, understanding and love
throughout this journey, helped me achieve
a lifelong dream and keep us “Two Against the World.”

To my mother “Cinda,”
who taught me never to give up on
myself and who set the standard high for
being an incredible teacher.

To my beloved brother Doug,
who made me realize that happiness comes from within and being in the
“arms of angels” can bring acceptance.

To my Grandmother Martin,
who always made me feel special and loved me unconditionally.

To my father,
as I continue to strive to make him proud.
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ATD</td>
<td>achieving the dream</td>
</tr>
<tr>
<td>AW</td>
<td>academic withdraw</td>
</tr>
<tr>
<td>CPT</td>
<td>college placement test</td>
</tr>
<tr>
<td>CUCC</td>
<td>Central Urban Community College</td>
</tr>
<tr>
<td>ED</td>
<td>United States Department of Education</td>
</tr>
<tr>
<td>FTIC</td>
<td>first time in college</td>
</tr>
<tr>
<td>FYE</td>
<td>first year experience</td>
</tr>
<tr>
<td>HEA</td>
<td>Higher Education Act</td>
</tr>
<tr>
<td>IRB</td>
<td>Internal Review Board</td>
</tr>
<tr>
<td>MAT</td>
<td>mathematics – preparatory courses prefix</td>
</tr>
<tr>
<td>MAT0002</td>
<td>basic skills mathematics course</td>
</tr>
<tr>
<td>MAT 0024C</td>
<td>beginning algebra course</td>
</tr>
<tr>
<td>MSLQ</td>
<td>motivated strategies for learning questionnaire</td>
</tr>
<tr>
<td>NUCC</td>
<td>North Urban Community College</td>
</tr>
<tr>
<td>OPPAGA</td>
<td>Office of Program Policy Analysis and Government Accountability</td>
</tr>
<tr>
<td>PC</td>
<td>Project Coordinator</td>
</tr>
<tr>
<td>QEP</td>
<td>quality enhancement plan</td>
</tr>
<tr>
<td>SACS</td>
<td>Southern Association of Colleges and Schools</td>
</tr>
<tr>
<td>SDS</td>
<td>self-directed search</td>
</tr>
<tr>
<td>SLS</td>
<td>student learning strategies – college success course prefix</td>
</tr>
<tr>
<td>SLS 1510</td>
<td>college success course at North Urban Community College</td>
</tr>
<tr>
<td>TCC</td>
<td>Tallahassee Community College</td>
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<td>W</td>
<td>withdraw</td>
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ABSTRACT

Community colleges are increasingly becoming a popular alternative for the first two years of a bachelor’s degree. The purpose of the typical American community college is to meet the needs of the community by providing open door access to opportunities for individuals so they can meet their academic, career and personal goals. Developmental education plays a key role at these institutions, as 94% of college students needing remediation attend community colleges. Of these remedial students, a glaring 83% typically need remediation in the mathematics area. Community colleges have implemented strategies to improve the academic success of students needing remediation. One of these strategies includes the instructional approach of utilizing learning communities to foster stronger bonds and inter-reliance among students by having groups of students attend a series of college preparatory courses together. The concept of students taking courses together is not new at the elementary and middle school level, and is often discussed with respect to looping. In academic context, this is the practice of keeping students with the same instructor for multiple years.

A variation of looping could be possible at the post-secondary level by offering linked courses for students in the developmental areas. Linked courses normally involve two subject areas, being taught by two different instructors, having the same cohort of students and incorporating integrated assignments. This phenomenological study looked at the benefits and limitations, as defined by students and the instructor, of linking a college success skills course with a college preparatory mathematics course. The uniqueness of this study pertained to the same instructor for both content areas, back-to-back class times, the same cohort of students, and a curriculum designed to integrate both content areas on a daily basis. The overarching investigation for this study was to determine the types of learning communities that develop when linking a college success course with a college preparatory mathematics course. Information gathered through this study on learning communities and the benefits and limitations for linked courses study will provide support for future recommendations for the college preparatory program at this community college and others throughout the State.
Through the review of field notes and other data sources for the study, four assertions were generated in the areas of **Peer-Learning**, **Self-Monitoring and Self-Growth**, **Community of Learners**, and **Teacher Change**. These assertions and findings were based on observations and data collection only within a linked course. Through this study, the following four assertions were made:

1) *Peer-learning was positively affected by the linked course.*

2) *Participation in this linked course led to the development of increased self-monitoring and self-growth.*

3) *A community of learners developed in this study and its foundation relied on this being a linked course.*

4) *The implementation of this linked course required the engagement of process of teacher change.*

If community colleges are going to maintain the “open door” policy, they have ethical responsibilities to the students they admit and enroll each semester. They must meet the students’ needs not just on the academic, specific-content level, but also by preparing them to be mature, life-long learners and successful adults. Pairing the college skills course with the developmental studies courses, particularly mathematics, could be part of the active steps to this positive direction for integrating the yin and yang of student learning in college that is needed today (Blake, 1996). Improving developmental students’ attitudes towards learning, self-efficacy and motivation, and increasing their ability to see the usefulness of an education are worthy goals. This study shed light on how a linked course can provide a foundation for the development of a community of learners and in reaching these goals.
INTRODUCTION

Philosophy of Teaching

In graduate school, I was asked to share my philosophy of teaching. At the time, I was overwhelmed with trying to understand and process the various philosophies of Gestalt, Skinner, Gagne, Piaget and Vygotsky. With so many before me having developed their own theories on mathematical learning, verbalizing my own seemed an impossible and daunting task. Trying to determine if my belief system and teaching strategies follow the behaviorists or the constructivist viewpoint is something I find difficult, and possibly detrimental, to my own thought process of who I am and how I see myself as an instructor and learner. To me, it is about taking bits and pieces of each philosophy and methodology, combining it with my own beliefs and experiences, and putting it into practice on a daily basis to guide my ideas and actions in the classroom. Perhaps the term detrimental is too harsh, as being able to connect and contrast my ideas and research to existing theories is central as an education researcher. Recent research suggests that teacher educators need to help teachers connect theory to practice (Brown et.al., 2006). Asking teachers to connect their philosophies to the broader theories can challenge their thinking and help them make that connection. As I continue my own pursuit of knowledge in the field of mathematics education, I believe my teaching and learning philosophy develops as well, and the connection to previous theorists’ ideas and beliefs takes root. Taking a closer look at the influences of past theories and research on my philosophy, I can see where I have adopted some of their beliefs and where I have discarded others. “Theories are nets to catch what we call ‘the world;’ to rationalize, to explain, and to master it. We endeavor to make the mesh ever finer and finer.” (Popper, 1968, p. 5).

From the instructional psychologists, I agree with Jerome Bruner’s (1995) cognitive development perspective, which called for an instructional theory that would describe the principles for the design of effective classroom instructions. I support the idea that effective classroom instructions exist and that to some extent, “structure,” in terms of providing an atmosphere conducive to learning, where it is free of negativity, bias and judgment, needs to come into the classroom for learning to take place. There must also be an open atmosphere where it is safe for students to practice their skills and knowledge and receive feedback to help
guide them during the discovery process. Class time needs to be made valuable by planning activities that can help students meet their objectives as learners of mathematics, but also as people in a social environment. I support the advocates of learning by discovery. Learning mathematics is a process that requires active involvement. Students need to be encouraged, engaged and empowered to learn, just as I need to be in the role of the instructor.

Skinner (1950) discussed his ideas of programmed instruction and behavioral management. In the courses that I teach in the mathematics developmental studies areas at a community college, I often times need to utilize the manipulation of reinforcers to obtain appropriate behavior. Skinner’s idea of “token economies” does work to reinforce good behavior in my classroom. However, I must admit, I often feel as if I am having to bribe my students to perform and that is where my support for Skinner starts to wane. The cognitive psychologist point of view distresses me even more. Their view of the learner as a complex information-processing system and their focus on information instead of meaning makes me worry that student learning can be categorized. My goal as an instructor is to inspire, encourage and motivate students to think “out of the box,” perhaps out of the “system” so they can develop their own problem-solving strategies and share with others their thought processes. The work of Noam Chomsky (1980) in psycholinguistics contributed to legitimization of “rule-following” explanations of language processing. When I’m teaching algebra to a group of developmental students, “rule-following” would probably be what they would prefer. However, this is probably exactly what got them into the category of developmental students in the first place: too much rule-following and not enough understanding taking place in the learning process. Gagne (1985) believed that children’s experiences play a major role in their development and that “the situations in which learners are placed may encourage the development of great artists and scientists, or they may inhibit the development of the human intellect.” In his cultural-historical theory, Vygotsky (1986) addressed the role of cultural signs and symbols in the individual’s cognitive development. Albert Bandura (1997) stressed the importance of models in learning of both prosocial and reprehensible behaviors. He also explored the role of self-efficacy in learning. “Perceived self-efficacy,” or the learner’s belief that he or she can be successful in a particular endeavor, is something I strongly believe in as an educator and learner. Too many times have I heard my mathematics students come into the classroom saying “I hate math, I can’t do it, and I always do poor in math.” These statements are the foundation which I am trying to build upon
for the rest of the semester. Not every builder’s dream job! The motivational theories look at a learner’s self-efficacy as one factor that influences their motivation to address challenging or difficult tasks. It sets the playing field for the individual’s expectancy for success, the value of the task to the individual and his/her goal orientation and perceived causes of success and failure. Part of my philosophy of teaching is to redevelop this negative foundation for learning that students often bring into the mathematics class. I want to enable students to develop their own learning strategies, focus on the application of the content and not just on the mechanics, incorporate higher order thinking skills and foster critical thinking for themselves and with each other, re-pour that foundation they have been standing on in their previous mathematical learning experiences and make it withstand changes in their “self-efficacy.”

I support Piaget’s (1970) cognitive-development theory, where natural development leads learning, and value its influence on respecting children’s wisdom and their ways of making sense of the world. Just as I must be held accountable and responsible for understanding that my students come into the classroom with their own social and cultural perspectives; I want my students to be held accountable and responsible for their work and their participation in their own learning environment. If I am to build upon their experiences, or change the impact those experiences have had on their learning abilities, I have to understand their cognitive development and respect their wisdom as it is. Maria Montessori (2000) stated that the greatest sign of success for a teacher is to be able to say “the children are now working as if I did not exit.” If the continuum for learning is for the big T (teacher) and little L (learner = student) to transform into the little T, big L over the course of the learning / teaching process: $T_L \rightarrow tL$, (Appendix A), then I have accomplished what Montessori has described as a sign of success.

A constant struggle for me in my philosophy of teaching and learning is Skemp’s (1976) discussion of relational understanding and instrumental understanding. He defines relational understanding as knowing both what to do and why and defines instrumental understanding as the rules without reason. My struggle with this occurred long before I had ever heard of Skemp and his now famous article, but rather it started in my elementary years having teachers that focused only on the rules without reason approach; thus my relational understanding in some content areas are lacking significantly. The arguments for these two sides still exist today and are valid within their own context. The problem for me as an instructor comes into play when I want to emphasize the relational understanding, but am forced to emphasize the instrumental
understanding due to time constraints and mandated state testing requirements. I want my students to develop relational understanding so they can adapt it to new tasks and develop their critical thinking skills and ability not to just ask the “why” question to me, but to come up with their own questions to ask each other. I also continue to struggle with the ability to accomplish restructuring. As Skemp states, some of the innovations have done more harm than good as there appears to be a mismatch between the teacher and the aims implicit in new content. When I taught higher level mathematics such as trigonometry or calculus, relational understanding was the focal point. Students were perturbed with just being given the rules with no explanation of the reasoning behind them. In fact, they didn’t want to know the rules; they wanted to discover them on their own and then proceed to challenge them. But, in the lower level college preparatory mathematics courses such as basic math or elementary algebra, when dealing with students that are just trying to get into a college credit course and have come so far without relational understanding, they demand the opposite. Just give me the rule and let me apply it is their motto. Tell me exactly what I need to know and do and that will suffice. I’ve read Skemp’s article several times and still have not been able to put myself on one side or the other of the fence on a permanent basis. In theory, my philosophy would incorporate both instrumental and relational understanding and find the prefect blend to best suit the needs of my students and my need to be a quality instructor of mathematics. But in practice, the perfect blend often does not exist.

Aristotle stated that teaching is the highest form of understanding. The National Council of Teacher’s of Mathematics Principles of Standards for School Mathematics (2000) states that teachers must know and understand deeply the mathematics they are teaching and be able to draw on that knowledge with flexibility in their teaching tasks. Yet, the research paints a different picture often implying that teachers have a strong command of the procedural knowledge of mathematics, but lack conceptual understanding of the ideas behind the procedures. “Students’ understanding of mathematics, their ability to use it to solve problems, and their confidence in, and disposition toward, mathematics are shaped by the teaching they encounter in school” (NCTM, 2000). My own learning experiences supports this statement, as my previous teachers have had both positive and negative impacts on my learning process, skills and understanding of mathematics. This realization influences my teaching philosophy at the highest level. As an instructor, I want to establish an environment that is conducive to learning
for all my students, at all levels. I want to be seen as approachable and caring, not just about the mathematical skills and concepts they are learning, but about them as human beings and individuals in society. I want to be an instructor willing to take risks and change my teaching style, or own learning style, if needed to help understand the learning styles of others. I strive to avoid getting stuck in a “routine,” and want to continually grow in my own development as a teacher and learner. In Ken Bain’s book *What the Best College Teachers Do*, he states that “excellent teachers develop their abilities through constant self-evaluation, reflection, and the willingness to change” (2004, p. 172). To do this, I must continually be active in my own education so I can keep up with the latest technology, the latest methods or strategies for instruction, and basically keep up with the times and not become one of those “in my day” instructors. I need to be pro-active, ask for constructive criticism from my colleagues and even my own students so I can learn and move forward in my own understandings of mathematical concepts and teaching in general. “The best teachers…displayed not power, but an investment in the students” (Bain, 2004). My philosophy combines not just the necessary administrative rules and requirements for the course, but the understanding that I must develop a strong bond of trust with my students. They need to know that I will do everything possible to help them learn and develop their own abilities, but they in turn must consciously decide to engage in the learning experience and be an active participant and critic of their own learning process. “Outstanding teachers recognize that those rules do not constitute intellectual or artistic standards…the rules can be changed to fit individual needs, whereas the standards of achievement cannot” (Bain, 2004).

In Stephen Brookfield’s book *Becoming a Critically Reflective Teacher*, chapter one begins with “we teach to change the world.” This could prove to be an overwhelming statement to the beginning teacher, so I prefer to change it ever so slightly and say I teach to make a difference in the world. Perhaps the same meaning, but as far as the criteria for goals go, meaningful, measurable and manageable, I think just making a difference is something I can accomplish as a teacher, even if it is only for one student. Brookfield also states that “one of the hardest things teachers have to learn is that the sincerity of their intentions does not guarantee the purity of their practice.”

I have been asked before to list metaphors to describe teachers and teaching. I think the selections I made provide insight into my philosophy of teaching. In answering the question “A
teacher is like…” I chose the following: a coach, a map, a social worker. I also came up with three additional ones: a facilitator, a role model, and a learner. I believe that all of these words describe my role as an instructor in the classroom, but also describe my role in society as a human being. Since I am a strong believer in “practice what you preach,” I find it a challenging task to meet the expectations of these words, but a challenge that I whole heartedly accept.

I want my students to be able to take something with them when they leave my classroom and not just learn a concept for the moment, but learn it for life! I want my students to be able to “learn how to learn,” and know they gain insight not just into the mathematical concept at hand, but into their own learning abilities. Teaching is a privilege and one that I hold in high regards. It is a profession that is not given the credit it deserves, but rather suffers the brunt of criticism and fault by those less informed of what it entails. Nevertheless, it is one that demands humility as much as respect. As a teacher, I need to be aware of my role not only in the classroom, but in my students’ lives. I need to be mindful of the metaphors that I equate to teachers such as being seen as a coach, a role-model and a social-worker. I need to be cognizant of my ability to influence and make sure that influence is of a positive and encouraging nature and not one of fear or disdain for learning. I need to be appreciative of the uniqueness of my students and try to tap into that uniqueness in ways to promote learning for them as an individual, but also for others in the classroom that may have similar needs. Success for me in the classroom is when a student can not only mechanically practice the concept, but also verbalize it, visualize it, and teach it to another. When a student comes up to me two years after having me as an instructor and tells me they are doing great in their higher mathematics course and that the foundational skills they learned in my classroom are still helping them today – that’s success! When they graduate and tell me that mathematics is no longer the big scary monster from their youthful days, that is even greater success!

I don’t believe the goal is to be able to recite Skinner, Piaget or Gagne for their theories and philosophies. But rather the goal is to incorporate their wisdom and theories of mathematical learning into a multi-faceted one of my own that I can follow through with in the classroom and that helps me become a successful instructor. Granted, I’m still learning all these philosophies and I truly don’t know which one I favor most; they all have something to add to the learning strategies of human beings. Just as the fields of mathematics and mathematics education grow, so do I, as a participant in the education system. The battle continues over what
government, society, administration and educators should do, want to do, and are able to do in the classroom. Although the necessity for balance is certainly acknowledged by the authors [NCTM Principles and Standards], they must admit that finding this balance has to be left in the hands of the implementers (Sfard, 2003). My growth as an educator and learner depends on my philosophy that change can be good, not just for me, but for the students that I teach. “Change in education is notoriously complex, difficult, and unpredictable…but can energize those teachers who want to teach better mathematics and to teach mathematics better” (Kilpatrick, 1997).

To summarize my philosophy, I believe that teachers can fall into three categories:

1) those that MAKE things happen
2) those that WATCH things happen
3) those that WONDERED WHAT happened

I strive to always fall under that first category. Eleanor Roosevelt stated one’s philosophy is best expressed not in words, but in the choices they make. It is not just about being able to write a teaching philosophy that is clear and concise, it is about having one that I can preach, practice and believe in! My choices need to reflect my philosophy. That is my goal and one that I will continue to work towards.

**Background**

In order for the reader to have a better understanding of the who, what, when, where, and why aspects of this study, I begin this document with some background information on the researcher. Too often studies are conducted, the results are given, and another research document is posted on the web or on some library shelf without background information on why the study was important to the researcher on a personal level, not just the professional level. By adding this background information at the beginning of this document, I hope the relevance of this study and its outcomes to the researcher emerge on a personal level.

Five years ago, the Southern Association of Colleges and Schools (SACS) came to the community college where I had been teaching for 10 years in the mathematics department and made changes to the criteria for instructor eligibility. My teaching world, as I had known it, changed in that moment. I went from being an instructor of college credit level mathematics to a new employee in the developmental studies program. My experiences in teaching and in working with students to help improve their mathematical abilities were about to change.
dramatically. What I didn’t realize at that moment, but I certainly appreciate now, is that a new window of opportunity for learning had opened up, not for my students, but for me!

I have always loved being in the classroom and helping students learn the language of mathematics. Seeing the flame and desire for learning ignite, is a natural high and one that I relish. I quickly realized that teaching in the developmental studies area (Academic Support) would give me the opportunity to not only spread my wings in the world of teaching mathematics, but also to open a new venue for me, teaching college success. A full time position opened up, I applied, and was offered the job. But, the position came with a twist: I was hired in what administration called a “split” position. My duties included not just teaching college preparatory mathematics, but also a college success skills course. I will admit that when I first took the split position, I was nervous, petrified and questioned, what had I gotten myself into and how would I ever manage two different disciplines. Looking back, I realize how silly I was to not see the great adventure I was beginning: being able not just to teach two different content areas, but also to be challenged daily in how to incorporate them into each other and to use the new approach to the students’ advantage. I am still challenged by this today, and I accept the challenge with great passion. Teaching mathematics has always been a joy and something that I can appreciate from my own struggles in high school. I was a good student, but as they say, you become a great student when you can turn around and teach it to someone else – that was my goal. I feel one of my greatest strengths is the ability to take the complex subject of mathematics and turn it into simple language that one can understand and appreciate. One of the common themes throughout my mathematics class is letting my students know that I am not necessarily there to make great mathematicians out of them (which is always a plus if it happens), but I am there to help them understand the importance of mathematics in their daily lives, how to appreciate it and respect it for what it can potentially do for them. Teaching college success skills on the other hand has opened an avenue of learning I didn’t know existed – and I am referring to the learning opportunities for me. Working with students to improve their skills in utilizing resources, time management, test taking strategies and goal setting has turned into a quest for my own improvement in areas that promote critical thinking. I honestly believe that people can become stagnant in their lives if they stop striving for new adventures and new experiences, all of which promote new learning opportunities. I do not want to become stagnant
in my teaching or in my life experiences. The students in my mathematics and college success skills courses fuel my life long learning quest, and I hope in turn I am fueling theirs.
CHAPTER 1

ABOUT THE STUDY

Purpose of the Study

This study took place in Florida at a community college, named for the purpose of this study, North Urban Community College (NUCC). The identity of the institution and the student participants have been protected throughout this documentation. In review of this institution’s descriptions of learning communities, the following was provided:

Table 1: Description of Learning Communities

<table>
<thead>
<tr>
<th>Linked Course</th>
<th>Integrative Assignment</th>
<th>Fully Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>This consists of 2 or more discrete courses having the same cohort of students.</td>
<td>This consists of 2 or more discrete courses having the same cohort of students.</td>
<td>This consists of 2 or more discrete courses having the same cohort of students.</td>
</tr>
<tr>
<td>Generally, faculty work together to coordinate syllabi and/or assignments, but continue to individually teach their own courses.</td>
<td>Faculty work together to develop an assignment, but continue to individually teach their own courses.</td>
<td>Faculty work together to develop a full curriculum, consisting of multiple assignments that incorporate the various course topics. Each faculty member only teaches one course within the integrated learning community.</td>
</tr>
</tbody>
</table>

What sparked my interest in these descriptions, and thus provided part of the purpose for this study, is the fact that learning communities are described as having multiple faculty participation. Whether the learning community is “linked, integrative or fully integrated,” the assumption is that the different courses are taught by their respective instructors, and that no discussion is made about the possibility of having the same instructor for both classes. Further investigation at this institution revealed that learning communities normally involve having different instructors for the different content areas. At this particular NUCC, only on one previous occasion has a learning community involved the same instructor for both content areas. This particular situation involved a college preparatory reading instructor linking with her
college skills success course. A linked course, where the instructors were different, has been done with a college preparatory basic mathematics course and the college success course. This particular institution has not offered a linked course for the college preparatory elementary algebra course and the college success course, where the instructor was the same for both content areas. Herein lays the uniqueness of this study.

A phenomenological methodology was chosen by the researcher to investigate this uniqueness. The phenomenological approach emphasizes that the meaning of reality is, in essence, in the “eyes and minds of the beholders,” the way the individuals being studied perceive their experiences (Wiersma & Jurs, 2005). The purpose of this phenomenological study was to explore the benefits and limitations of linking a college success course with a college preparatory mathematics course, and having the same instructor for both content areas, as articulated by the student participants and the instructor.

**Characteristics of the Community College**

Community colleges are increasingly becoming a popular alternative for the first two years of a bachelor’s degree. They offer a wide range of technical, career-specific and transfer courses and programs that appeal to a diverse student population. Students are given many chances to maximize their options. These institutions are continually adapting their policies, procedures and services to accommodate new and growing groups of students (Andrews, 2003). Community college students are primarily part-time students with diverse backgrounds, ethnicities, and educational needs. The average community college student is 29 years of age (American Mathematical Association of Two Year Colleges [AMATYC], 2006). Fifty-eight percent of the community college student populations are women and thirty-percent are minority students.

The purpose of the typical American community college is to meet the needs of the community by providing open door access to opportunities for individuals so they can meet their academic, career and personal goals. Most community colleges offer educational or academic programs in the following areas: liberal arts and general education; economic and workforce development; continuing adult education; and developmental (remedial or academic support)
education. This commitment to openness is one reason why community college enrollments are expected to continue to grow.

**Developmental Education in the Community College**

It has been said that developmental education is probably the largest “hidden curriculum” on campuses across the nation. As such, student success in developmental education is related to student participation in every other college program – vocational, technical, or college transfer (Achieving the Dream, 2007). Young & Ley (2003) define developmental students as college students who lack the requisite skills necessary for college coursework. This means they need to take remedial (or preparatory) courses before they can begin taking college level credit courses. Developmental students tend to come from low socioeconomic status, to be first generation to attend college, to be culturally disadvantaged, to have low self-esteem, and to have a high expectation for failure (Grimes, 1999). According to Office of Program Policy Analysis and Government Accountability (OPPAGA, 2007):

- over 55% of all students entering Florida’s public postsecondary institutions require some remediation in mathematics, reading, and /or writing
- 94% of students who need remediation attend community colleges
- only 52% of these students subsequently complete their college preparatory program

The graduation numbers for students starting their college adventure in developmental courses is frightening. According to McCusker (1999), the graduation rate in 1999 for those students not enrolled in any developmental courses was 55%, whereas in comparison, the graduation rate for those students taking three or more preparatory classes was a mere 24%. In 2006, the numbers are just as grim, evident by a study conducted through the Community College Research Center (2009). Bailey, Crosta and Davis (2006) state the graduation rate for all first time in college students in 2006, within the Florida Community Colleges, was a mere 23.5% within a 4-year period. I choose the word frightening to describe these numbers, as I consider myself part of the system that allows these numbers to exist. I have been teaching mathematics for over fourteen years. Every year, when a new cohort of students walk through my classroom door, I fear that I will not be able to see them reach their goals, reach their potential, or be successful and a part of
the graduating masses. I fear that I might not be able to improve that 24% and that is something I find unacceptable, for myself and for NUCC.

Community colleges have long been a driving force in providing developmental education to students (Carnevale & Desrochers, 2001; Levin, 2001). In his working paper, *Forging New Partnerships: Adult & Developmental Education in Community Colleges*, Boylan (2004) refers to developmental education as a continuum of courses and services ranging from tutoring and advising to remedial coursework on college and university campuses. It continues to be a necessity as colleges and universities set their standards for academic skills at a level beyond that of many high school graduates. The goals of developmental programs may vary according to the missions of their institutions. However, two common themes exist: 1) to prepare students for success in the college or university curriculum and 2) to increase student retention. What concerns me, and also contributes to my driving force as an educator, is how community colleges address the above mentioned two themes and what role I play in the grand scheme of things. The National Association for Developmental Education (2001) lists the following key goals in providing learning-centered activities:

1) to preserve and make possible educational opportunity for each postsecondary learner
2) to develop in each learner the skills and attitudes necessary for the attainment of academic, career, and life goals
3) to ensure proper placement by assessing each learner’s level of preparedness for college coursework
4) to maintain academic standards by enabling learners to acquire competencies needed for success in mainstream college courses
5) to enhance the retention of students
6) to promote the continued development and application of cognitive and affective learning theory

If the student’s academic success is directly related to the quality of the developmental studies program offered at their college (Boylan, Bliss, & Bonham, 1997), then my job as a faculty member at a two-year institution, teaching not one but two content areas for the developmental studies program, just doubled on the “frightening” scale. I use this term to emphasis the importance of a *quality* developmental studies program.
Given the community college’s emphasis on occupational training and the job-advancement interests of students, it is not surprising that vocational programs appear to be in good shape, with respect to funding, support, enrollment and development, compared to the academic programs (Brint, 2003). What does this mean for the developmental education educators? I would like to believe job security, but in today’s world of ever changing priorities, recessions, and government leadership, security is probably not a safe term. But for the purpose of this study and paper, security in the sense that educating our population at all levels of ability and keeping the open door of educational opportunities open is still a priority. What does it mean for our college preparatory students? It means more options, more chances to enter that “open door” that the community college environment offers, and more reason to believe they can not only enter the open door, but proceed through it, walk across the stage to graduation, and walk closer to achieving their higher goals and dreams.

A Closer Look at the Research Site - North Urban Community College

Mission Statements

The teaching mission for the institution where this study took place is to be an open-admission, comprehensive community college. The mission is to provide excellence in teaching and learning through educational programs that promote the intellectual, social and personal development of students; assist them in developing the ability to think critically, creatively and reflectively; and prepare them for productive and satisfying lives. The faculty at this institution is committed to creating a learning environment for all students which promotes, encourages, and fosters higher order thinking skills, including critical thinking skills that are grounded in an understanding of the fundamental concepts of the disciplines in which they are taught.

For the college preparatory program (developmental studies), the mission is to provide instruction and to enhance learning through instructional support services. These services include classroom instruction, learning centers (Mathematics, English Skills, Reading, Writing), and learning communities. Through these services, the goal is to assist students in achieving academic success, gaining scholastic independence, and improving self-confidence.
Information about the College Preparatory Program

The college preparatory program is designed to improve student performance in the college-entry skills of reading, English and mathematics. Upon beginning studies at the community college, student skills are assessed in reading, writing and mathematics with a computerized placement test. Effective July 1, 1985, any student who falls below the state adopted score on the college placement test must register in the college preparatory courses indicated. Based on the remedial section of HB 2489 of the 1995 legislation, and reiterated in the 2007 Florida Statute, Title XLVIII, Chapter 1008.29, a student enrolled in a college preparatory course may concurrently enroll only in college credit courses that do not require the skills addressed in the college preparatory course. The State Board of Community Colleges shall specify the college credit courses that are acceptable for students enrolled in each college preparatory skill area. A student who wishes to earn an Associate in Arts or a Baccalaureate degree, but who is required to complete a college preparatory course, must successfully complete the required college preparatory studies by the time the student has accumulated 12 hours of lower division college credit degree course work.

Passing Rates for Developmental Mathematics Courses at this North Urban Community College

Passing rates for the beginning algebra developmental mathematics course (MAT0024C) at this North Urban Community College are shown below for semesters Spring 2007 through Fall 2008. The first chart depicts success rates (ABC%) for students that did not have to take the pre-requisite basic skills mathematics course (MAT0002) offered at this institution. These students placed in this course via their college placement test scores for the mathematics section. The second chart depicts success rates (ABC%) for students that were required to take the pre-requisite basic skills mathematics course at this North Urban Community College. As the totals show for both scenarios, pass rates for the beginning algebra course are still below 50%.
Table 2: Success Rates for MAT0024C

<table>
<thead>
<tr>
<th>College Prep Math</th>
<th>Yes</th>
<th>MAT0002</th>
<th>Required</th>
<th>No</th>
</tr>
</thead>
</table>

Success ABC%

<table>
<thead>
<tr>
<th>Year</th>
<th>20072</th>
<th>200073</th>
<th>20081</th>
<th>20082</th>
<th>20083</th>
<th>20091</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT0024C</td>
<td>54.1%</td>
<td>58.3%</td>
<td>48.9%</td>
<td>46.5%</td>
<td>39.0%</td>
<td>47.2%</td>
<td>47.6%</td>
</tr>
</tbody>
</table>

Note: Number at end of year represents semester as follows: 1=Fall, 2=Spring, 3=Summer
Source: www.portal.tcc.fl.edu

Table 3: Success Rates for MAT0002

<table>
<thead>
<tr>
<th>College Prep Math</th>
<th>Yes</th>
<th>MAT0002</th>
<th>Required</th>
<th>Yes</th>
</tr>
</thead>
</table>

Success ABC%

<table>
<thead>
<tr>
<th>Year</th>
<th>20072</th>
<th>200073</th>
<th>20081</th>
<th>20082</th>
<th>20083</th>
<th>20091</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT0024C</td>
<td>53.0%</td>
<td>50.0%</td>
<td>46.6%</td>
<td>48.4%</td>
<td>54.1%</td>
<td>43.9%</td>
<td>49.0%</td>
</tr>
</tbody>
</table>

Note: Number at end of year represents semester as follows: 1=Fall, 2=Spring, 3=Summer
Source: www.portal.tcc.fl.edu

Rules and Policies for Repeating a College Preparatory Class and Payment

Beginning July 1, 1999, Florida law states that a student may attempt a college prep course only twice at regular cost. Students who do not achieve a C or better in their second attempt in this course or who withdraw or are withdrawn by the instructor after a specified date, will be required to pay the full cost of instruction if they enroll a third time. If students do not achieve a C or better in their third attempt in a preparatory course, they will no longer be permitted to take the course at the institution, but will be required to obtain and show proof of remediation in the subject from an outside source. This remediation must take place before a student can be readmitted as a student at the institution.
Rules and Policies for Enrolling in SLS 1510 – College Success Course

As of Fall 2007, SLS 1510-College Success is mandated for all students that have placed into one or more college preparatory course (reading, writing, English or mathematics). Enrollment in this course must occur within the first 12 hours of course credits. SLS 1510 can also be taken as an elective credit by students not falling under this requirement. Data has shown that students taking this course as an elective is equivalent to those taking it as a mandatory course (Achieving the Dream, 2008, p. 2).

College Preparatory Students

Cohen and Brawer (2003) state two words sum up the students (at a community college): number and variety. With this large number and multi-faceted population of students, it is becoming necessary for college administrators to look at those students registering for remedial / developmental courses. Courses of this nature are becoming an “epidemic…stretching from the Ivy League to public community colleges” (Roueche & Roueche, 1999). A study done by the Florida State Legislature in 2001 found that nearly half of the students enrolled in remedial classes in Florida’s community colleges did not complete the course. Research also shows that many developmental students withdraw or leave school during the first two or three weeks of classes (Roueche & Roueche, 1999). According to Winter, et al., (2001), many of the community colleges’ “non-completers” were not serious, or socially or academically ready for their first time in college. Reasons for leaving included: family-related issues, academic failure, loss of funding, and lack of continued family support. Shaw (2001) states that failure rates in remedial courses are higher than that for college-level courses. According to OPPAGA (2008, p. 2) approximately 62% of students not ready for college need some type of remediation in multiple areas, with remediation in mathematics being the highest. With statistics high, and the “epidemic” potentially still in its early stages, administration and faculty members must take a closer look at the factors influencing low retention rates and lack of success for students in these developmental programs.
Course Information

This study took a closer look at the potential connection between two courses: College Preparatory Beginning Mathematics (MAT 0024C) and College Success (SLS 1510). In order to appreciate this connection, an overview of these courses and their characteristics is provided.

MAT 0024C – Beginning Algebra. This course is one of 3 college preparatory mathematics classes offered at this study’s community college. The first course is a 3-hour basic skills course, which is taught predominantly on a web-based platform, and the two remaining courses are versions of the beginning algebra course. One version of the beginning algebra course is offered as a 3-hour course and usually is enrolled in by students placing directly into it via their placement scores or transfer scores from the College Placement Test (CPT). The second version of this beginning algebra course, and the one that was used in this study, is a 5-hour course that is enrolled in predominantly by students that started in the basic skills course and those with low college placement test scores. This course is taught in options of 5 days, 3 days or 2 days. For this study, the 3-days a week structure was used.

Students with SAT mathematics scores of 440 or below or ACT mathematics scores of 19 or below, must take the CPT to determine placement in a mathematics class. Placement scores for the specific developmental mathematics classes are broken out as follows:

Table 4: College Placement Test Transfer Scores

<table>
<thead>
<tr>
<th>Course</th>
<th>Arithmetic</th>
<th>Algebra</th>
<th>Placement Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 0002, Basic Math</td>
<td>0-55</td>
<td>0-71</td>
<td>Students with SAT or ACT math scores below:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SAT: 440</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACT: 19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Must take the CPT to determine math placement.</td>
</tr>
<tr>
<td>MAT 0024C, Elementary Algebra</td>
<td></td>
<td></td>
<td>Arithmetic = 56+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Algebra = 0-44</td>
</tr>
<tr>
<td>MAT 0024, Elementary Algebra</td>
<td></td>
<td></td>
<td>Arithmetic = 56+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Algebra = 45-71</td>
</tr>
</tbody>
</table>

The students that participated in this study had CPT scores falling into the second row category for MAT 0024C, Elementary Algebra.
SLS 1510 – College Success. The college success course was designed to build and reinforce skills promoting college success such as: motivation, goal setting, time management, test taking skills, reading strategies, memory skills, locus of control, health and well-being, interpersonal relationships, employability skills, financial management, choosing a major and other career planning topics. This course originally was a 1 hour course housed in the counseling department and taught by counseling personnel. In 2000, it became a two hour course, and in 2003 it was changed to its current status of three hour credit status. In 2005, it was restructured to fall under the academic support department and is now taught by college preparatory instructors and faculty across disciplines. Many of the four-year institutions have a similar course entitled “First Year Experience (FYE),” but it is only a 1 hour course and does not focus on as many topics. There are approximately seventy sections of this course being offered during a given fall semester and more than half that number during the spring term. Student retention rates, success rates in other classes, and graduation rates appear to have increased due to their participation in this course, and data is currently being collected to support continued development and improvements in the course structure, teacher training, and student enrollment as either an elective or mandatory course. Many of the four-year universities mandate their FYE course for all incoming freshman. However, at the community college level, the mandate for the college success skills course is only for preparatory students. There is currently an increasing pursuit for making it mandatory for all incoming students regardless of skill level. During the Fall 2005 semester at NUCC, 916 First Time in College (FTIC) students enrolled in this college success course (College Success Progress Report 2005 – 2006). Of these 916 students, 622 (68%) were students with two or more preparatory classes, one being a mathematics course. This represented only 73% of those FTICs who placed into two or more preparatory courses. Additional analysis from this same year indicated that only 79% of those with two or more prep courses registered for the college success course, even though it is mandated. Only 54% of those with three or more preparatory classes enrolled. These numbers are astonishing considering the implications of the number of students not only in college preparatory courses, but those required to take the college success skills course and choosing not to take it.
Researcher’s Interest

My interest in this study was due in part to my current “unique” position at the institution. I am one of three individuals on campus who was hired for a “split” position. All three of the “split” positions are housed under the developmental studies program (Academic Support). Administration’s purpose for these positions was to increase the number of full time faculty members teaching the College Success course. Prior to these positions, there was only one full-time instructor; therefore, the majority of the classes were being staffed by adjunct (part-time) faculty. Since the College Success program had recently been relocated from the Counseling Department to the developmental studies area (Academic Support), the Administration’s directive was for the next three hiring’s to be “split” positions, where the hired faculty member would teach 50% in their area of expertise and 50% in the College Success area. The three individuals hired at this time fell into two categories: 2 of the hiring’s would be Reading / College Success splits, and I would be a Mathematics / College Success split. Being in this “unique” position, I feel obligated, yet motivated, to try and understand how these two disciplines can come together for the good of the students and the good of the instructor. Improving student success and the retention of students is always of high priority at any institution. As a faculty member in this split position, I think it is imperative that I continue to seek new initiatives to help support the institution’s mission and support the students. My contract states I must teach courses in college preparatory mathematics and college success. What it does not say is that I have to combine the two or even try to make the connection (the “link”) between the two. This was the fuel for my research interest. How can I marry these two content areas and make it a perfect union to reap the maximum benefits for our students? I have a vested interest if I am to “survive” in this career position. Developmental studies are not going to disappear. The need for preparatory mathematics is a constant force in our community colleges. The need to teach students college success skills and encourage enrollment in this course type should be a moot point, but it is not. The focus needs to be on how to combine these two areas to increase student success, promote student retention, and support the community colleges mission of serving its population.
Benefits of Enrolling in Linked Classes

Linked classes are two classes with the same student cohort. In theory, they could be taught by the same instructor or by two different instructors. In practice, it is normally two different instructors. Lessons, assignments, and activities are planned to integrate content and enrich the curriculum. Students enrolling in one linked class must enroll in the co-requisite linked class. For example, in this study, students enrolling in MAT 0024C (Beginning Algebra) had to enroll in the corresponding linked section of SLS 1510 (College Success).

In linked classes, faculty and students collaborate to form a learning community, which in turn can become a pathway to success. As defined by NUCC, participation in a learning community offers several benefits to students such as:

- Students and faculty work together to provide a range of learning opportunities including active learning and teamwork
- Student learning and achievement are increased
- Students develop and strengthen critical thinking skills through integration of content and collaboration activities
- Students see the connections between different disciplines and develop an understanding of how concepts and skills can be applied in other areas of study
- Students have enhanced opportunities to build relationships with each other and with faculty

Part of the purpose of this study was to see if these institution defined benefits of a linked class are supported by the study’s results.

Pre-Study Assumptions and Limitations

It is important that a discussion on the pre-study assumptions and limitations be had in order for the reader to be aware of the researcher’s concerns going into the study. Some of these concerns were validated by the mere lack of control that I had over certain aspects of the study. However, the hope was these assumptions and limitations would not adversely affect the overall results of the study.
An action made for this study was the notion of the researcher casting a very wide net in an effort to obtain enough information to analyze and make observations about the phenomenon of a linked course. Much of the data included artifacts that are part of the regular class documentation and requirements. This information was used to provide rich descriptions in the reporting of the data. The researcher understood that by casting such a wide net, making concrete conclusions and generalizations would be difficult, if at all possible.

An immediate potential limitation to this study was the timing of the linked course offering. The institution’s registration population is higher during the fall semesters than in the spring. This is due to high school graduation occurring in the spring. Therefore, the registration numbers for the first-time-in-college student (FTIC) are higher in the fall. Since this study was conducted during the Spring semester, this fact limited the class size for this linked class. Classes at this institution are normally capped at twenty-eight students. However, the expectation for the number of enrollees for this linked class was low.

A second limitation to this study was the instructors’ decision to not academically withdraw (AW) students from the class due to poor attendance. Instructors are permitted to AW students for the academic reason of poor attendance. Once a student has missed more days than the credit hours listed for the course, instructors may remove that student from their class and submit an AW for the student’s course grade. In the past, I have utilized this option to remove students from class for poor attendance. I believe this is a wake up call for many students who continue to think that mathematics can be learned by osmosis and not through practice and participation, and the college success course, on its name alone, should not allow for excessive student absences without consequences. However, due to the newly implemented, Spring 2008, administration policy for the College Success course that no AW’s will be given regardless of student attendance, this policy in turn affected my mathematics course policy. Students signing up for a linked course are not permitted to withdraw or be withdrawn from just one content area; it is neither or both. This explains my rationale to not utilize the AW process for the semester in which this study was conducted.

Limitations were also possible in the ability to transfer the findings of this study to a broad audience. Transferability would be limited to a similar mid-size urban community college with the same student population make up. However, the number of students that are required to
take College Success and the Beginning Algebra course is similar to other community colleges within the State of Florida. Therefore, the data will be valuable and within context.

The fact the instructor would eventually turn into the researcher was also a possible threat to the limitations on this study and its findings. To address this concern, efforts taken to control for this included: having a Project Coordinator (PC) serve as the researcher during the study; having the PC come into the classroom and observe the environment, the student engagement, and the instructor’s behaviors; share ideas and perceptions about the class and how I viewed things to the PC for feedback. Any limitations that surfaced were documented and reported in the findings. Having the same instructor for both courses could also have posed to be a limitation, but this is an integral aspect of the study. Information on how the same instructor proved to be beneficial or a limitation is discussed in the results section of this study.

**Research Purpose and Questions**

The purpose of this phenomenological study was to explore the phenomenon of linking a College Success course with a College Preparatory Mathematics course at North Urban Community College in the State of Florida, as defined by registered students of the course and the course instructor. The overarching question for this study was:

*What types of learning communities develop when linking a college skills course with a college preparatory mathematics course?*

Additional questions that guided the educational examination of this context included:

1. *What are student-defined benefits of a linked course with the same instructor?*
2. *What are student-defined limitations of a linked course with the same instructor?*
3. *What are instructor-defined benefits of a linked course with the same instructor?*
4. *What are instructor-defined limitations of a linked course with the same instructor?*

The answers to these questions may provide support for future recommendations for the college preparatory program at this community college and others throughout the State.
Anticipated Future Research

If educators have the goal to improve passing rates for students in remedial course work, we should take a closer look at the many facets of our students, adjust our teaching strategies accordingly, provide students services that cater to their individual needs, offer alternatives to the standard classroom experience, and perhaps change our definition of the “traditional” student and classroom experience all together. We can no longer use the cookie-cutter approach to educate the masses, as the masses have changed in dynamics and no longer have a common goal, a common learning style or a common experience with instructors. Diversity exists among our students; it should exist in our teaching environments by offering learning communities such as linked courses. Future research in the area of developmental studies and its student’s success rates should be focused not only on meeting the academic needs of this population, but also the social and personal needs.

History shows taking a college skills course, specifically SLS 1510-College Success, matters when it comes to student success in preparatory mathematics classes. On a broader scale, does linking with the same instructor in preparatory classes matter? This topic should be considered for future investigative research, as this study was only able to shed a small light on a subject that in turn could help address questions such as:

- What are the important issues that are carried over from College Success (SLS) to Preparatory Mathematics classes?
- How can we identify what students think are the important issues and share those issues with future instructors that may participate in a learning community of a linked course?
- Would linking the college success course with other preparatory mathematics classes, such as the basic skills course, be beneficial in improving student success and retention?
- If this study was expanded, would similar results exist?
- Does it matter that a linked course is offered with the same instructor or different instructors?
- What is the feasibility of these options on a regular basis at community colleges?
Is this community college missing an opportunity to enhance student learning as defined by passing rates in college preparatory mathematics?

What Does This Mean for the Researcher?

These are all excellent questions that need answers to help steer the community college in a direction of helping students be successful. But what happens after this study for the researcher? This is an issue I feel is worthy of a few words. As part of an annual assessment of faculty on continuing contract, a Professional Growth Plan (PGP) must be submitted and completed. The official form submitted regarding this PGP must include the following parts:

- rationale (how it will be effective in classroom, how it will link to the strategic goals of college/division/department)
- how it will affect the Department, Division or College wide initiatives, such as the Quality Enhancement Plan (QEP), or Achieving the Dream (improving retention and success rates for minorities)
- implementation plan
- expected Outcomes (potential changes/benefits) and Assessment Methods to be used
- Outcomes (Self Evaluation of Plan) - a Final Report including supporting documents, such as sample data, narratives, summaries, survey and survey results, analysis of results, etc.

The purpose behind the PGP is to keep faculty constantly striving to find new methods, new technologies, and new initiatives to implement into the college curriculum. Faculty members must align their PGP’s with the Quality Enhancement Plan goals and sub-goals of the community college. These goals are:

**Goal 1:** Incorporate higher order thinking skills and foster critical thinking across the curriculum

**Goal 2:** Develop learning community opportunities for all students

**Goal 3:** Expect all students who place in two or more college prep classes to enroll in College Success Skills

**Goal 4:** Provide timely feedback to students and advisors on progress of FTIC students (through 18 hours earned credit – early alert)
Goal 5: Develop an integrated system of peer support
Goal 6: Develop a campus culture of shared responsibilities that results in positive conditions for student learning

My purpose in sharing with readers this information is to demonstrate my commitment to this study, but also to convince them it will not end with this dissertation. I am a community college faculty member committed to learning, student success and quality improvement. My job is to encourage, engage and empower my students. I want to prepare them for transfers to universities, instill in them the skills and knowledge for in-demand jobs, and boost their confidence to reach their personal goals. Through these PGP’s, I will be given the opportunity to travel down various educational paths, explore a variety of teaching methods, participate in learning communities, and expand on this current research. I am excited about the possibilities for future research.

**Definitions of Key Terms**

**ATD** Achieving the Dream: Community Colleges Count

This is a national initiative to help more community college students succeed. Although the initiative is to assist all students, the focus is on those groups that traditionally have faced the most significant barriers to success. A multiple front approach is being taken by examining efforts at community colleges, in research, public engagement and public policy. The emphasis is on the use of data to drive the needed change and focus on identifying and dealing with disparities in student outcomes at community colleges. This initiative is funded through generous grants from the Lumina Foundation for Education, Knowledge Works Foundation and Nellie Mae Education Foundation.

**AW** Academic Withdraw

Initiated by instructor of the course to remove a student from the class permanently due to academic reasons (i.e. attendance, academic dishonesty).

This code is placed on the student’s transcript where the class grade would normally appear.
CPT  College Placement Test
Effective July 1, 1985, any student who falls below the state adopted score on the college placement test must register in the College Preparatory course indicated. This placement test is administered to students to ensure placement into the appropriate courses in Math, Reading and English. Generally, the CPT is administered during orientation for new students. However, for a minimum fee, students can retake the CPT in order to improve their scores and potentially test out of college preparatory classes.

Learning Community
Learning Communities are groups of students and faculty who work collaboratively in an effort to deepen and enrich the learning experience. They exist in various forms such as: linked assignment, linked courses, integrated courses, theme course, and integrated seminars.

Linked Class
Linked classes are two classes with the same student cohort. Can be taught by same instructor or by two difference instructors. Lessons, assignments and activities are planned to integrate content and enrich the curriculum. Students enrolling in one linked class must enroll in the co-requisite linked class. For example, in this study, students enrolling in MAT 0024C (Beginning Algebra) must enroll in the corresponding linked section of SLS 1510 (College Success).

MAT 0024C  Beginning Algebra Mathematics Course
Part of the Developmental Studies Course Listings (College Preparatory)
5-hour course
No college credit given
Course Purpose:
The purpose of this course is to increase your proficiency in the areas of arithmetic, algebra and geometry. This course is for students who have had little or no experience in algebra, or who need a refresher course in the basic skills of mathematics. The class is for those students who have been identified through placement testing as needing these preparatory math skills; those students who have non-transferable math credits from another college; or those students who personally request a refresher course in mathematics. This course will cover a
range of topics including: the order of operations, solving equations, solving word problems, factoring and basic graphing skills.

**MSLQ Motivated Strategies for Learning Questionnaire (Appendix B)**

A student questionnaire to establish baseline information on their motivation, goal setting skills, study habits and organization abilities.

**PC Project Coordinator**

This individual served as the researcher’s “critical friend.” Their role was to administer, collect and retain all consent forms, surveys, questionnaires and interview documentation from the study participants. The PC maintained a website for participants to ask questions, voice concerns, or bring up issues needing addressed in regards to the project.

**Phenomenological Study**

This type of study describes the meaning of experiences of a phenomenon (or topic or concept) for several individuals. In this study, the researcher reduces the experiences to a central meaning or the “essence” of the experience (Moustakas, 1994).

**SLS 1510 College Success**

3-hour course

Elective credit given

**Course Purpose:**

This course is designed to build and reinforce skills necessary for college and career success. Topics include: motivation, goal setting, learning styles, time management techniques, test skills, reading textbooks, and memory skills. This course also covers topics such as wellness, interpersonal relationships, employability skills, financial management, choosing a college major and other career planning topics.

**State Exit Exam**

The Remedial Section of House Bill 1545, passed by the Florida Legislature effective fall term 1995, states that all students enrolled in a college preparatory course must achieve a passing score on an Exit Examination. To enroll in MAT 1033–Intermediate Algebra, which is the mathematics class proceeding MAT 0024C–Beginning Algebra, you must have both a C or better average (70% or higher) in the course, MAT 0024C, and a
passing score of at least 60% on the State Exit Exam. Students whose average is below 70% will be required to repeat the course. Those students who have a C average or better but do not pass the State Exit Test will be given one chance to pass a make-up State Exit Exam on the last day of the exam week. If that is not passed, the student will receive a grade of “F” in the course. The State Exit Exam (Appendix BB) is composed of 30 multiple choice mathematics problems derived from the MAT 0024C course objectives (Appendix C).

The Phenomenon

This is the central concept being examined by the phenomenologist. It is the concept being experienced by subjects in a study. In this study, it is the phenomenon of a linked course, being taught by the same instructor for both content areas, at an urban community college.

W Withdraw
Initiated by student and can be done up to the end of the 10th week of the spring semester. Reasons can include: health situation, family issue, financial issues, and academic issues as determined by the student. This code is placed on the transcript where the class grade would normally appear
Chickering and Gamson (1987) discuss in their book, *Seven Principles for Good Practice in Undergraduate Education* the problems and frustrations of how students and faculty members can improve undergraduate education. How can we, as educators, combat the apathetic students, the illiterate graduates, and the high drop out rates across campuses, the increasing number of developmental students at our institutions, incompetent teaching and impersonal campuses? Regardless of whether the subjects are upper level students or beginning developmental students, the focus should be on what constitutes good practice in undergraduate education. Chickering and Gamson (1987) identify good practice as the following:

1. encourage contact between student and faculty
2. develop reciprocity and cooperation among students
3. encourage active learning
4. give prompt feedback
5. emphasize time on task
6. communicate high expectations, and
7. respect diverse talents and ways of learning.

Good practice should be a common ground for all programs on campus. They should support students of all kinds – white, black, Hispanic, Asian, rich, poor, older, younger, male, female, college-level, developmental, well-prepared, and underprepared. The ways in which different institutions implement good practices depends a great deal on their students and their circumstances. If statistics are correct in showing that nearly 50% of first time in college students are enrolled in the mathematics college preparatory track, then this circumstance needs to be addressed. According to Chickering and Gamson (1987), when the practices listed above are employed together, they employ six powerful forces in education: activity, expectations, cooperation, interaction, diversity and responsibility. If the percentages are to change of students needing developmental mathematics education, not only do we want these forces to employ instructors in the classroom, but also our students, and specifically developmental students.
What kind of qualities must a learning environment have to foster student success and student retention? Can the combination of a college success skills course with a beginning algebra course create an environment not only conducive to learning, but dependable in determining student success in mathematics? A definitive answer of yes or no would be ideal, yet unrealistic. As an educator and researcher, I believe institutions are doing a disservice to their students and the community if they avoid efforts to try new initiatives, explore other options in course offerings, and ignore the possibility that linked courses with preparatory classes could make the difference between a high retention rate and high drop out rate.

According to the National Center for Education Statistics (NCES, 2003), 98% of U.S. community colleges offer developmental education courses and services for underprepared students. On average, 50% of first time in college students place into one or more preparatory course (Roueche & Roueche, 1999). According to the NCES, these figures have remained relatively constant since 1985, when data first started being collected. If this statistic remains true for the future, community colleges will not be able to rest on their laurels of their past experience in teaching underprepared students; but rather they will need to find new and improved methods, techniques and options in reaching this large population and helping them achieve success.

Researchers support the idea that the key principle of developmental education is that students are constantly developing in both the personal and academic domains (Chickering, 1969; Chickering, 1981; Kuh, Kinzie, Schuh, & Whitt, 2005; Silverman & Casazza, 2000). Student development and academic personnel must collaborate at the community college institutions in order to provide support services for the developmental students.

Recent literature indicates that “institutions have made greatest progress in assessment of career and occupational outcomes,…less…assessment work has been accomplished for transfer and general education outcomes…little assessment work…in remedial and developmental, noncredit and continuing education…”(Seybert, 2002, p.15). According to the University of Washington (2002), the assessment of student outcomes begins with educational values. I would emphasize that student learning outcomes encompass more than just “output-only measures” (Astin, 1993). These outcomes encompass a wide range of student attributes and abilities, both cognitive and affective, which are a measure of how their college experiences have supported their development as individuals (Frye, 2003).
Best Practices

Literature contains a vast amount of best practices for teaching and learning at all levels. Included in this wealth of knowledge are discussions about working with developmental students on their mathematical abilities and students participating in college success skills courses, both of which pertain to this research study. As Galbraith (2002/2003) indicates:

The teaching and learning process in not an easy task. The mode and complexity of the teaching and learning process are confined in the individuality and idiosyncrasies of those who take on the role of teacher and learner. This is certainly true in all teaching and learning disciplines and perhaps more applicable when engaged in instructing developmental mathematics at the community college level.

Many who have taught the developmental level will agree with the Best Practices in Developmental Mathematics (2002) that teaching developmental mathematics differs substantially from simply teaching mathematics; developmental instruction addresses not only the remediation of subject-specific deficiencies, but motivational and learning deficiencies as well, this is [in part] because the population of students entering college at the developmental level differs from traditional student populations. Working with developmental students, in the community college environment, opens a multi-faceted window of opportunities and challenges. Developmental mathematics courses alone serve multiple purposes, with the primary being to remediate student deficiencies in mathematical skills, which are prerequisites for them to enter into college-level math, science, or other discipline courses. Another purpose, although rather clandestine in nature and controversial, is that of developmental mathematics courses as a gatekeeper mechanism colleges use to eliminate students who are not meeting the qualifications for further study. The National Association for Developmental Education would have us believe that this inherent tension is natural:

The fact that developmental math courses play this gatekeeper role gives rise to two somewhat contradictory considerations. On the one hand, these courses are intended to assist students in meeting college qualifications by overcoming their deficiencies, while on the other hand, they are intended to eliminate students who are not qualified to continue. This creates a natural
tension between setting and maintaining strict standards of performance while simultaneously providing high levels of assistance to a population of students that is known to be below those standards. (Best Practices in Developmental Mathematics, 2002).

However, what about the students that may be adequately prepared for college level study in mathematics, but instead have fallen behind due to lack of interest, motivation, effort, seriousness, or similar reasons. Developmental courses, in all areas, also serve to strengthen students’ general learning skills prior to their enrollment in college-credit level courses. College skills courses, often called “College Success” or “First Year Experience” courses also serve this purpose. The primary focus of these courses is the development of academic skills. This includes: the how, when, where, why and how much of study skills; how to read a textbook or other source; note-taking skills; and test taking strategies. These courses also include discussion and activities to help students develop their personal skills in the areas of time management, dealing with other students and faculty, health and well-being, and possibly most important, critical thinking skills. As emphasized by Garza (1996), while these may seem rather rudimentary, many students do not have these skills or do not have the skill-level necessary to succeed in college. Without a guided and helpful push, some students will never develop these skills, will eventually fail, and will leave college. Even for students who do not drop out of college, such skill development can reduce the number of students that drop classes.

Tinto (1997) supports the idea of offering first semester student success courses at community colleges and believes the activities should help address students’ needs as they arise. Stovall (1999) believed that participation in these success courses is especially beneficial for minority students. Through their study The Freshman Year Experience: Student Retention and Student Success, Sidle and McReynolds (1999) discovered that students who participated in these college success skills courses tended to earn higher cumulative grade point averages, to be in good academic standing at the end of the first year, and to be less likely to risk consequences due to low academic achievement. Students also persisted to their second year of study at the institution at a significantly higher rate and completed more of their first year academics than those students who did not enroll in the first year experience course. Based on their key findings, Sidle and McReynolds support the idea that a college skills course can be an effective strategy for increasing the success and development of students during their first year of college.
For developmental mathematics students, the first year of college can be especially
difficult. Not only are they dealing with lack of content knowledge, but also math anxiety and
negative beliefs about their abilities to be successful. Sheila Tobias, the guest speaker at the
National Association for Developmental Education conference in 2001, stated:

The predominant causes of math anxiety are environmental factors created
by math teachers [within the math classroom]…pressures created by timed tests,
an overemphasis on one right method and one right answer, humiliation of students
at the blackboard, an atmosphere of competition…these factors lead to destructive
self-beliefs about the math abilities they possess, avoidance behavior, and an
unwillingness to explore mathematical concepts in the classroom.

Tobias continues to identify and describe a misfit between students’ learning characteristics and
the instructors’ teaching styles in mathematics. Identification of students’ learning styles and
how they can be adapted to instructors’ teaching styles is one of the key concepts discussed in a
college skills course.

All too typical, students who place into developmental mathematics courses exhibit math
anxiety or fear of math. It is imperative that developmental education instructors create a non-
threatening and nurturing environment that not only is conducive to learning, but a place where
students are not afraid to ask questions, make mistakes, and explore their own learning styles.
Providing opportunities for collaborative activities, activity-based learning and curricular
enhancements to make standard concepts more interesting and meaningful to students are all part
of the innovation and reform for developmental mathematics teaching. But, so can the
incorporation of the skills provided in a college success course be counted as innovative and
reforming. Dr. Selina Vasquez (2002) believes that reforming the developmental mathematics
classroom includes aligning the courses with the goals of the students, the department and the
institution. Students should be prepared to continue their study of mathematics, be equipped with
the mathematical knowledge and skills needed in their respective careers, have refined and
strengthened mathematical knowledge and skills and also have the desire for life-long
mathematical learning through improved problem-solving, reasoning and communication skills.
The curriculum set for college skills courses includes goal alignment, problem-solving,
reasoning and communication skills. It would seem that pairing developmental mathematics
courses with college skills courses is a perfectly balanced equation for success.
Learning to learn courses play an important role in providing academic assistance to undergraduate students, particularly those in the developmental programs (Dembo & Seli, 2004). These courses teach students a variety of learning strategies to help them become more independent, responsible and self-regulated learners. Specifically, students learn strategies to improve their time management, acquire higher-level content knowledge, manage their environment, develop critical thinking skills, and pursue extra help outside of the classroom (Dembo & Seli, 2004). Changing one's academic behavior can be a daunting task, and to the developmental student, one that can potentially affect their motivation and self-efficacy. Change is never easy, and many times scary. Prochaska and Prochaska (1999) suggest four reasons why individuals have difficulty changing their behaviors: (1) they believe they can’t change, (2) they don’t want to change, (3) they don’t know what to change, or (4) they don’t know how to change. College skills courses allow students to assess their own behavior and make decisions about how those behaviors add to or diminish their abilities to be successful in the classroom.

With the study of mathematics in particular, being able to analyze one's errors in both the procedural and conceptual knowledge is crucial. Students need to be given the tools to become change agents. This change strategy involves more than providing information about how to learn, such as note-taking and exam preparation strategies; it involves helping students use this information so they can learn to control their own behavior and actually benefit from the knowledge of the strategies (Dembo & Seli, 2004).

If community colleges are going to maintain the “open door” policy, they have ethical responsibilities to the students they admit and enroll each semester. They must meet the students’ needs not just on the academic, specific-content level, but also by preparing them to be mature, life-long learners and successful adults. Pairing the college skills course with the developmental studies courses, particularly mathematics, could be part of the active steps to this positive direction for integrating the yin and yang of student learning in college that is needed today (Blake, 1996).

**Need for Remediation**

Taking a closer look at Florida, over half (55%) of all students entering public postsecondary institutions require remediation in mathematics, reading and/or writing.
A startling 94% of students who need remediation attend the state’s community colleges. These students are required to successfully complete, as determined by state exit exams, college preparatory programs prior to enrolling in college-level courses. Unfortunately, only 52% approximately of these preparatory students complete the developmental programs, and often take a considerable amount of time (2 years) to do so. It is no wonder that many of the students who fail to complete these college preparatory programs are more likely to discontinue their education, either completely or for a period of time. Often times when a student takes a college placement test, and multiple remediation areas emerge, the results can cause an immediate closing of the education window of opportunity, as the students are at a high risk for drop out (OPPAGA, 2007). Despite being admitted into the colleges, students sometimes see multiple remediation areas as barriers to achieving higher education. Charts from OPPAGA’s April 2006 report on data collected for 2003-2004 convey the necessity for educators to focus on remediation. The first graphic shows that more than half of first time in college students needed remediation in at least once subject area.

Figure 1: Percentage of Students in Need of Remediation

This next graphic illustrates one-third of students (34%) who needed remediation were behind in all three preparatory areas of mathematics, reading and writing. In the categories where only one
or two remediation areas were needed, mathematics remains to be the highest percentages at 32% and 17% respectively.

Figure 2: Percentages of Students by Number of Preparatory Areas

As depicted below in the following graphics, of the three preparatory areas (Math, Reading, Writing), mathematics remediation is at the forefront. Also, the majority of college students needing remediation attend community colleges.
Previous literature also documents that college success rates for math completion in the Florida Community College System has remained, on average and at best, under the fifty percent marker:
Table 5: Florida Community College System – College Preparatory Success Rate  
Fall 1994-Fall 1999

Florida Community College System

College Preparatory Success Rate

<table>
<thead>
<tr>
<th>College</th>
<th>Fall 1994</th>
<th>Fall 1995</th>
<th>Fall 1996</th>
<th>Fall 1997</th>
<th>Fall 1998</th>
<th>Fall 1999</th>
</tr>
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<tbody>
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<td>35.77</td>
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<td>35.57</td>
<td>45.99</td>
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<td>36.42</td>
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<td>70.51</td>
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<td>68.92</td>
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<td>66.34</td>
<td>59.62</td>
<td>75.48</td>
<td>71.91</td>
</tr>
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<td>52.06</td>
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<td>68.97</td>
<td>88.02</td>
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<td>71.91</td>
</tr>
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<td>Edison</td>
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<td>35.80</td>
<td>44.12</td>
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<td>32.07</td>
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<td>49.12</td>
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<td>0.00</td>
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<td>50.80</td>
<td>49.91</td>
<td>49.45</td>
</tr>
</tbody>
</table>

Source: Accountability Measure 4 Part 1 College Preparatory Success Rate Report Students are traced for two years. Florida Department of Education, Division of Community Colleges and Workforce Education.

Although more recent data on College Preparatory Success Rates for Mathematics shows improvement, low percentages still exist for some institutions.
Although students who need remediation in mathematics were more likely to complete their college preparation requirements, when compared to reading or writing remediation, a closer look at their level of “success” reveals additional areas for investigation and questions to be answered (OPPAGA, 2007).
Table 7: Students With Relatively High College Entry-Level Placement Test Scores Were More Likely to Complete College Preparatory Program Requirements

<table>
<thead>
<tr>
<th>Group</th>
<th>CPT Score Range</th>
<th>Percentage Completing College Preparatory Program Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Third</td>
<td>43-71</td>
<td>65.0%</td>
</tr>
<tr>
<td>Middle Third</td>
<td>30-42</td>
<td>45.1%</td>
</tr>
<tr>
<td>Bottom Third</td>
<td>Less than 30</td>
<td>30.2%</td>
</tr>
</tbody>
</table>

Source: OPPAGA analysis of Florida Department of Education Metadata system of remedial students attending Florida community Colleges for the first time in 2000-01 through 2003-04.

What is being done to address the needs of the students in the middle to bottom third scores of the college placement test range?

The following two tables provide information on students who have completed preparatory programs:
Table 8: Students Who Completed College Preparatory Programs Were Less Likely to Earn an “A” in Foundation Courses Than Other Students

<table>
<thead>
<tr>
<th>Students Who Completed College Preparatory Programs Were Less Likely to Earn an “A” in Foundation Courses Than Other Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of Students Earning an A</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MAC 1105</td>
</tr>
<tr>
<td>MGF 1106</td>
</tr>
<tr>
<td>ENG 1101</td>
</tr>
<tr>
<td>ENG 1102</td>
</tr>
</tbody>
</table>

Source: CPPAGA analysis of Florida Department of Education metadata system of remedial students attending Florida community colleges for the first time in 2000-01 through 2003-04.

What can the college preparatory instructors do to increase learning and retention for developmental students to improve their chances of earning a higher grade in foundation courses?

Table 9: Students Who Completed College Preparatory Programs Generally Passed Foundation Courses But Earned Slightly Lower Grades Than Other Students

<table>
<thead>
<tr>
<th>Students Who Completed College Preparatory Programs Generally Passed Foundation Courses But Earned Slightly Lower Grades Than Other Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math/English College Course</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MAC 1105</td>
</tr>
<tr>
<td>MGF 1106</td>
</tr>
<tr>
<td>ENG 1101</td>
</tr>
<tr>
<td>ENG 1102</td>
</tr>
</tbody>
</table>

Source: CPPAGA analysis of Florida Department of Education metadata system of remedial students attending Florida community colleges for the first time in 2000-01 through 2003-04.
If the findings are indicative that college preparatory programs are, in general, successful in helping ensure that students have the skills and knowledge needed to be successful in their future college-level courses, what strategies can college preparatory programs and instructors implement to improve the success data and prepare the “underprepared” student? Several of the recommendations made by the Office of Program Policy Analysis & Government Accountability in their May 2007 report No. 07-31 address this question:

- Use (or plan to begin using in 2007-2008) **learning communities** to foster stronger bonds and inter-reliance among students by having groups of students attend a series of college preparatory courses together
- Use (or plan to being using in 2007-2008) **course pairing techniques** to provide reinforcement and continuity by having students register for two or more college preparatory courses during the same semester
- Offer **learning skills classes** to address the root causes of students needing remediation (such as deficiencies in time management skills, study skills, library usage, public speaking, and organizational skills)
- Require all students needing remediation to enroll in learning skills classes

These recommendations directly relate to the purpose of this study. Could linking the college preparatory mathematics class and the college success course be a successful strategy in improving academic success of students needing remediation? The purpose of this study was to shed light on this possibility.

**Data Specifics for this North Urban Community College**

Statistics on NUCC are provided by the National Center for Educational Statistics (2009). This institution is a 2-year, public facility offering degrees of Associate of Arts, Associate of Applied Science, Associate of Science, and less than one year program certificates. Its student population is a little under 14,000 and close to 70% of the student population receives some type of financial assistance. Approximately 50.5% of the population is part-time students and the remaining 49.5% are full-time. Student race and ethnicity are predominately white non-Hispanic at 55% and black non-Hispanic at 32%. The remaining groups include: Hispanic, Asian/Pacific, American Indian or other. Retention rates are comparable to other similar colleges with 64%
retention of full time students and 51% for part time students. Although The National Center for Educational Statistics cautions readers when interpreting the data they provide, the numbers for graduation rates are still not particularly promising. In their review of only 50% of entering students counted in calculating graduation rates, 31% actually graduate and the remaining transfer out, making it difficult to track and provide concise analysis. A look at the overall graduation rate by race and ethnicity shows that much improvement can be done for all categories, and in particular, the black non-Hispanic population.

Table 10: Overall Graduation Rate by Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Graduation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>White non-Hispanic</td>
<td>39%</td>
</tr>
<tr>
<td>Black non-Hispanic</td>
<td>18%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>30%</td>
</tr>
<tr>
<td>Asian/Pacific</td>
<td>58%</td>
</tr>
<tr>
<td>American Indian</td>
<td>30%</td>
</tr>
<tr>
<td>Race/Ethnicity unknown</td>
<td>28%</td>
</tr>
<tr>
<td>Non-resident alien</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: National Center for Educational Statistics 2009

A look at the institution’s ABC% success rates for Spring 2007 through Fall 2008 (coded by academic year of 20091) for all preparatory mathematics classes and the elective credit intermediate algebra course illustrate the total percentages are still at best slightly over 50%. This chart is provided in its entirety on the following page.
A study was done during the period of Fall 2000-01 and Fall 2001-02 to investigate the value of the college success course in conjunction with the mathematics college preparatory track (College Success Study – Math College Preparatory Track, 2005-2006). The goal of this study was to track cohorts from various college preparatory series through Intermediate Algebra to see if students successfully completing the college success course had a higher success rate in their mathematics class up to and including Intermediate Algebra. Successful completion in the college success course was defined as receiving a grade of A, B or C. Successful completion for all preparatory mathematics classes and the Intermediate Algebra course is defined as a grade of

### Table 11: Success Rates for Preparatory Courses

<table>
<thead>
<tr>
<th>College Prep Math</th>
<th>MAT0002 Required</th>
<th>MAT0002</th>
<th>MAT0024</th>
<th>MAT0024C</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td></td>
<td>67.40%</td>
<td>54.10%</td>
<td>61.80%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>76.40%</td>
<td>58.30%</td>
<td>69.10%</td>
<td>59.10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55.10%</td>
<td>45.90%</td>
<td>51.20%</td>
<td>51.20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44.80%</td>
<td>46.50%</td>
<td>45.30%</td>
<td>45.30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74.60%</td>
<td>39.00%</td>
<td>60.30%</td>
<td>60.30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50.00%</td>
<td>47.20%</td>
<td>48.80%</td>
<td>48.80%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>56.20%</td>
<td>47.60%</td>
<td>52.60%</td>
</tr>
</tbody>
</table>

### Success ABC %

<table>
<thead>
<tr>
<th>Success ABC %</th>
<th>Column Labels</th>
<th>20072</th>
<th>20073</th>
<th>20081</th>
<th>20082</th>
<th>20083</th>
<th>20091</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT0024</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>MAT0024C</td>
<td>53.00%</td>
<td>50.00%</td>
<td>46.60%</td>
<td>42.40%</td>
<td>54.10%</td>
<td>43.90%</td>
<td>49.00%</td>
<td>48.60%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>52.40%</td>
<td>49.70%</td>
<td>46.40%</td>
<td>48.00%</td>
<td>48.00%</td>
<td>54.10%</td>
<td>45.50%</td>
<td>48.60%</td>
</tr>
</tbody>
</table>

Source: [www.portal.tcc.fl.edu](http://www.portal.tcc.fl.edu)
A, B or C and a passing score (60% or above) on any State Exit exams. The findings revealed in every cohort, that students who completed the college success course early in their college career had higher success rates not only in their initial mathematics course, but also in successive mathematics courses. The following chart demonstrates this success:

Table 12: Passing Rates for Students in College Preparatory Mathematics Courses and College Success Students

<table>
<thead>
<tr>
<th>Total Cohorts</th>
<th>Initial n</th>
<th>% Passing</th>
<th>% Passing MAT 1033</th>
<th>College Success Students</th>
<th>Initial n</th>
<th>% Passing</th>
<th>% Passing MAT 1033</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 0002</td>
<td>1370</td>
<td>62%</td>
<td>16%</td>
<td>227</td>
<td>78%</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>MAT0024C</td>
<td>543</td>
<td>61%</td>
<td>42%</td>
<td>68</td>
<td>71%</td>
<td>59%</td>
<td></td>
</tr>
<tr>
<td>MAT0024</td>
<td>661</td>
<td>66%</td>
<td>47%</td>
<td>83</td>
<td>83%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>MAT1033</td>
<td>1247</td>
<td>54%</td>
<td>69%</td>
<td>109</td>
<td>67%</td>
<td>81%</td>
<td></td>
</tr>
</tbody>
</table>

Source: [www.portal.tcc.fl.edu](http://www.portal.tcc.fl.edu)

Specifically, in review of the MAT0024C cohort report (Appendix D), the data shows that the college success class is highly beneficial to students who begin in the MAT0024C track. Students who enrolled in MAT0024C and successfully completed college success, 71% successfully completed, on their first attempt, MAT0024C. This is a favorable percentage when compared to those students who did not take college success, where only 61% passed. This data supports this research study’s premise that the college success course in conjunction with preparatory mathematics classes is beneficial to promoting student success.

As part of this community colleges’ Quality Enhancement Plan (QEP), data is being collected on MAT0024C success and withdrawal rates for students who did enroll in SLS 1510 and those that did not enroll in SLS 1510. In both Fall 2004 and Fall 2005, students who were enrolled in SLS 1510 had a higher passing percentage in MAT0024C than those that did not enroll in SLS 1510 (Appendix E). This data also shows that students enrolled in SLS 1510 consistently had higher GPA’s, lower withdrawal rates, and higher percentages of completion of their preparatory courses during the Fall 2003 to Fall 2005 period.

The overall picture presented in the data collected at this community college in regards to the benefits of the college success course is encouraging. Students with two or more preparatory class placements, who enrolled and successfully complete the SLS 1510 course, had substantially
higher pass rates than those who did not enroll in the course. With data to support the SLS 1510 course and its association with college preparatory course, specifically mathematics, the next avenue to pursue is how to make the combination of these two content areas more effective and in what type of packaging for the students. Would offering linked courses of college success and beginning algebra be an avenue worthy of pursuit by administration and faculty? In short, given that we know SLS 1510 matters with preparatory mathematics classes, the question to be answered now is how does it matter?

**Specifics on Enrollment in the College Preparatory Mathematics Classes at this NUCC**

Taking a closer look at the enrollment numbers for college preparatory mathematics classes at NUCC provides additional support in the need to find new and innovative ways to reach these students and help them be successful. The first table depicts the general number of students enrolling in none, one, two or three preparatory classes. The remedial areas include: reading, English and mathematics. Where only one preparatory class is required, mathematics is generally the content area. The startling numbers are for those students testing into three preparatory classes. However, the fact that the percentages have gone down from 44.7% (Fall 2003) to 22.2% (Fall 2008), is encouraging.
Table 13: FTIC College Prep Number of Areas Placed – Cohort 2003-2008

FTIC Student Cohort 2003 - 2008
Number of college preparatory areas students place into after taking the college placement test in areas of reading, English and mathematics.

The following tables illustrate the number of students testing into college preparatory mathematics classes. The first provides general numbers and the second table breaks it down by the number of mathematics preparatory classes required for a student. This institution offers two preparatory mathematic level courses: Basic Math and Elementary Algebra. Beginning Algebra is also offered, but it is housed in the Mathematics/Science Department and not considered a preparatory content area. Students taking this course receive three hours of college elective credits.
Table 14: FTIC Students Placing into College Prep Math in General - Cohort 2003-2008
Illustration of number of students placing into college preparatory mathematics in general.

Source: www.portal.tcc.fl.edu

Table 15: FTIC Students Placing into College Prep Math by Levels - Cohort 2003-2008
Number of students placing into none, one or two college preparatory mathematics classes.

Source: www.tcc.fl.edu
Information on Previous Linked Courses

During the Fall of 2006 semester at this community college, several learning community opportunities were offered to students. These included several linked classes where one of the courses was college success and / or a college preparatory mathematics class. The purpose of these offerings is part of the institution’s overall plan to meet their initiative of student engagement, which is part of the Quality Enhancement Plan. According to the QEP Initiatives Progress Report (2006), this initiative continues to make slow, but purposeful progress. The following linked classes were offered:

- College Prep Reading II (REA 0002) and College Prep English (ENC 0020)
- College Prep Reading II and Elementary Algebra (MAT 0024C)
- College Success (SLS 1510) and Computer Literacy (CGS 1060)
- College Success (SLS 1510) and Basic Mathematics (MAT 0002)
- College Success (SLS 1510) and College Prep Reading II (REA 0002)
- American Experience I (AMH 1041) and American Experience II (AMH 1050)

The shaded courses represent the two content areas that were linked for this study. Only one of the previous linked courses was for college success and a college preparatory class. This link was done with the basic mathematics course (MAT 0002), which is the course below this study’s focus, Elementary Algebra (MAT 0024C).

Most of the linked courses are focused on novice learners in developmental studies (college prep). It is important to note at this time that developmental studies are currently undergoing a major revision of curriculum and delivery at this community college due to a Title III Grant. Additional information regarding this grant will be provided in the context of this paper.

As reported in the institutions Quality Initiatives Progress Report (2006), the success data compiled from these links demonstrates that in general, learning communities experienced higher success rates than traditional classes. The full report can be found in Appendix E.
Table 16: Fall 2006 Learning Communities Success Data

<table>
<thead>
<tr>
<th>Course</th>
<th>LC Type</th>
<th>LC ABC</th>
<th>Course ABC</th>
<th>LC ABCD</th>
<th>Course ABCD</th>
<th>LC W/AW</th>
<th>Course W/AW</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGS 1060</td>
<td>Linked</td>
<td>89.2</td>
<td>68.5</td>
<td>89.2</td>
<td>74.4</td>
<td>3.5</td>
<td>8.6</td>
</tr>
<tr>
<td>SLS 1510</td>
<td>Linked</td>
<td>89.2</td>
<td>68.8</td>
<td>89.2</td>
<td>74.1</td>
<td>3.5</td>
<td>8.3</td>
</tr>
<tr>
<td>ENC 0020</td>
<td>Linked</td>
<td>85.7</td>
<td>64.4</td>
<td>92.8</td>
<td>72.9</td>
<td>7.1</td>
<td>10.8</td>
</tr>
<tr>
<td>REA 0002</td>
<td>Linked</td>
<td>68.9</td>
<td>64.6</td>
<td>89.6</td>
<td>77.2</td>
<td>6.8</td>
<td>11.2</td>
</tr>
<tr>
<td>REA 0002</td>
<td>Linked</td>
<td>42.8</td>
<td>63.5</td>
<td>50.0</td>
<td>75.9</td>
<td>21.4</td>
<td>11.0</td>
</tr>
<tr>
<td>MAT 0024C</td>
<td>Linked</td>
<td>14.2</td>
<td>45.9</td>
<td>21.4</td>
<td>57.4</td>
<td>42.8</td>
<td>15.9</td>
</tr>
<tr>
<td>MAT 0002</td>
<td>Linked</td>
<td>62.9</td>
<td>52.1</td>
<td>66.6</td>
<td>58.5</td>
<td>18.5</td>
<td>19.2</td>
</tr>
<tr>
<td>SLS 1510</td>
<td>Linked</td>
<td>59.2</td>
<td>69.3</td>
<td>70.3</td>
<td>74.5</td>
<td>18.5</td>
<td>8.3</td>
</tr>
<tr>
<td>AMH 1050</td>
<td>Integrative</td>
<td>75.0</td>
<td>59.8</td>
<td>78.5</td>
<td>70.8</td>
<td>8.9</td>
<td>8.7</td>
</tr>
<tr>
<td>THE 1000</td>
<td>Integrative</td>
<td>78.3</td>
<td>N/A</td>
<td>83.7</td>
<td>N/A</td>
<td>5.4</td>
<td>N/A</td>
</tr>
<tr>
<td>ENC 1101</td>
<td>Integrative</td>
<td>80.0</td>
<td>70.4</td>
<td>83.3</td>
<td>74.2</td>
<td>13.3</td>
<td>11.7</td>
</tr>
<tr>
<td>PSC 1112</td>
<td>Integrative</td>
<td>67.5</td>
<td>54.5</td>
<td>72.5</td>
<td>59.1</td>
<td>15.0</td>
<td>9.1</td>
</tr>
<tr>
<td>GEB 1011</td>
<td>Integrative</td>
<td>69.0</td>
<td>72.6</td>
<td>89.6</td>
<td>77.9</td>
<td>1.8</td>
<td>8.0</td>
</tr>
<tr>
<td>PET 2000C</td>
<td>Integrative</td>
<td>78.1</td>
<td>N/A</td>
<td>78.1</td>
<td>N/A</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>SPN 2220</td>
<td>Integrative</td>
<td>61.5</td>
<td>63.6</td>
<td>61.5</td>
<td>63.6</td>
<td>19.2</td>
<td>9.1</td>
</tr>
<tr>
<td>FIL 1031</td>
<td>Integrative</td>
<td>73.0</td>
<td>N/A</td>
<td>73.0</td>
<td>N/A</td>
<td>19.2</td>
<td>N/A</td>
</tr>
<tr>
<td>AMH 1041</td>
<td>Fully Integrated</td>
<td>69.8</td>
<td>64.0</td>
<td>75.8</td>
<td>72.0</td>
<td>3.4</td>
<td>9.1</td>
</tr>
<tr>
<td>AMH 1050</td>
<td>Fully Integrated</td>
<td>69.8</td>
<td>60.1</td>
<td>75.8</td>
<td>71.3</td>
<td>3.4</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Note: Course data includes the averages for all other classes except the LC class and SPI.

However, the exceptions were in learning communities that included college preparatory mathematics courses. Withdrawal rates were mixed and in some cases higher in the linked course than in traditional courses. This is to be expected, particularly when linking a college success course, which has a low withdrawal rate, and college preparatory mathematics course, that tends to have a very high withdrawal rate.

A learning community’s survey for the linked classes was also administered and reported on in this Progress Report as indicated below:
Table 17: Learning Communities Survey Linked-Class Version

<table>
<thead>
<tr>
<th></th>
<th>Percent Strongly Agreed/Agreed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The topics or assignments in one class were relevant to assignments in the other class(es).</td>
<td>88%</td>
</tr>
<tr>
<td>I feel I learned more in my learning community classes than in the classes outside of the learning community.</td>
<td>70%</td>
</tr>
<tr>
<td>My grades in my learning community classes will fairly reflect my learning.</td>
<td>80%</td>
</tr>
<tr>
<td>Participating in this learning community helped me to see ways other classes (not in learning communities) relate to each other.</td>
<td>80%</td>
</tr>
<tr>
<td>Being part of the learning community encouraged me to remain in this/these class(es).</td>
<td>76%</td>
</tr>
<tr>
<td>My learning community experience helped me to interact with my classmates.</td>
<td>90%</td>
</tr>
<tr>
<td>My learning community experience helped me to participate in classroom discussion.</td>
<td>79%</td>
</tr>
<tr>
<td>My learning community experience encouraged me to ask classmates for help.</td>
<td>83%</td>
</tr>
<tr>
<td>As a result of the learning community, I formed one or more friendships that I will maintain after the semester.</td>
<td>83%</td>
</tr>
<tr>
<td>My learning community experience helped me to communicate with my professors.</td>
<td>90%</td>
</tr>
<tr>
<td>My involvement in this learning community has helped me to understand, relate, and apply key concepts between different classes.</td>
<td>83%</td>
</tr>
<tr>
<td>My involvement in this learning community has helped me to analyze and evaluate material.</td>
<td>76%</td>
</tr>
<tr>
<td>My involvement in this learning community has helped me to appreciate and learn from my classmates’ diverse backgrounds.</td>
<td>86%</td>
</tr>
<tr>
<td>Participation in this learning community has enhanced my sense of belonging in the TCC community.</td>
<td>72%</td>
</tr>
<tr>
<td>Participation in this learning community has enhanced my knowledge and use of campus resources (library, learning centers, computer facilities, BlackBoard…etc)</td>
<td>97%</td>
</tr>
<tr>
<td>Participation in this learning community has enhanced my interest in continuing my education at TCC.</td>
<td>66%</td>
</tr>
<tr>
<td>As a result of my participation in this learning community my ability to collaborate with my classmates increased.</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: Quality Initiatives Progress Report 2006
Overall, the percentages were relatively high in the strongly agreed / agreed category for student responses in the following areas: the learning community helped them to learn more; helped them to relate classes to each other; encouraged them to remain in the classes and not withdraw; promoted their confidence and ability to participate and engage in classroom discussions; improved student communication with their professors; improved their ability to analyze and evaluate material; enhanced their knowledge of campus resources.

Similar to these findings, Nolting (2003) conducted a linked pre-algebra and life skills course pilot and non-pilot study. The results indicated the pilot had a 58% pass rate and the non-pilot had a 50% pass rate. In his study, Nolting front loaded math study skills into the life skills course to explore what impact that would have on student success rates. His study conducted in 2004 on incorporating manipulatives and collaborative learning in the basic algebra preparatory course indicated a higher passing rate for the 4 pilot groups than the pass rates for the non-pilot groups. Through his research, Nolting supports the idea of incorporating the college success course, mathematics study skills, manipulatives and collaborative learning into the preparatory mathematics curriculum.

According to this QEP Progress Report, the institution plans to focus on expanding offerings for 2008-2009 of linked classes with college preparatory content areas. Since this research study combined a college preparatory mathematics class with the college success class, it may provide support for this initiative and potentially offer vital information to administration about the benefits and limitations of this particular kind of link.

North Urban Community College recently applied to the Strengthening Institutions Programs sponsored by the U.S. Department of Education (ED). This is a federally funded program that was established under the Higher Education Act (HEA) Title II-A in the 1960s as one President Johnson’s Great Society initiatives. The institution was awarded a $1.2 million dollars, over 5 years, Title III grant with the purpose to “equalize educational opportunity by improving the academic quality, institutional management, and fiscal stability of eligible institutions” (Title III Project Overview). Accredited institutions that enroll a significant proportion of needy students are eligible for funding to improve their programs, services and systems. This institution is challenged by what they deem a “shamefully low graduation rate, rapid growth, and a surging majority of underprepared students” (p.2). As reported in their Title III application, this institution has a staggering 69% of enrolling students who require
developmental courses in mathematics, reading or writing. Even more alarming, is that 25% require remediation in all three preparatory areas. The students placing in the lowest level of developmental educational face a tough challenge of getting through potentially six courses (2 math, 2 reading, 1 English and 1 College Success) before they can even enroll in their first college-credit level course counting towards their Associate of Arts degree. Adding to this dismal picture, with over 3,000 students enrolling in developmental studies in a given semester, the overall failure rate is above 40% (p. 13). The current system utilized in developmental studies is archaic and has not been reviewed in over ten years. Much of the “rigid, lock-step curriculum” is based on pedagogy of the 1960s. Exploration in new approaches to meet the needs of the students is needed. Reform of the outdated, outmoded, and simply stale developmental curriculum and instruction are needed if the institution is to provide underprepared students with the assistance they need to succeed in college-level courses. Over the next 5 years, Title III will provide the financial backing for exploring new possibilities of new course offerings and content integration. However, it will be the faculty’s drive and motivation that either takes the institution to the next level or keeps it locked in the 60’s mentality.

This community college is also taking part in a program called “Achieving the Dream: Community Colleges Count.” This is a national initiative to help more community college students succeed. The initiative is particularly concerned about student groups that traditionally have faced the most significant barriers to success. It is working on multiple fronts—including efforts at community colleges and in research, public engagement and public policy—and emphasizes the use of data to drive change (Achieving the Dream, 2007). Two important strategies coming out of this national initiative are: 1) preparing faculty, staff and administration to teach underprepared and culturally diverse students; and 2) preparing underprepared and culturally diverse students to be successful. This urban community college is conducting a pilot study with approximately 10 percent of the Fall 2005 first-time-in-college (FTIC) students. Many of these FTIC’s are in college preparatory classes, so these strategies play another key role in support of this study and its potential benefit to the institution.

The QEP Annual Report, July 2005, stated that one of the community colleges curricular trouble spots was the developmental mathematics courses. For the Spring 2007 term, the college preparatory mathematics class of MAT 0024C had an enrollment of 848 students (Student
Information System, 2007). Of this total, 34.4% students received a grade of D or F. When W or AW information is included, this percentage increases to 53.7% of students enrolled in the elementary algebra course do not pass or complete it. These numbers are disturbing and highlight a need for further investigation into the phenomenon of why student success and retention is so low in this area. As illustrated in the QEP Annual Report (2005), linked courses support the institutions proposed learning community initiative for 2007 and 2009 (Appendix E). The use of learning communities for developmental students has been amply documented in the literature (Boylan, 2002; McCabe, 2000; Roueche & Roueche, 1999; Tinto, 1997).

At the community college where the study took place, the following provides a snapshot of the enrollment for college preparatory mathematics and its student population:

Table 18: College Preparatory Mathematics Registered Students for Fall 2007

<table>
<thead>
<tr>
<th>Course Title</th>
<th># of Registered Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 0002 – Basic Math</td>
<td>987</td>
</tr>
<tr>
<td>MAT 0024 – Elementary Algebra (3 hours)</td>
<td>459</td>
</tr>
<tr>
<td>MAT 0024C – Elementary Algebra (5 hours)</td>
<td>737</td>
</tr>
<tr>
<td>Total Mathematics Students for Fall 2007</td>
<td>2183</td>
</tr>
</tbody>
</table>

Numbers retrieved off the community colleges mainframe (January 20, 2008)
Source: Quality Enhancement Plan Annual Report 2005

Approximately 34% of college preparatory student enrollment was for MAT0024C, one of the study’s content areas. Of the 737 students enrolled in MAT 0024C for Fall 2007, data for repeating students is as follows:

Table 19: Repeating Student’s Data for MAT 0024C

<table>
<thead>
<tr>
<th>Course Title</th>
<th>2nd attempt students</th>
<th>3rd attempt students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 0024C</td>
<td>159</td>
<td>37</td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: Quality Enhancement Plan Annual Report 2005

As a participant and graduate of The Florida Chair Leadership Academy, whose members come from the 28 community colleges in the State of Florida, and occasionally from out-of-state, I took advantage of the opportunity to do an informal survey with my cohorts. During October 2007, I attended The Academy’s final week of the leadership’s two-year program. An informal
In November 2007, prior to this study being conducted, a survey (Appendix F) was sent to faculty at this institution, who had participated in a linked course. The faculty members that replied to this survey either taught the college success course, or taught preparatory reading or preparatory mathematics. The linked mathematics course was basic skills only and is differentiated from the beginning algebra course that was utilized in the study. The purpose of this survey was for the researcher to obtain information on other instructors’ experiences in teaching a linked course and what they perceived to be limitations and benefits. Although these links included reading courses and not all mathematics courses, the experiences of the instructors
could potentially still give the researcher insight into expectations for the study. Broken out by the survey questions, the following feedback was obtained from the instructors:

1. What are limitations to teaching a linked course in general? And in particular with SLS?
   - If there is not good chemistry between you and the students, it’s double trouble.
   - Increased prep time for the instructor
   - I did not find any real limitations; there is never enough time to do all you want to do.
   - Limitations to teaching a linked course in general and with SLS would be time required for preparation and coordination of materials and activities. Additionally, each instructor brings their own values, beliefs, and teaching philosophy to the course that could potentially cause conflict.

2. What are benefits to teaching a linked course in general? And in particular with SLS?
   - Instructors get to know students well
   - Students have a higher comfort level than other classes
   - Having the same cohort of students for 2 classes allows the instructor to reinforce what is said in one class or the other. With SLS, you can reinforce and practice different study techniques, time management, etc.
   - It permits collaboration across disciplines and encourages collegial relations. It also fosters a sense of community among students and allows students to learn from each other. The various topics that are taught in SLS are the basic tools that are needed for students to be successful in college and life.
   - Instead of having students blow off my efforts to discuss study strategies, etc., with them, I appreciated that the skills that I like to incorporate into all of my classes were immediately applicable to the students…there was assessment of their understanding in the SLS portion of the link.
3. What do you think are limitations for the students taking a linked course in general? And in particular, with SLS?

- Students are not exposed to as many different instructors and students and if there is a personality conflict, it is doubled.

- I really do not believe there is a limitation for the students. If anything, they become too chatty and comfortable in the class.

- If a student is not doing well in one of the courses the student would have to drop both courses.

- The only issues could be scheduling. Also, the issue of having to withdraw from both courses if you want to withdraw from one.

4. What do you think are benefits for students taking a linked course in general? And in particular with SLS?

- Students become adept at reading the instructor.

- Less confusion and pressure for new students.

- The major benefit is that a community of students is formed, friendships are forged, and the collaboration between students is greater. In addition, the students are able to use the skills, etc., presented to them (Note: interesting usage of the phrase “community of students” as the reader will see in the discussion on Looping to follow and the usage of the term “community of learners”)

- Promotes greater understanding of the importance and relationships between the disciplines.

- The main benefit is the collaboration between the two courses. Assignments can be coordinated, linked, and at a very minimum staggered so that students are not overwhelmed.
5. What benefits does taking the college success course (link or no link) provide to students?

- Knowledge of success strategies and hopefully how to apply them
- Knowledge of careers and college majors
- I believe that SLS provides great study skills and time management concepts to the students who need it the most
- Even for the students who already have pretty strong skills, SLS is a way for them to hone these skills so they can carry them forward, not only in school but in the workplace.
- Promotes the development of skills needed for college and career success
- As a math instructor, I can refer to topics from SLS and remind them how to put them to use for success in my math class.

6. What limitation does taking the college success course (link or no link) put on students?

- It is an expense and a 3-hour time drain they could otherwise use for a course they selected (meaning not required to take)
- Only those limitations that the students put on themselves. SLS is the type of course where one student can get a ton of information, motivation, etc., from the course and the student next to them gets nothing. It depends on the student.
- Limits their [students] ability to schedule other needed courses

7. What are the benefits of teaching college success?

- The instructor learns a range of information that can be woven into other courses and that is useful in advising other students
• It is a fun, enjoyable class to teach. I believe that the topics covered should be mandatory for every college freshman. It is a nice change of pace from teaching math.

• College Success closely parallels what I teach in reading, so the ability to use this information is a big plus.

• Permits greater interaction between students and faculty. It is a course that lends itself to teacher creativity and because of the many topics that students are exposed to… being able to incorporate guest speakers is an added bonus for students.

8. What are the limitations of teaching college success?

• Too many topics and too little time, especially for meaningful practice and application

• I think the worst thing about SLS is its perception on campus. Students still think it is a crib class and treat it and the teacher that way. I felt like most students did not take the class seriously and did not care about the consequences. They were okay with getting a C in a class that should have been easier than that

• Difficult for new faculty to become familiar with the materials used to teach the course

9. Having already participated in a linked course (with SLS or with another discipline), would you again? Why or why not?

• Yes, it makes you look at your own discipline in a fresh way
• Working with another instructor is rewarding

• I have heard some negative reports about student behavior in the linked classes. They become too friendly with each other and discipline becomes a problem. I don’t know if I want to deal with that.
• I found it to be very enjoyable and I think the students were pleased. The only difficulty lies within the completion rates. In my link, the math course had a negative effect on the completion rate for the SLS course. [There is a high percentage of withdraws from preparatory mathematics courses. If a student is in a mathematics/college success link and they withdraw from the mathematics course, this will have a negative effect on the completion rate for the college success course as well since the students must withdraw from both classes.]

Based on the instructor’s responses to the survey, several common themes emerged for linked courses in general. Regarding benefits, the following prevailed: collaboration between students; promotes better understanding of the importance and relationship between two content areas; and the development of a community of students [learners]. However, the limitations are focused on the following: amount of time for instructor preparation and presentation; student scheduling and the consequences for withdrawing from a course; and possible personality conflicts student/student or student/teacher.

**Looping**

*Looping*, in the academic context, is the practice of keeping students with the same instructor for multiple years. This practice tends to be common in the European schools, but so infrequent in North America that it is still considered innovative (Hume, 2007). Indeed in many schools in other countries, including many European and Japanese schools, the phenomenon of looping is fairly common (Groves, 2000). In the US middle and secondary schools, *departmentalization* is the more frequent practice, which involves a team of teachers working as subject-area specialists (Delviscio & Muffs, 2007). Looping is used to refer to “continuity of care that occurs from kindergarten to middle or high school” (Hedge & Cassidy, 2004, p.133). Although this phenomenological study at the college level does not involve students having the same instructor for multiple years, it is a variation of looping in the sense of students having the same instructor for multiple content areas and providing consistency and continuity. It is certainly possible for students to have the same mathematics instructor for multiple semesters.
This can occur when students have an instructor for college algebra and then have the same instructor for trigonometry, calculus and statistics. It can also occur when students need to repeat a course and they sign up for the same instructor they had previously. This last scenario always confuses me, as I wonder why students sign up for an instructor they already had for a class in which they did not succeed. I would be remiss if I did not confess that I often discourage any of my students from retaking a class with me, as I question whether we “clicked” in the teacher/learner relationship, suggesting to them that perhaps another instructor might better meet their learning style needs. However, after having many students sign up for my classes a second time and informing me that it was more their lack of effort than it was my teaching style that prohibited them from being successful, and also becoming more familiar with the benefits of looping in my literature review, I may need to rethink just what it means to have “clicked” with a student. Perhaps I am doing it more than I perceive. Although the true definition of looping in the elementary and middle school levels of education do not specifically apply to post-secondary education, I believe the literature on looping still has relevance to this study. For this study, the act of linking two courses together, with the same instructor, is being interpreted by the researcher as a variation of looping, with the idea that similar benefits and limitations may materialize.

Elliott & Capp (2003) discuss how looping works to provide a continuum that maximizes learning. They believe that the “formula for success is putting together the familiarity a teacher and student can develop across two or three academic years……[and] certain content topics for which we can thank the national content standards movement‖ (Elliott & Capp, 2003, p. 34). Since many of the developmental mathematics classes are standardized by State Exit exams and strict requirements for passing and moving into college credit level courses, it would be interesting to see if this “formula for success” works within the college environment and within the same semester. A discussion on the benefits and limitations of looping, as described in literature, is worthy at this point if the reader is going to buy into why the researcher felt this phenomenological study of linking two courses with the same instructor was valid.

**Literature Defined Benefits of Looping**

Restructuring, reform and redesign are all common practices in our educational system at all levels. At the college level, this type of activity is often under the guide of legislative
directives, grant monies, administrative pressure, and community needs. Institutions are always looking for new and innovative ways to organize for and steer themselves towards success. Additional funding is often the incentive if these redesigns work and help to improve retention and graduation rates. The dangling carrot of money is always taken as an opportunity for institutions to try new approaches to improving the instruction provided on campuses and for faculty to try innovative ways to support their professional development. Schools, at all levels, face many complex issues: “progress toward the national educational priorities...standards-based curriculum, higher standards for all [students], stronger home-school connections, empowerment of all sectors of the educational community, and the general impact of technology on schools and society” (Denault, 1999, p. 19). Redesigns not only include the physical aspect of the learning environment, the classroom organization and the instructor’s professional development, but they also include the teaching-learning situation. If the more traditional model of teaching-learning situation consists of students having a different instructor for each content area, and if the statistics for this traditional model at the college level for students entering at the developmental studies level are not in line with supporting retention and success rates, then perhaps an alternative approach is needed. Looping may be an appropriate alternative. “The literature on restructuring offers support for permanence in group. An important common thread in the literature is that schools should become ‘communities of learners,’ with adults and children as partners in the process of learning. As a relatively simple, flexible plan of restructuring, looping appears to have the potential of providing a workable model that can have a positive impact on the teaching-learning dynamic. Built on the concept of establishing a continuum of learning through a long-term relationship, looping can embody the essence of successful school reform – the sense of a community of learners” (Denault, 1999, p.21).

Literature offers an insight into the many benefits of looping. Broken out by the various researchers and educators that took a look at this alternative method, the benefits of looping are as follows:

Delviscio & Muffs, 2007
- provides more continuity in instruction from one year to the next as well as increased instructional time
• the bond that naturally developed between…teachers as a result of increased time
together working on schedules and cross-curriculum constructs
• gift of an extra year [time] for teachers to work with developmentally immature
  students…allows for more time to observe, analyze and employ alternate strategies
  before making critical recommendations regarding issues such as retention
• enthusiasm teachers demonstrated when…spending more time working in subject
  areas that are most interesting to them
• less of a “transition shock” for students when not having to be exposed to
differentiated teaching styles

Denault, 1999
• a pattern of persistence in a group that allow long-term relationships to be built
  between teacher and students
• building long-term relationships allow teachers to know their students better, leading
  to improved instruction and higher levels of student progress
• rooted in developmental learning theories, looping can be practices differently in
  different communities to reflect local school visions and to help achieve individual
  school goals
• looping offers a number of special connections between the teacher and student,
  among students and between the home and school
• looping allows educators to connect with students and show a caring attitude
• looping builds a strong sense of a community of learners
• increased time on task and provides opportunities to expand the curriculum
• gives incentives for attendance and exhibiting / highlighting students’ work

Hume, 2007
• teachers gain extra time for instructional purposes because they don’t have to redo
  classroom rules and “getting to know you” activities at the start of the school year
• increased time together means more in-depth knowledge of learning styles, more time
  for students to master skills
• teachers tend to have higher professional expectations for themselves and higher academic expectations for their students
• shy students have time to get comfortable
• relationships benefit: student / student and instructor / student
• difficult students have time to get used to consistent expectations
• teachers note an improvement in classroom discipline

Elliott & Capp, 2003
• provides an instructor with the gift of additional time and ability to look critically at the curriculum and help the student from where he/she is on that continuum of learning to the end or beyond
• opportunity to build relationships and knowing each of the student’s needs are based on information gathered over a longer period of time with the instructor
• struggling student has his needs established early and the teacher has plenty of time to correct them
• academic planning can be addressed over a longer term with attention to retention of learning and extension of skills
• more time to cover the content in enhanced ways
• better able to establish connections between content areas

Hedge & Cassidy, 2004
• stability and continuity of care
• ease in transition for children
• ability to anticipate children’s needs
• increased communication and trust between teacher and students
• helps children overcome defiance, shyness and sensitivity
• helps child develop self confidence
Literature Defined Limitations of Looping

As with all research, methodologies and strategies, limitations exist. The following are limitations to the practice of looping, as noted by respected researchers and educators:

Delviscio & Muffs, 2007
- concern that students and teachers may become “stale” with each other
- identifying instructors that would be committed to this alternative method of instruction and willing to assist in the establishment of the long-term relationships between themselves and the students
- should only be an option and not a requirement
- the ability to limit the number of students participating in this type of learning environment – as too many in the class could pose a threat to building the relationships and making the connections that looping has to offer
- once in this setting, how could a teacher or student get out of it if there was too much conflict and it was turning into a negative experience as opposed to a positive one

Denault, 1999
- limitations with respect to grade levels
- students placed with a poor instructor – the teaching style / learning style does not mesh
- mismatch between students/students and students/teachers
- requires extra effort

Hume, 2007
- personality clashes
- allowing for students to get out of a difficult situation
- can be hard on first timers – both on students side and instructor side
- separation at end can be difficult for all involved
- the impact an ineffective instructor could have on the student for multiple content areas
- looping could prevent students from forming the new social networks that are prime benefits
- looping could stifle a student's development of independence and responsibility

Elliott & Capp, 2003
- difficulty of staffing classes
- requires commitment from instructors and administration
- requires more time for planning

Hedge & Cassidy, 2004
- planning activities can be difficult
- time consuming
- strained relationships: teacher/student, student/student
- preference by teachers for a particular age of child or content area to instruct
- separation anxiety can occur at end of the learning experience
- no opportunity for child to experience different types of teachers and individuals in life

Common themes in the benefits and limitations of looping are apparent in the review of literature. With respect to the benefits of looping, the following themes came to light: stability and continuity for the students; community of learners established; stronger and more long-term relationships develop between students and between the teacher and the students; creates additional time to cover the content in enhanced ways; and allows the instructor to obtain a more in-depth knowledge of the students' learning styles. Similarities in the limitations of looping also exist in previous research such as: mismatch or “staleness” can occur between students and teacher; requires extra work and time for planning and activity development on the teachers’ part; could stifle student’s development of social skills, independence and responsibility.

Prior to the start of the study, I was not convinced that I would see all the commonalities that were apparent in the literature review. I was hopeful that the benefits would stand out as common, but was more hesitant regarding the limitations. I believed my “ideal” linked classes would not succumb to the limitations and that I, as the instructor, would have more control over ensuring they did not creep into my study. I naively believed that if I was completely organized and in control, that nothing but positives would come out of this experience. I later learned that
even the best intentions cannot control limitations and that my naiveté was a learning lesson in itself.

The question of whether academic looping is a problem or a solution still remains at large. Studies have been conducted, interviews given and programs have been assessed, but the answer is still not clear. When compelling evidence is given in support of looping, it usually relates to only the pre-school, elementary or middle school levels. High schools do not usually entertain this alternative method and colleges tend to be uninterested. Even the education curriculum of future teachers at the universities does not include a discussion on looping and its potential benefits. Teaching teachers how to loop is also not a common practice in educational programs. “We believe it is unfortunate that the local universities could not be enticed to join with Rocklin (an elementary school working to ‘grow’ looping and multi-age teachers) in a partnership to equip teachers with the important skills to be outstanding in the multi-age and looping curriculum designed classrooms. Perhaps they will in future years” (Elliott & Capp, 2003, p. 35). Certainly there are limitations to looping, and even at the elementary levels the discussion is intense as to whether or not the investment in this alternative method is worthy in the long run, so envisioning offering this type of experience at the community college level is probably not even on the radar screen. But, herein lays perhaps a golden opportunity that is being overlooked by post-secondary institutions. If looping could be equated to linked courses at the college level, where a single instructor has the same cohort of students for two content areas, either in the same semester or in sequential semesters, would the benefits outweigh the limitations as they do in the research listed above at the elementary and middle school levels? If post secondary institutions are going to continually ask for additional funding for developing innovative methods for reaching the masses through their “open door” policy, then perhaps linked courses should become a brighter blip on that radar screen and that professional development for instructors should include this type of training. The answer is not clear as to whether linked courses would be a problem or a solution at the college level, but hopefully this study, and those that follow, will add to the repertoire of supporting it as another option for students.
A Visit to a Central Urban Community College

An information gathering visit to Central Urban Community College (CUCC) proved to be quite informative and encouraging. This particular community college has more experience in offering linked courses and planning for learning communities than the study site institution. The purpose of the visit was to gain information from faculty and staff on their experiences, and what they perceived their students experiences to be based on data with linked courses. A group interview was conducted with the Director of Student Success and three faculty members, all of whom had experience in teaching a linked course. For the purpose of this discussion, a course named ‘student success’ at this community college is the same as the course entitled ‘college success’ at the primary research study site.

This community college has offered learning communities (linked courses) since the mid-90s. At first, these “LinC and Learn” (Connections, 2008) course options were only offered sporadically and without much planning or forethought. The main drive behind these offerings was grant money from the Achieving the Dream (ATD) initiative, and not so much the willing creativity of administration and faculty. The director of student success shared these thoughts:

The only reason, to be honest with you, the only reason why SLS and links are being promoted is ATD (grant), because we’ve had links forever. I started doing links back in the early 90s…with preps… with reading… with writing…college-level classes…and it never really got the promotion that it needed to have and nobody ever took it home…there was no dean that would say…let’s do links…it was always like a grant….because of the monies we were forced to have links…faculty were sort of set up…what choice did they have…we knew we needed a minimum of nine links to support the ATD initiative…and get the funding….so I think what happened the first term was we jumped in…we were volunteers…when it was written in the grant…here’s the money, now you have to do this…but this has changed…now its [links] a choice….we are at the point now where most of our experiences are very positive…people are wanting to join in.

The director feels that for the first time links are being recognized and the student success course is being recognized with the link. She believes this new recognition is not only due to the ATD grant, but with more heightened promotion. The student success class is now being promoted
and with this promotion within the last two years is getting the course recognized by other faculty and administration for its value and purpose. But since that rocky start, the plan for learning communities at this community college has become more solid in its foundation and is now getting recognized by other community colleges as a successful template. “We are out there on the cutting edge with the ATD and the links…we are still new at this…but our data is clear…links do well…you link them upside down, crossways, whatever you want to do with them, it doesn’t matter…the links do well.”

The logistics for these learning communities include a summer design workshop with stipend, and an additional pay stipend for being a link instructor. However, this has a ‘catch’ to it. If an instructor links with another instructor, the stipend is paid. If an instructor links with themselves, meaning they teach two different content areas, but maintain the same cohort of students, no stipend is paid. This scenario is not considered a true link by the institutions’ definition. As described by the Director for student success at this institution:

   We have one person that does a link with himself…he’s done it for years…the kids love it, and we love it…but he does not get paid [the stipend] for a link because he is not linking with someone else…he doesn’t mind …he has phenomenal success with his students.

The logistics for classroom organization include two instructor subject areas of developmental mathematics or a gateway course linked with the student success course and a third faculty/staff member (advisor, counselor, or librarian) included with the assigned role of success coach. The focus has been on links of the following format: pre-algebra with student success; beginning algebra with student success; and intermediate algebra with student success. This focus is driven by the high withdrawal rate from the preparatory mathematics classes at this institution. However, other combinations do exist with courses such as U.S. Government, Humanities and Social Science courses.

A difference between this community college and the research site with respect to these courses involved what I would call “back-end consequences” for a student not being successful in the course. At the research site, students who enroll in the college success course and complete it with a grade of “D” or “F” do not receive any consequences for these low marks. It is considered a “take,” the course counts towards an elective, and there is no requirement to repeat the course for a higher grade. In contrast with the preparatory classes, students must
receive a grade of “C” or better for it to be counted as a successful take. Students not receiving this mark are “flagged” by the system, placed on lists that alert faculty and staff to provide additional assistance, and must retake the course until it is achieved. The research site has implemented “back-end” consequences for the preparatory courses; however, no such consequences are in place for students performing low in the college success course. At the comparison college, red-flags and consequences are in place for the college success course as well as the preparatory classes. Their student success course is not under the academic center (developmental programs). Rather, they are their own entity. Many community colleges have a centralized preparatory system. The research site has this in place, where all preparatory classes come under one department. However, at the comparison college, preparatory classes are housed and taught by the various divisions: i.e. Communications, Mathematics, and English. This institution mandates students into the student success course based on the number of needed preparatory classes. The mandates that apply for the preparatory classes are thus implemented on the student success course as well. Their philosophy is why make the course required if there are no consequences for poor performance. This philosophy has worked well for them. It is a philosophy the research site has yet to support, but hopefully will soon, with future discussions and supporting data.

Benefits of Linking a Student Success Course with Mathematics

For these interviewed faculty members, the benefits of a student success course and linking it with preparatory classes, fall under the idea of helping students see some light at the end of a dark, and often endless, tunnel. As faculty stated during the interview:

We train our faculty...to have an understanding of why are we here to begin with...you’re hear to keep the student [in school] and show the student that there is some light at the end of the tunnel...maybe they have come to know an F written on their chest because everyone says...hey, you’ve been a loser your whole life because the FCAT has said you’re not doing well...you know, it goes on and on...we know from statistics that three weeks...three weeks is the most you’re going to get them...if they are going to go, they are going to go...we train our faculty to pay attention to the student...what’s happening to them in the first week...the second week...hold onto them...encourage
them in their base groups…put them in base groups….support systems…if you can get them there for three weeks and get them excited….excited about being in the class…we have hope that we are going to hold onto them.

For this institution, linked course instructors are required to attend both classes. They teach their content area course and then attend the linked course that is outside their discipline. This requirement, although difficult to schedule and manage, provides a great advantage to the instructors of the link and to the students. Instructors tend to have a stronger commitment to the link process and to developing an integrated curriculum. The support system is established quickly between the instructors, as they become another pair of eyes in the classroom to assist not only the instructor in the lesson (if needed), but more importantly, to keep an eye on the students and provide assistance to them. I must confess, I have often wished for another pair of eyes in my classroom to help me look for student behaviors that need addressing, or catch the ‘deer in the headlight’ look on my students faces when covering a mathematics topic. Factoring alone in a beginning algebra class provokes this look quite frequently! By this institution requiring link instructors to be present in the other course, the benefits of having that extra pair of eyes emerge. As relayed by one faculty member:

I really think what makes it beneficial and especially with student success …because math can be difficult for students…I [student success instructor] can develop a rapport with the math instructor where I can stop the math instruction and say, okay…look, I’m watching you [students] all behave this way…we talked about this in the student success class…let’s kind of regroup here as a class…I want everyone to pull out a piece of paper…and let’s try taking math notes this way.

The link instructors see this as a means to refocus the class and help them see how to apply the skills they are learning in their student success class, to their mathematics class. However, they emphasize that having a comfortable rapport with the link partner is imperative for this type of dialogue and interruption in the classroom to be beneficial.

Data from Fall 2006 to Spring 2008 was shared by this college to support the success of this LinC and Learn initiative.
Table 20: LinC Fall Cumulative Findings

LinC Fall Cumulative Findings
Degree-seeking FTIC students with a Grade of C or Better in Developmental Mathematics by Mandate Level

<table>
<thead>
<tr>
<th>Mandate Level</th>
<th>Non-LinC</th>
<th>LinC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy 3 preps</td>
<td>45%</td>
<td>57%</td>
</tr>
<tr>
<td>Moderate 2 preps</td>
<td>55%</td>
<td>69%</td>
</tr>
<tr>
<td>Light 1 prep</td>
<td>62%</td>
<td>73%</td>
</tr>
<tr>
<td>All</td>
<td>57%</td>
<td>65%</td>
</tr>
</tbody>
</table>

Source: Connections May 2008

This cumulative data from Fall 2006 to Spring 2008 illustrates that degree-seeking FTIC students that participated in a link course of student success paired with either one, two, or three mandated preparatory developmental mathematics courses had higher passing rates of grade C or better than their peers not participating in a linked course.

To illustrate how faculties at Central Urban Community College visualize the connection between the content areas of mathematics and the student success course, the following is offered:
Faculty participating in linked courses between the two disciplines of beginning algebra mathematics and college success skills support and believe in this connection. They continue to help students see the big idea, essential concept, or real-life problem that connects the courses and helps them to become successful students.
CHAPTER 3

METHODOLOGY

Overview of the Study

Phenomenology is a qualitative type of research concerned with understanding certain
group behaviors from that group’s point of view (Glossary of Key Terms, 2006). This chapter
outlines the methodology for this phenomenological research project designed to identify the
benefits and limitations of linking a college success course with a college preparatory
mathematics course. Moustakas (1994) states that understanding the ‘lived experiences’ marks
phenomenology as a philosophy as well as a method, and the procedure involves studying a
small number of subjects through extensive and prolonged engagement to develop patterns and
relationships of meaning. The intent of this study was to do just that – observe a small group of
students participating in a linked course and allow the researcher to bracket her own experiences
in order to understand those of the participants in the study (Nieswiadomy, 1993). In this context,
the researcher interprets the word ‘bracket’ to imply a means of classifying or grouping her own
experiences with the linked course separate from the experiences of the participants. Although
both qualitative and quantitative data was collected, the intent was not to focus on the individual,
but to use the multiple sources of data to provide a rich description of the phenomenon. By
looking at the whole experience of the students in the linked course, the hope was to build an
information resource of their perceptions of the benefits and limitations of this type of learning
community, to assist the college in developing and planning this option, and to assist future
instructors of these linked courses.

Literature presents several approaches to analyze phenomenological data. Data analysis,
of this type, proceeds through the methodology of reduction, the analysis of specific statements
and themes, and a search for all possible meanings. Moustakas (1994) states data analysis should
include researchers bringing in their own personal experiences into the study, the recording of
significant statements and meanings, and the development of descriptions to arrive at the
essences of the experience. Through a combination of data collected via assessments of course
assignments, the additional requirements of the study participants in the form of questionnaires
and interviews, my own journal entries as the researcher, and observations made by the Project Coordinator in his role of the study, I adhered to the recommendations of Moustakas. As the researcher, I tried to set aside any prejudices I may have made, or my own experiences, and rely on intuition, imagination, and universal structures in order to suggest possible interpretations of the data (Creswell, 1998). By having a PC administer, collect and retain all documentation from the students, and his role of keeping the lines of communication open to the student participants for any grievances, comments, concerns or suggestions, I believe I maintained my role in the classroom as the instructor first and the researcher second. I could not allow myself to switch these roles during the research period, as this would have jeopardized the study’s credibility.

**Phenomenological Study vs. Case Study**

At one point, the case study approach was also considered by the researcher. However, upon more in-depth investigation of the purpose of a phenomenological study and its search for the intrinsic properties of a situation or experience, this research design was deemed more appropriate. Whereas a case study may report the life of a single individual, a phenomenological study describes the meaning of a common lived experience for several individuals about a concept or the phenomenon (Creswell, 1998). In phenomenological studies, the researcher reduces the experiences to a central meaning or the “essence” of the experience (Moustakas, 1994), as described by its participants. In the event that the registration of students in a linked class resulted in only 2 or 3 students, a case study would be more appropriate. Should the class take on a size of 10 or more, a phenomenological study would better serve its purpose. The point of the study was not the analysis of the individual students, but rather the occurrence of a linked course offered at a community college and the benefits and limitations this offers for teaching and learning, specifically mathematics, as determined by the students and the instructor. The initial enrollment numbers for students in this linked course supported the phenomenological approach.
Differences in this Linked Course Compared to Others

Linked courses have been offered at this institution in the past and the results of these links were discussed in the literature review; however, the main difference in this linked course compared to others is the constant factor of the instructor. The two courses being linked, Beginning Algebra and College Success, are part of this instructor’s “split” teaching assignment. Connecting these two content areas and retaining the same instructor for both classes has not been done previously at North Urban Community College. Normally, linked classes are the combination of two content areas, where the different instructors teach their own discipline. This was the first time that a developmental mathematics course and the college skills course were linked with the same instructor for both disciplines. Also in the past, linked courses have not been assigned with back-to-back class times, on the same days and in the same classroom, as was the case for this study. This provided a unique opportunity to see if these factors played a role in the benefits and limitations of this type of linkage.

Pre-Study Researcher Comments

The researcher understood that only assertions, and not conclusions, would be possible to make at the end of this study. With the number of participants potentially being small, and generalizability not possible, the researcher hoped to provide insight into the overall experience of students in this course and to develop an information resource of their perceptions that may be transferable. Analysis of perceptions may aid administrators and instructors in determining if these perceptions influence future skills and successes of the students and if so, how the linked course option can be incorporated more concretely into the institution’s curriculum planning.

Research Context

Setting

The research was conducted in a standard classroom at North Urban Community College during the Spring semester of January 7, 2008 through April 26, 2008. This community college has a student enrollment of approximately 14,000. Students enrolled in the two linked classes of
Beginning Algebra and College Success reported to a single classroom for instruction in both content areas. The time schedule for these classes was purposely designed for back-to-back instruction. College Success was a 50-minute class scheduled for 11:15am to 12:05pm; Beginning Algebra was an 85-minute class scheduled for 12:25pm to 1:50pm. There was a 20 minute break between the two classes. Classes met every Monday, Wednesday and Friday for the duration of the semester. The instructor had a key to the classroom, which allowed students to leave their materials in the classroom while on break. Due to the purposeful nature of having back-to-back time slots for these classes, content areas were discussed in an order that was most beneficial to the students, as determined by the instructor. Flexibility was permitted to carry over college success discussions into the mathematics hour topics and vice-versa; mathematics discussions also began during the college success time slot if deemed necessary and relevant by the instructor. The break between classes was a requirement of the college; however, it did not restrict the format for the presentation of the two content areas for this research project. This study was conducted in a classroom setting with the expectation that students participate in regular class activities such as: class discussions, group activities, and completion of all assignments as required for both content areas.

In an attempt to control teacher variability in this linked course environment, both the college success and mathematics course components were taught by the same instructor. This instructor serves in a “split” position at the community college and is qualified to teach in both content areas.

**Participants**

Formal recruitment for this study was not permitted. The registration guide listed a linked course of MAT0024C and SLS 1510 being offered during the Spring 2008 semester. The times indicated a Monday / Wednesday / Friday class schedule, with the classes being back-to-back within the time slot of 11:15 to 1:50 pm. Students participating in normal registration procedures conducted on campus were permitted to register for this linked class if they needed and qualified for both content areas. Students are advised during the registration process of courses they need for their specific education goals and also what their test scores require for entering the college. Advisors can only make recommendations for the specific courses needed for the individual. It is solely up to the student to decide which days and time meetings of the
course meet their personal schedules. Advisors cannot force a student to register for a linked course, nor can they perform the actual registration for the student. With this in mind, students are free to make their own selection and determine if a linked class is something they choose to participate in or not. For this research project, no recruitment was done for participants. A consent letter was provided to and discussed with the students by the Project Coordinator of the research study. Students were given the opportunity at this time to either agree or decline to participate in this study. Students had to be 18 years or older to participate in this study.

**Researcher**

The researcher is a doctoral candidate in Middle and Secondary Mathematics at Florida State University. Her teaching experience at the community college level includes ten years in the mathematics department and four years in the academic support area teaching preparatory mathematics and college success. She is currently in a tenured position at an institution other than Florida State University teaching the two content areas of preparatory mathematics and college success. Her areas of interest are improving student success and the retention of developmental students in mathematics courses.

**Project Coordinator**

To adhere to the recommendations made by the Human Subjects Committee to separate the instructor and researcher role, a Project Coordinator (PC) was part of the research study team. This individual is a doctoral professional in his field of mathematics education. His role was to administer, collect and retain all consent forms, surveys, questionnaires, and interview documentation for the duration of the research project.

**Linked Course Contents**

**MAT 0024C – Beginning Algebra.** Course Purpose: The purpose of this course is to increase student proficiency in the areas of arithmetic, algebra and geometry. This course is designed for students who have had little or no experience in algebra, or who need a refresher course in the basic skills of mathematics. The class is for those students who have been identified through placement testing as needing these preparatory math skills; those students who have non-transferable math credits from another college; or those students who personally
request a refresher course in mathematics. This course covered a range of topics including: the order of operations, solving equations, solving word problems, factoring and basic graphing skills. The course syllabus and objectives are available in Appendix C.

**SLS 1510 – College Success.** Course Purpose: This course is designed to build and reinforce skills necessary for college and career success. Topics included: motivation, goal setting, learning styles, time management techniques, test skills, reading textbooks, and memory skills. This course also covered topics such as wellness, interpersonal relationships, employability skills, financial management, choosing a college major and other career planning topics. The course syllabus and objectives are available in Appendix G.

**Data Available**

Data available to support and enrich the purpose of this study and provide richer descriptions of its participants included: passing rates for developmental mathematics students enrolled in or not enrolled in the college success course; information from students and instructors on previous attempts at linked classes at this same community college; information on linked courses and their success from a similar sized urban community college; college placement test scores for participating students; data from the Motivated Strategies for Learning Questionnaire (MSLQ), which is given to all students taking a college success course at this community college; data from the standardized State final exam given to all students taking the Beginning Algebra course; and data from the standardized section of the final exam, which assesses critical thinking skills, given to all students in a college success course at this institution. Biographical data of the students participating in this study was also available from administration records and from student information sheets completed by all students upon entering a developmental mathematics course and college success course. This biographical information was only used to provide an overall picture of the student population and add to any rich descriptions.

**Data Collected**

Data collected as part of the research study included: two student questionnaires (beginning and middle of the semester); a final interview (conducted by the researcher after
course grades finalized) with study participants at the end of semester; all assignments, quizzes,
tests, projects and final exams scores of participants for both content areas; journal notes from
the instructor; comments or questions posted by participants on the study website (maintained
and monitored by the PC); notes from the PC as they pertain to the study, his role, and any
interactions with the participants. All questionnaires were completed anonymously by the
participants. The PC utilized a coding technique to identify the participants in order to ensure
receipt of study documentation by all and for the researcher to be able to group the
questionnaires and interview comments for future review and analysis. Coding, as defined by
Rossman & Rallis (1998, p. 171), is the process of organizing the material into “chunks” before
bringing meaning to those “chunks.” It would be imperative during the time of data analysis to
utilize codes that addressed topics that readers would expect to find, codes that are surprising,
and codes that address a larger theoretical perspective in the research (Creswell, 2003).

Data Collection and Analysis Type

Both qualitative and quantitative data was collected during this research project. However, it is emphasized that much of the quantitative data was a college requirement of the
course. For the Beginning Algebra course this data included: college placement test scores,
homework scores, quiz scores, chapter test scores, and final exam scores. For the College
Success course this data included: homework assignment scores, test scores, participation scores,
essay paper scores, group project scores, notebook scores, and final exam scores. Qualitative
data included: student questionnaires, student interviews, and any student initiated conversations
with the Project Coordinator of this study. The quantitative data, in conjunction with the
qualitative data, helped provide a fuller, richer description of the student population in this
research project. The researcher also kept notes throughout the duration of this study to
document her viewpoint, which were included in the qualitative data for review and analysis.
These notes acted as artifacts to support the study and provide the physical documentation of the
instructors’ experiences and reflections.

As it was possible that the setting for this study could influence the thoughts and feelings
of its participants, an attempt was made to interpret the situation from the subjects’ points of
view and utilize extremely detailed, or thick, Gertz descriptions to accomplish this task. Similar
to the role of a researcher in an ethnographic study, and in support of the idea for the research to
keep her own notes, the researcher’s role is to “make inferences about what people know by
listening carefully to what they say [and] by observing their behavior” (Ethnographic Research,
2007).

According to Creswell (1998), for a phenomenological study, the process of collecting
information involves primarily in-depth interviews with as many as 10 individuals. The
important point is to describe the meaning of a small number of individuals who have
experienced the phenomenon (p. 122). With enrollment in this linked class being small,
interviews were conducted at the end of the course with all willing participants of the study.
These taped interviews lasted between one and two hours with a scripted list of questions utilized
for all interviews and documentation of any follow up questions. At the beginning of the study,
the plan was to have the PC conduct these final interviews with the students. However, after
careful consideration of the instructor/student relationship, the dynamics in the classroom, and
the need for the researcher to get more detailed information in these interviews than perhaps the
PC would have privy to, the researcher (instructor) conducted the interviews. To ensure that no
ill-consequences could be taken toward the students being interviewed by the instructor as a
result of any comments obtained, and for the students to feel safe in discussing their thoughts
about the experience, the interviews were conducted after final grades had been calculated and
posted. As recommended by Moustakas (1994), adding to these in-depth student interviews was
the researcher’s own self-reflection as an initial step in the analysis.

The questions posed in the two student questionnaires and in the final interview were
designed to gain insight into the students’ experience of this linked course. Literature supports
the concept of learning communities; however, there is a strong need for additional information
on how linked courses in particular are viewed by the students. The lack of research on what
students define as benefits and limitations of linked courses with the same instructor at the
college level poses the need for answers or at least insight into the phenomenon.

As stated earlier in this paper, coding of the data was especially important for the
researcher to be able to extract meaning from information obtained from the participants.
Bogdan and Biklen (1992) suggest the following list of possible types of codes that I believe
were relevant to this study: setting and context codes, perspectives held by subjects, subjects’
way of thinking about people and objects, process codes, activity codes, strategy codes,
relationship and social structure codes, and preassigned coding schemes.
Questions addressed in the review and analyses of the data include:

- Were there shifts between the beginning and the end comments?
- Was there common knowledge about linked courses, their benefits and/or limitations?
- Were there commonalities between the student’s perceptions of the linked course and how it could potentially influence their ability to be successful in mathematics?
- What implications does this study have on future learning communities?
- What kind of redesign would be necessary to promote student success and retention rates through a linked course environment?
- Which aspects, if any, of the linked course helped students with the following: mathematics skills, study skills, time management, stress management, locus of control, knowledge and utilization of campus resources, development of relationships and communication with other classmates, development and communication with the instructor?

**Keeping the Focus on Mathematics in this Study**

Because this study involved the combination of two content areas, preparatory mathematics and college success, the researcher strived to keep the focus on mathematics through the development of the combined curriculum. Efforts were made to contextualize what the mathematics students were learning in terms of their college success topics. These topics included campus resources, time management, study skills, classroom skills, memory and concentration, all of which were tied to the mathematics curriculum. For example: after students completed a time management worksheet, documenting their activities for a full week, 24-hours a day, as part of the college success curriculum, the instructor had students focus on an individual aspect of their worksheet, such as time spent on studying and preparing for class. Students were asked to determine the percentage of this time with respect to a single day and for the week, and also to provide a graphic representation. A second activity involved students utilizing test taking strategies and error analysis discussed in the college success course, in preparation for their mathematics tests and error analysis after the test has been graded and returned (Appendix H). Additional activities that demonstrated the focus on mathematics in connection with the college success skills being taught are discussed later in this paper. As part
of the final interview with the study participants, the researcher inquired as to what aspects of the college success class helped students with their mathematics skills and their utilization of the mathematics resources available on campus. A chart depicting the connection of college success course content areas to mathematics course activities is provided later in this chapter.

**Introduction of Researchers’ Personal Experiences into the Study**

One of the challenges of a phenomenological study is how the researcher decides in what way his or her personal experiences will be introduced into the study. The concept of *epoche* is central, and is defined to be where the researcher *brackets* his or her own preconceived ideas about the phenomenon to understand it through the voices of the informants (Field & Morse, 1985). To address this challenge, I was cautious in my daily journaling of the study experience to record information pertaining strictly to what was happening in the linked class as it occurred, and not as I had hoped it would occur. As the instructor of two other non-linked courses, it was imperative to the study to maintain a sense of distance and distinction between occurrences in the linked class versus the non-linked courses. Any influencing factors from the non-linked courses that interceded with the linked course was documented and given priority during the data analysis.

**Strategies to Check the Accuracy of the Findings**

According to Moustakas (1994), phenomenological studies should involve a series of steps: *epoche* or bracketing, horizontalization, transformation of clusters of meanings, and generalizations involving textural and structural descriptions. A look at the definitions of these steps will provide insight into how the accuracy of the study can be determined. Using the research and descriptions of Moustakas (1994), John Creswell offers the following explanations of these terms in his book: *Qualitative Inquiry and Research Design: Choosing Among Five Traditions* (1998, p. 235).

*Epoche or bracketing*: This is the first step in phenomenological reduction, the process of data analysis in which the researcher sets aside, as far as humanly possible, all preconceived experiences to best understand the experiences of participants in the study.
**Horizontalization**: This is the second step in the phenomenological analysis in which the researcher lists every significant statement relevant to the topic and gives it equal value.

**Clusters of meanings**: This is the third step in phenomenological data analysis in which the researcher clusters the statements into themes or meaning units, removing overlapping and repetitive statements.

**Textural description**: From the first three steps in phenomenological data analysis, the researcher writes about ‘what’ was experienced, a description of the meaning individuals have experienced.

**Structural description**: Following the textural description, the researcher writes a structural description of an experience, addressing ‘how’ the phenomenon was experienced. It involves seeking all possible meanings, seeking divergent perspectives, and varying the frames of reference about the phenomenon or using imaginative variation.

Qualitative and quantitative research frequently uses the terms reliability and generalizability as strategies to establish accuracy of the findings; however, these terms are difficult to apply in phenomenological research. Trustworthiness, transferability, authenticity, and credibility tend to hold more meaning in this type of study. Within phenomenology, different conceptions of verification exist. ‘Neither empirical nor transcendental phenomenologists place substantial emphasis on verification beyond the perspective of the researcher’ (Creswell, 1998, p. 207). Dukes (1984) believes there are very distinct procedures for verification in this type of study. His verification concept consists of looking for identical patterns, the “eureka factor” (p. 201), and “rational analysis of spontaneous recognition” (p. 201). This last concept involves the researcher asking if the patterns fit together in a logical manner and if rearranging the same elements in the study would produce the same pattern or something different. For Moustakas (1994), it still boils down to the simplistic terms of “establishing the truth of things” (p. 57). Perhaps this is simplistic in terms, but certainly more difficult in process for the phenomenological researcher.

Although it has been stated that the terms reliability and generalizability do not apply in this type of study, a brief explanation as to why might be beneficial to the reader. Reliability is the extent to which a measure, procedure or instrument yields the same result on repeated trials. Although the assessment tools utilized in these linked classes are used during each new semester, because the student population changes, it is not expected that the same results would occur on
repeated trials. Each semester a new student population brings with it new experiences, varying cultures, different skills sets and ability levels, and different degrees of motivation. It would be unrealistic to assume that the assessments of one particular cohort of students would match another exactly. Reliability deals with the quality of the measurement and their “consistency” or “repeatability.” Although the measurements (assessments) are the same each semester in terms of tests and assignments, the student population is not the same. Calculation of reliability is not going to be possible, but may be estimated at best. On the other hand, generalizability involves the extent to which research findings and conclusions from the conducted study on a sample population can be applied to the population at large. Just as reliability plays a minor role in this study, so will generalizability due to the nature of the constant changes in student populations.

Another factor is the validity of the study. Terms are multiple in the qualitative literature that speak to this ideas, terms such as “trustworthiness,” “authenticity,” and “credibility” (Creswell & Miller, 2000) as mentioned previously. As the researcher, I supported these areas by focusing on several of the eight primary strategies for research design as presented by Creswell (2003, pg 196):

**Triangulation:** The word triangulation has been used frequently, and often imprecisely, in qualitative research. It was first borrowed in the social sciences “to convey the idea that to establish a fact you need more than one source of information” (Bogdan & Biklen, 2007, p. 115). Triangulation was used to verify facts, but also came to mean that “many sources of data were better in a study than a single source because multiple sources lead to a fuller understanding of the phenomena you were studying” (Bogdan & Biklen, 2007, p. 115). Although Bogdan & Biklen (2007) actually advise against using this terminology, and prefer the researcher just list the different data-collecting techniques that will be implemented in the study, I find it worthy to mention their definition as the wording alone supports the proposed idea of a phenomenological study. A combination of research methods will be used in this study. Standard class assessments to be incorporated include: chapter tests, class assignments, college placement test scores, State developed final exam scores, as well as instructor / departmental final exam scores. The researcher acknowledged that these quantitative assessments will not answer the research questions directly. However, indirectly they may shed light on the benefits and limitations of the linked course, as determined by the student, when score analysis is combined with their interview and questionnaire responses. For example, if a student stated there was a benefit in the
linked course in how the sharing of content material of the college success topics helped to improve their study habits, and thus improved their performance on their mathematics exams, then a correlation could potentially be made with further investigation. Student questionnaires were given twice over the course of the study: beginning of the semester and mid-semester. Student interviews were conducted at the end of the semester, after final grades were calculated. Observations made by the Project Coordinator were incorporated into the data analysis, as well as observations made by the researcher and documented in notes during the course duration.

**Member-checking:** To assist in determining the accuracy of the qualitative findings, I met with faculty members at a mid-state community college to discuss my study and its findings. This particular community college has offered linked classes similar to the one in this study, and faculty have collected and examined data for its relevance. By discussing and comparing our studies findings, specific descriptions and themes, a determination can be made regarding their accuracy.

**Use of rich, thick descriptions:** Because there was a high potential for the number of study participants to be low, it was imperative that rich, thick descriptions of the participants, the activities in the classroom, the student’s mannerisms and the overall “feel” of the environment be provided. “Writers can incorporate details or ‘write lushly’ (Goffman, 1989, p. 131), or ‘thickly,’ description that creates verisimilitude and produces for readers the feeling that they experience, or perhaps could experience, the events described (Denzin, 1989b).” Denzin (1989b, p. 83) states that rich narrative can “present detail, context, emotion, and the webs of social relationships… [and] evokes emotionality and self-feelings…. The voices, feelings, actions, and meanings of interacting individuals are heard.” My goal as the researcher was to provide these rich descriptions based on my notes, student completed information sheets and formal administration information obtained on all registered students. I believe these descriptions supported the credibility of this study.

**Clarify the bias the researcher brings to the study:** Through my note taking of the study experience, I provided a self-reflection in order to create an open and honest narrative that will hopefully resonate well with educational scholars and lay readers.

**Presentation of negative or discrepant information:** It was highly possible that conflicting information, themes, or perspectives could arise during this study, due to the diversity
of the participants. Where this occurred, I presented the information to the reader for their own interpretation, and in hopes of enhancing the credibility of the account to them.

**Prolonged time spent in the field:** The length of this study is one spring semester at a community college campus. This consisted of 16 weeks of classes, which equated to 41 days of actual classroom interaction. At 125 minutes per class day of student contact hours, approximately 85.4 hours of teacher-student interaction occurred during the duration of this study. Granted, a higher number of contact hours would statistically improve validation, this amount of time still provided the researcher an opportunity to develop an in-depth understanding of the phenomenon under study and allow for details about the site and the people exposed, lending credibility to the narrative account.

**Peer debriefing:** This was done with the PC of the study, along with other members of the community college faculty that have had experiences with linked courses. Two community college faculty members (one internal, one external), who have experience in conducting qualitative research, were asked to review the data and ask questions about the qualitative study so the account would resonate well with people other than the researcher.

**External auditor:** Lincoln & Guba (1985) state the importance of an external auditor is similar to that of a fiscal auditor, someone that can ask specific questions that auditors might ask either during the process of research or at the conclusion of the study. I enlisted a community college faculty member that is new to the researcher and not under the same department in which this study is taking place to fulfill the role of the external auditor. This faculty member has a doctorate degree and is knowledgeable on research methods. She does not work with developmental students and does not teach the college success course. These facts made her a prime candidate for serving in this role.

Transferability is the ability to apply the results of research in one context to another similar context. It also focuses on the connections being made between the elements of the study and readers own experiences. In terms of this study, I believe this term has the most potential impact. If the results of this linked course prove to have a positive influence on student retention and success, then the possibility for these influences to transfer into the next semester of classes would be the ultimate goal. If the student is making the connection between elements of the study, his own experiences and successes, than perhaps the development of an internal locus of
control is not far behind. This would certainly satisfy one of the objectives of the college skills success course, and would only be advantageous in the mathematics course.

**Confirmability**

In order to sustain the objectivity of the research, the data collected throughout this research was available to any interested parties for review. All records and artifacts will be retained for this purpose.

**Research Timeline**

<table>
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<tr>
<th>Event</th>
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<tr>
<td>Student Registration</td>
<td>November 1, 2007 – January 8, 2008</td>
</tr>
<tr>
<td>First Day of Classes</td>
<td>January 7, 2008</td>
</tr>
<tr>
<td>Student Consent Forms</td>
<td>January 16, 2008 – week 2</td>
</tr>
<tr>
<td>Initial Student Questionnaire</td>
<td>January 16, 2008 – week 2</td>
</tr>
<tr>
<td>Mid-Semester Student Questionnaire</td>
<td>February 22, 2008 – week 7</td>
</tr>
<tr>
<td>Final Exam College Success</td>
<td>April 14 – 18, 2008 – week 14</td>
</tr>
<tr>
<td>Final Exam Mathematics</td>
<td>April 21, 2008</td>
</tr>
<tr>
<td>Final Student Interview</td>
<td>April 22 - 25, 2008</td>
</tr>
</tbody>
</table>

**Setting the Stage for the Findings and Results of this Study**

To set the stage for the findings and results of this study, descriptions of the course objectives and content areas are needed. Certainly these classes can stand alone on their content and value to the student; however, this study was about discovering any benefits and limitations in linking these two content areas and determining if this connection increased the value to the students and created a positive phenomenon.
Course Objectives and Content Areas

MAT 0024C - Beginning Algebra
Broken Down into Six Tests

TEST 1

1. Determine the order relation of two integers.
2. Write sets using the roster method.
3. Find the union and intersection of two sets.
4. Find the opposite of an integer.
5. Find the absolute value of an integer.
6. Determine the order relation of two absolute values.
7. Add two or more integers.
8. Subtract two or more integers.
9. Multiply two or more integers.
10. Divide two integers.
11. Solve applications involving operations on integers.
12. Write rational numbers as decimals.
13. Write a percent as a fraction.
14. Write a percent as a decimal.
15. Write a fraction as a percent.
16. Write a decimal as a percent.
17. Add rational numbers.
18. Subtract rational numbers.
19. Multiply rational numbers.
20. Divide rational numbers.
21. Evaluate exponential expressions.
22. Simplify using the Order of Operations Agreement.
23. Evaluate variable expressions.
24. Recognize the following properties of real numbers and give examples which illustrate the use of each:
   - The Commutative Property of Addition
   - The Commutative Property of Multiplication
   - The Associative Property of Addition
   - The Associative Property of Multiplication
   - The Addition Property of Zero
   - The Multiplication Property of Zero
   - The Multiplication Property of One
   - The Inverse Property of Addition
   - The Inverse Property of Multiplication
   - The Distributive Property

25. Simplify variable expressions using the properties of addition.
26. Simplify variable expressions using the properties of multiplication.
27. Simplify variable expressions using the distributive property.
28. Translate a verbal expression into a variable expression given the variable.
29. Translate a verbal expression into a variable expression by assigning the variable.
30. Translate a verbal expression into a variable expression and simplify the resulting expression.
31. Write two related quantities in terms of one variable.
32. Translate application problems.

**TEST II**

1. Determine if a given number is a solution to an equation.
2. Solve equations in the form of \( x + a = b \).
3. Solve equations in the form \( ax = b \).
4. Use the Basic Percent Equation to solve percent problems.
5. Solve application problems involving percents.
6. Solve equations in the form of \( ax + b = c \).
7. Solve equations in the form of \( ax + b = cx + d \).
8. Solve equations containing grouping symbols.
9. Solve equations containing fractions.
10. Translate a sentence into an equation and solve.
11. Translate an application problem into an equation and solve.
12. Graph the solution set of an inequality on the number line.
13. Solve inequalities using the Addition Property of Inequalities.
15. Solve general inequalities.

**TEST III**

1. Solve consecutive integer problems.
2. Solve coin and stamp problems.
3. Add two polynomials.
4. Subtract two polynomials.
5. Multiply two or more monomials.
7. Multiply a polynomial by a monomial.
8. Multiply two polynomials.
9. Multiply two binomials using the FOIL method.
10. Multiply binomials which have special products.
11. Divide two exponential expressions.
12. Divide a polynomial by a monomial.
13. Simplify expressions containing negative and zero exponents.
14. Convert between scientific notation and standard notation.
TEST IV

1. Find the Greatest Common Factor of two or more monomials.
2. Factor a monomial from a polynomial.
3. Factor polynomials in the form of $ax^2 + bx + cx + d$ by grouping.
4. Factor polynomials in the form of $x^2 + bx + c$.
5. Factor polynomials in the form of $ax^2 + bx + c$ where “a” is the common factor.
6. Factor polynomials in the form of $ax^2 + bx + c$.
7. Factor the difference of two squares.
8. Factor a perfect square trinomial.

TEST V

1. Solve quadratic equations by factoring.
2. Simplify algebraic fractions.
3. Solve application problems involving proportions.
4. Solve literal equations.
5. Solve perimeter problems.
6. Solve problems involving the angles of a triangle.

TEST VI

1. Solve markup problems.
2. Solve discount problems.
3. Graph points on a rectangular coordinate system.
4. Determine if a given ordered pair is a solution to a linear equation in two variables.
5. Given a linear equation in two variables and a value for $x$, find the ordered pair solution of the equation.
6. Graph equations in the form of $y = mx + b$.
7. Graph equations in the form of $Ax + By = C$.
8. Find the $x$ – and $y$- intercepts of a straight line.
9. Graph equations in the form of $x = a$ or $y = b$.
10. Simplify numerical radical expressions.
11. Simplify variable radical expressions.
12. Add and subtract radical expressions.
13. Multiply numerical radical expressions.
SLS 1510 – College Success – Content Areas

Content areas for this course included but were not limited to:

Organization
Time Management
Reading and Critical Thinking Skills
Note-Taking Strategies
Test Preparation and Test Taking Strategies
Test Anxiety and Stress Management
Memory and Concentration
Motivation and Locus of Control
Choosing a Major and Career Planning
Goal Setting and Values Clarification
Problem-Solving Skills
Campus Resources
Money Management
Effective Class Preparation and Participation
Skills Promoting Success Within the Classroom
Skills Promoting Success Outside the Classroom
Learning Style Identification
Personality Type Identification
Career / Occupation Assessment
Motivation / Student Learning Assessment

SLS 1510 – College Success - Course Objectives

1. Develop a personal definition of success in the college environment.
2. Elaborate on locus of control and demonstrate an internal locus of control.
3. Clarify academic, personal and career goals.
4. Establish short and long-term goals along with objectives designed to facilitate the accomplishment of these goals.
5. Determine personal learning styles and develop strategies to adjust to teaching styles.
6. Understand the significance of time management and demonstrate the ability to manage time effectively.
7. Compare and evaluate various tools to get organized and establish priorities.
8. Synthesize effective listening skills and understand the direct relationship between listening and note-taking.
9. Apply logical systems (Cornell System and SQ3R) for taking good notes during lectures.
10. Demonstrate an understanding of and the ability to use different of textbook reading covered in the course.
11. Determine the necessary steps for successful test preparation. Analyze cause and effect between preparation and outcome.
12. Accurately perceive strategies for taking different types of tests such as true/false, multiple choice, matching and essay tests.
13. Understand reasons contributing to test anxiety and list aids to counteract them.
14. Discuss the relevance of stress management; identify signs of stress and reduction techniques.
15. Describe strategies to prepare for and take math and science tests.
16. Evaluate the importance of concentrating and list methods for improving the ability to recall information.
17. Describe specific memory techniques and steps to create mnemonic devices.
18. Understand the relationship between retention and learning.
19. Evaluate the role that relationships play in success in college and in the workplace. Provide methods for maintaining healthy relationships in college, at home and in the workplace.
20. Describe the cause and effect relationship of physical, emotional, and mental health in achieving academic success.
21. Evaluate the role of nutrition and fitness in a healthy lifestyle, and illustrate components of each.
22. Understand the positive effects of diversity in the workplace and in college and the perspectives of others.
23. Understand the value of a diverse campus and describe ways to deal with differences.
24. List, locate, and describe the functions of the Financial Aid Office, the Library, the Counseling department, the Career Center, the Learning Labs, the Student Activities programs, and his/her instructors’ office hours.
25. Apply the skills learned in this course to other academic classes. Assess personal attitudes to learning.
26. Understand the changes in the career world and future career needs. Determine the relevant information required to make career decisions.
27. Assess personal interests and values and determine their purpose(s) in college and life in general.
28. Identify personality preferences and be able to elaborate on the significance of this knowledge (Myers-Briggs/Please Understand Me)

Connecting College Success Course Content Areas to Mathematics Course Activities

An important factor in making a linked course successful is how the instructor takes the content material in one course and makes it significantly applicable in the second course. This is a daunting task to say the least, as students often find course content inapplicable in general. Instructor success in facilitating student connection-making between courses, therefore seems even less likely. Documentation of this connection was vital to this study and created an audit trail which others could follow and apply to different content areas. The joint pacing schedule (Appendix K) allowed students to see which topics were being covered on a daily basis in each
class. However, it was the instructor’s duty to ensure that connections between topics were made and to promote the development of cognitive skills due to the linked material.

The following pages provide the connection between the fourteen College Success course chapter content areas, the activities conducted in and outside of the classroom, and the relationship to mathematics. With each of the fourteen chapters in the college success textbook, attempts were made to incorporate activities that would utilize new mathematics skills and strengthen remedial or established skills.

<table>
<thead>
<tr>
<th>Chapter 1</th>
<th>Knowing My Campus</th>
<th>Scavenger Hunt – Finding Campus Resources</th>
<th>Locating Mathematics Lab where students can get one-on-one tutoring assistance, watch on-line videos of mathematics lesson, obtain additional handout on specific mathematical topics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Class discussion on all campus resources and how to utilize them to promote their success</td>
<td>Locating Disability Support Services and Testing Services that students have the option of utilizing if meet criteria</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Locating and being informed of the Mathematics Engineering Science Achievement (MESA) Program</td>
</tr>
</tbody>
</table>
Diversity on the College Campus and Beyond

Students define diversity, explore different vocabulary relating to diversity and discuss its importance in the classroom, on campus, in the community, and worldwide.

Students relating diversity to their own circle of friends, classmates, community connections (numeric discussion in very general terms of their interactions with people of different genders, race, ethnicities, ages, social and financial status, etc.).

Discussion of diversity numerically within the community college setting and then compared to a 4-yr institutional setting.

Students place numerical representations on their encounters with diversity of all categories.

Numeric discussion can include raw numbers and percentages.

Numeric comparisons of diversity numbers (as defined by the students) within the community college versus their potential 4-yr university.

Compare/contrast discussions which can include: raw data, percentages, use of inequality symbols, student defined equation to describe their whole population as it relates sole to their environment or experiences.
Chapter 3
Motivation and Locus of Control – Moving Me to Success

Defining motivation and locus of control.

Assessment to determine students' locus of control (internal or external).

Defining and listing characteristics of intrinsic/extrinsic motivation.

Discussion of suggested steps to improve your motivation to learn (i.e. believe in yourself, identify why you are attending college, make learning your top priority, set realistic long- and short-term goals, reward yourself).

Discussion of past experiences in mathematics classes – what effect did those experiences have on your ability to be successful in mathematics courses and retention of material?

Discussion on how does students' locus of control assessment relate to their motivation to learn mathematics?

Relating mathematics to student's specific short- and long-term goals and their career goals. Helping students see the relevance of mathematics in their lives.
Chapter 4
What’s Your Major?

Identify students personality type (Myers Briggs Assessment) (Appendix L)

How does this identification affect student’s potential choice for a major?

Discussion of AA Degree requirements

Discussion of percentage scores on Myers Briggs assessment

Discussion of number of mathematics classes required for AA degrees versus BA or higher degrees

Discussion and practice in calculating grade point averages and what is required for entrance into universities and their specific colleges of study

Discussion of requirements for transfer to a 4-yr university and a BA Degree
Chapter 5

Ready, Set – GOAL!

Identify and list short- and long-term goals

Identify personal, social, career and academic goals

Discuss the role of values and personal commitment to successfully achieving goals

Discuss how goal setting can improve problem solving skills and sense of personal responsibility

Identify short- and long term goals specifically for mathematics class (i.e. completion of homework, completion of test within a certain time, completion of course within a specific timeline)

Preparing a timeline for (or mapping out) current developmental course and the sequential mathematics courses required to complete the AA and BA requirements for mathematics
<table>
<thead>
<tr>
<th>Time Management Worksheet (Appendix M)</th>
<th>Using students personal time management worksheet, determine number of hours spent on academics, personal, social, career (Time = $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Time Survey (Appendix N)</td>
<td>Relating raw hours to percentages of day, week, year</td>
</tr>
<tr>
<td>Discuss connection between setting goals and time management</td>
<td>Calculation of hours spent on studying based on personal time survey</td>
</tr>
<tr>
<td>Discuss time management techniques</td>
<td>Relating calculation results to grades on mathematics tests, course grades, GPA</td>
</tr>
<tr>
<td></td>
<td>Incorporating geometry (volume) with time management – mason jar, water, sand, rocks activity – to illustrate point of order of things / priorities / time management</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>Develop a budget (Appendix O)</td>
</tr>
<tr>
<td>Show Me the Money – Money Management</td>
<td>Discuss income versus expense</td>
</tr>
<tr>
<td></td>
<td>Discuss credit card practices (rates, payment calculations, fees, etc.)</td>
</tr>
<tr>
<td></td>
<td>Credit Card comparison worksheet (Appendix P)</td>
</tr>
<tr>
<td></td>
<td>Discuss investment options (CD’s, 401K, Stocks, Bonds)</td>
</tr>
<tr>
<td></td>
<td>Investment Calculation worksheet</td>
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<tr>
<td>Chapter 8</td>
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<tr>
<td>The Way I Learn</td>
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<thead>
<tr>
<th>Learning style assessment – Visual, Auditory, Tactile (Appendix Q)</th>
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<tbody>
<tr>
<td>Relating students learning style outcome to course delivery in mathematics classes previous, currently and in future</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Discussion of course delivery formats and what works with students individual learning style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion of course type that best suits need of students and their learning abilities in mathematical courses</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Identifying course types (lecture, web based, self paced, televised) and how they work with specific learning styles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion on how internal/external distractions can impact study and preparation time for mathematics courses versus other discipline areas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identifying internal/external distractions</th>
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<tbody>
<tr>
<td>Chapter 9</td>
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<tr>
<td>Chapter 10</td>
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<tr>
<td>Outside the Classroom</td>
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</tbody>
</table>
Chapter 11
Don’t Forget...Memory and Concentration

Recognize the types of memory (sensory, short-term, long-term)

Understand the three stages of memory
( encoding – deciding to learn, to receive it;
storage – keeping it; retrieval – finding information again)

Discuss strategies to help with memory
(using chunking, mnemonics, rhyming, acronyms, acrostics, association,
visualization, repetition)

Discuss how memory processing and concentration work together

Discuss problem solving techniques

Relate memory strategies to mathematics:

Acronym – PEMDAS
- SOHCAHTOA
- D2P (decimal to percents and vice versa)

Acrostic –
Please Excuse My Dear Aunt Sally
- Silly Oscar Had Carrots And Hot Tamales On Apples

Rhyming –
- singing the formula for finding roots to an equation using the Frera-shaka song

Mnemonics –
- houses for square roots (inside/outside the house)
- “eggs” on the bottom or top of a fraction

Discuss when married to “Aunt Sally” with PEMDAS and when not married to her

(12 * / * 6 X 2)
<table>
<thead>
<tr>
<th><strong>Chapter 12</strong></th>
<th><strong>Test Taking and Test Anxiety</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify types of assessments given in college (homework, quizzes, chapter tests, cumulative tests, final exams)</td>
<td>Discuss differences in studying for a mathematics test versus other disciplines (English, History, etc)</td>
</tr>
<tr>
<td>Discuss how to prepare and take subjective versus objective tests</td>
<td>Strategies for taking mathematics tests (data dump, formula recall, visualization of steps, organizing work, procedures)</td>
</tr>
<tr>
<td>Develop a testing routine</td>
<td>Promoting positive self talk and utilizing reward system for good performance</td>
</tr>
<tr>
<td>(arrive on time, survey test, jot down cues, answer easy questions first, never leave blank, use time wisely, always check your work)</td>
<td>Test Errors analysis – after test returned (Appendix H)</td>
</tr>
<tr>
<td>Define test anxiety</td>
<td>Looking for repeated pattern in errors (always the negative sign, not checking answer, speed, etc)</td>
</tr>
<tr>
<td>Develop test taking strategies</td>
<td>Discussion of past performance in mathematics classes and how does that effect ones test anxiety and self-talk (self-efficacy)</td>
</tr>
<tr>
<td>Chapter 13</td>
<td>List and Identify basic workplace skills</td>
</tr>
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</tr>
<tr>
<td>After Graduation</td>
<td>Identify workforce trends, including those reflecting your career goals</td>
</tr>
<tr>
<td></td>
<td>Identify skills and preparation for job interviews</td>
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</table>
Chapter 14

The Dimensions of Wellness

Discuss three parts of a person (physical, emotional, social)

Discussion of healthy lifestyle (eating habits, exercise, social influences)

Complete daily food diary

(Appendix U)

Daily food diary worksheet incorporates basic mathematics operations (calories calculation)

Discuss how exercise can help to balance calorie intake – (develop a daily food equation that works for individual based on calorie intake and calorie expenditure)

Additional activities incorporated into the mathematics class to enhance learning included the following:

- Usage of small white boards for each individual student in the class to promote participation and engagement in working out problems for review and for test preparation
- Development and usage of Jeopardy Game for test review or concept review problems
- “Clearest Point and Muddiest Point” activity at end of class where students submit piece of paper stating what information covered in class was the clearest and what information needed additional explanation or examples to illustrate the concept
- Collaborative learning activity on test review days either through group work on test review worksheets or via letters around the room activity requiring problem solving to uncover the full sentence when letters combined
- Additional class activities are included in Appendix T

Independent syllabi were provided for each specific course (Appendix C and G). Students were provided the course pacing (calendar) for Beginning Algebra (MAT 0024C) and College
Success (SLS 1510) in a combined format (Appendix K). However, separate pacing schedules were available if requested by the students.
CHAPTER 4

FINDINGS AND RESULTS

Enrollment Numbers for Study

Initial enrollment for this class listed eleven students. Speculation, and thus a limitation later discussed in this study, is the lower enrollment of FTIC during the Spring term and its effect on enrollment numbers. Ten students remained on the roster after the first week of classes in this linked course. Seven of these students completed both the Initial Student Questionnaire (Appendix V) and the Mid-Semester Student Questionnaire (Appendix W). Three of these seven students participated in the Concluding Student Interview (Appendix X).

Setting for Data Analysis

Data analysis consisted of two approaches: 1) the utilization of coding for interview question responses; and 2) researcher defined assertions generated from the analysis of the data collected. Each of these approaches brings value to the results of the study and provides the reader an opportunity to view the data through the lens of coding with actual student responses and also view the assertions generated through the lens of the researcher.

Coding

In order to organize the data being collected during this study, the process of coding was utilized. Rossman & Rallis define coding as the process of organizing the material into “chunks” before bringing meaning to those “chunks” (1998, p.171). “It involves taking text data or pictures, segmenting sentences (or paragraphs) or images into categories, and labeling those categories with a term, often a term based in the actual language of the participant (called an \textit{in vivo} term)” (Creswell, 2003, p. 192). Developing a list of coding categories is a critical step in data analysis and can also be one of the most difficult and overwhelming for the researcher. To aid this study, the following possible types of codes established by Bogdan & Biklen (2007, pp.173-180) were considered:
Although not all of these types of codes are present in every study, and additional ones are often needed, having predefined potential types of codes can offer the researcher a starting point into organizing the data for analysis.

For the seven students that completed both the Initial Student Questionnaire (Appendix V) and the Mid-Semester Student Questionnaire (Appendix W), the PC for this study assigned them a numerical value in order to organize the documentation. Bogdan & Biklen discuss the usage of “preassigned coding systems” (2007, p. 190) as it relates to others involved in a study implementing their own coding system for some aspect of the study that the researcher must accommodate. To ensure anonymity for the students completing these questionnaires and allow the researcher to analyze the data without knowledge of who is who, the PC randomly assigned the numbers 1 through 7 to the students signed Informed Consent Form (Appendix Y). When completing the questionnaires, the PC asked the students not to place their name on the form. Instead, as they were turned in to the PC, he placed their corresponding number on the questionnaire and then filed it with the student’s consent form accordingly. For the purpose of this study, the following key will be utilized in discussing student responses:

S1 = student 1  
S2 = student 2  
S3 = student 3  
S4 = student 4  
S5 = student 5  
S6 = student 6  
S7 = student 7
The following table is offered to provide description of the eleven students originally enrolled in the linked course. Diversity existed in student gender and number of attempts in this course. However, there was great similarity in the number of preparatory classes needed and the fact the college success course was required and not chosen by the student purely as an elective.

Table 21: Student Descriptions

<table>
<thead>
<tr>
<th>Student ID</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Took Basic Skills Mathematics MAT 0002</th>
<th># of Attempts in Beginning Algebra MAT 0024C</th>
<th># of Prep Areas Required (Math, Reading, and/or English)</th>
<th>College Success Course (SLS 1510) Required</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Male</td>
<td>Caucasian</td>
<td>No</td>
<td>2</td>
<td>1 prep</td>
<td>No</td>
<td>Study and Interview Participant</td>
</tr>
<tr>
<td>S2</td>
<td>Female</td>
<td>African American</td>
<td>Yes</td>
<td>1</td>
<td>2 preps</td>
<td>Yes</td>
<td>Study and Interview Participant</td>
</tr>
<tr>
<td>S3</td>
<td>Female</td>
<td>African American</td>
<td>Yes</td>
<td>1</td>
<td>3 preps</td>
<td>Yes</td>
<td>Study and Interview Participant</td>
</tr>
<tr>
<td>S4</td>
<td>Female</td>
<td>African American</td>
<td>Yes</td>
<td>1</td>
<td>2 preps</td>
<td>Yes</td>
<td>Study Participant</td>
</tr>
<tr>
<td>S5</td>
<td>Male</td>
<td>African American</td>
<td>Yes</td>
<td>1</td>
<td>3 preps</td>
<td>Yes</td>
<td>Study Participant</td>
</tr>
<tr>
<td>S6</td>
<td>Male</td>
<td>Other</td>
<td>No</td>
<td>1</td>
<td>1 prep</td>
<td>No</td>
<td>Study Participant</td>
</tr>
<tr>
<td>S7</td>
<td>Male</td>
<td>African American</td>
<td>No</td>
<td>1</td>
<td>3 preps</td>
<td>Yes</td>
<td>Study Participant</td>
</tr>
<tr>
<td>S8</td>
<td>Female</td>
<td>Caucasian</td>
<td>Yes</td>
<td>2</td>
<td>1 prep</td>
<td>No</td>
<td>Withdrew from class</td>
</tr>
<tr>
<td>S9</td>
<td>Male</td>
<td>Other</td>
<td>Yes</td>
<td>2</td>
<td>3 preps</td>
<td>Yes</td>
<td>Non-study participant</td>
</tr>
<tr>
<td>S10</td>
<td>Female</td>
<td>Other</td>
<td>Yes</td>
<td>2</td>
<td>2 preps</td>
<td>Yes</td>
<td>Withdrew from class</td>
</tr>
<tr>
<td>S11</td>
<td>Female</td>
<td>African American</td>
<td>Yes</td>
<td>0</td>
<td>1 prep</td>
<td>No</td>
<td>Withdrew from class</td>
</tr>
</tbody>
</table>
The gender ratio was nicely distributed, whereas the ethnicity of the group was predominantly African American. This was not surprising, as the majority of students entering into developmental areas at NUCC are minority based. Most of the students had courses in more than one preparatory content area and had also taken the basic skills mathematics course at this same institution. Although four students were not required to take the college success course, they elected to register for the linked course mainly due to the timing of the mathematics course working into their schedules and having the college success course count as an elective towards their Associate’s degree.

Motivated Strategies for Learning Questionnaire Results

Twice during the semester, students in the college success course are required to take the Motivated Strategies for Learning Questionnaire (MSLQ). Students take this on-line approximately two weeks into the semester to provide pre-data and then again during the second to the last week of the semester for post-data. The reason for the pre- and post- data is to provide the college with statistical data for analysis to determine in which areas the college success curriculum is serving the students well, and which content areas need more focus. Students complete the questionnaire on-line and receive documentation of their scores. The meaning of these scores is then discussed during class time.

The MSLQ was created during the early 1980s by two professors at the University of Michigan, Bill McKeachie and Paul Pintrich. Their focus was to develop a tool for assessing students’ motivation and learning strategies. In their model, they believe that “a student’s motivation is directly linked to their ability to self-regulate their learning activities, that motivation and learning strategies are not static traits of the learner, but rather that motivation is dynamic and contextually bound and that learning strategies can be learned and brought under the control of the students” (Artino, 2005).

The instrument itself consists of 81, self-report items that are divided into two general categories and sub components as follows:

<table>
<thead>
<tr>
<th>Part 1: Motivation Scales</th>
<th>Part 2: Learning Strategies Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intrinsic Goal Orientation</td>
<td>1. Rehearsal</td>
</tr>
<tr>
<td>2. Extrinsic Goal Orientation</td>
<td>2. Elaboration</td>
</tr>
</tbody>
</table>
3. Task Value  
4. Control of Learning Beliefs  
5. Self-Efficacy for Learning & Performance  
6. Test Anxiety  
7. Effort Regulation  
8. Peer Learning  
9. Help Seeking

When completing this questionnaire, students rate themselves on a 7-point Likert scale, from 1 (not at all like me) to 7 (very true of me). The mean is used between the subscales to determine the final score in that category.

During the semester this study took place, only a pre-test was given to the linked course participants. An unrecoverable system error at the end of the semester prevented any post-data for this class. However, the pre-data are supplied to give additional insight into the makeup of these students at their starting point in terms of the above categories. It is recognized that any further analysis would be impossible due to the lack of post-data comparison.

Table 22: MSLQ Pre-Data

<table>
<thead>
<tr>
<th>Student Code</th>
<th>Mean Score</th>
<th>MOTIVATION</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>3.20</td>
</tr>
<tr>
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</tr>
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<tr>
<td>EXPB1</td>
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<td>5.00</td>
</tr>
<tr>
<td>TA1</td>
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<td>1.00</td>
</tr>
<tr>
<td>S1</td>
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</tr>
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<td>S2</td>
<td>3.50</td>
<td>4.50</td>
</tr>
<tr>
<td>S3</td>
<td>5.50</td>
<td>4.00</td>
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<tr>
<td>S4</td>
<td>5.50</td>
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<td>S5</td>
<td>6.25</td>
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<tr>
<td>S6</td>
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</tr>
<tr>
<td>S7</td>
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</table>
Table 22 – continued

<table>
<thead>
<tr>
<th>Mean Score</th>
<th>LEARNING STRATEGIES</th>
<th>High Score</th>
<th>Low Score</th>
</tr>
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<tbody>
<tr>
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<td></td>
<td></td>
<td>3.75</td>
<td>1.67</td>
</tr>
<tr>
<td>Student Code</td>
<td>REHEARS</td>
<td>ELAB</td>
<td>ORGAN</td>
</tr>
<tr>
<td>S1</td>
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<td>4.50</td>
<td>5.00</td>
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<tr>
<td>S2</td>
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<tr>
<td>S6</td>
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<td>1.67</td>
<td>1.75</td>
</tr>
<tr>
<td>S7</td>
<td>6.00</td>
<td>4.67</td>
<td>5.25</td>
</tr>
</tbody>
</table>

Source: www.portal.tcc.fl.edu (MSLQ)

Based on the above pre-test MSLQ scores for categories under motivation, test anxiety appears to be the lowest (not at all like me) mean score at 3.20 for the study participants and self-efficacy for learning and performance had the highest (very true of me) at 6.18. In the area of learning strategies, peer learning had the lowest (not at all like me) mean at 3.71 and time/study environmental management had the highest (very true of me) at 5.21. Based on these pre-scores, it was interesting to note how the students rated test anxiety as low, when usually this is high for students and that self-efficacy for learning and performance was the highest, when for developmental students in particular, this is usually low. In the area of learning strategies, it was not surprising to see peer learning as low. At this level of preparatory studies, students are usually either not comfortable with peer learning because they do not take the time to engage with other students and get to know them, or they have not had the experience of peer learning up to this point in their education. They tend to not embrace this approach. The time/study management having a high score is not surprising, as students usually tend to overestimate their ability to be proficient in this area. The fact that these students tested into preparatory classes...
reveals they may already have difficulties with their estimation of time and study management skills.

Due to the fact the post-test MSLQ was not captured, in-depth analysis of these scores is not possible and therefore not provided. This information is provided only as potential insight into the perceived starting point for these students in the areas of motivation and learning strategies.

Pre-Determined Policy for Administration of Questionnaires

Since a PC was required for the administration of questionnaires for this study, it was important to establish a policy for how these would be administered and what impact the scheduling of the questionnaires would have on the PC’s own workload and the students. Careful pre-planning was done prior to the semester to ensure the PC’s participation in this study would not have a negative impact on his classes or workload. As the researcher, I wanted to ensure there would not be any timing issues of when I wanted the questionnaires administered and when the PC would be available during the semester. Therefore, the two of us met prior to the start of the semester and selected days for the administration of the questionnaires that worked for both our schedules. We agreed the questionnaires would be given to the students at the end of the class period and that I would remove myself and my lesson materials from the classroom once the PC had arrived. We also agreed the questionnaires would only be given on the pre-determined days and that make-ups would not be permitted. We agreed students would not be given advance notice of when the questionnaires would be administered. As the researcher, I understood this might have a negative impact on the number of responses I received on any given day, due to my inability to control the attendance of my students; however, it was important to not allow my research activities to impose upon the PC’s own time schedule and workload. I also wanted to maintain the “element of surprise” in the administration of the questionnaires so students’ responses could not be premeditated.

Rationale for Format Choice

Responses to the initial and mid-semester student questionnaires are provided in the format of the question and answers by student ID. Although a table could have been provided,
this question / response format was selected purposefully to help with easy comparison of responses and quick recognition of common themes. Student answers were often brief and vague on these questionnaires. Another objective of this format is for readers to see the differences in student responses on the maturity level. In some cases, and by taking note of the student ID attached to the response, higher critical thinking levels (maturity level) appear to take form.

For the final interview questions and responses, a different format is provided. Bogdan & Biklen (2007, pp. 173-180) purposed eleven possible types of codes for the process of organizing material. Seven of these codes were utilized in categorizing the responses received by the study participants interviewed at the end of the semester. This change in format is not meant to confuse the reader, but rather to illustrate the significance of putting information into “chunks” (Rossman & Rallis, 1998, p. 171). In the researcher’s opinion, the initial and mid-semester questionnaires did not provide the amount of feedback or depth that would support as strong of a case for coding as did the final interview. Brief summary comments are provided at the end of each question.

**Responses to Initial Student Questionnaire**

This questionnaire was given at the beginning of the spring semester on January 16, 2008. Student responses to the Initial Student Questionnaire (Appendix V) were overall short and broad. But some responses proved to be quite insightful and allowed for themes to emerge. Examples of the comments received are provided below:

**Question 1:** What do you know about linked classes?

S1: I think it’s rather innovating. I like it but sometimes it gets a little tiresome.

S2: Nothing.

S3: They are connected to two classes you have to take both classes – you cannot take separately.

S4: They are provided now by [this school] to see if it’s better for the students.

S5: Nothing.

S6: They involve one instructor.
Students either did not know what a link was, or they knew the term, but not necessarily what it involved.

Question 2: Why did you sign up for a linked class?

S1: Because the teacher had good references and three times a week seems fair.
S2: Was the only class left.
S3: It was a requirement of prep classes.
S4: I didn’t know that I was enrolled in one until the first day of class.
S5: I didn’t know it was linked.
S6: To reduce the number of teacher I would encounter.
S7: Because it came as a package for my math course that needed to be taken.

Students were either not aware they were in a linked class, or unfamiliar with link concept. Students also picked the course for time / schedule convenience or because it was a requirement.

Question 3: Do you have any hesitations about being in a linked course? Please explain.

S1: Is there really a difference if they are taught by the same teacher?
S2: No hesitations.
S3: Time is the one concern and being with one instructor can be tiresome and if the class is boring it makes you not want to attend class.
S4: No, nothing really major.
S5: No, it’s pretty straight and easy.
S6: Only if they are far apart in time.
S7: No, because I see the same people and they are back to back classes.

The issue of time is brought up in this initial questionnaire. This continued to be a theme throughout the student’s comments and interviews.

Question 4: What are your expectations of this linked class of College Success and
Elementary Algebra?
S1: A better understanding due to more time with the same teacher.
S2: To help me become a better student.
S3: To meet my highest potential capable of meeting.
S4: To know things that I should. Maybe, being with the same teacher getting an extra one on one can be better.
S5: To pass it with hardly any problems.
S6: To receive the necessary skills I need to move on.
S7: To move to my next course with an outstanding GPA.

Students had the course expectations to learn new skills, become better students, and hopefully move into their next college level courses better prepared by taking this linked course.

Question 5: What are your expectations of the instructor in this linked class?

S1: More communication.
S2: Same as above (answer to previous question). Help me be a better student.
S3: To absorb all the info possible and get to know her personality and respect that.
S4: To provide me with various components I need to pass the two courses.
S5: She’s pretty cool.
S6: To keep my attention and help me get to the next level.
S7: To assist me in becoming a better learner.

Students expected the instructor of this course to assist them in becoming better students, improve communication between instructor and students, and to help them move into the next level of the educational process.

Question 6: What are your expectations of your classmates in this linked class?

S1: Better relationships with one another.
S2: Nothing. Don’t know anybody.
S3: To get as much out of this experience as possible.
S4: To become better math students.
S5: They seem okay.
S7: I don’t expect my classmates to do anything except what the teacher asks of us.

Students did not appear to have high expectations of their fellow classmates, which corresponds to their low mean score in peer learning on the pre-MSLQ.

Question 7: Do you feel that having the same instructor for these two classes will be a benefit or a limitation to your learning? Please explain your answer.
S1: Benefit, you get to know the teacher better.
S2: A benefit because you get used to their teaching style.
S3: Benefit – you can get use to instructor personality, get to know her on a more personal level and you can get more one on one time needed with help in problem areas.
S4: Yes, a benefit because you get to grow with the instructor.
S5: A benefit because we already know what she’s like and she has a feel for us.
S7: I believe it benefits because she already has a certain bond with the students.

Having the same instructor was defined as a benefit by the students for reasons such as: knowing her teaching style, a more personal level and one-on-one time, and the bond that could potentially form between students and instructor. It is interesting to note students defining this as a benefit so early in the semester before any true one-on-one time or bonding had a chance to occur.

Question 8: What advantages or disadvantages do you think there will be in having this linked course back-to-back with respect to time?
S1: It might get exhausting later on.
S2: Disadvantage – get tired of teacher.
   Advantage – you know how the teacher is.
S3: Disadvantages include loss of interest in subject and fatigue
S4: Disadvantages – they are very long and you may tend to fall asleep.
S5: We have the same teacher for each course and I think that’s good.
S7: As long as it is back to back and at a certain hour – that is good.

Fatigue and the time factor are the main disadvantages discussed by the students.

Question 9: What advantages or disadvantages do you think this linked course will have on you learning the material and being successful in your SLS 1510 – College Success class?
S1: Relate both topics together applying skills I learn in both.
S2: Nothing.
S3: Advantages include preparedness for further college courses, transferring and job success.
S4: Make me a better student.
S5: I think it will help us.
S7: No disadvantages, but it will help me understand where or what I want to do in life.

The responses to this question were rather general and broad. However, they favored an advantage to the linked course and the impact it would have on students learning the material and being successful in their college success course.

Question 10: What advantages or disadvantages do you think this linked course will have on you learning the material and being successful in your MAT0024C – Elementary Algebra class?
S1: More responsibility.
S2: I will be able to study my math more productively.
S3: Advantages – class preparedness, focus on success in MAT0024C, inspiration to make good grades.
S4: Not sure yet.
S5: I think it will make it easier to learn and be very helpful.
S7: It will help me be organized and get better understanding of what I have to do.

By the student’s responses, responsibility and organization appeared to be the advantages the linked course would have on students learning the material for their elementary algebra course. Interestingly, responsibility appears as a coined phrase with the mathematics course, but not with the college success course. Perhaps students have more insight than we give them credit for and as their statements seem to suggest that they realize their level of responsible behavior in mathematics does not always mimic their level of responsible behavior in other content areas.

Responses to the Mid-Semester Student Questionnaire

The Mid-Semester Student Question (Appendix W) was administered on February 22, 2008. Not all students remained for the full two class periods on this particular day. The college was having a student/faculty event (which included free food, music and giveaways) and this event likely contributed to many of the students not returning from the break between the two classes. The following responses are examples of the student feedback and brief summaries are provided after each question.

Question 1: At this midpoint in the semester, how are your expectations of the linked course being met?

S1: Actually, it is quite surprising that the course being linked makes me meet my goals equally making both my grades high and similar.

S2: They are being met very well. [the instructor] always tries to combine the stuff we learn in SLS with our math class so that we do better on tests and notes.

S3: I feel that I have a dedicated teacher who will help me with any problems I have as long as I communicate with her, she will help do what’s best, and that’s the biggest of my expectations and its being met.

S7: My expectations are being met very well by the instructor.
Student’s expectations of the linked course are being met and connections are being made between instructor and student and the positive impact that the college skills course can have on student performance in the mathematics course.

Question 2: At this midpoint in the semester, how are your expectations of this linked course NOT being met?

S1: Sometimes the material loads up together and you have similar due dates.
S2: They are being met. It’s all ok.
S3: No problems. My expectations are being met and my instructor tries her best to make this linked course as painless as possible.
S7: N/A

In general, no problems are being indicated. However, student’s frustration with material overload for the two classes is starting to emerge. Students do not realize that course material would be the same regardless if the classes were linked or not. But, the fact they fall back-to-back time-wise probably makes it seem as if double the work is required.

Question 3: At this midpoint in the semester, what are the difficulties of having this linked course of SLS 1510 and MAT 0024C?

S1: None.
S2: Having to stay in one class for a long time.
S3: Being in class about 3 hours is tiresome, even though you have a break after the first period, the last period sometimes seems to kill you.
S7: I don’t have any difficulties because my teacher makes the classes comfortable.

Fatigue is a common theme with the linked course. The three hour time slot proves challenging for students to maintain focus and energy.
Question 4: At this midpoint in the semester, what are the benefits of having this linked course of SLS 1510 and MAT 0024C?

S1: We can use MAT0024C to apply all the skills we learn in SLS1510. It is quite effective having the classes being back to back.

S2: You know what to expect from the teacher. You don’t have to walk all over campus to get to class.

S3: You can apply what you learn from SLS to the math course to help strengthen your skills and work study habits.

S7: Well, I believe it has to do with the way [the instructor] handles the class. She has more time with us and she connects with us students to the best of her ability, which makes having linked courses easier.

The connection between the college skills class and the mathematics class is being made. Students recognize that tools, strategies and techniques discussed in the skills class can be implemented into their mathematics course.

Question 5: What changes do you think need to be made at this midpoint in the semester regarding this linked course?

S1: Perhaps having both periods last the same amount of time.

S2: Nothing.

S3: None. I don’t believe at this point any changes will be beneficial. It’s best to leave as is.

S7: I wouldn’t make any changes.

For most students, no changes would be made at this point in the semester. However, the theme of time is brought up again.

Question 6: At this midpoint in the semester, have you performed better in one class of the linked courses (SLS 1510 and MAT 0024C) than the other? If so, which one, and why?
S1: Yes, I’m performing better in math but the difference is small. I think it is because the type of assignments and the attendance hurts most in SLS.

S2: No.

S3: No, about the same. I believe because of the same instructor and she sometimes reminds us to apply what we’ve learned in SLS to MAT0024C.

S7: No, about the same in both.

Level of performance in the different classes is deemed equivalent by most students. However, it is interesting to note how one student has recognized that lack of attendance in the college skills course can have a negative impact. This is interesting to the researcher, as lack of attendance in a mathematics course can have similar consequences, but the student perhaps does not recognize this factor.

Question 7: At this midpoint in the semester, are your grades in both classes (SLS 1510 and MAT0024C) of the linked course what you would like them to be? Please explain your answer.

S1: Yes, I couldn’t be happier. Both grades are pretty high. I think the reason to this is you can’t really perform poorly or great in just one course. You perform equally regarding the professor.

S2: Yes, they are both either A’s or high B’s.

S3: Yes, they are both A’s.

S7: Yes, because I have a good teacher and I’m applying what I learned in one to the other.

All students are content with their current grade standings in both courses.

Question 8: During class registration and the advising period, was this linked course option explained to you for your understanding?

S1: At first it was confusing, but it made some kind of sense. I think you should keep it the way it is, with having the same instructor in both linked classes.
S2: No, it wasn’t explained to me.
S3: Yes.
S7: No, but it’s still good that I chose them.

Communication during the advising and registration periods regarding linked course needs to be improved. Students are not getting a clear explanation of what linked courses involve.

Question 9: Has this linked course of SLS 1510 and MAT 0024C enabled you to develop better relationships and communication skills with your classmates? Please explain your answer.
S1: Definitely, the activities learned to break the ice in SLS helps us work collaboratively in MAT.
S2: I really don’t know. Maybe.
S3: Yes, I almost always have been very quite in my other classes, but now I’m a little more talkative and sociable.
S7: Yes, because we are around each other longer than normal.

In general, students feel the linked course has improved their relationship and communication skills with other classmates. The amount of time spent with each other seems to be the driving factor in this improvement.

Question 10: Has the linked course of SLS 1510 and MAT 0024C enabled you to develop better relationship and communication skills with your instructor? Please explain your answer.
S1: Yes, the time we have for both courses is enough to create a well established relationship.
S2: Yes. I know her expectations and she knows me.
S3: Yes, out of respect for her, I know this can’t be an easy task for her. It’s challenging to both students and teacher, so I’m able to relate to what she’s going through and respect and admire her drive throughout the course, because we both have busy lives.
S7: Yes, because we interact as a group and individually with her.
The extended time together enhances both the student-student relationship and the instructor-student relationship. Students appreciate knowing the instructor’s expectations upfront.

Responses to the Concluding Student Interview

At the conclusion of the linked course, three students were interviewed during the week of April 22-25, 2008. These interviews were conducted by the researcher in a formal office setting and tape recorded. Interviewed students were reminded of their rights and all privacy issues regarding information they provided during the interview. Students were also given the opportunity to talk “off the record” if desired. Final grades for both classes had been determined prior to these interviews; therefore, students were reminded that participating in the interview would have no impact on their class performance and final grades in either class. Great effort was made by the researcher to ensure students felt comfortable responding to the interview questions, having their responses recorded, and giving them the opportunity to reject a question, or ask additional questions, during the interview process. The following seventeen questions were asked during the interview:

Question 1: What would you define as the benefits of this linked course of SLS 1510 and MAT 0024C?

Question 2: What would you define as the limitations of this linked course of SLS 1510 and MAT 0024C?

Question 3: Were there any advantages in having the same classmates for these two classes?

Question 4: Were there any disadvantages in having the same classmates for these two classes?

Question 5: Were there any advantages in having the same instructor for these two classes?

Question 6: Were there any disadvantages in having the same instructor for these two classes?
Question 7: Do you think having a linked course for SLS 1510 and MAT 0024C made a difference in your performance in the class and final grade?

Question 8: With respect to the order in which the classes were taken during the day, do you think that having SLS 1510 first and MAT 0024C second was an advantage or a disadvantage?

Question 9: With respect to the timing of the classes, was it an advantage or a disadvantage to have classes meet Monday, Wednesday and Friday with SLS 1510 from 11:15am -12:05pm and MAT 0024C from 12:25pm – 1:50pm?

Question 10: Which aspects, if any, of the linked course helped you with:

- Math skills
- Study skills
- Time management
- Stress management
- Locus of control
- Knowledge and utilization of resources
- Development of relationships and communication with other classmates
- Development of a relationship and communication with the instructor

Question 11: What changes would you make in a linked course of SLS 1510 and MAT 0024C that would better meet the needs of the students?

Questions 12: Would you recommend a linked class of SLS 1510 and MAT 0024C to your peers (i.e. friends, classmates, etc.)

Question 13: Would you recommend any combination of a linked class (i.e. History, Science, and English) to your peers (i.e. friends, classmates, etc.)?
Question 14: This was a linked course of SLS 1510 and MAT 0024C, what other linked courses do you think would be beneficial to students?

Questions 15: Do you think establishing relationships and communication with your fellow classmates is important to your success in college?

Question 16: Do you think establishing a relationship and communication with the instructor is important to your success in college?

Question 17: What are your final thoughts on this experience of a linked course?

Coding of Interview Responses

As discussed earlier in this section, responses to these final interview questions were placed into seven out of eleven codes, pre-established by Bogdan & Biklen (2007, pp. 173-180). These codes include the categories: Setting and Context codes, Definition of the Situation codes, Perspectives Held by Subjects, Subjects’ Ways of Thinking about People and Objects, Event codes, Strategy codes, and Relationship and Social Structure codes. Duplication of comments can be seen, as many of the student’s responses fell under more than one code. Only three students were interviewed and responses are separated by their Id’s, and provided in their original verbiage and format. Summaries are provided at the end of each coding section.

Setting and Context Codes

S1 sometimes the classes are too long…
S1 you take a break…but then you have to go back to class..it can be frustrating sometimes…
S1 It could be…instead of being a three-day class, it could be the whole week but shorter classes..they could be linked…and back-to-back, but shorter…maybe shorter time with no break between the two…
the time of class…this is at noon…some people are going to be hungry, and they’re going to want to go eat…
advantage having same people in class…depends on the personalities..like if I get to know someone very well…I’ll be confident and everything…but if like the class were a lot larger…it would be a lot harder…
it would be a disadvantage to have too many people in the class…at least for me…
in a smaller class…you get more noticed…that’s good…you get more motivation
the linked course made my performance better…you have to apply yourself equally in both classes…can’t be lazy in one…she’ll [instructor] notice…
I liked the order of the classes…SLS first, then math…SLS got me motivated…it’s more of a relationship kind of class…but math, it’s more of your work a lot so if you have the math first, you’ll get tired and won’t participate as much in the SLS class…
link is good if you like the teacher…will motivate you more…but if you don’t like the teacher…I wouldn’t recommend it…you’re not going to get good grades in both classes…
it [link class] helps you like strategies…
in large classes, you don’t really have like the one-on-one relationship with a teacher…no time…so if you have a problem, and you go talk to them, they might not really care that much..but in a smaller class it’s different…
in a large class…if he [instructor] asks me questions and stuff, and you don’t do good,…and in a class of a few hundred…you never get noticed no matter what…
in a small class…you’ll get noticed…and you’ll feel bad if you do bad…you’ll feel uncomfortable in front of them [classmates]…won’t want to let them down…
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having the same teacher was a benefit…because you have to learn different teaching styles that different teachers have…didn’t have to in this class…
good having it in same classroom …
if they [linked classes] weren’t so close together, I wouldn’t even want to come back to class…having them back to back was good…
was a little hard since over lunch period…I got hungry…
It was an advantage having the class so small…no disadvantages…at least not for me.
S2 Advantage [small class] because I knew who I would see that day…and we liked each other and felt comfortable with each other…because we would support each other on stuff we didn’t understand in math…or help each other out…

S2 A disadvantage to the link was maybe having a two-hour class [MAT0024C] after the 50 minute [SLS 1510] class…I still liked it back to back…it was just long

Note: Students interviewed knew the time of the classes would not change regardless if they were linked or not linked. SLS would still be 50 minutes on a 3 day a week class and the MAT would still be a 90-minute class. The back-to-back set up made it seem longer to them and more difficult to handle, even though they preferred the back-to-back classes.

S2 I liked having the SLS first and then the math…it was good to have the easy part first.
S2 getting the organization information in the SLS class first helped me use it in math class…I needed help getting organized in math…it’s always confusing for me…
S2 I think I need the same instructor…I do better.
S2 I would drop the class if I got in a link and didn’t like the instructor.
S2 Better to have a small class because they [instructor] are going to remember you…they might help you out later on in the future…big class…they might not even know you…

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S3 The good things [with links] are you have one instructor, you can pretty much learn her ways and her style of teaching…you get adjusted to that…you don’t have to worry about two different instructors and trying to adjust to their ways. Also, you learn things in SLS you can take with you to the math side, so I think that is the two biggest benefits.

S3 I think finding out your learning style [in SLS] is the best thing to take to the math class. Trying to figure out if you learn best, like if you are visual, auditory or hands-on learner, that was one of the biggest things, because if you don’t really know how you learn, and then you’re kind of like all over the place because you don’t know.

S3 You can improve your grades on the math style once you figure out your style…your best style of learning.

S3 The time management and the study skills helped that I learned in SLS…helped me be a better math student.
S3 The locus control is actually like a realization technique to make you realize okay, our internal locus control person will pretty much run things themselves and not make and an excuse…the external locus person will make all those excuses…so it kind of make you evaluate yourself…and then you figure out from that why I’m doing the things I do, not going to see all the things that I could do…it makes you think about your actions when you look at it like that.

S3 It helped to find out what resources are available…to help us as a student…I needed that in all my classes…so good to learn in class [SLS].

S3 The small class setting helped [to build relationships with classmates]…or maybe it was just the class itself…I don’t know, but I did open up.

S3 I don’t see any disadvantages. I would say we’ll get tired of looking at each other, but I don’t think that was true because we pretty much laugh and talk with each other, so I think we actually had a good time. We were like….a family….

S3 The only disadvantage I can remember at the beginning of the link class…it was very tiresome at the beginning…those hours…it wasn’t really any different than two classes…it just seemed longer…but it got better…at first you notice the time, but then you noticed it started to go faster after coming for so many weeks, it didn’t seem as bad…

S3 I think it would be better to have the classes and hour apart, but still on the same day. The students could go eat…or socialize…during that hour break. Just get outside the classroom.

S3 A link with an hour break…that’s just like going to another class, but it’s linked, but then it’s not linked…you don’t feel like it’s linked because now you got this hour period where if I need to run to the library and do something, I can do that…If I need to go to the student union to eat and talk to some friends, I can do that because I know I have an hour between the two classes.

S3 But if that is your only classes that day…it could be bad…you’ve got to stay around for that second class and you might leave after the break…that might be the only disadvantage.
S3 But if you are that type of person that linger, you are going to stay for your classes…but if you’re one of those in and out, it might bother you to have to wait after the break for the class…depends what type you are…

S3 I think the order [of the classes: SLS then MAT] was good…my brain doesn’t function well with math in the morning, so having the SLS first…it was the easier course…that was good. It kind of helped warm you up and got you ready for the hard course, you know.

S3 I would definitely say that was the best direction…best route they could’ve took when they did the SLS first thing and then the math.

S3 Having the three day was okay ….two days, Tuesday and then Thursday would be good….but it would be longer time….so that’s not good. It would benefit you more if you would come regularly…more regularly like on Monday, Wednesday, Friday.

**Summary for Setting and Context Codes**

Similar comments prevailed in the following areas: time of class, order of classes, class size, instructor teaching style, and relationship development. Timing was a major discussion point with the interviewed students. They disliked having to be in class for so long at a time, but they all agreed the Mon / Wed / Fri schedule was still better than a Tues / Thurs schedule. They recognized that class would be longer if held on a two day a week setup versus the three day a week setup. All three wanted the break between classes to be longer than the given 15-minutes. There was a strong desire for consistency with respect to the length of time of the two classes. However, this is not possible due to the college success being a 3 hr course and the mathematics is a 5 hr course.

Students liked the order of the classes, with college success being first and mathematics second. The length of time of the linked classes together was discussed by all three students. The discussion of needing a break between classes to allow students to go eat, socialize and relax was common to all three students. Having the same teacher and being able to learn that instructor’s teaching style and requirements appeared to be a positive factor. The development of relationships between students and between the instructor and the students was a common response. Students also appreciated the smaller class size and made interesting comments regarding their perception that a larger class size does not allow the development of the one-on-
one relationship with the instructor and often prohibits instructors from remembering students or giving help to them. One student also commented that a smaller class size helps to promote motivation, as the instructor is more likely to notice a student’s lack of effort in a smaller class. This comment, and the former one regarding instructors not remembering students or offering help to those in a larger class, certainly made the researcher contemplate these charges.

**Definition of the Situation Codes**

S2  I didn’t even know it was linked. Somebody just told me to take your class for math…I looked you up…when I registered for the math class…the other one just popped up…it made me register for the second one too.

Note: Students frequently use the ratemyprofessor.com or pick-a-prof websites to try and find instructors that have good reviews from their peers. Although these websites are not monitored and the comments need to be taken with a grain of salt, student tend to rely on them when picking instructors, particularly for difficult classes such as mathematics. This is what S2 is referring to when stating “I looked you up.”

S3  I thought it was mandatory to take the link. I was told you had to take it. Then they explained that it had to be done by certain number of hours [within students’ first 12 hours SLS must be taken if they have 2 or more prep courses] so I had to decide if I wanted the same instructor. So I went with the decision of one. I felt like that since I was in this condition [student was expecting] that it was probably better for me to have the one instructor…is something comes up…I would have to deal with only one instructor and not two…

S3  Deciding on if I was going to take one instructor….I thought just going with one would be best…so I looked you up, and I read up on you.

**Summary of Definition of the Situation Codes**

Marketing of linked courses on the NUCC campus is weak. There is no formal process by which linked courses are marketed to students, nor is training provided to advisors on the linked concept and how to inform students of this option. It is not surprising to hear the common theme that students did not know the courses were linked or what a linked course involved. Linked
courses are not mandatory, but students are often either mislead by uninformed advisors or incorrectly interpret the registration requirements for a linked course. The researcher suggests that by improving communication between faculty, staff and students, and revamping the promotion and information set forth of linked courses during registration, much of the confusion could be eliminated.

**Perspectives Held by Subjects**

S1  I find it easier than doing the linked courses…with separate teachers
S1  If you have the same teacher for the same class, it’s a lot better
S1  a good thing about having like the same teacher…if you don’t do your math homework, she’ll tell you you’re not learning anything in SLS
S1  I always had a good locus of control…I thought…now I know what it means…
S1  in a smaller class…you get more noticed…that’s good…you get more motivation…like if there’s 30 people, and you do bad, someone else is going to do bad so you won’t care as much……in a smaller class…the teacher will notice you doing bad…
S1  having SLS first is good…it’s more of a relationship kind of class…
S1  if you don’t like the teacher…I wouldn’t recommend it [link]…you’re not going to get good grades in both classes…
S1  it [link class] helps you like strategies…
S1  in large classes, you don’t really have like the one-on-one relationship with a teacher…no time…so if you have a problem, and you go talk to them, they might not really care that much..but in a smaller class it’s different…
S1  in a large class…if he [instructor] asks me questions and stuff, and you don’t do good,… and in a class of a few hundred…you never get noticed no matter what…
S1  It’s been definitely an experience…for me, it’s been great...like I don’t think you should change anything…it was …phenomenal…great…

Note: As the researcher, I was particularly thrilled when this student used the word “phenomenal” in their response. Perhaps the phenomenon of this study had truly taken place, at least for one student.
S2 makes it easier if you have the same teacher…only have to learn one style…I can know how they like the work…how I should do my work
S2 I wouldn’t have performed as well if I didn’t have the same teacher and classmates…it was a good thing for me…
S2 I liked having the SLS first and then the math…it was good to have the easy part first.
S2 I wasn’t an organized person before…the SLS helped me understand organization…then I used it in the math class…it helped a lot.
S2 I think I need the same instructor…I do better…
S2 Better to have a small class because they [instructor] are going to remember you…they might help you out later on in the future…big class…they might not even know you…
S2 I did well because you were a good teacher.
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S3 When I have this fear of a class, I try to face that fear and come out of it with an A…math is a fear for me…I was nervous going into it this time…but I came out with an A….I must have faced that fear...
S3 I think that’s like the biggest complaint for college students is the instructors that they get don’t care. That’s the major complaint I hear a lot. Matter of fact, it gets to the point where if you tell a student oh, I got to take this subject…their friends will say…oh…let me tell you who not to take, let me tell you who to take and who not to take, you know. And everybody’s trying to look out for each other.
S3 When we talk [friends] we’ll say you don’t need to take that instructor…not that person…they don’t care about you…so you definitely want someone that is going to care about you…you don’t want to be in a situation where if something may come up…and then your instructor that you have don’t actually care about you to even care about what happened…they won’t even listen.
S3 The college success class was really informative because, you know, you could see how that stuff made sense in your life…how you might use it. But we don’t always think that about math…we always think that math is…we’re not going to use it, because we actually do use it, at least the basic math…but at first it’s a little boring because we don’t see why we need it. But then we got into the other stuff [SLS] that I didn’t know and that’s when it got interesting. I could tell I was learning something about my
organization and time management stuff [skills]...and then you had us apply it to our math...and it started to make sense. I was playing with the numbers...and it was okay...these different letters of the alphabet doing different things with them...I was like, okay, I can do this...it was crazy crazy in high school with all these numbers and stuff...but now it’s not so bad...it’s not boring...the other class [SLS] made me see it [math] as kind of like a challenge for me to get to know it...I need to further my education so...math is okay now.

Summary of Perspectives Held by Subjects

Again, having the same instructor emerged as a positive common theme. This required students to adapt to only one teaching style, which they deemed beneficial. The interesting comment from this section regards that of students perceptions that instructor’s do not care, that this is a major complaint among their classmates. Fortunately, in this linked course, they felt the opposite was true and that the instructor demonstrated, in their eyes, a sense of care and concern. The content and organization of the skills course, along with the ability to relate the college success course topics to their lives, appears to have had a positive influence on the student’s abilities to apply them in the mathematics course. It was encouraging to hear “math is okay now,” as opposed to the negative comments mathematics teachers so often hear.

Subjects’ Ways of Thinking about People and Objects

S1 you were good at it [instructor teaching a link]...you wouldn’t go like beyond the line...we had good relationship...you knew when we weren’t doing something right...you’d make us work on that...but you weren’t too rude or anything...

S2 I don’t think you were too easy as a teacher...you set the rules...but they were fair...you were not too tough...

S2 [given opportunity to give instructor advice]...No, I like you.

S3 If it wasn’t you teaching it...someone not quite as friendly and caring, it wouldn’t work out then, because you’re going to hate coming to that class.
I can’t make excuses the reason why everybody else probably fell…fell out of this class because I didn’t think it was bad…I think those students had other issues pulling them other different ways…maybe they didn’t like the link class period.

But definitely I think the instructor is like the core of the class, and if you’re not satisfied with your instructor, and you’re not happy with them, no way that a link class is going to be good for you. If you had a bad instructor for a link…I would definitely suggest withdraw.

Instructors are important for the aspect of teaching. I mean, I wish I had the passion to teach. I don’t. I have it in me to want to, but I don’t think I have the passion. You’ve got to have a passion to want to do it…to help people in that way.

Teacher is important because we [students] are paying money to come to you to get what we can from you…so you’re [teachers] important. If I’m not learning anything from you [teachers in general], then I wasted my money…I’m not taking anything away with me…I’m not learning anything from you.

The quality I say you have is that you’re actually interested in our ethnics. The things that we grew up with….and our stories and stuff, so it makes a difference when somebody just don’t really even care….then you were willing to learn, you know, some of the things that we do…like our talk, the way we talk sometimes…our dances and the music that we listen to…you know, it goes back to respect.

So you know, as we learn from you, you learn from us.

You don’t tolerate a lot…and I think they [students] know it. We know it’s certain things you like…the rules of the class…like in the past when you had to stay your ground it’s because you had to keep to those rules…you really wanted our respect. And you needed that respect, and you meant that your students would respect you…it didn’t matter our age or where we came from…it’s that you are the instructor, and you’re here to teach us something, and you want to be respected. You have certain rules you want abide, and if you’re going to be in this class, you’re going to respect my rules and my wishes, or you can leave …..and the ones that didn’t want to respect that….they left…..but it wasn’t right.. they didn’t understand that that is how it is in the world…you wanted respect…..but you gave it back to us… that was a good lesson….but some of them [students] didn’t get it….they didn’t stick around long enough…
Summary of Subjects’ Way of Thinking about People and Objects

This section mostly involved student’s comments regarding their view of the instructor. Students understood the rules set and enforced in the classroom and appreciated knowing what was going to be tolerated and what was not. They appreciated being encouraged to work hard and did not take firmness as a sign of rudeness. This is certainly something that many teachers struggle with in finding the right balance. The most intriguing comments in this section are those involving the importance of teachers and the effect they have on student learning. Particularly, the comment, the “teacher is important because we are paying money to come to you to get what we can from you….if I’m not learning anything from you, then I wasted my money.” To think that students perceive money being wasted if they are not learning something from our classrooms gives new hope that students actually do care about their education and that attending college is not just a means to socialize or collect financial aid. Perhaps the connection is being made that education is important, time is money, and that teachers and students both need to work on their connection in the classroom, if educational rewards are to be reaped by all.

Event Codes

S1 I would recommend a link class to my friends…it’s a good choice…it’s better for your GPA…you are more motivated to study…
S1 I would do a link again…I would like it better with the same instructor…
S1 maybe have a link with a speech class…
S1 It’s been definitely an experience…for me, it’s been great...like I don’t think you should change anything…it was …phenomenal…great…

S2 I think I need the same instructor…I do better…I liked this link
S2 I would drop the class if I got in a link and didn’t like the instructor.

S3 I think the link made a difference in performance because we were all there, and it’s almost kind of like a family. I know I wouldn’t have got that if I wouldn’t have had like two different instructors because of my past history with different instructors.
S3 I would tell them [friends] to go ahead and do it [take a link course]. I would just let them know about the time...that they will feel like they are there for a long time at first, but that it will get better. After you do it for a while, it won’t be so bad...time will go quicker.

S3 I think it [SLS] should be linked with not just the prep courses but some of the other courses too...I think a good idea would be like students that’s fixing to graduate, and get out there into the job market...have their other classes link with the college success one...they’d get tips on the job...interviews...stuff like that.

S3 You could say, you’re here, and this is going to be kind of like and exit class you know to get them ready for the world. We want to make sure you’re ready, so we’ve got this one last thing that we want to teach you...that’s going to help you.

S3 If you think about it, if you take it [SLS] real early, say coming into college and you take it with your prep class...by the time you get through taking all those other courses, you may have forgotten stuff....need a refresher...some of the things you’ll take with you forever, but some of them you need again...this [SLS] is like a refresher course for them...an exit course.

S3 I think about twenty students would be good in a link class.

S3 It was somewhat of a disadvantage not having lots of people in the class...but advantage at the same time. At the beginning you told us we were going to be able to learn a lot from each other...but we didn’t have very many later on in the class...I think it started to discourage the ones that wanted to be there...but then it was like...what I call rubbing off on the other people that had the potential...to stay in the class and do good that kind of started making everybody feel good about staying with it...not giving up...we could still learn from each other...

Summary for Event Codes

All students interviewed agreed they had a positive experience in the linked course. They would recommend it to their peers, providing that the instructor was the same for both classes, and that they “liked” the instructor. It was encouraging to hear one of the students state “the link made a difference in performance...it’s almost like a family.” Based on the researcher’s experiences, many of the students in developmental studies do come from broken or distant
families, where support and the “family” feeling is not strong. A particularly interesting comment in this section was the statement that the small class size potentially started out as a disadvantage in the students’ eyes, but later changed to an advantage. The students’ comment on how the instructor stated that learning from each other would be part of the journey that semester, and that the number of students in the class would foster that learning, exemplified motivation and anticipation from that student. However, with the diminished class size, S3 saw this as a discouraging factor at first, until the “rubbing off on the other people” took place and the realization that learning from each other was still possible. As an instructor, this comment was insightful and encouraging. Insightful in regards to knowing that some students actually do pay attention to what is discussed at the beginning of the semester and the atmosphere for learning they are trying to promote in the classroom, and also encouraging to know that students will create their own atmosphere for learning if necessary.

Strategy Codes

S1 I think there is a connection with the time management stuff (for SLS and MAT link)
S1 you learn how to manage your classes and your math classes especially with other classes…they take a lot of time….all that homework ...
S1 the teacher makes you apply stuff you learn in the SLS class…to the math class…she knows if you aren’t applying it…
S1 we can help each other out in either class…if someone’s good in math, but not SLS…or the other way…we can help each other out…

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S2 Advantage [small class] because I knew who I would see that day…and we liked each other and felt comfortable with each other…because we would support each other on stuff we didn’t understand in math…or help each other out…

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S3 I think finding out your learning style [in SLS] is the best thing to take to the math class. Trying to figure out if you learn best, like if you are visual, auditory or hands-on learner, that was one of the biggest things, because if you don’t really know how you learn, and then you’re kind of like all over the place because you don’t know.
S3 You can improve your grades on the math style once you figure out your style…your best style of learning.

S3 Basically, like when we get our math grades back…our math test back and we’ll look at it…we go over the problems and look at what area I made the mistake in…look for I didn’t do this or I didn’t do that…I don’t blame it on anyone…I don’t say Ms. so and so didn’t show me that…instead I’ll say I forgot to do this or I see where I made my error…so that’s when your internal locus of control comes in…when you realize the mistakes you have done and then you know, you try to correct them…you work out the problem and try to become better so you won’t make the mistake again.

Note: This was a great example of the student using the information obtain in the college success course on Internal Locus of Control and applying it in the mathematics course.

Summary for Strategy Codes

The connection between the college success skills and the mathematics class was apparent in the responses of all three interviewed students. S1 related time management skills to completing homework for the mathematics class and noted the instructor would look to see if skills learned in the college success were being applied in the other. Both S1 and S2 commented on how supporting each other became important, particularly in the mathematics class on topics that were difficult to understand. Determining ones learning style and locus of control was important to S3, as was the connection made between these assessments and those in a mathematics class. It was encouraging to see connections being made between student’s efforts and motivation to their performance on mathematical assessments. Determining ones locus of control as internal or external, and being able to relate that to ones performance on mathematical assessments, are perhaps, or should be, two of the most important goals for mathematical educators.

Relationship and Social Structure Codes

S1 getting to know the teacher – you spend more time together - especially since it’s back-to-back

S1 we do more talking…you’ve got a better relationships on one-to-one with the teacher
The link has advantages…you get to know the people better, a lot better…so like you can like become friends with them in math and then have friends in SLS too…they go together…

we can help each other out in either class…if someone’s good in math, but not SLS…or the other way…we can help each other out…

you get to know a lot more people…

establishing relationships with your classmates and your instructors are important…like the better acquaintance you have with them, you’re going to feel more comfortable…

in a small class…you’ll get noticed…and you’ll feel bad if you do bad…you’ll feel uncomfortable in front of them [classmates]…won’t want to let them down…

Depends on who is in the class [whether connecting to other students or not]…sometimes I do and sometimes I don’t…but this class…I did with a few people…it was good…

Advantage [small class] because I knew who I would see that day…and we liked each other and felt comfortable with each other…because we would support each other on stuff we didn’t understand in math…or help each other out…

I wouldn’t change anything…I like the classes…I liked you…you tried to explain everything easy to us…even when you were mad at us for not doing our homework…you explained why that was bad…but you were nice about it…sometimes teachers aren’t nice about things…

It’s important to have good classmates…good relationship…sometimes if I am having trouble in the class, then I could ask someone for help…normally I stick to myself and don’t ask…but I did in this class…made friends…we helped each other out…

I don’t think you were too easy as a teacher…I set the rules…but they were fair…you were not too tough…

Definitely there was a benefit with building relationships with classmates…I opened up to one classmate in particular…I don’t normally do that…last semester I didn’t at all in any of my classes…didn’t open up and talk to anybody…this semester was different…I actually, to be honest with you, I talked more to actually everybody in my class than I ever did.
I opened up to the teacher…I told you [the instructor] my family stories. So that’s a plus right there. I don’t do that with my instructors, because some…the way some instructors come off sometimes, it’s not always positive. You know, you got some instructors that you kind of feel like they really don’t care anything about you, but you know, it’s different with you. You know, you showed from the beginning that you cared…I said wow, she actually cares about her students. Well, since you showed that from the beginning, then I thought okay, I can work with her…I can work with her because it seems like she want to work with me, you know?

You [the instructor] kept trying…you kept telling those jokes….they were bad, but you kept trying just to make us laugh when it got hard…the math got hard…you would make a joke…people [students in the class] respected that you tried hard…it showed …like you say, there’s confidentiality that you have…you told us to be confident too…

There was a bond there [instructor / student] …it’s a bond.

Good to have the same classmates….made it constant…seeing the same people…And then you kind of like build a trust in each other’s work, you know, because I noticed that too in the class. Sometimes this wasn’t good….like if the one student answered all the time and the others just let them answer, they trusted they would be right so they didn’t try…they would say I’m going with her [going with that students answer and not try on their own] -

If you are going to be in a class with somebody [an instructor] that long, it needs to be somebody you definitely get along with…and that their teaching styles, you can benefit from that.

When we talk [friends] we’ll say you don’t need to take that instructor…not that person…they don’t care about you…so you definitely want someone that is going to care about you…you don’t want to be in a situation where if something may come up…and then your instructor that you have don’t actually care about you to even care about what happened…they won’t even listen.

You can bond with the same classmates…that’s a good thing…the faster you get to bonding, the time goes by better.
Summary for Relationship and Social Structure Codes

Common themes in this category were building relationships with classmates; establishing a bond with the instructor; and the feeling of comfort in the social, classroom setting. It was interesting to note how S1 felt that in a small class size, and when relationships are established, one would feel bad if they performed poorly as if they “let them down.” S2 concurred by stating that feeling comfortable with each other was important and that support was provided for those having difficulty in a subject area, particularly mathematics. Consistency, confidentiality and confidence building was important to S3. The building of trust in each other’s work became both a positive and a negative. Positive impact is identified as knowing that one of their peers would probably have the correct answer and used theirs as a guide, but a negative aspect is reflected in the idea of relying too much on that person for the answers and not trying to solve the problem on their own. Bonding was important to all three students.

Assertions Generated from the Study

Fred Erickson (1985) believes in the value of reflection, assumptions and assertions to promote research methods of qualitative, case study, interpretive and phenomenological. He argues that “detailed scrutiny of the routines of everyday life in teaching, and such deliberate reflection on its ends and means, are a route to the improvement of practice…” (Erickson, p. 5). Certainly goals of any research study are to provide additional data and analysis to support new lenses by which other researchers, teachers, and administrators can view educational research and potential teaching / learning environments. Erickson (1985, p. 10) states that in order for interpretive research on classroom teaching to play a significant role in educational research, it needs to address the following three concerns: (a) the nature of classrooms as socially and culturally organized environments for learning, (b) the nature of teaching as one, but only one, aspect of the reflexive learning environment, and (c) the nature (and content) of the meaning-perspectives of teacher and learner as intrinsic to the educational process.

Goals of this study were to address what types of learning communities develop when linking a preparatory mathematics class with a college skills course, and what the benefits and limitations are, as defined by both instructor and students, when participating in this linked course environment. In order to support these goals, the collection of quantitative and qualitative data was performed. Once data collection was completed, the researcher’s objective was to sift
through the various types of information, generate assertions, and then support these assertions through data analysis. This supports Erickson’s (1985) approach to fieldwork research.

One basic task of data analysis is to generate these assertions, largely through induction. This is done by searching the data corpus – reviewing the full set of field notes, interview notes or audiotapes, site documents, and audiovisual recordings. Another basic task is to establish an evidentiary warrant for the assertions one wishes to make. This is done by reviewing the data corpus repeatedly to test the validity of the assertions that were generated, seeking disconfirming evidence as well as confirming evidence (p. 96).

As the objective is to make key linkages between the data and the assertions, I use the following data sources for support: instructors’ daily journal notes, student interview comments, class assignment scores, and student questionnaire responses.

Through the review of field notes and other data sources, four assertions were generated in the following areas: Peer-Learning, Self-Monitoring and Self-Growth, Community of Learners, and Teacher Change. If the phenomenon of this study is to emerge, these assertions need to be either supported or disproved. “The key linkage is linking in that it connects many items of data as analogous instances of the same phenomenon” (Erickson, p. 102). The discussion on each of these assertion areas will revolve predominantly around data obtained from the study’s three interviewed students. The reason for this selection is that these students completed all course requirements, as well as all requested components of the study, therefore providing conception to completion study data. However, if data from other class members are illuminating to the cause, it will be shared accordingly.

It is important to clarify that these assertions are those of the researcher and based on findings attributable, as she saw it, to the linked course. The reader may question if these assertions and findings could be made in a non-linked course, which is certainly a reasonable and much needed concern. The researcher is not trying to place judgment, based on this study, as to whether a linked course is better than a non-linked course, as a comparison study was not conducted. These assertions and findings were based on observations and data collection only within a linked course. To address the concerns of these findings being inconsistent, similar or better in a non-linked course, a comparison study would be beneficial.
Peer-Learning

*Peer-learning was positively affected by the linked course.*

O’Donnell & King (1999) define peer learning as how children educate each other and how to maximize the cognitive benefits of peers learning from each other in a given setting (p. ix). Various aspects exist when discussing peer learning such as: cognitive processes, developmental information processing and social context. Peer learning is multifaceted and involves “consideration of who is learning, how the role of peers with whom one works can be conceptualized, what it is that peers learn together, what changes as a result of the interaction and how we can know what occurs in groups or what has been learned” (p. ix). The following discussion will shed light on how these questions were answered through this study.

The MSLQ data obtained at the beginning of the semester revealed two of the students scored very low in their assessment of the importance of peer-learning in the classroom (S1 = 2.00 and S2 = 3.33) and one student scored mid-range (S3 = 4.67). These scores are not surprising for developmental students, as frequently they are not comfortable with peer learning, due to lack of previous experience in their educational background. Two of the critical thinking points for the college success course (Appendix CC) focus on helping students develop an awareness of how other students can be resources for support and how relating to others, through the appreciation of our diversities, can ultimately enable them to learn more about themselves. And although two of the students had low Peer-Learning scores, it was encouraging to initially see the average score for the three students in the area of Help-Seeking on the MSLQ was 4.5.

Literature on the concept of looping supports the idea that peer-learning can be promoted and improved through the development of positive and trusting student-to-student relationships. Denault (1999) and Hume (2007) discovered looping offers the opportunity for special connections to form between students. Hedge & Cassidy (2004) added increased communication and trust between students to this connection. If the teacher/learner continuum is to be supported and achieved (Appendix A), whereby the student is less reliant on the teacher for guidance and support, then perhaps the increase in peer learning illustrates a positive experience has taken place and reliance on the instructor is weakening. The logistics and curriculum of the linked course alone created an atmosphere where students were forced to choose a side on whether or
not peer-learning was going to have a positive or negative impact on their individual learning. With the class size being so small, the ability for a student to hide in a sea of students and not engage in the discussion was not an option. During the student interview, S1 alludes to this analogy when stating “in a large class, if the instructor asks questions or stuff, and you don’t do good, in a class of a few hundred, it really doesn’t matter, you never get noticed no matter what…in large classes, you don’t really have the one-one-one relationship with a teacher…there is no time, so if you have a problem and you go and talk to them, they might not really care that much…but in a smaller class it’s different.”

Responses to the initial student questionnaire (Appendix V), specifically Question 6, provided insight into the early expectations these students had of their classmates in this linked course. Their MSLQ score for peer-learning is listed beside it to provide additional richness to its potential significance.

S1: Better relationships with one another - (Peer-Learning 2.00)
S2: Nothing. Don’t know anybody – (Peer – Learning 3.33)
S3: To get as much out of this experience as possible – (Peer – Learning 4.67)

A look at the instructor’s journal notes reveal the early expectation that S3 would be the initiator for classroom discussion, thus peer-learning, and that S2 would be hesitant to get involved with class discussions or with classmates in general. “It’s encouraging to see how eager S3 is to get involved in the classroom discussions and started out of the gate on the first day of class as being the first student to introduce themselves and share their personal story of how they are trying to have a more positive experience in school, as opposed to earlier ones that left them feeling rather jilted by the whole education system. However, I’m not convinced S3 will be able to keep up the energy level and motivation they bring to the classroom for the next twelve weeks. S2 seems to be the quite one of the group, not willing to share information, and if required, will provide only the bare minimum.” S1 had a low peer-learning score on the MSLQ, which did not match their response to wanting “better relationships” with respect to their expectations of their classmates. However, this non-correlation did match the instructor’s journal notation stating “S1 has me confused; one moment there is no engagement, no participation, and evidence of boredom, and the next minute S1 is leading the discussion and asking probing questions to keep the momentum of the class going. Perhaps time will reveal their [S1’s] true character.”
Over the semester, two of these initial instructor perceptions held true and one was slightly altered. S3 worked hard at maintaining the motivation, but the energy level was often waning; S2 remained the “wall-flower,” but as discussed later in this paper, took on the surprising role of informant in the classroom. S1 continued to sit on the fence of engagement, and this inconsistency could have been a factor in the fluxuation of their mathematics test scores. This causal relationship, although not proved, suggests that increased engagement resulted in higher test scores. However, the altered perception came about as S1 took on a more serious quest to perform well in the class, not just for themselves, but to “not look bad” in front of the other students.

S3 consistently initiated class discussion and looked forward to activities that involved working with other classmates, regardless if the activities were college skills or mathematics related. S3’s motivation never faltered; however, the energy level was not always sustainable or often available. This became obvious to the other students in the class and at times, became a crutch they used to avoid engaging in conversation. On one particular day, when S3 was not participatory in class for health reasons, S2 quickly used that as an excuse to remain quite and perform at the absolute minimum level to obtain participation points for that day. S1, noticing the quite dynamics of S2 and S3 for their own reasons, then used this as an invitation to sporadically disengage one moment, or engage but off topic the next moment, for the duration of this class. Journal notes indicated the following observation: “I am flustered by the ‘weather’ change in the classroom when S3 does not bring their ‘A’ game. It is as if S3’s actions determine how S1 and S2 will behave for the class period.”

Generally speaking, peer-learning was taking place in the classroom in a positive manner. However, at one point during a difficult mathematics lesson, it came to an abrupt halt, requiring the instructor’s immediate attention. The preparation for the mathematics test covering the objective of factoring polynomials quickly put into light how peer-learning could become a disguise for lack of understanding. During the coverage of this content area, S3’s skills in factoring quickly exceeded the other student’s skills. As homework problems were discussed and additional practice problems were given, S3’s mastery of the skill became, almost painfully, evident. Painful is used here in the sense that it began to overshadow S1 and S2’s lack of understanding and their willingness to speak up and ask for additional assistance or explanation.
After completing a worksheet of factoring problems, the students were asked to raise their hands and provide their answers. S3 was the only one providing answers. When S1 and S2 were directly asked to provide an answer to a problem, they would defer and say they were not sure. S1 stated: “I’m not sure I did it right, [S3’s name] what did you get for that one?” The students were now using S3 as a crutch to provide all the answers and hide their own lack of grasping the concept. As the instructor, I needed to address this situation quickly, but in a sensitive manner, to ensure that I did not damage the self-confidence and excitement that S3 was demonstrating, or compound the frustration and embarrassment that S1 and S2 were feeling. I chose to have a discussion with S3 after class and asked S3 to take on a bigger role in the classroom by becoming a “2\textsuperscript{nd} teacher.” We discussed how their proficiency in factoring could help me assist the other students in finding ways to master the skill on their own and discover their own tricks for recognizing various patterns. By allowing the other students to come up with their own problem-solving techniques and not rely on theirs [S3], this student was actually enhancing their own strategies and being a leader in the classroom. Fortunately, S3 embraced the idea of being another “teacher” in the classroom and beautifully mastered the role of facilitating knowledge for the others, as opposed to dictating knowledge.

Student responses to the final interview questions also supported the assertion that peer learning was beneficial and positively affected by the linked course. As S1 relayed: “the linked course made my performance better... [and] in a small class, you’ll get noticed more...and you’ll feel bad if you do bad...you’ll feel uncomfortable in front of them [classmates] and you don’t want to let them down.” Although S1 continued to be on the fence of engagement, the belief in peer-learning is still evident in the interview comments: “we can help each other out in either class...if someone’s good in math, but not SLS [college success], or the other way, we can help each other out and be there for them...help them do better.” The sense by S1 of “feeling bad” in front of others if performance was low is a testament of the power of peer-learning. S2 also supported peer-learning by stating: “It [small class] was an advantage because I knew who I would see each day and we liked each other and felt comfortable with each other...because we would support each other on stuff we didn’t understand in math...and help each other out.” If the statement is true that people tend to remember and understand 95% more when they have to teach someone else, than collaborative activities in the classroom are the means to enhance peer-learning. This linked class provided students with opportunities to learn independently and as a
team. S3 summed this concept up nicely in the interview by saying: “At the beginning of the class you told us we were going to be able to learn a lot from each other…but we didn’t have very many [students] later on in the class…I think that started to discourage the ones that wanted to be there…but then it was like…what I call rubbing off on the other people that had the potential…to stay in the class and do good, that kind of started making everybody feel good about staying with it…not giving up…we could still learn from each other…we could talk to each other and explain things…maybe what confused me didn’t confuse them and so on.”

Although peer-learning started off relatively low on the student’s perception list, in the end, it appeared to play a major role in their experience of the linked course. Negative peer-pressure has certainly been researched throughout the ages, but the positive power of peer-learning and its impact on socialization, communication and academic performance is just being tapped. In this study, it was evident that the student’s expectations of themselves and each other changed over the course of the semester, and peer-learning became a tool to help them be successful in and outside of the classroom. O’Donnell and King (1999, p. 84) sum this concept up nicely by stating “we propose that an essential feature of learning is that it creates the zone of proximal development; that is, learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers.”

This study supports the idea of coexistence between peer learning and the aspects of cognitive processes, developmental information processing and social context. A review of the scores in part 2 of the MSLQ, as it relates to Learning Strategies, denotes mean scores in the range of 4.85 to 5.18 for areas including: rehearsal, elaboration, organization, critical thinking and metacognitive self-regulation. These baseline scores are reasonable for the beginning of the semester. However, what supported the idea that growth took place in these areas were the final exam scores for the college success course, which assesses critical thinking via all these areas. S2 and S3 both tested into the high 90’s on the final exam covering these areas. S1, who as mentioned above was not always consistent with the social engagement aspect of the course, tested in the 80’s for these areas.
Self-Monitoring and Self-Growth

Participation in this linked course led to the development of increased self-monitoring and self-growth.

A goal of the college success course is to help students become independent and responsible learners. This is often a daunting task, as developmental students tend to enter the classroom with low self-esteem, low-confidence levels, unrefined social skills, and needy in their behaviors. They tend to come from low socioeconomic status, to be first generation to attend college, to be culturally disadvantaged, to have low self-esteem, and to have a high expectation for failure (Grimes, 1999). Even though over 55% of students entering the postsecondary institutions require some type of remediation in mathematics, reading, and/or writing (OPPAGA, 2007), students often do not see this as opportunity to be in courses with others like themselves and take advantage of being ‘in the same boat’ with respect to their academic challenges. Getting students to engage with each other can be difficult; however, students embracing the ideas of self-monitoring, self-growth and finding their own motivation can be even more difficult.

The MSLQ results for this class showed unusual results in the area of self-efficacy for learning and performance. On the Likert scale of 1-7 for this area, the mean was 6.38. This high number was not expected, as developmental students usually have lower expectations for themselves, in part due to their previous unsuccessful educational experiences, and just the fact they are enrolled in developmental courses, gives them the perception they are below par. However, this high number was encouraging to the instructor, in hopes it was a foretelling sign these students would be actively engage in their own learning process. A second sign revealed itself when students took a Locus of Control assessment as part of the college success course. Students were asked to complete a series of questions where the targeted responses narrowed down if they possessed an internal locus of control or an external locus of control. For the purpose of this course, locus of control is defined as one’s personal belief regarding what controls your behavior. It addresses the question of what factors and personal experiences do you believe cause your success and failures in meeting your goals. Students with an internal locus of control attribute their success to their own efforts, skills, knowledge and abilities. On the other hand, students with an external locus of control believe they do not have control of their successes and
failures, and instead contribute them to outside sources such as: luck, fate, parents, roommates, coworkers, or teachers. Educators across the globe have encountered the student that insists they failed the course because the instructor did something wrong. It had nothing to do with their lack of effort, motivation or focus in the class; but had more to do with the instructor’s poor teaching strategy, unfair assignments, the students’ bad luck, and the ultimate favorite, ‘the teacher just doesn’t like me’ perception. With respect to the results of the study participant’s locus of control assessment, eight out of ten students completing the questionnaire revealed an internal locus of control. This is not always accurate, as students often times believe they truly do not blame others for their successes and failures, and answer the questions accordingly to this skewed belief. Perhaps denial is a more appropriate word for this behavior, as blaming others for our failures is the easy part, recognizing or acknowledging this behavior is something else. Despite this internal locus of control result for the majority of the class, the instructor was still skeptical on how accurate this would be in the long run; time would tell.

Although it appeared, based on the MSLQ scores and locus of control assessment, that self-monitoring was already an established trait for these students, an increase in this behavior became apparent when ‘progress reports’ were handed out in class after each test or significant assignment. Students were provided with a computerized printout that listed all assignment scores, with corresponding weights, for the final grade calculation. At the top of this sheet, students were able to see exactly what final score they had at that moment in the class, and also, where they ranked among their peers in the class. For example, they would see 85% (class grade) and Class Rank= 4, meaning out of the total number of students in the class, they were 4th in terms of the highest overall grade. This information became more important, and apparently more motivating, as the semester continued. It appeared to have a strong impact on the student’s self-monitoring and self-growth as well. During one particular mathematics class, after the ‘progress reports’ had been handed out, the following observation was made by the instructor:

The students are starting to seek out who has the higher grade percentage and rank in the class. This is week six of the term, and now that multiple assignments and tests are showing on the score sheets, students are taking note of how their grade can be positively and negatively affected. They are getting curious to know who has a higher ranking then them. They are asking the instructor to reveal the name of the person with the highest score, specifically in math, and are frustrated that the instructor
will not share this information.

What was even more interesting about this observation is that students were not as curious about the percentages and rankings in the college success course, as they were in the mathematics course. When being given the reports in the skills course, students usually took a quick glance and then filed it away in their notebook. However, when the mathematics reports came out, there was an almost stress-induced panic to find out how the others had done and what their percentages and rankings were in the class. It is possible that competition was coming into play, as part of an earlier college success course discussion revolved around students creating a new “record” of their abilities and performances via a transcript, and how the transcripts reveals grade point averages, which can help or hinder a student trying to get into a particular 4-year university and college program. Another speculation would be that students tend to commiserate with each other, particularly in difficult subjects, such as mathematics. If a student is doing poorly in a mathematics class, they want to find others who are doing just as poorly, so they can either 1) complain together about how bad the teacher is; 2) complain how hard and unfair the test was; and/or 3) discuss with others how mathematics has “always” been a difficult subject for them and therefore another poor grade just supports their theory that math is hard and does not have a meaningful purpose in their academic curriculum. Granted, these are mere speculations on what goes through the student’s minds and why they seek out others, but it would be hard to find an instructor who has not heard these complaints in a mathematics course. The point of this discussion is how students began to see the relevance of these progress reports and take an interest in how they were performing in comparison to their peers. Competition had set in and they wanted to ensure their percentage and class rank had improved each time, or at least was staying status-quo with everyone else in the class. During a class discussion, S1 stated: “the rankings make me nervous…in high school I didn’t care, there were over 300 students in my graduating class, so nobody noticed if you were in the bottom…but now it’s different, we are a small class, we know each other…it’s weird…I don’t want to be at the bottom anymore.” I think “weird” was positive in this context, as the students were starting to develop their relationships in the class, trusting each other, encouraging each other, and wanting to do better than each other, thus promoting their own self-growth and self-monitoring.
Community of Learners

A community of learners developed in this study and its foundation relied on this being a linked course.

This study suggests that a linked course encourages the development of a community of learners with defined roles and support for the students. The practices of the students in this linked course illuminate the kind of relationships that are allowed to develop when students are enrolled in back-to-back classes for a long period of time. The empirical evidence from this study regarding the community of learners suggest the vary notion of time spent together developed this community. Chickering and Gamson (1987) believed the development of reciprocity and cooperation among students, and the encouragement of active learning in the classroom were part of the basic principles for good practice in undergraduate education. If time and opportunity are factors in helping to promote reciprocity, cooperation and active learning, then learning communities are the perfect foundation.

Instructors interviewed at both NUCC and CUCC supported the concept their linked course helped to develop strong communities of learners. The following comments were taken from their interviews:

“The major benefit [of the linked course] is that a community of students is formed, friendships are forged, and the collaboration between students is greater.”

“The increased amount of time that students spend together in a linked course provides the opportunity for relationships to develop, trust to be formed, and a sense of comfort with each other, and the instructor, that doesn’t always happen in a non-link course.”

This notion of community of learners does not limit itself to only students. Interviewed faculty also felt a faculty version developed as well.

“One of the benefits of a linked course is that it permits collaboration across disciplines and encourages collegial relations. It fosters a sense of community among students and allows students to learn from each other, but it also does with faculty across campus.”
Learning communities have been shown to experience higher success rates than traditional classes (QEP, 2006). If the development of a “community of learners” opportunity exists more so in a linked course, then logic would have it that offering learning communities (linked courses) would be the solution.

Within a community of learners, roles can develop among students. A study done by Erickson (1985, p. 96) revealed that students often establish major lines of division in the classroom. These social identities (status) and roles (rights and obligations in relation to others) can vary in their scope and inference, but if established, they can have both positive and negative consequences in the classroom and for the community of learners. As the students progressed in this study, self-imposed roles began to develop in the classroom. Initially, only two or three of the students regularly engaged in conversation prior to or after class. Invisible segregation lines were drawn and a sense of status or hierarchy seemed to exist. Group discussions were difficult, as comfort levels were not wide and sharing with outsiders seemed taboo. However, as these lines began to dissipate, and the comfort levels broaden, individual roles seemed to appear. For example: one student became the keeper of time and was adamant about students arriving on time for class, returning from break promptly, and making sure the instructor was aware when the class was coming to an end. At first this was taken rather grudgingly by the other students and the instructor, but as this behavior was repeated and students comfort levels increased, the time keeper actually became an embraced factor of the classroom setting, and even created disappointment when absent, as students felt discouraged that they could not “clock in” for their jobs in the classroom. A second example consisted of a student who began the class extremely shy and recluse, but later mastered the role of being the informant. This student would inform the others and the instructor if so-and-so would be absent or late that day, and at one point informing the class of one of the student’s abrupt departure from school due to legal issues. What became apparent and unexpected, was this shy, recluse student, had become the messenger for the others. They would check-in with this individual on their own time and inform her as to their whereabouts. Apparently, the shy-recluse performance given in the classroom setting was only a mask for the social and engaging individual outside the institution walls. A third example of a student role developed over the semester was that of the “Momma Hen.” This individual set the tone for high performance that ultimately the others tried to mimic. During the first few
weeks of the course, it was this individual that the instructor perceived would not survive the linked courses. This perception was not based on the student’s skill potential, but rather on the student’s life issues they were trying to simultaneously juggle with their academics. Work, family and health issues all played a major roll in this individual’s life already, so adding academics to an already full plate seemed like a recipe for disaster from day one. But, this perception was only in the eyes of the instructor, and it proved to be completely flawed. Although this student’s plate was filled, their motivation for getting an education and understanding of the power and impact of a degree was contagious. This student set the standards high for performance and set the excuse level low for the others in the class. The others would look to this student for support, guidance, leadership and sympathy. The unspoken motto for the class became, if this person can juggle all of these balls successfully in life, then so can I. It was amazing to watch the transformation that took place in the classroom, where ethnic lines were crossed, performance levels raised, diversity embraced and locus of control internalized, all guided (or enhanced by) this individual taking on the “Momma Hen” role. Even during the final moments of the semester, when students knew this family was about to be separated, this student’s motherly role was evident. The following story illustrates this point:

As the final exam was about to be given, and the linked and non-linked classes had been combined for the administration of the mathematics final exam, the established relationships and roles in the linked course were evident. As the students entered the test room, the non-linked students took their seats arbitrarily and without notice of their fellow classmates; however, the linked students were very meticulous in their seating arrangement and greetings of their fellow classmates. As the “Momma Hen” of the linked class was already in position, when the other linked students arrived, it was almost ceremonial how they would walk by the patriarch of the class and get a reassuring nod or touch prior to taking their seats. They all sat within close proximity, and they all took, what appeared to be, one last glance at their classmates prior to leaving the testing room. For the instructor, it was touching to watch. For the students, it was motivating to those still in deep thought trying to complete their test. In my fourteen years of teaching, I’d never seen this type of support and concern demonstrated by students.
For these students in the linked course, a sense of faithfulness in the established relationships had developed and was maintained all the way until the end of the exam. They took the exam as individuals, but they functioned, as evident above, as a team. Post-study data provides further evidence to support the benefits, for each other, of student’s roles and relationships. Two students from this study continued to take mathematics courses together for the next two semesters. The academic relationship that had developed was strong enough to help them not only take these two courses as a team, but also resulted in passing grades in their first college credit mathematics course. After this class, different majors dictated different mathematics courses, but the social relationship continued.

Negative roles can also develop in the classroom, which can ultimately have an impact on all learners in the class. In this study, one student was particularly disruptive on a continuing basis. They were seen as an outlier by the other students. This behavior, and the need for addressing, came to a climax when the conducive to learning atmosphere had been compromised for the other students. The removal of this distracting student proved to be an interesting turning point in the dynamics of the classroom.

Through this students’ behavior, the learning environment had become unpleasant and non-welcoming for others in the class. As the instructor, I did not realize the extent of the negative impact this student had on the other class members until witnessing the dynamics change drastically, from negative to positive, when they were removed from the environment. It was also interesting, if not shocking, to learn the loyalty that a few students felt towards the instructor with respect to this disruptive student. The following story is rather insightful into the sense of “family” and bonding that the students developed with me as their instructor.

As the instructor, I had finally had enough of the disruptive students’ behavior. The other students in the class were clearly aggravated, and the learning environment had been compromised. An outlier to this community of learners existed. At one point during the class, when the disruptive student left to “go to the restroom” (which proved to be false), I made the decision to remove the student from the classroom by physically picking up their books and belongings and placing them outside the classroom door (still within the instructors’ view to ensure protection). When the student returned to the classroom several minutes later to find their belongings removed, and was then told by me they were not welcome in class at that time due to their disruptive behavior, as the
student left the classroom and building, an interesting reaction took place in the classroom. The remaining students not only expressed a great sigh of relief, but they also clapped and then stated, almost in unison, “it’s about time!” This was certainly an eye opener for me, as I had no idea the other students felt so strongly about this disruptive students’ antics and the negative impact it had on their learning. It was as if the remaining students were saying thank you for making them a priority and for recognizing their need for action to be taken so the safe learning environment could return. These feelings and emotions were later verified when conducting the three student interviews. But what was most fascinating to me, as the instructor and researcher, was the similar comment made by all three interviewed students that I did not understand the significance of that moment during the semester and how they were at the point of losing all interest in the class if action had not been taken soon. As the instructor, I was losing respect and credibility. What I gained by taking action was the remaining students trust and support for my rules, policies and procedures in the classroom. What I also learned, was due to the ethnic differences between this student and myself, the others in the classroom had prepared for a much bigger battle to ensue and had actually decided among themselves, who would be able to protect me should this student get physical. I had no idea this level of thinking or planning was going on with my students, but it certainly had an impact on my understanding of the bond that had developed between the students and their bond with me as their instructor.

It was evident in this study that relationships with each other and as a member of the community (team) with specific rights and responsibilities had been formed and supported. Both positive and negative roles and relationships existed, and both were apparently needed for the functioning of this learning environment. These findings also suggest that to have a successful community of learners, stability and continuity for the students are important. The extended time and multiple opportunities together allow for the development of positive and supportive academic, personal and social relationships.
Teacher Change

The implementation of this linked course required the engagement of process of teacher change.

Ken Bain (2004) believes that excellent teachers develop their abilities through constant self-evaluation, reflection, and the willingness to change (p. 172). Eleanor Roosevelt stated ones philosophy is best expressed not in words, but in the choices they make. As an educator, I believe that if I want my students to be able to self-reflect in order to improve learning strategies, skills and behaviors, then I too must be willing to evaluate my own learning strategies, teaching techniques and willingness to change. If we are to believe the saying that action speaks louder than words, then encouragement needs to be given to instructors to evaluate themselves and their actions and ensure that a positive connection is being made between what they say they are willing to do in terms of teacher change, and what they are actually doing to support that change. When taking on a new course to teach, or implementing a new teaching technique in the classroom, the frustration of the change and of learning something new can be difficult. And if allowed, it could actually impede ones progress in terms of successfully making that change. In defining the terms of teacher change, the following three stages are provided: 1) the desire to change, 2) the development of the image of what the change will look like and 3) carrying the change through to completion. To be successful in this process, teachers must be willing to move through all three stages. Excitement, motivation and drive often come with step one. The desire to improve curriculum and to increase student learning and retention is fairly easy to ignite among educators. Even step two has the support of the teacher, as visualizing the positive effects of the potential change can be motivating in itself. It is step three that poses the most difficulty for teachers, administrators and even the students, in their quest to make improvements. The follow through with actions to support the words of change can be trying. Erickson (1985, p. 134) states:

Teachers in public schools have not been asked, as part of their job description, to reflect on their own practices, to deepen their conceptions of it, and to communicate their insights to others. As the teaching role is currently defined in schools, there are external limits on the capacity of a teacher to reflect critically on his/her own practice. There is neither time available nor an institutionalized audience for such reflection. The lack of these opportunities is indicative of the relative powerlessness
of the profession, outside the walls of the classroom.

As I reflected on my own ability to progress through the three stages of teacher change, as defined above, it became apparent that I too could easily have fallen victim to the all talk no action plan. My motivation and excitement pre-study was at a high; my pre-planning, designing, and belief that this would be a ‘perfect’ study was in place; the difficulties emerged when trying to maintain the energy and willingness to make changes in order to keep the linked course on a smooth road to our final destination and avoid the taunting shortcut to the road of destruction and desire to call the whole thing off.

The first week of this linked class proved to be rather challenging. Knowing how to keep the dynamics of the linked class flowing, how to engage the same students for the combined amount of class time, and how to maintain the objectivity needed for the integrity of the study proved to be a bigger learning curve than I expected. The expectation was that linking these content areas would be as simple in practice as it was on the pacing schedule, and although it was do-able and manageable, it was hardly simple! My enthusiasm the first week for the class potential and study opportunity was, in my view, commendable. However, it would prove to be difficult to tap into on a regular basis as the amount of time and energy the linked course began to demand was draining.

For the first few weeks, a great amount of time was spent pre-planning each lesson and ensuring that the connection between the college skills course and the mathematics class was evident. This pre-planning also involved, to some degree, instructor delivery ‘practice’ time. When teaching just mathematics or just college success, I have found that the pre-planning and practice of delivery time is manageable, as the content, activities, and performance can pretty much stay consistent from one class to the next. As with unlinked courses, the audience changes, but the teaching performance could, and often, remains the same. However, in this linked class, the audience did not change, and thus the teaching performance could not remain the same; it had to change – frequently. This learning curve, although expected, turned out to be more of a sin wave than a simple exponential function.

It quickly became evident in the semester that previous comments made by linked course instructors regarding the additional time links require were accurate, if not understatements. Ensuring that quality time was spent on both subject areas and the focus on mathematics did not dominate and thereby cause a negative effect on the students was a high priority. I needed to
maintain some distinctions on the class topics to ensure the study was not compromised by an
overload of the mathematics aspects. Certainly one of the goals of the study was to see the
benefits and limitations the college skills course would have on student’s success and retention
of mathematics skills. However, some neutrality had to be maintained to ensure a teaching to the
test situation, or in this case, teaching to the study, did not occur.

I must admit, there were two distinct times during the study that I was tempted to put up
the white flag and call the whole thing off. My energy level, enthusiasm, motivation and desire
to make necessary changes to ensure the success of the class and study were at the breaking
point. One of these incidents came early in the semester, when class size had been reduced from
the eleven enrolled to seven students that were regularly attending class. At that moment, losing
four students seemed like a sign that the study was not meant to take place. So much effort and
pre-planning had gone into making these linked courses blend in hopes of providing as much
benefits to the students and opportunities for data collection for the study, that a reduction in
class size seemed detrimental to carrying it through to completion. In my journal notes, I
commented:

I am disappointed today in the reduced size of the class. With so few numbers, I worry
that student engagement, class discussions, and opportunities for them to learn from each
other will be limited. The students are asking about the class size too, and I don’t have a
good answer for them. S3 commented on how small the class was and what did that mean
for the group project that would be assigned later on in the course. S1 keeps asking where
is everybody and why aren’t they showing up. I need to keep the motivation in the
classroom high and keep their focus off the low number of students in the class. The
classroom size isn’t helping matters. It’s a big room, larger than some of the other
classrooms, so having only seven students in a room that holds close to forty-five really
makes it obvious. I’m also disappointed for selfish reasons. I put a lot of time and energy
into preparing materials for the class. I equate this feeling to having planned a
Thanksgiving dinner with all the trimmings for a large family gathering and then nobody
shows up. I know it’s not that bad and I still have seven students that I need to focus on,
but at the moment, I’m discouraged and feeling self-pity.
The second incident revolved around the disruptive student that was removed from the class as described earlier in this chapter. Although this student’s behavior was clearly compromising the learning environment for others, and action had to be taken, I had never in my previous teaching experience had to literally remove a student from the classroom. I always took pride in the fact that I had very few disruptive students in my classes, and when I did have an incident, it was taken care of easily and quickly with no repercussions to the students or me. But this time was different, and although my passive-aggressive action of removing the student’s belongings from the classroom, and ultimately the student from the class, was applauded by the others, I still felt I had failed in my ability to meet the needs of one of my students and help them be successful in their learning endeavor. Clearly I was engaged in self-reflection as Erickson (1985) discussed, but I was focusing too much on the negative impact for that one student and myself and not enough on the positive impact it had on the remaining students.

Although Erickson (1985) focused on elementary and secondary schools, his comment on classroom teaching and its coming of age as a profession relates to higher grade-level instructors as well.

“If the role of the teacher is not to continue to be institutionally infantilized – then teachers need to take the adult responsibility of investigating their own practice systematically and critically by methods that are appropriate to their practice. Teachers currently are being held increasingly accountable by others for their actions in the classroom. They need as well to hold themselves accountable for what they do and to hold themselves accountable for the depth of their insight into their actions as teachers (p. 135).

**Specific Observations for SLS 1510 – College Success**

Due to the variety of topics covered in this course, student participation and motivation varied from one extreme to the other and reflect the students’ greater interest in discussing their goals and dreams than in discussing note-taking strategies. The students in this study welcomed the opportunity to do a presentation on their choice of topic, as opposed to the instructor requiring them to conduct an interview and write a paper. Assessments on learning styles, personality and career choices can be entertaining, but discussing how to take a mathematics test,
analyze answers and critique problem solving skills has less excitement and is more challenging. All are requirements of this course, and all help to develop the student’s foundation for being successful in all their academic courses and in life.

Week one sets the tone for this course, as a great amount of class time is spent doing ice-breaker activities to help the students get acquainted and comfortable with sharing their stories and ideas. The dryness of learning resume writing for these students, particularly so early in their academic endeavor and careers, can be turned into a wave of excitement when students become interested not only in their professional development, but their classmates as well. Part of it is competition, and part of it is simple pleasure in seeing what someone else will pick as their career goal and how it matches their persona.

For this class in particular, lack of engagement by the students can be detrimental to their learning. Part of the purpose for this course is to increase a students’ awareness of where to get assistance, where to turn for resources, and how to be successful both in and outside of the classroom. If communication and engagement with other students does not take place, then meeting these objectives is limited. In this linked course situation, students are encouraged to develop awareness that they are resources for each other in and outside of the classroom. Learning does not stop within the walls of the classroom, and assistance does not come only from the instructor. In the linked course, students began to accept the idea of learning from each other and realized quickly their differences only enhanced their similarities. Their time spent together was expanded due to the linked course. This extended time created a necessity, which they imposed, to get along and make the best of the situation. In all three of the final interviews, the students commented on how liking their classmates and feeling comfortable – family like – made a difference in their desire to attend class, perform well, and engage in the learning experience. Had this family like atmosphere not been established, according to the students interviewed, their success rate would have been different and their perception of the experience altered.

Specific Observations for MAT 0024C – Elementary Algebra

All students but one expressed a dislike or fear of mathematics on the student information sheet for this course regarding learning mathematics (Appendix Z). When given the opportunity
to explain further, their responses illuminated that most of their fears stemmed from previous
poor experiences in a mathematics class and low performance in those classes or with an
instructor of mathematics. The seven student participants in the study were hopeful that this new
approach of a linked course would alter that negative association, yet at the same time remained
convinced that it would not be any different. Their negative self-talk, as it pertained to
mathematics, was in full gear.

Most students were reluctant at first to embrace the idea of homework assigned and
collected each time the class met as part of their grade. In fact, the importance of homework,
that counted 20% towards their grade, was not fully realized by all until status reports of their
class standing were provided to them after each test and the weighted homework percentage
effect could be seen. Even then, some students failed to embrace the importance of doing
homework and the correlation it has to performance in a mathematics class. Unfortunately, this is
not new to mathematic educators, nor unique to this study. It is and will remain a constant battle
in a mathematics classroom. Fortunately, for some students the connection was made early in the
term, and they began to check each other’s homework and respond to each other’s questions
prior to the instructor getting involved. Questions on homework, which started each mathematics
class, turned into students answering each others questions and putting their solutions on the
board for others to see.

The linked students trusted each other’s work and respected those that needed additional
guidance. They took pleasure in responding to new information presented in class and problems
posed to see who had mastered the new skill first. They also took pleasure in recognizing when
they made similar mistakes and how their problem solving skills, although potentially wrong, at
least were in good company. Competition became a positive aspect in the classroom for most of
the semester.

Group activities involving worksheets, test reviews and mathematical puzzles became a
welcomed part of the curriculum. Once trust was established between classmates and the group
accepted that no question was a “stupid” question, the mathematics learning environment
became a positive experience for most students and conflicted with the fears they had originally
anticipated. Changing negative self-talk and experiences as it related to mathematics had begun,
even if only in infant form, and it continued throughout the duration of the course.
Student Performance

Providing information on all students’ performances in the study class would be skewed due to the high level of students not completing the course. This non-completion rate was due to several factors: legal, health, academic and disciplinary issues. Although these types of issues are common during a course, and non-completion rates are often high in developmental courses, it was not common, in the researcher’s opinion, for them all to occur within one class. But, this is the fact of the matter and could not be changed. For these reasons, providing final student performance with respect to grades will be limited. Since three of the initial eleven students were interviewed and completed the study requirements in its entirety, their performance information is offered to the reader as additional rich description in the following table. Their student code is used for identification.
<table>
<thead>
<tr>
<th>Category</th>
<th>S1 – Male</th>
<th>S2 – Female</th>
<th>S3 – Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLS 1510 - College Success Final Exam Result</td>
<td>87%</td>
<td>89%</td>
<td>100%</td>
</tr>
<tr>
<td>SLS 1510 – College Success Critical Thinking Exam (Appendix AA) Result</td>
<td>25 / 25 100%</td>
<td>20 / 25 80%</td>
<td>20 / 25 80%</td>
</tr>
<tr>
<td>SLS 1510 -College Success Critical Thinking Scenario Exam Areas Needing Additional Support</td>
<td>None</td>
<td>Time Management</td>
<td>Time Management Study Skills</td>
</tr>
<tr>
<td>SLS 1510 – College Success Final Course Grade</td>
<td>90.7% A</td>
<td>88.5% B</td>
<td>93.3% A</td>
</tr>
<tr>
<td>MAT 0024C – Elementary Algebra Final Exam Results</td>
<td>87%</td>
<td>91%</td>
<td>95%</td>
</tr>
<tr>
<td>MAT 0024C – Elementary Algebra State Exit Exam (Appendix BB) Results</td>
<td>28 / 30 93%</td>
<td>29 / 30 96%</td>
<td>28 / 30 93%</td>
</tr>
<tr>
<td>MAT 0024C – Elementary Algebra Final Course Grade</td>
<td>92.6% A</td>
<td>95.5% A</td>
<td>98.9% A</td>
</tr>
</tbody>
</table>

**Common Limitations, Challenges and Benefits Found by NUCC and CUCC With Linked Courses**

A potential limitation discussed by the faculty at Central Urban Community College that was tangible in this study was the concern when linking with a college success course over students reading level. On the one hand, one of the components in the college success course is to help students learn how to read a textbook; however, if a student is entering the college success course and has not completed (or is enrolled in simultaneously) the developmental reading course, then the discussion becomes one similar to the chicken or the egg, which
(course) comes first? Both institutions require students to complete the college success course within their first twelve hours. However, neither have a pre-requisite for the course, so competency at a basic reading level may or may not have been established. If students are not competent in their basic reading skills, then are we doing them an injustice by trying to teach them how to read a textbook, when the skill of just reading is still under development? With common sense as our guide, students coming into a college success course having higher reading levels certainly have the potential to perform better than students that are still trying to master the skill, let alone apply it to a textbook.

The director of student success stated in regards to the promotion of the class that the attributes it can have on the mathematics courses and the still existent nay-sayers:

SLS has come into their own in the last two years in particular… it’s being promoted…[but] still, we have an audience out there that says I don’t know why you’re doing that…I don’t know why SLS should be linked with math…we have math teachers that don’t agree that SLS should be linked…not [even] with the prep math…[these instructors] haven’t experienced it really…I think things are getting better in terms of the reputation that the course is having…this is due to math instructors working with students and instructors seeing the value of it [SLS]…taking the concepts that they’re seeing an SLS instructor doing and then know they’re applying it in their own traditional math cases…traditional because they are not linked…SLS has gotten rave reviews for those that have participated….

Those that do not see the value in the college success course, or support the linking of it with mathematics, or any course for that matter, often feel it is imposing on their territory or is questioning their ability to provide their students with the tools to be successful students. This notion was supported by the interviewed faculty and staff at the comparison college as shared below:

It’s [SLS and math links] gotten rave reviews for those that participated, but there are a few that just feel like either way I’m going to have success with my students…because of the thinking….I’m so great…and I don’t know why other people are having the need for this class…or this link…I don’t want anyone in my home [classroom territory]…that’s my home…I don’t need someone else…another instructor in the class.
One of the challenges that both the visited and research community college encountered with link classes that are scheduled back-to-back is the time issue. Having only the standard fifteen minute break between classes proved to be difficult. Maintaining students attention levels, fighting off their fatigue and boredom, and just keeping the energy in the classroom generated for that amount of time was a challenge. Students interviewed for the study all had similar comments regarding the fatigue, boredom and motivation factors for back-to-back classes. Suggestions were consistently to have a longer break between classes – one full hour. This would allow students to get something to eat, make their phone calls, do their texting, check emails, and socialize in order to unwind and regroup. This makes sense on the surface. However, we instructors know that too long of a break between classes may also promote absences in the second class. Students have been known to perfect the disappearing act, when given too much free time between classes. Having instructed linked back-to-back classes, I agree the fifteen minute break is not enough and I often wanted to perform the disappearing act myself. Determining the appropriate break time is going to take more trial and error.

It was interesting to see if any of the experiences had by the Director of Student Success and the three faculty members at CUCC were similar to my experience in teaching a linked course. Where were the commonalities and where were the differences? Limitations exist for faculty members participating in a linked course with another instructor. Sometimes what starts off as a good connection between the two instructors, can turn into a difficult or uncomfortable one as the semester progresses. The visited institution made it a requirement for link instructors to attend each others classes and be that extra pair of eyes. This certainly has its logistic limitations, but I feel the benefits would over rule. Unfortunately, this is not a requirement at the study site, and is, from my experience, not even suggested, as workload issues would prevent it.

A benefit that was pointed out by the visited community college that I had not considered regarding linked courses and utilizing an integrated (one) syllabus was the removal of the good cop / bad cop scenario between instructors, as perceived by the students. As the faculty member explained from CUCC:

Well, what happens is the student who is taking student success, and then they go to another class, and it’s math, it’s the same group of students and they discuss the differences between the instructors…what do they like about one and dislike about the
other…there’s a lot of the good-cop/bad-cop kind of thing happening…and it doesn’t happen if you have one syllabus.

I think this plays well into what the participants in this study relayed about knowing the expectations, rules and procedures for the instructor, and how they did not change between one class to the other. Because the instructor variable was constant, the ability for the students to play good-cop / bad-cop was removed.

### Benefits of Linked Courses in General

One of the potential benefits of linking courses for the instructors is the opportunity to meet faculty outside ones own discipline and realize they have more in common than they do different. Summed up nicely by one of the interviewed faculty members at the visited community college:

> I was the student success instructor…I was directed to talk to the math people and find somebody I would like to work with…which was nice because I really did get a chance to kind of meet some of the math faculty…I hit it off with a math person…I mean, I really hit it off…we talked alike, we sounded alike, we approached classes kind of the same way…it was wonderful!

These faculty members felt that one of the reasons links were working in their experiences is they were being linked with faculty members new to the college or relatively young in age. As they stated:

> They’re fairly new to the college…this [linked courses] is new to them…this is like wow…they are willing to try something new…they are innovative in the classroom…they like prep areas…I think some of the initiative [for the new folks] was along the lines of what is it that [they] can do in the department to get recognized…help their chances for tenure…what can they do that will get [their] name up there…that will get [them] out in front of the dean.…

One of the benefits of linking preparatory mathematics with the college success course that was common at both the visited college and the research college was watching students that normally give up quickly in their mathematics class, struggle and finally succeed, by applying what they were learning in the college success class to the mathematics one. As one of the
interviewed faculty members who believes in and teaches part of a mathematics / college success link stated:

When it comes to mathematics…we have kept students screaming, crying and dragging through math because we told them they couldn’t get out…and then they end up passing both classes…they kept coming, and we kept encouraging and pushing…making them apply the skills and the techniques they learned in the class [college success] to their mathematics…they were motivated…they passed both classes…for many…this was unheard of…it’s phenomenal…well, it is…I mean, the math statistics across the board…the success numbers are there…we provided, for lack of better words, kind of the touchy-feely that the student needs…motivation and the guidance that then they can apply in the math course, because a lot of times students get in a math course and there isn’t that link…there isn’t that connection and they’re just like I’m just a number in here…I’m overwhelmed…there is no support…and I have nobody to go to or no one to talk to…whereas then they get in a college success course…we are trying to be the glue.

This passage contains a number of key points that I feel this study examined and ultimately supported. Yes, the students felt overwhelmed in the mathematics course. However, they quickly realized through their college success class that they had a support system, there was motivation and guidance through their instructor and through their classmates, there was a connection and feeling that they were not just a number in a class, but there was concern for their well being. They had someone to talk to in their instructor and in their classmates. The phenomenal feeling came into being. The “glue” was there, and it worked.

**Limitations of Linked Courses in General**

One of the difficulties of linked courses that I experienced as the researcher, and as echoed by the faculty interviewed at the visited college, deals with the advertisement of the class option and ensuring that students understand what a link course entails. For this study, flyers were posted and placed in all new student orientation packets. Advisors are informed of the logistics of all link options and are coached on how to explain these logistics to enrolling students. However, some disconnect still exists as evident by the following comments:
**Interviewed Faculty.** The difficulty in having links is the coordination of the two classes; of getting them into the banter and making sure that they read/write for the student when they go to register…students aren’t completely informed as to what is a link…so promoting a link…this is a great opportunity, but students don’t know about it unless they go to new-student orientation…we have flyers out, but do they really read the flyers…if they don’t go to orientation, how will they know about the links…promoting the links, that is the challenge for deans…

**Interviewed students in study.** I didn’t know what a link was….I just signed up for the class. Nobody explained it to me… I didn’t know it till the first day of class. When I signed up for the math class during registration, the advisor told me I had to take the college success one too.

Another limitation for instructors is the mere logistics side of linked courses. Scheduling arrangements can be challenging with respect to individual instructor schedules and just finding a classroom that will accommodate time frames for both classes. Having link classes where the class times are separated and the class rooms are different are not as challenging as links where the same classroom is utilized and back-to-back time periods are requested. This second scenario was exemplified by the difficulties in scheduling the link courses for this study. Classrooms and class times become a premium and when instructors try to get the “perfect” schedule, difficulties arise. As one of the interviewed faculty members stated: “the logistical pieces that make it very challenging is to find a classroom, negotiate the times, and then some of them [faculty] still want their dream schedule…you can’t have it all…and it makes it difficult for the deans.” Faculty also expressed a concern over the amount of time that is required for preparation, teaching and instruction for a linked course. As the Director of student success states, “faculty are worried that it’s going to take up too much of their time and that they won’t have enough time to get through the curriculum…they feel they need more time to complete both components of the linked course.”

From the student perspective at the visited urban community college, limitations to links include feeling overwhelmed and that course material and assignments start to blend together and not have distinction. Students also feel pressured by knowing if they withdraw from one class, it means withdraw from the second class. These sentiments were echoed by the participants in the study.
Researcher Defined Limitations of this Linked Course and Possible Resolutions for Future Links

Originally, eleven students were enrolled in this link course. However, the mortality rate was high and by the end of the data collection period, only three students remained. Although withdraw and drop out rates are normally high for college preparatory classes, this reduction in class size certainly had an effect on the potential qualitative and quantitative data that could have been collected to support the phenomenon at hand and the essence being investigated. Despite the low number, some components of the phenomenon are supported and certainly correspond to previous studies and information gained in the literature review.

The following table discusses additional limitations of a linked course and possible resolutions. These resolutions are certainly not exhaustive of what educators could implement in the classroom, but they are a starting point in building a better foundation for this alternative learning structure.

Table 24: Limitations of this Linked Course and Possible Resolution for Future Links

<table>
<thead>
<tr>
<th>Limitations</th>
<th>Possible Resolution for Future Similar Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough time to prepare materials for both content areas equally throughout the semester</td>
<td>Extend pre-planning time prior to start of the semester so bulk of planning for both content areas is completed prior to day one of semester</td>
</tr>
<tr>
<td>Limitations</td>
<td>Possible Resolution for Future Similar Link</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Extensive preparation prior to semester start</td>
<td>For administration to provide pay ($) incentives or reassign time for faculty teaching linked courses to allow for extra planning time during the semester</td>
</tr>
<tr>
<td>Scheduling difficulties or conflicts</td>
<td>Allow link courses to be priority when assigning classrooms, meeting days/times</td>
</tr>
<tr>
<td>Relationship issues – if instructor does not mesh well with a particular student or group of students – will have them for two content areas – double the amount of time</td>
<td>Allow for member of counseling department to sit in on linked classes and provide “coaching” to faculty member on how to improve relationship with students</td>
</tr>
<tr>
<td>Not enough time to cover all materials in both content areas as thoroughly</td>
<td>Additional pre-planning time would help support the ability to organize curriculum so all material could be covered thoroughly; reassign time would also provide additional support for faculty preparation</td>
</tr>
<tr>
<td>Instructor views / perceptions</td>
<td>Experience and guidance from others who have successfully instructed a linked course will assist with supporting positive views and encouraging positive perceptions</td>
</tr>
<tr>
<td>Students doing poorly in one class – would have to drop both classes</td>
<td>Administration develop an alternative solution to withdraw policy to allow for single course withdraw and not the 2nd - this would alter the “link” phenomenon – so this particular limitation is difficult to address without further research and administrative input</td>
</tr>
</tbody>
</table>
Table 24: continued

<table>
<thead>
<tr>
<th>Limitations</th>
<th>Possible Resolution for Future Similar Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception of College Success course being an easy “A” (blow off) course – students then get overwhelmed with its curriculum and requirements</td>
<td>Educate other faculty members, staff, and advising personnel on the curriculum of the course, its requirements and its benefits in helping students be successful in academics and life goals</td>
</tr>
<tr>
<td>Completion rates in preparatory classes are often low, which would impact the college success course if dual drops or withdraw requirements are made</td>
<td>Similar to above – administrative development of an alternative solution to drop/withdraw policy for single course and effect it would have on completion rate for other non-dropped course</td>
</tr>
<tr>
<td>Draining for students and instructor with respect to time allotment for both classes</td>
<td>Determine through best practices what type of set up for link is best: back-to-back with minimum break; or just same day classes with 1 hour or more break between; or different days for different content areas, but same instructor set up</td>
</tr>
<tr>
<td>Instructors inability to be objective (neutral) with students due to sympathy level high if seeing them in two classes and knowing too much about the other factors on their plate</td>
<td>Instructor must maintain distance and remain objective in dealing with students issues that are impeding their success or progress in the class – limitations and boundaries must be set and kept in order for instructor to remain objective and consistent in rules and policies and not allow emotions or sympathy to cloud judgment, assessment or consequences</td>
</tr>
<tr>
<td>Administrative Support / Commitment to Linked Courses and its Students and Faculty</td>
<td>Provide administration with data that shows the positive effects of linked courses on student retention and students successful completion in both curriculum areas</td>
</tr>
</tbody>
</table>
### Limitations

<table>
<thead>
<tr>
<th>Limitations</th>
<th>Possible Resolution for Future Similar Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>If student dynamics / connections are not positive for one class – this will effect 2\textsuperscript{nd} class as well</td>
<td>Establish a community of respect, trust, honesty, politeness and professionalism from day one in the classroom – equal opportunity, equal treatment, and equal understanding for all</td>
</tr>
<tr>
<td>Instructor must adjust quickly to students learning styles, needs and abilities for not just one content area, but potentially two</td>
<td>Experience and assistance from counseling department and other faculty members with link experience can help instructor learn to adjust to students learning style, needs and abilities for both content areas</td>
</tr>
<tr>
<td>Multiple disciplines taught on same day could effect the quality of instruction and instructor motivation</td>
<td>Additional preparatory time or reassigned time (reduction in required course load) could assist with minimizing stress or fatigue on link instructor – thereby supporting motivation and quality of instruction</td>
</tr>
<tr>
<td>Mortality rate in this study was high. The initial class enrollment was nine students – however, only three completed the entire course.</td>
<td>Improved marketing of linked course – increase student awareness of options of this type of course and benefits it can provide - offer linked course during Fall semester when FTIC student numbers are higher</td>
</tr>
</tbody>
</table>

Additional limitations that were specific to this study included the following:

- Limitation in relying on each other too much for problem solving and providing answers. If one student had the trust of the others for correct answers in the mathematics class, this would potentially inhibit them from trying to solve things on their own and become dependent on that one individual’s skills and not their own. However, students also saw this as an advantage as they had one of their peers that they trusted, felt confident in, and knew as consistently correct, so they would use them as a guide for their own problem solving skills.
• Limitation in not having the post MSLQ data to compare mean scores pre and post study. Interesting to note how peer learning had the lowest mean score of 3.71 on the pre-test, and yet strong connections and relationships developed during the course of the semester. It would have been interesting to see if the mean score on the post-test for this category had increased. Based purely on observation and speculation of the student interactions, I would venture to say an improvement would have been evident.

• Decision to only administer the questionnaires on specific days and anyone not in attendance was not allowed to take it

• Higher than usual degree of familiarity between the teacher and students – this could make the student(s) or the teacher feel uncomfortable if relationship was not positive

• Scheduling nightmare for students / missing a day means missing 2 content areas – difficult to make up

• Scheduling issues for faculty and administration: days/times/classroom availability

• Making sure test days and assignment days are different in the two content areas

• Support from administration – lack of support / lots of red tape / enrollment issues can put a hold on it due to instructor course load and student contact hours requirements

• Pre-planning difficult when enrollment requirements must be met

• Maintaining the balance in the classroom – especially if people W or are AW’ed – how does this affect the rest of the group?
• Attachment to students – too personal – difficult to get stories out of head to maintain distance, equity and maintain ability to be objective (i.e. family stories; legal actions, student relationship issues that were potentially harmful)

• No lab component, however the new redesign will require labs for all preparatory classes– how would this change the outcome of the study? Or would it?

• As the researcher, I thought I could control for the limitations in the study and that in my “ideal” study, only benefits (positives) would exist. However, this limitation in my thinking actually became a lesson in itself for me as the researcher.

**Researcher Defined Benefits of this Linked Course**

Although limitations to this linked course existed, the benefits to the students and the reward gained by the instructor of seeing students engaged, encouraged, and empowered, triumphs in the end. The following is a list of researcher defined benefits of this linked course:

• Positive and supportive relationships develop students-to-students

• Positive and supportive relationships develop students-to instructor

• Increased collaborative learning and student interaction

• Students improved knowledge of strategies to help them be successful in different curriculum areas

• Reinforcement opportunities for information and learning strategies from one curriculum to the other

• Fosters sense of community between students

• Fosters sense of community between faculty
- Community of learners develops quickly and is reinforced each class period, regardless of content area

- Students learn quickly instructors teaching style, rules, grading policies, classroom procedures, expectations – learning curve is lessened in second content area since instructor is the same

- Promotes higher understanding of relationship and parallels between disciplines

- Increased student engagement and participation due to establishment of trust and connection between students and with instructor

- Scheduling for students can be easier since linked courses generate a schedule automatically of the two classes with fitting time frames

- Students develop a support network among each other – when one falls behind, the others quickly react as a team to help the fallen one catch up – no loners in the class permitted; when one student is particularly successful, the others rally behind them to show support and admiration

- Students start to self-monitor each other for following the rules, being prepared and putting their best effort forward

- Potential for long-term, positive, student relationships and support networks develop

- Boost in students confidence, self-talk, self efficacy and motivation through supportive network of other students and instructor - TEAM effort mentality develops
Follow through on assignments more likely when students know others of close knit group are watching - students not giving each other too much “slack” as they develop this “all for one, and one for all” mentality

Less time needed for instructor to learn students names and become familiar with their learning styles, skills, abilities, and needs – as they have increased time to observe, evaluate and get to know their students

Scheduling of test days in both content areas can compliment each other and ensure no overlap / or overlap if content covered would benefit that scenario

When comparing the benefits of the linked course after the study to previous researchers work, it was comforting to see similarities. For example, when discussing community of learners, Denault (1999) provided the following:

- allowed teacher to have greater knowledge of student, extended time together, knew what the foundation was – since helped to build it – could see progress over time – allowed for shared experiences – saying “we learned this together

- Students already knew rules and regulations – from one class that transferred to the second class – could move forward from day one – students didn’t have to learn different sets of rules – or try to adapt to different teaching styles (this is a pro and a con)

- Be able to watch the gains and observe the strong, healthy bonds develop between the students and instructor

- Teacher views looping as offering the stability that is vital to their progress

- Allowed teacher to understand each student’s learning style better and prepare accordingly
The clear expectations and continuity of teaching style viewed as beneficial – perhaps more so those students who were considered “at risk”

Was a challenge for the instructor and provided for professional growth

All of these comments, almost ten years later, are still similar in context to those of the researcher and students.

The students in this study provided great insight into the limitations and benefits, as they perceived them, for a linked course. Many of these are mimicked by the instructor and by previous researchers in the areas of linked courses and looping initiatives. As with the researcher defined limitations and benefits, in the end, the strengths outweighed the weaknesses, and student success was achieved.

Study Participants Defined Limitations of this Linked Course

- Length of time of the combined classes; fatigue set in; hard to maintain focus
- Classes scheduled over lunch hour – hunger was an issue
- Break between classes was not long enough; did not allow for extensive socialization or to get lunch
- Potential buildup of due dates on assignments for both classes; homework due on same day
- With small class, instructor knew which students were on task, late in assignments, or not focused; there was no “hiding” behind other students
- Small class size limited amount of peer sharing and learning

Study Participants Defined Benefits of this Linked Course

- students developed strong bonds with their classmates with long term effects; provided support, motivation, and direction to each other
• Students developed positive relationship with instructor

• Peer learning became a focus point established by their own actions and initiatives

• Students motivated each other and became a resource for support

• Learning community felt like a “family”

• Only had to learn one instructor’s rules and policies for two courses, therefore consistency was present in expectations and requirements

• Only had to learn one instructor’s teaching style and could adjust quickly for both classes

• Small class size allowed for personalization of the course; one-on-one attention given to students

• Students felt instructor showed concern and genuine care for their success

• Trust and respect in the classroom between students and between instructor and students

• Students able to apply strategies learned in one class to the other; content areas were combined, helping to reinforce new skills

• Students felt a safe learning environment was established, allowing them to discuss and explore their difficult areas of study or skill, particularly with mathematical applications and understandings
• Students began to monitor each other for attendance, participation and performance; if one student felt behind, the others would offer support and guidance to help them catch up; a Team effort was established by the students
CHAPTER 5
DISCUSSION AND RECOMMENDATIONS

College prep is not a punishment – it’s an opportunity. Without it, 70 percent of our students would not be going to college (Report to the Community, p. 3). The President of NUCC reports:

“student success is [our] priority, and we constantly refine our services, from cutting-edge academic support labs to redesigned courses that better engage students…without our attention to their success, untold numbers of [our] students would, indeed, fall behind…of our [student population], 70 percent require at least one college prep course…by devoting resources to improving the skills of students who come to us less than fully prepared, we actually save them…years of time, effort and money.” (Report to the Community, p. 2).

I would like to believe that I am part of the “save them” effort and that my desire to integrate courses through linked options to preparatory students is in that “cutting-edge” arena. With the percentage being high for students requiring preparatory classes, particularly in the mathematics area, it is imperative that administrators, educators, and researchers continue to look for successful approaches to meet the needs of our students.

The department specializing in preparatory classes at NUCC is participating in a five-year federal Title III grant to strengthen educational institutions. The goal is to increase student retention and graduation. Part of the redesign includes incorporating the learning lab on campus and aligning the curriculum with a required lab component. The College Success program continues to be required for students testing into two or more developmental courses and had over 111 sections with a total of 2,973 students during the previous school year. Statistics for students enrolled in the College Success course show that students who succeed in this particular course have higher retention rates and higher success rates in other courses (Report to the Community, p. 9).

Another major component of the Title III redesign effort is focusing on student engagement via student motivation. The curriculum redesign effort is based on the believe that “instructional activities in the redesigned courses will help students realize the relevance of the curriculum, understand the importance of integrating its different components and help [students]
build transferable skills” (Title III: Pathways to Success, 2008, p. 4). An interesting outcome of this study was students initially ranked the area of learning strategies and peer learning as the lowest (not at all like me) with a mean of 3.71 on the MSLQ at the beginning of the semester. However, the exact opposite in terms of action took place. Students developed strong bonds with their classmates and peer learning became a focal point established by their own actions. Student engagement, motivation and recognizing the relevance of the curriculum was addressed by all three interviewed students.

The foundational goal of NUCC, as with many, is to keep the open door open. Keeping it open for the students and the community is certainly honorable and noble; however, during the current difficult, if not bleak, financial status for post-secondary educational institutions, the open door is starting to narrow. How these difficult financial times will affect the community college and its initiatives with new learning communities is yet to be determined. If budget cuts persist, opportunities for further linked courses and studies, such as this one, may be limited if not completely impossible.

Recall of Research Purpose and Questions

The purpose of this phenomenological study was to explore the phenomenon of linking a College Success course with a College Preparatory Mathematics course at North Urban Community College in the State of Florida, as defined by registered students of the course and the course instructor. The overarching question for this study was:

What types of learning communities develop when linking a college skills course with a college preparatory mathematics course?

Additional questions that guided the educational examination of this context included:

1. What are student-defined benefits of a linked course with the same instructor?
2. What are student-defined limitations of a linked course with the same instructor?
3. What are instructor-defined benefits of a linked course with the same instructor?
4. What are instructor-defined limitations of a linked course with the same instructor?

The goal of this study was to shed light on the answers to these questions and provide support for future recommendations for the college preparatory program at this community college and others throughout the State. Student and instructor defined limitations and benefits
have been provided and discussed. Data analysis is certainly not exhausted on this subject, and probably not even within this small study. But on a small scale, light has been shed on the types of learning communities that develop within a linked course of college skills and college preparatory mathematics. Although the class size was small, relationships were still established, roles were still assumed, and student success took place. The learning community in this particular study became “family,” and the students continued this connection for at least two more semesters. This study took place in Spring 2008. During the Summer and Fall 2008 semesters, two of the students continued to be support systems for each other by taking similar classes. Communication between class members did not stop when the linked class ended, but still remains today on both the academic and personal level. Two of the students have also maintained communication with the instructor, and continue to provide updates on their successes and failures in meeting their academic, career, personal and social goals. The learning community thrived well beyond the semester and study, which makes it a success on levels beyond this paper’s scope.

**Discussion Points**

**The Role of Self-Assessment**

The college success course provides students with many opportunities for self-assessment type activities. By having students complete assessments such as: Motivated Strategies for Learning Questionnaire, Locus of Control, Myers-Briggs and the Self-Directed Search, self-assessment becomes a process by which students can “1) monitor and evaluate the quality of their thinking and behavior when learning and 2) identify strategies that improve their understanding and skills” (McMillan & Hearn, p. 40). When these assessments are combined with mathematical ones of skill and test error analysis a perfect combination may exist for helping students realize the connection between self-assessment and self-motivation. McMillan & Hearn (2008) believe that correctly implemented, student self assessment can promote intrinsic motivation, internally controlled effort, a mastery goal orientation, and more meaningful learning (p. 40).
McMillan & Hearn (2008) conceptualized self-assessment as follows:

\[
\begin{array}{|c|}
\hline
\text{Self-Judgment} \\
\text{Knowing progress toward learning targets} \\
\hline
\text{Learning Targets and Instructional Correctives} \\
\text{Implementing strategies to improve performance} \\
\hline
\text{Self-Monitoring} \\
\text{Awareness of thinking or actions} \\
\hline
\end{array}
\]

They believe it is a “combination of three components related in a cyclical, ongoing process: self-monitoring, self-evaluation, and identification and implementation of instructional correctives as needed. Essentially students identify their learning and performance strategies, provide feedback to themselves based on well-understood standards and criteria, and determine the next steps of plans to enhance their performance” (p. 41). This mode of thought blends perfectly with the goals and objectives of the college success course and how its lessons can be implemented into all disciplines.

Schunk (2004) discusses the need for students to become proficient at the skill of self-monitoring. The belief is that students will pay a more deliberate attention to what they are doing, what they are progressing towards, and ultimately self-judgment and being able to identify what level of progress they have made towards their targeted performance. This directly falls in line with the number one objective in my college success class: Learn to become a responsible and independent student. Within the critical thinking points for the college success class (Appendix CC), the first two, and their components, deal with motivation and self-assessment:

a. What is the relationship between motivation and success in school?
   i. Discovering your Locus of Control: internal / external
iii. Defining your personal, academic, social and career goals

iv. Becoming a lifelong learner

b. How is self-assessment relevant to your personal growth?

i. Identify your strengths and weakness

ii. Defining your values

iii. Assessing your interests

iv. Gaining confidence

McMillan & Hearn (2008) believe that student self-assessment, defined as a dynamic process in which students self-monitor, self-evaluate, and identify correctives to learn, is a critical skill that enhances student motivation and achievement (p. 48). The college success course is crucial in helping students explore these issues and in helping them show increased performance and motivation that is meaningful. Combining this skills course with a developmental mathematics course can only enhance the possibilities of meeting what McMillan and Hearn (2008) define as the two most important goals: 1) to improve student self-efficacy and confidence to learn and 2) to promote high scores on accountability tests.

**Perception is Reality**

Perception is Reality…until given *time* and *opportunity* to change it.

This is a lesson I teach in all my classes, regardless of content area. The underlying meaning is that our perception about people, places and things is our reality at that moment. This perception can only change if we allow time and opportunity to come into play. Sometimes our perceptions remain the same, sometimes they go from better to worse, or in best scenarios, they go from negative to positive. Students often have a very negative perception about learning mathematics, their abilities to be successful in this content area, and even the mathematics instructors themselves. Previous poor experiences are often to blame for the learning mathematics and abilities to be successful part of that statement, but how is it that students have a negative perception about a mathematics instructor on day one of a class when the most they have done is taken role. It is disappointing to think that many of our mathematics students,
particularly the developmental students, walk into a mathematics class with their perception for learning the content already at a low point.

Galbraith and Jones (2006) believe a perspective towards the art and science of teaching developmental mathematics can be built through dialogue. For me, the perspective is the perceptions I have about my students and my abilities to provide a strong foundation for their educational advancement along the teacher / learner spectrum. The dialogue is gained through the time and opportunity a semester allows for student-to-student and student-to teacher interaction. Part of this study involved understanding the perception that I had, along with the perceptions that my students had, on day one of this link adventure and how it changed or cultivated along the way. Questions motivating the researcher included: Was there a shift in the student’s perceptions? Was there a shift in mine? How did I handle these changes? How did they handle the changes? Did time and opportunity play a positive role in altering their perceptions, thus their reality? It would be nice to be able to say the short answers of “yes” and “easily.” However, this would be short circuiting what the researcher knows to be true and what many instructors know to be the case in their own classroom experiences.

The Impact of Taking a College Success Course on Success, Persistence and Retention

So what is the impact of a college success course? This question has been addressed throughout this document and through this study. Its impact on NUCC in the areas of success, persistence and retention is clear when looking at data from Fall 2006 to Fall 2007 (SLS Orientation, 2008). These three areas are defined as follows:

**Success:** the percentage of A, B or C grades
**Persistence:** keeping students in the classroom and lowering the withdraw rate
**Retention:** students registering for classes the following semester

The following table illustrates a clear indication that students enrolling in college success, in conjunction with two or more preparatory classes (mathematics, reading or English), have a better percentage rate in all three areas.
Table 25: SLS 1510-College Success

Data for Success, Persistence and Retention from Fall 2006 to Fall 2007

<table>
<thead>
<tr>
<th>SUCCESS: students receiving an A, B or C in the class</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Rate</td>
</tr>
<tr>
<td>2 or more preps</td>
</tr>
<tr>
<td>- with SLS</td>
</tr>
<tr>
<td>Fall 2006 Cohort 59%</td>
</tr>
<tr>
<td>Fall 2007 Cohort 60%</td>
</tr>
<tr>
<td>- without SLS</td>
</tr>
<tr>
<td>Fall 2006 Cohort 42%</td>
</tr>
<tr>
<td>Fall 2007 Cohort 58%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERSISTENCE: keeping students in the classroom/lowering withdraw rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdraw Rate</td>
</tr>
<tr>
<td>2 or more preps</td>
</tr>
<tr>
<td>- with SLS</td>
</tr>
<tr>
<td>Fall 2006 Cohort 13%</td>
</tr>
<tr>
<td>Fall 2007 Cohort 12%</td>
</tr>
<tr>
<td>- without SLS</td>
</tr>
<tr>
<td>Fall 2006 Cohort 22%</td>
</tr>
<tr>
<td>Fall 2007 Cohort 16%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RETENTION: students registering for next semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2006 FTIC Cohort in Fall 2007</td>
</tr>
<tr>
<td>2 or more preps</td>
</tr>
<tr>
<td>- with SLS</td>
</tr>
<tr>
<td>Fall 2006 Cohort 50%</td>
</tr>
<tr>
<td>- without SLS</td>
</tr>
<tr>
<td>Fall 2006 Cohort 26%</td>
</tr>
</tbody>
</table>

Granted, this data is only for two cohorts and additional data collection and analysis needs to be done to understand the true and full impact a college success course may have in these areas. But, the data is promising and it opens the window of opportunity for administration and faculty to take a serious look at the value of the college success course and its impact on success, persistence and retention, all crucial areas to any institution.

What Does the Future Hold for this NUCC?

Revisiting Success Rates in College Preparatory Mathematics and College Success

In Chapter 2, a glimpse of previous statistics for NUCC was provided. A second glance at the numbers to see if change is taking place or have they become stagnant, is valid if the discussion is about what the future holds. The following tables illustrate the success rates, as defined by ABC %, for students taking both levels of the preparatory mathematics class and for those taking the elective mathematics course, where preparatory work was a prerequisite.
The table below illustrates the success rates independently for the two content areas that were linked in this study: MAT 0024C (Elementary Algebra) and SLS 1510 (College Success). The data covers Fall 2006 through Spring 2008. In general, the success rates, as defined by ABC %, for the mathematics course is lower than the college success skills course. Also, the failure rate (a grade of F), except for Spring 2008 semester, is higher in the mathematics course than the skills course.

Source: [www.portal.tcc.fl.edu](http://www.portal.tcc.fl.edu)
Table 27: Success Rates (ABC%) for MAT0024C and SLS 1510

<table>
<thead>
<tr>
<th>Division</th>
<th>Course ID</th>
<th>Success ABC %</th>
<th>Success ABC</th>
<th>D %</th>
<th>F %</th>
<th>Total Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASP</strong></td>
<td>MAT0024C</td>
<td>45.9%</td>
<td>567.0</td>
<td>11.4%</td>
<td>26.5%</td>
<td>800</td>
</tr>
<tr>
<td>SLS1510</td>
<td></td>
<td>69.4%</td>
<td>1,116.0</td>
<td>5.2%</td>
<td>16.8%</td>
<td>1608</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>61.5%</td>
<td>1,683.0</td>
<td>7.3%</td>
<td>20.6%</td>
<td>2408</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division</th>
<th>Course ID</th>
<th>Success ABC %</th>
<th>Success ABC</th>
<th>D %</th>
<th>F %</th>
<th>Total Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASP</strong></td>
<td>MAT0024C</td>
<td>46.3%</td>
<td>391.0</td>
<td>9.2%</td>
<td>25.2%</td>
<td>845</td>
</tr>
<tr>
<td>SLS1510</td>
<td></td>
<td>59.4%</td>
<td>523.0</td>
<td>6.3%</td>
<td>16.6%</td>
<td>880</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>53.0%</td>
<td>914.0</td>
<td>7.7%</td>
<td>20.8%</td>
<td>1725</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division</th>
<th>Course ID</th>
<th>Success ABC %</th>
<th>Success ABC</th>
<th>D %</th>
<th>F %</th>
<th>Total Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASP</strong></td>
<td>MAT0024C</td>
<td>43.4%</td>
<td>319.0</td>
<td>12.9%</td>
<td>25.4%</td>
<td>735</td>
</tr>
<tr>
<td>SLS1510</td>
<td></td>
<td>68.7%</td>
<td>1,221.0</td>
<td>7.3%</td>
<td>15.5%</td>
<td>1777</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>61.3%</td>
<td>1,540.0</td>
<td>9.0%</td>
<td>18.4%</td>
<td>2512</td>
</tr>
</tbody>
</table>

Total
What does this mean for the future of NUCC? What strategies and procedures could be implemented to merge the efforts of these two distinctly separate content areas into a flowing curriculum that promotes the increase of the success rate in all areas? This data reflects the status quo of how classroom instruction and learning environment opportunities are designed at most institutions: separate classes, separate instructors, no connection. Perhaps it is time to turn away from status quo and try something different in hopes of seeing improvement in success rates.

### What Does the Future Hold for Other 2-Year Institutions?

#### Focus on College Preparatory Mathematics

The following 2006 data is provided as a wake up call for all 2-year institutions that are concerned about their student success rates, particularly in college preparatory mathematics. Students enrolled in preparatory mathematics classes are required to take a State Exit Test (Appendix BB) at the end of the semester, in conjunction with their regular mathematics final exam. This test, required by the legislature, has become an obstacle for many students, as well as for instructors and administration.
Table 28: College Prep Mathematics State Exit Test Passing Rates

<table>
<thead>
<tr>
<th>Colleges with Exit Scores at 70% or Higher</th>
<th>Colleges with Exit Scores Below 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broward</td>
<td>Brevard</td>
</tr>
<tr>
<td>Central Florida</td>
<td>Chipola</td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>Edison</td>
</tr>
<tr>
<td>Florida Keys</td>
<td>Gulf Coast</td>
</tr>
<tr>
<td>Hillsborough</td>
<td>Lake City</td>
</tr>
<tr>
<td>Lake-Sumter</td>
<td>Miami-Dade</td>
</tr>
<tr>
<td>Okaloosa-Walton</td>
<td>Santa Fe</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>St. Johns River</td>
</tr>
<tr>
<td>Pasco-Hernando</td>
<td>Tallahassee</td>
</tr>
<tr>
<td>Pensacola</td>
<td></td>
</tr>
<tr>
<td>Seminole</td>
<td></td>
</tr>
<tr>
<td>South Florida</td>
<td></td>
</tr>
<tr>
<td>St. Petersburg</td>
<td></td>
</tr>
<tr>
<td>Valencia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td></td>
</tr>
<tr>
<td>Indian River</td>
<td></td>
</tr>
<tr>
<td>North Florida</td>
<td></td>
</tr>
<tr>
<td>Polk</td>
<td></td>
</tr>
</tbody>
</table>

Source: [http://www.fccj.edu/campuses/mccs/instruction/leadership/alc/archives/iac_minutes/docs/4_12_06/math06_12_06.pdf](http://www.fccj.edu/campuses/mccs/instruction/leadership/alc/archives/iac_minutes/docs/4_12_06/math06_12_06.pdf)

The data reveals the number of community colleges that have reached a 70% or higher for their College Preparatory Mathematics State Exit Test passing rate. More than a dozen are just at the minimum of 70% or slightly over. Even more discouraging are the nine institutions below the 70% standard, where 60% is in good company. Only one community college had a relatively high percentage of 80%.

**New Strategies and Plans for the Future**

In their May 2007 Report, OPPAGA states that community colleges are implementing strategies to assist students who enter postsecondary education unprepared. These strategies include:

- providing clear direction and accountability for the institutions’ college preparatory programs
• establishing strong academic advising for students needing remediation

• providing specialized training to instructional faculty and staff who work with students needing remediation

• using a variety of instructional approaches in college preparatory courses

• providing supplemental courses and services to students who need remediation

• evaluating the institution’s success at meeting the expectations it has established for its college preparatory program

In this report, the section entitled *Instructional Approaches* is most encouraging, as it provides support for learning communities, which is relevant to this study. It states the strategy to “use (or plan to begin using in 2007-08) learning communities to foster stronger bonds and inter-reliance among students by having groups of students attend a series of college preparatory courses together.” Although the percentage of community colleges using this strategy is only 57%, perhaps by studies such as this one, and future data collected on linked courses that supports student success and retention rates, the next OPPAGA report will reflect a higher number; this is a start. And with all change, it must begin somewhere. Having a government entity, whose official role is to offer policy analysis and accountability, recognize the strategy of learning communities and their value is a beginning.

For NUCC, the sign of progress has also emerged. Learning Communities on this campus were originally designed to contain linked courses with different instructors and not extensive integration of course materials or cohorts. However, as depicted below, the updated ideology of learning communities has changed. This represents a sign of progress.
Learning Community Initiative 2007

Figure 7: Learning Community Initiative 2007

Learning Community Initiative 2009

Figure 8: Learning Community Initiative 2009
As defined by NUCC (TCC, 2008), participation in a learning community offers several benefits to students such as:

- Students and faculty work together to provide a range of learning opportunities including active learning and teamwork
- Student learning and achievement are increased
- Students develop and strengthen critical thinking skills through integration of content and collaboration activities
- Students see the connections between different disciplines and develop an understanding of how concepts and skills can be applied in other areas of study
- Students have enhanced opportunities to build relationships with each other and with faculty

Part of the purpose of this study was to see if these institution’s defined benefits of a linked class are supported by the study’s results. This study was conducted in Spring 2008, thus falling between these two ideologies for learning communities. With the new one in place for 2009, and clearly showing the concept of fully integrated cohorts, perhaps administration has found the “bull’s eye” strategy after all. Certainly more pilot programs, data collection and faculty training is required before making any distinct conclusions, but the ground work is being put into place for learning communities to take on an additional form.

**Suggestions for Future Links**

As the researcher, and as the instructor at a community college, I would like to see the following linked courses be an option for our students.

- College Success Basic Skills course (1 hr) + Basic Mathematics Skills course (4 hrs)
- College Success full course (3 hrs) + Elementary Algebra course (4 hrs)
- College Success full course (3 hrs) + Intermediate Algebra course (3 hrs)

By combining the pass / fail basic skills course with the first level of preparatory mathematics course, the students would get initiated into how to incorporate proper study skills into their academic environment. When students progress into the next level of preparatory mathematics, or the intermediate, elective credit mathematics, taking the full college success
course that covers a broad spectrum of topics and study strategies would then be a welcomed supplement to assist in their learning.

The “Essence” and “Phenomenon” of the Study as Defined by a Student

Despite the limitations that existed in this study, the phenomenon still took place. The evidence of this is best illustrated by the following comments taken from the student interviews:

At the beginning of the class you told us we were going to be able to learn a lot from each other…but we didn’t have very many later on in the class…I think it started to discourage the ones that wanted to be there…but then it was like…what I call rubbing off on the other people that had the potential…to stay in the class and do good, that kind of started making everybody feel good about staying with it…not giving up…we could still learn from each other….

The college success class was really informative because, you know, you could see how that stuff made sense in your life…how you might use it. But we don’t always think that about math…we always think that math is…we’re not going to use it, because we actually do use it, at least the basic math…but at first it’s a little boring because we don’t see why we need it. But then we got into the other stuff [SLS] that I didn’t know and that’s when it got interesting. I could tell I was learning something about my organization and time management stuff [skills]…and then you had us apply it to our math…and it started to make sense. I was playing with the numbers…and it was okay…these different letters of the alphabet doing different things with them…I was like, okay, I can do this…it was crazy crazy in high school with all these numbers and stuff…but now it’s not so bad…it’s not boring…the other class [SLS] made me see it [math] as kind of like a challenge for me to get to know it…I need to further my education so…math is okay now. So you know, as we learn from you, you learn from us…we’re like a family.

Another Look at Looping

Literature shows that looping has a positive effect in the elementary and middle school grade levels (Elliott & Capp, 2003; Hedge & Cassidy, 2004; Delviscio & Muffs, 2007). It
provides a “continuum that maximizes learning…[and ] that the formula for success is putting together the familiarity a teacher and student can develop across tow or three academic years and with certain content topics….” (Elliott & Capp, 2003, p. 34). A community of learners is also discussed in the literature as being an important common thread of what schools should become for adults and children as partners in the process of learning (Denault, 1999). If the developmental student at the college level can be equated to the developmentally immature student in the lower levels, then Delviscio & Muffs (2007) statement that the gift of an extra year [time] for teachers to work with developmentally immature students allows for more time to observe, analyze and employ alternate strategies before making critical recommendations regarding issues such as retention” holds value in the community college environment and the support for linked courses.

On the other end of the educational level spectrum, a closer look at the curriculum for graduate students illustrates this promotion of a community of learners. Graduate classes are designed to encourage, engage and empower students to not only develop and improve their skills independently, but also to develop these skills though strong student engagement. Group presentations, group projects, in-class discussions, and on-line blogging (off-campus) all promote the development of a community of learners. In fact, most graduate students would probably have a hard time naming a course they have taken where a community of learners was not just encourage, it was the expectation.

Putting the pieces together, it would appear that looping, its variations and the development of a community of learners are the norm at the two ends of the educational grade level spectrum. So the question for researchers now becomes, why is their a gap in the middle? Why are the high school, community college and undergraduate levels left out of this picture? If a community of learners promotes peer-learning, self-growth, self-monitoring, motivation, organization and responsibilities, then shouldn’t these factors be just as important to promote during the crucial years of high school and college, when students are making choices that will affect the rest of their lives? Perhaps this disconnect should not be dismissed so easily.

While most looping is done on a vertical basis, such as students staying with the same teacher for second and third grade levels, this study looked at students staying with the instructor on a horizontal basis, from one course laterally to another course. The content areas were different, but the students and the instructor remained the same. The following are examples of
vertical looping and the researcher’s idea of horizontal looping and how it could take place in a college setting.

Examples:

<table>
<thead>
<tr>
<th>Common Vertical Looping</th>
<th>Possible Vertical Looping at College Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(if instructor meeting qualifications exists)</td>
</tr>
<tr>
<td>2nd Grade</td>
<td>Instructor A for College Algebra -1st semester</td>
</tr>
<tr>
<td>3rd Grade</td>
<td>Instructor A for Trigonometry – 2nd semester</td>
</tr>
<tr>
<td></td>
<td>Instructor A for Calculus – 3rd semester</td>
</tr>
</tbody>
</table>

Variation of Horizontal Looping

Instructor A for Preparatory Mathematics + Instructor A for College Success
Instructor A for College Credit English + Instructor A for College Success

The question of whether academic looping is a problem or a solution still remains at large. Studies have been conducted, interviews given and programs have been assessed, but the answer is still not clear. When compelling evidence is given in support of looping, it usually relates to only the pre-school, elementary or middle school levels. High schools do not usually entertain this alternative method and colleges tend to be uninterested. Even the education curriculum of future teachers at the universities does not include a discussion on looping and its potential benefits. “We believe it is unfortunate that the local universities could not be enticed to join with Rocklin (an elementary school working to ‘grow’ looping and multi-age teachers) in a partnership to equip teachers with the important skills to be outstanding in the multi-age and looping curriculum designed classrooms. Perhaps they will in future years” (Elliott & Capp, 2003, p. 35). Certainly there are limitations to looping, and even at the elementary levels the discussion is intense as to whether or not the investment in this alternative method is worthy in the long run, so envisioning offering this type of experience at the community college level is probably not even on the radar screen. But, herein lays perhaps a golden opportunity that is being overlooked by post-secondary institutions. If looping could be equated to linked courses at the college level, where a single instructor has the same cohort of students for two content areas, either in the same semester or in sequential semesters, would the benefits outweigh the limitations as they do in the research listed above at the elementary and middle school levels? If
post secondary institutions are going to continually ask for additional funding for developing innovative methods for reaching the masses through their “open door” policy, then perhaps linked courses should become a brighter blip on that radar screen and that professional development for instructors should include this type of training. The answer is not clear as to whether linked courses would be a problem or a solution at the college level, but hopefully this study, and those that follow, will add to the repertoire of supporting it as another option to students.

Final Reflections

Since the community of learners developed in this study, it raises the following questions for future study:

1) What are the advantages of a community?
2) How might it influence behaviors of participants?
3) Would these behaviors be a consistent factor (element) with other linked courses?
4) How could these advantages be incorporated into a non-linked course?

Additional research would allow us to extend the analysis and outcomes of this study to not only this group of students, but possibly as a consistent factor in other learning communities.

As stated in Chapter 1, the purpose of the typical American community college is to meet the needs of the community by providing open door access to opportunities for individuals so they can meet their academic, career and personal goals. Providing learning communities that include linked courses with same instructors is not the norm. However, this study revealed it could provide some of the same benefits and those offered from looping. Perhaps community colleges should take a lesson from the movie A Field of Dreams and believe in the idea “if you build it…they will come.” If community colleges ‘build’ the opportunities for students to take linked course, and participate in a learning environment that promotes a community of learners, then they should take this belief and expand it by investigating the possibilities within the statement as: if you build it… what are the results, what are the benefits, and what does this untapped resource have to offer our students?

Although the assertions and findings in this study shed light on the value of a linked course, final judgment cannot be passed on its effectiveness until additional studies are conducted. A comparison study of a linked course to a non-linked course would be beneficial, as
would additional linked course studies, to determine if these results are an isolated incident or a
global discovery. The community college strives to be the “open door” institution that accepts
all students, at all levels and abilities, with all learning styles and needs. As educators, we want
the least number of distractions and opportunities for frustration as possible for our students. We
strive to create a seamless transition for student learning. It is unreasonable to think that one
specific class format can be the solution to this desire; but it is not unreasonable to think that
alternative offerings of learning environments in the form of linked courses on a consistent basis
is part of the solution.

Boylan (2004) discusses the philosophies of community colleges he has worked with in
his research. The overall reflection is that student’s needs must be considered first. “We help
students understand what they already know and realize that they do belong here [in
school]…our job is to meet students where they are and to move them as far as they can go…we
judge our success by the success of our students” (Boylan, 2004, p. 20). This last statement is
the heart of the matter for me as an instructor. I tend to judge my success by whether or not my
students are successful. I realize that reaching a 100% of my students and helping them along
the continuum of the “T1 -----> tL” is not always possible, no matter what efforts I take in my
planning, organizing, and instruction. But, unlike some professions where feedback is not
always a daily occurrence, teaching offers this reward, as I like to call it. Reward in the sense
that every day I receive some type of feedback from my students. Some days this feedback is
good, other days, not so good. But regardless, it is feedback – and either way it gives me fuel and
motivation for another day. “Decisions are made in terms of what is in students’ best interests
rather than what is in the best interests of the faculty. Students are central to the learning
process. In these programs, student learning is integral to the mission of the program; it is also
the measure by which the programs define their success” (Boylan, 2004, p.20).

Moustakas (1994) professes that the goal of a phenomenological study is to “reduce the
textural (what) and structural (how) meanings of experiences to a brief description that typifies
the experiences of all of the participants in a study. All individuals experience it; hence, it is
invariant, and it is a reduction to the “essentials” of the experiences.”

Giorgi (1985, p. 69) provides a nice summary to the phenomenological approach in terms
of two descriptive levels.
Level I, the original data are comprised of naïve descriptions obtained through open-ended questions and dialogue. On Level II, the researcher describes the structures of the experience based on reflective analysis and interpretation of the research participant’s account of the story.

By adopting a strictly descriptive approach, we can let the phenomena speak for themselves, and when we do we discover that whatever appears suggests in its very appearance something more which does not appear, which is concealed…the given that is in the appearance of phenomena is ‘directionality,’ a direction is offered or a significance is held out which we pick up and follow or turn away from.

The aim is to determine what an experience means for the persons who have had the experience and are able to provide a comprehensive description of it. From the individual descriptions general or universal meanings are derived, in other words, the essences of structures of the experience (p. 151).

Through the student questionnaires, the final interviews, the daily student interactions and the researcher’s own perceptions and interpretation of the data, Moustakas’ and Giorgis’ essence of the experience is reached.

Linked courses, with different instructors, require an integrated syllabus, integrated classroom policies, and the commitment to the concept. It definitely requires more work throughout the conception to completion stages. Linking with oneself requires the same commitment. This type of learning community is not for all students, nor for all instructors. However, after conducting this study, I believe the opportunity to participate in one should exist on all community college campuses.

“Remedial education, like all areas of education, has experienced its ‘bandwagons’ since the first documented course at Wellesley in 1893. Some of the more renowned fads have
been: individualized instructions, self-paced instruction, peer tutoring, computer-managed instruction, computer-assisted instruction, and workbook texts. Labs have been designed with a multitude of functions to facilitate this area of education. However, the literature reveals that no ‘cure-all’ has been found. In spite of the variety of modes and methods being used, no one has produced results so remarkable for a consensus to develop” (Buchanan, L.K., 1992).

It is unlikely the ‘bandwagons’ in remedial education have been eliminated, as no cookie-cutter approach or ‘cure-all’ has been developed to satisfy the masses. However, progress has been made and linked courses may be part of the antidote to improve student success and retention. If government entities, administration and faculty are all willing to support the idea of change in terms of providing new options for student learning, then linked courses need to be in the middle of the radar screen. Change is a choice. If you change the classroom dynamics and the teacher, perhaps then we can begin to change the student.

“Remedial math students were found to have a significantly poorer attitude toward mathematics regarding confidence in their ability, feelings about being successful, anxiety levels, motivation to do math, and usefulness of math” (Buchanan, L.K., 1992)

Maturity is a choice as well. The questions for this researcher after post-study continue to be: How did I mature? How did my students mature? What is needed to balance the equation of content mastery plus academic maturity and how did the linked course factor into the equation?

Certainly we can all agree that improving developmental students’ attitudes towards learning, their self-efficacy, their motivation, and their ability to see the usefulness of an education is a priority. The question remains “How?” A community of learners was reached in this study. I believe that linked courses, particularly with developmental mathematics and college success, are the stepping stones of a solid foundation.
Teacher/Learner Spectrum:

\[ T_L \quad T_L \quad T_L \quad T_L \quad T_L \]

\( T = \) Teacher
\( L = \) Learner

\( T_L \) Novice learner is heavily dependent on the teacher for instruction, guidance, development of learning strategies, study skills, assessment and reinforcement, and monitoring of progress. Learner's locus of control is external. Teacher plays a dominant role in helping shape the student's development as a learner and providing a structured learning environment.

\( T_L \) The learner becomes more experienced and begins to take responsibility for his or her own learning. Locus of control begins to shift. Develops study skills and learning strategies. Develops strategies for monitoring own progress. Motivation begins to shift but is still largely extrinsic and teacher's role is still critical in providing structure, instruction, guidance, assessment, feedback and reinforcement.

\( T_L \) Teacher and learner share equal responsibility for student's learning. Learner has developed viable learning strategies; locus of control is more internal than external. Learner is motivated by intrinsic as well as extrinsic factors. Learner is becoming a self-regulated learner and is able to function in a less structured learning environment, but teacher still provides regular guidance, feedback, assessment and reinforcement.

\( T_L \) The learner takes responsibility for his or her own learning. Locus of control is internal. The learner has a fully developed set of learning strategies and is able to monitor progress and self-regulate. Motivation is largely intrinsic but learner still looks to teacher for some feedback and reinforcement. Teacher provides limited guidance and feedback and begins to move into a facilitative role.

\( T_L \) The learner is self-actualized. Learner takes full responsibility for own learning, is intrinsically motivated, and self-directed. Learner is able to regulate his or her own learning. The teacher is viewed as a facilitator of learning by both learner and teacher.
APPENDIX B

MOTIVATED STRATEGIES FOR LEARNING QUESTIONNAIRE (MSLQ)

This document contains the questions used in the MSLQ survey so that you will be familiar with what it looks like. DO NOT GIVE THIS SURVEY ON PAPER. Rather, have students complete it online during the assigned windows, at http://content.tcc.fl.edu/surveys/MSLQ/.

DIRECTIONS: This questionnaire asks about your study habits, your learning strategies, and your motivation for the classes you are taking. THERE ARE NO RIGHT OR WRONG ANSWERS TO THIS QUESTIONNAIRE. THIS IS NOT A TEST.

We want you to respond to the questionnaire as accurately as possible. Your answers to this questionnaire will be analyzed by computer and you will receive an individual report that summarizes your responses. Please get started by answering the following demographic questions.

Enter your name in the space to the right.
Enter your student e-mail address.
In what year did you graduate from high school or obtain your GED? Enter the year in the boxes to the right.
How many hours per week do you work for pay? Enter the number in the boxes to the right.
How many credit hours are you taking this term? Enter the number in the boxes to the right.
Which category best describes your goal at TCC?
  - Complete a two-year degree for transfer
  - Complete a two-year degree for employment
  - Complete a short-term certificate program
  - Enhance current job skills
  - Personal enrichment
  - Other

Part A. Motivation
The following questions ask about your motivation for and attitudes about your courses. There are no right or wrong answers. Answer the questions as accurately as possible. Use the scale below to answer the questions. If you think the statement is very true of you, select 7; if a statement is not at all true of you, select 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

1 = not at all true of me   2       3       4       5       6       7 = very true of me

1. I prefer course material that really challenges me so I can learn new things.
2. If I study in appropriate ways, then I will be able to learn the material in a course.
3. When I take a test, I think about how poorly I am doing compared with other students.
4. I think I will be able to use what I learn in my courses in other courses.
5. I believe I will receive an excellent grades in my classes.
6. I'm certain I can understand the most difficult material presented in the readings for my courses.
7. Getting a good grade is the most satisfying thing for me right now.
8. When I take a test, I think about items on other parts of the test I can't answer.
9. It is my own fault if I don't learn the material in a course.
10. It is important for me to learn the material in my classes.
11. The most important thing for me right now is improving my overall grade point average, so my main concern is getting a good grade.
12. I'm confident I can learn the basic concepts taught in my courses.
13. If I can, I want to get better grades than most of the other students.
14. When I take tests, I think of the consequences of failing.
15. I'm confident I can understand the most complex material presented by my instructors.
16. I prefer course material that arouses my curiosity, even if it is difficult to learn.
17. I am very interested in the content areas covered by my courses.
18. If I try hard enough, then I will understand course material.
19. I have an uneasy, upset feeling when I take an exam.
20. I'm confident I can do an excellent job on the assignments and tests in my courses.
21. I expect to do well in my classes.
22. The most satisfying thing for me in a course is trying to understand the content as thoroughly as possible.
23. I think the material in my classes is useful for me to learn.
24. When I have the opportunity, I choose course assignments that I can learn from even if they don't guarantee a good grade.
25. If I don't understand course material, it is because I didn't try hard enough.
26. I like the subject matter of my courses.
27. Understanding the subject matter of my courses is very important to me.
28. I feel my heart beating fast when I take an exam.
29. I'm certain I can master the skills being taught in my classes.
30. I want to do well in my classes because it is important to show my ability to my family, friends, employer, or others.
31. Considering the difficulty of my courses, the teachers, and my skills, I think I will do well in my classes.

Part B. Learning Strategies

The following questions ask about your learning strategies and study skills for your courses. Again, there are no right or wrong answers. Answer the questions about how you study for your classes as accurately as possible. Use the same scale to answer the remaining questions. If you think the statement is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

1 = not at all true of me 2 3 4 5 6 7 = very true of me
32. When I study the readings for a course, I outline the material to help me organize my thoughts.
33. During class time, I often miss important points because I'm thinking of other things.
34. When studying for a course, I often try to explain the material to a classmate or a friend.
35. I usually study in a place where I can concentrate on my course work.
36. When reading for a course, I make up questions to help focus my reading.
37. I often feel so lazy or bored when I study that I quit before I finish what I planned to do.
38. I often find myself questioning things I hear or read to decide if I find them convincing.
39. When I study, I practice saying the material to myself over and over.
40. Even if I have trouble learning the material in a class, I try to do the work on my own, without help from anyone.
41. When I become confused about something I'm reading for class, I go back and try to figure it out.
42. When I study for a course, I go through the readings and my class notes and try to find the most important ideas.
43. I make good use of my study time for my courses.
44. If course materials are difficult to understand, I change the way I read the material.
45. I try to work with other students to complete the course assignments.
46. When studying, I read my class notes and the course readings over and over.
47. When a theory, interpretation, or conclusion is presented in class or in readings, I try to decide if there is good supporting evidence.
48. I work hard to do well in my classes even if I don't like what we are doing.
49. I make simple charts, diagrams, or tables to help me organize course material.
50. When studying, I often set aside time to discuss the course material with a group of students from the class.
51. I treat course material as a starting point and try to develop my own ideas about it.
52. I find it hard to stick to a study schedule.
53. When I study, I pull together information from different sources, such as lectures, readings, and discussion.
54. Before I study new course material thoroughly, I often skim it to see how it is organized.
55. I ask myself questions to make sure I understand the material I have been studying in class.
56. I try to change the way I study in order to fit course requirements and instructor's teaching style.
57. I often find that I have been reading for class but don't know what it was all about.
58. I ask instructors to clarify concepts I don't understand well.
59. I memorize key words to remind me of important concepts.
60. When course work is difficult, I give up or only study the easy parts.
61. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.
62. I try to relate ideas in a subject to those in other courses whenever possible.
63. When I study, I go over my class notes and make an outline of important concepts.
64. When reading, I try to relate the material to what I already know.
65. I have a regular place set aside for studying.
66. I try to play around with ideas of my own related to what I am learning.
67. When I study, I write brief summaries of the main ideas from the readings and the concepts from the lectures.
68. When I can't understand the material in a course, I ask another student for help.
69. I try to understand the material in this class by making connections between the readings and concepts from the lectures.
70. I make sure I keep up with the weekly readings and assignments for my courses.
71. Whenever I read or hear an assertion or conclusion, I think about possible alternatives.
72. I make lists of important terms and memorize the lists.
73. I attend class regularly.
74. Even when course materials are dull and uninteresting, I manage to keep working until I finish.
75. I try to identify students in my classes whom I can ask for help if necessary.
76. When studying, I try to determine which concepts I don't understand well.
77. I often find that I don't spend very much time on my courses because of other activities.
78. When I study, I set goals for myself in order to direct my activities in each study period.
79. If I get confused taking notes in class, I make sure I sort it out afterward.
80. I rarely find time to review my notes or readings before an exam.
81. I try to apply ideas from course readings in other class activities such as lecture and discussion.
Welcome to MAT 0024C! My name is Mrs. Gubitti – (sounds like goo-betty), but call me “Mrs. G.” I’ll be your tour guide on this journey through elementary algebra. My goal in this class is to help you improve your knowledge and skill level in elementary algebra, enhance your reading comprehension and verbalization of the “foreign” language of math, and improve your overall thinking process when dealing with mathematical concepts. By doing this, I hope to help you be successful not only in this math class, but those to follow. It will be a TEAM effort! I’ll do my part to guide you through this journey, if you’ll do your part to be an active and dedicated participant in your own learning process. I will expect you to devote time and energy into studying the concepts, practicing the problem solving skills learned in class, asking your classmates or me questions when you don’t understand, and be an active participant in the classroom itself. You can expect me to do my best to provide a learning environment that is safe, fair and non-judgmental. An environment where making mistakes is not negative, but it is an opportunity for you to learn from them and improve your skills. I will give you my undivided attention in facilitating this math learning environment, if you give me your undivided attention in learning the material. You may view this class as a bit structured, with the homework due daily and my expectation that you will not only “do” math problems, but “talk” about them, “verbalize” them. The reason for this structure is that I am a firm believer that by practicing a particular skill over and over again, not just with pencil and paper, but with your communication skills too, that the combination of these learning techniques will help make not only math a little easier, but any course of study easier. So let’s work together and make MATH a welcomed part of your course curriculum!

TEACHING MISSION: Tallahassee Community College is an open-admission, comprehensive community college. Its mission is to provide excellence in teaching and learning through educational programs that promote the intellectual, social and personal development of students; assist them in developing the ability to think critically, creatively and reflectively; and prepare them for productive and satisfying lives.

CRITICAL THINKING: The faculty is committed to creating a learning environment for all students which promotes, encourages, and fosters higher order thinking skills including critical thinking skills that are grounded in an understanding of the fundamental concepts of the disciplines in which they are taught.

EDITION BOOK (PURPLE COVER). THE PREVIOUS EDITION (BLUE COVER) WILL NOT MATCH COURSE CONTENT, TEST MATERIAL AND HOMEWORK ASSIGNMENTS AS OUTLINED ON THE PACING SCHEDULE. A solutions manual is available in the bookstore, but is not required. This textbook is available at the TCC bookstore. If you have any trouble purchasing this book, please let me know immediately. A copy of the textbook is on reserve at the library. However, this is NOT for checking out, it is only for viewing while in the library. If you purchased a new book, it should have come with a CD. This CD has very good tutorials on it for each section of the book. It is a great resource for extra help!

PURPOSE: The purpose of this course is to increase your proficiency in the areas of arithmetic, algebra and geometry. This course is for students who have had little or no experience in algebra, or who need a refresher course in the basic skills of mathematics. The class is for those students who have been identified through placement testing as needing these preparatory math skills; those students who have non-transferable math credits from another college; or those students who personally request a refresher course in mathematics. This course will cover a range of topics including: the order of operations, solving equations, solving word problems, factoring and basic graphing skills. Students must receive a score of 70% in the course content and 60% on the State Exit Exam in order to receive a passing grade in the class and be eligible for MAT 1033. The State Exit Exam is part of the Final Exam in this course. The purpose of MAT 0024C is to prepare students for MAT 1033, which is the required intermediate algebra course that you will take following the successful completion of this course.

LEARNING OBJECTIVES: The learning objectives for this course are listed at the end of this syllabus and are grouped accordingly under the class tests.

CONTENT: Chapter 1 – 3 ......... Union & Intersection of sets (omit sec 3.1 obj. 4 & sec 3.2 obj. 4)
Chapter 4 .................(omit sec. 4.3 obj. 2 and sec. 4.5 – 4.8)
Chapter 5 ................. (sec. 1 obj. 1 and sec. 2 only)
Chapter 7 ................. (omit sec. 7.3 obj. 5 and sec. 7.5 obj. 2)
Chapter 8 ................. (omit sec. 8.5 obj. 2)
Chapter 9 ................. (sec. 9.1 obj. 1, sec. 9.5 obj. 2&3 and sec. 9.6 only)
Chapter 10 ................. (sec. 10.1, sec. 10.2 and Handout: Multiplication of Numerical Radicals)

ATTENDANCE: Attendance is critical to your success and therefore is required! Since learning math skills is like laying bricks, one builds on the other and helps to create a firm foundation, missing a day in your math class can be detrimental. The catch up work can be overwhelming. And of course, you would miss the benefit of hearing the information explained, examples provided, and an opportunity to ask questions and share ideas with your fellow classmates and me. You have registered for this course and it is your responsibility to attend class regularly. If you choose to be absent from class, keep in mind that you will bear full responsibility for all subject matter and procedural information discussed in class. It will be your responsibility to make an effort to either learn the information by reading the book, checking out the textbooks’ video in the library for that particular section of material that you missed, going to the math lab for help, asking a student in class to assist you, or coming to see me in my office during office hours. Please do not ask me to “re-teach” the material in class the next time you show up, that is not fair to the other students and our schedule of material that needs to be covered in class will not allow it. It is institutional policy that you may be administratively withdrawn from the course if you miss more that
five hours of instruction (see the T.C.C. catalog). Remember that mathematics is a complex subject and you cannot learn if you are not in class.

NOTE: I WILL NOT WITHDRAW YOU FROM THIS CLASS FOR EXCESSIVE ABSENCES. THE RESPONSIBILITY IS YOURS IF YOU CHOOSE TO WITHDRAW FROM THIS CLASS.

TARDINESS: Class begins promptly at the scheduled time and attendance will be taken. Please show respect for your fellow classmates and me by arriving to class on time, being prepared, ready to begin, and staying for the entire class period.

WITHDRAWAL: If for any reason you are unable to complete the course, you must withdraw no later than March 24, 2008 to avoid receiving a grade of F. Beginning July 1, 1999, Florida law states that a student may attempt a college prep course only twice. Students who do not achieve a C or better in their second attempt in this course or who withdraw or are withdrawn by the instructor after January 12, 2007 (the last day a student may withdraw from a course and receive a refund) will be required to pay the full cost of instruction if they enroll a third time.

Bottom line is this – dedicate yourself to this class and only need the ONE attempt to successfully complete it – your wallet will thank you and you will be further along in your course curriculum and achieving your goals!

CALCULATORS: Calculators are NOT permitted in this course because you will have to take the State Exit Test as part of the Final Exam for this course and calculators are not allowed. The CLAST also does not permit the use of a calculator.

HOMEWORK: Homework assignments are given and collected daily. Homework is calculated into your final grade at 20%. All homework assignments should be completed prior to the next class meeting. It is very important that you complete the assignments and get help with anything that you do not understand. It is only through study and practice that you will understand the material well enough to perform successfully on tests and quizzes, and retain the skills for long term use.

NOTE: I will collect homework daily! Late homework will not be accepted unless you have a documented and excused absence approved by the instructor.

QUIZZES: Quizzes will be given randomly during the semester. Some of these quizzes may be unannounced so it is important that you stay current with your homework and seek help with anything you do not understand. Quizzes are a great way of testing what you do know and giving you a heads up on what you don’t know. They will reveal the areas in which you need additional help in understanding the material and concept and more practice problems to work.

EXAMS: There will be six (6) unit tests and one (1) comprehensive final exam. The tests and final exam will have some multiple-choice items and some free response items. The State Exit exam is part of the course final exam. See the section below for further details on the tests and final exam.
EXTRA CREDIT: Extra credit should not be an expected option in any college course. However, at times in this class, at my discretion, I will give extra credit quizzes or assignments where the points will only be used to help your overall class score, never to hurt it. These quizzes will be based on class material and content and the assignments will deal with mathematical concepts as well. You must be present in class in order to participate in these extra credit quizzes and assignments. PLEASE NOTE - If you are absent from class, or arrive late and the quiz / assignment has already been given, you are not eligible for this extra credit.

SPECIAL NOTE: The Remedial Section of House Bill 1545, passed by the Florida Legislature effective Fall term 1995, states that all students enrolled in a college preparatory course must achieve a passing score on an Exit Examination. To enroll in MAT 1033 you must have BOTH a C or better average (70% or higher) in this course, MAT 0024C, AND a passing score of at least 60% on the Exit Test. Students whose average is below 70% will be required to repeat the course. Those students who have a C average or better but do not pass the Exit Exam will be given one chance to pass a make-up Exit Test on the last day of the exam week. If that is not passed, the student will receive a grade of “F” in the course. Please ask me if you have any questions about this requirement.

MAKE-UPS: Quizzes cannot be made up and late assignments will not be accepted. If you must miss a test, it is your responsibility to contact me before the test if at all possible. Should you miss a test, please come see me immediately. I will allow your Final Exam grade to count DOUBLE to replace the missing test score. However, please note that I will only do this ONE TIME, so if you miss more than one test, a score of zero will remain for the others. Also, I do not drop any tests, so please make sure you know when a test day is scheduled. See the course calendar, but realize it is subject to change, so attend class regularly for any change announcements to be made.

NOTE: No make-ups on homework, quizzes or tests!

EXTRA HELP:

OFFICE HOURS: I will gladly provide individual help during my scheduled office hours. Please see the front page of the syllabus for my office hours. You do not need an appointment to see me during office hours, so feel free to come by as often as you wish.

MATH CENTER: You may use the Math Center as often as you like. The Math Center is located in DH 225. Please see the handout given in class for the Math Center times. Remember that the Math Center is there to help you succeed and the tutors in the Center can help you at times when I am unavailable. If you have any questions regarding the Math Center, the coordinator is Vera Mayes and she will be happy to answer your questions.

AVAILABLE RESOURCES: HM3 is a computer tutorial CD which is included in your textbook if you bought a new one. If you bought a used textbook, you might be able to get the CD from the bookstore. The tutorial is also available on the computers in the Open Access Labs (AC 210 and CT 206) and in the Math Center (AP 225). Instructional videotapes are available at the circulation desk on the first floor of the library. The same lessons are available on the computers in the Library, Open Access Labs and Math Center. HM eduSpace, a tutorial and practice website is available to you at: eduspace.hmco.com. Use the password “hmmmathstudent” and username “hmmmathstudent”. If you bought a new textbook, you have also received “Math Study Skills Workbook” by Paul D. Nolting. This is particularly helpful should you miss a day of class instruction. Please utilize one of these options to help you catch-up with the material.
You will find that Tallahassee Community College has a fine support system made up of your instructor, the Math Center tutors and the counselors. Let us help you get help when you need it! That’s what we are here for – to help YOU be successful!

CELL PHONES: I am very appreciative of the technological advances in today’s society. However, there is a time and place for everything so here is my FIRM policy on cell phones. CELL PHONES ARE ONLY ALLOWED IN MY CLASSROOM IF THEY ARE TURNED OFF OR ARE TURNED ON VIBRATE!!!

If your cell phone ringer, beeper, song, or any other noise other than a vibrating sound goes off in my classroom, you will have 5 points deducted from your homework/quiz grade or your test grade if it goes off during a test. That’s 5 points every time it goes off – so be careful and put those cell phones on vibrate! Having said that, I understand that some of you may need to keep your cell phone on due to emergencies or being on call at work, etc., this is where the vibrate only comes into play. If your cell phone has this option, USE IT, if it doesn’t, then don’t bring it to class. If there is some extreme emergency and your phone does not have the vibrate option but you need to keep it turned on during class, please come and tell me about it BEFORE class and we can discuss the situation and options available. I am serious about this, so don’t test me on it. It is very rude and distracting to your fellow classmates and me when your cell phone goes off, so please don’t let it happen. I have a cell phone too, but it is always turned off during class, so I will follow the same rule that I am asking you to follow. If I ever forget to turn my cell phone off for class and it goes off, everyone in class that day receives 5 extra bonus points on their homework/quiz grade. I appreciate your compliance with this request.

GRADING RATIONALE:

90% - 100% = A
80% - 89% = B
70% - 79% = C
60% - 69% = D
0% - 59% = F

6 Tests at 10% each.................60%
Each test has 25 questions on it that are worth 4 points each. Partial credit will be given where appropriate and where work is shown. Each test consists of 5 multiple choice questions and 20 free response questions. Remember, there are no make ups for missed tests. Should you miss a test, your final will count TWICE to replace the missed test grade. This option is only used ONE time per student, all other missed tests will remain a “0” in the grade book. No tests are dropped!

Quizzes & Homework.............20%
There will be approximately 10 quizzes given during the semester. Quizzes will vary in value between 10 – 20 points depending on amount of material.
covered in the quiz. There are no make ups for quizzes.

Homework is assigned each class period and will be collected the following class period. You will have homework to turn in and be collected EACH class period. Each daily homework assignment counts 5 points. Late homework will not be accepted unless approved by the instructor. Examples of reasons for approval: medical emergency for which you have documentation; work responsibilities with documentation to clarify. Should you have to miss a class, but would like to turn your homework in early, that is acceptable and you can still earn the homework points. Please see the homework assignment sheet that is part of this syllabus. It will tell you what problems are assigned for each section.

REMEMBER – THE BEST WAY TO LEARN MATH IS TO PRACTICE IT! THE HOMEWORK PROBLEMS WILL STRENGTHEN YOUR MATH SKILLS IN NO TIME! 😊

Final Examination ..................... 20%

In accordance with college policy, ALL students must take the Final Examination. The Final Exam will consist of 20 free response questions and 30 multiple choice questions. The 30 multiple choice questions are considered to be the State Exit Exam portion of the Final.

DATES and DEADLINES:

Course Withdrawal: Last day to withdraw from the course March 24th

Last week of classes: Last week of classes prior to Final Exam April 14th – 18th

Final Exam Week: Final given during this week April 21st – 26th

FINAL EXAM FOR MAT 0024C – MONDAY, April 21, 2008
12:30 – 2:30pm ROOM TBA

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STUDENTS WITH DISABILITIES / ADA PROVISIONS: Tallahassee Community College is committed to making all programs, services, and facilities accessible to and usable by persons with disabilities in order for students to obtain maximum benefit from the educational experience and to effectively transition to our college environment. Students with disabilities who identify themselves and provide appropriate documentation are eligible for support services. To access these services, please contact the TCC Disability Support Services (DSS) Office at 850-201-8430 or visit the office on the first floor of the Student Union Building (SU 178).

ACADEMIC HONOR CODE: Students are expected to uphold the Academic Honor Code published in the Tallahassee Community College Catalog and Student Handbook. (Please see TCC’s catalog for full details)

SYLLABUS CHANGE POLICY:
This syllabus is a guide for the course and is subject to change with advanced notice.

Math Path at Tallahassee Community College

Where are you on the path? What do you need?

FOCUS ON YOUR GOAL!!!

<table>
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<tr>
<th></th>
<th>MAT 0002</th>
<th>MAT 0024 / 0024C</th>
<th>MAT 1033</th>
<th>*MAT 1105 / STA 2023 / MGF 1106 / MGF 1107</th>
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NEED 2 MATH CLASSES FOR AA DEGREE THAT ARE FROM MATH CREDIT CATEGORY

Take responsibility for reaching your goal. Don't drop out of a math class. Study, work hard, and pass that class the first time - YOU CAN DO IT!

* I will provide you with a list that shows all the possible math classes with their titles that you could take after successful completion of MAT0024C and MAT1033.
Attitude makes a big difference in a student’s work. Instead of thinking, “I have to take this course before I can take a college level math class”, think: “If I take advantage of this course to strengthen my elementary algebra skills, I will have a stronger foundation and a better chance at succeeding in future college level math courses!”

GUBITTI–MAT 0024C


Homework Assignment Sheet By Book Section And Learning Objectives

Remember – homework can be turned in EARLY, but NOT LATE.

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MAT 0024C
PACING SCHEDULE: The following is an intended pacing schedule for the semester. The material listed for each day will be explained in class and the homework corresponding to that material should be completed prior to the next class. Your instructor may need to make changes in this plan.

| Monday       | 1/7     | Introduction               |
|             |         | Ch. 1, Sec. 1.1 (Obj. 1)   |
|             |         | Handout: Union & Intersection |
| Wednesday   | 1/9     | Ch. 1, Sec. 1.1 (Obj. 2)   |
|             |         | Ch. 1, Sec. 1.2 (Obj. 1 & 2) |
| Friday      | 1/11    | Ch. 1, Sec. 1.2 (Obj. 3, 4 & 5) |
|             |         | Ch. 1, Sec. 1.3 (Obj. 1)   |

| Monday       | 1/14    | Ch. 1, Sec. 1.3 (Obj. 2 & 3) |
| Wednesday   | 1/16    | Ch. 1, Sec. 1.3 (Obj. 4)    |
|             |         | Ch. 1, Sec. 1.4 (Obj. 1, 2) |
| Friday      | 1/18    | Ch. 2, Sec. 2.1 (expressions only) |
|             |         | Ch. 2, Sec. 2.2 (Obj. 1)    |

<p>| Monday       | 1/21    | Holiday – No School        |
| Wednesday   | 1/23    | Ch. 2, Sec. 2.2 (Obj. 2, 3, 4 &amp; 5) |</p>
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<td>Ch. 7, Sec. 7.3 (Obj. 1 &amp; 2)</td>
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<td>Ch. 7, Sec. 7.3 (Obj. 3 &amp; 4)</td>
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<td>2/22</td>
<td>Ch. 7, Sec. 7.4 (Obj. 1)</td>
</tr>
<tr>
<td>Monday</td>
<td>2/25</td>
<td>Ch. 7, Sec. 7.4 (Obj. 2)</td>
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<td>Ch. 7, Sec. 7.5 (Obj. 1)</td>
</tr>
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<td>Activity</td>
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<tr>
<td>Wednesday</td>
<td>2/27</td>
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<td></td>
<td>Ch. 4, Sec. 4.2 (Obj. 1)</td>
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<tr>
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<td>Ch. 4, Sec. 4.2 (Obj. 2)</td>
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<tr>
<td>Friday</td>
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<td>Review</td>
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<tr>
<td>Monday</td>
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<td>3/5</td>
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<tr>
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<td>Ch. 8, Sec. 8.1 (Obj. 2)</td>
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<tr>
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<td>Ch. 8, Sec. 8.2 (Obj. 1 &amp; 2)</td>
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<td>3/7</td>
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<td></td>
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<td>3/10 – 3/14</td>
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<tr>
<td>Monday</td>
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<tr>
<td></td>
<td>Ch. 8, Sec. 8.4 (Obj. 1)</td>
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</tr>
<tr>
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<td>3/19</td>
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<td>Review</td>
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<td>3/21</td>
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<td></td>
<td>Test #4</td>
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<td>Monday</td>
<td>3/24</td>
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<td>Ch. 8, Sec. 8.5 (Obj. 1)</td>
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<td>3/26</td>
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<td>Ch. 9, Sec. 9.1</td>
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<td>Ch. 9, Sec. 9.5 (Obj. 2 &amp; 3)</td>
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<tr>
<td>Friday</td>
<td>3/28</td>
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<td>Ch. 9, Sec. 9.6 (Obj. 1)</td>
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<tr>
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<td>Handout: Literal Equations</td>
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<td>Ch. 4, Sec. 4.3 (Obj. 1)</td>
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<tr>
<td>Monday</td>
<td>3/31</td>
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<td></td>
<td>Ch. 4, Sec. 4.3 (Obj. 3)</td>
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<td>Handout: Sum of Angles</td>
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<td>Review</td>
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<tr>
<td>Wednesday</td>
<td>4/2</td>
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<tr>
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<td>Test #5</td>
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<tr>
<td>Friday</td>
<td>4/4</td>
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<td>Ch. 4, Sec. 4.4 (Obj. 1 &amp; 2)</td>
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<tr>
<td></td>
<td>Ch. 5, Sec. 5.1 (Obj. 1 &amp; 2)</td>
<td></td>
</tr>
</tbody>
</table>
### MAT 0024C  LEARNING OBJECTIVES

**TEST 1**

33. Determine the order relation of two integers.
34. Write sets using the roster method.
35. Find the union and intersection of two sets.
36. Find the opposite of an integer.
37. Find the absolute value of an integer.
38. Determine the order relation of two absolute values.
39. Add two or more integers.
40. Subtract two or more integers.
41. Multiply two or more integers.
42. Divide two integers.
43. Solve applications involving operations on integers.
44. Write rational numbers as decimals.
45. Write a percent as a fraction.
46. Write a percent as a decimal.
47. Write a fraction as a percent.
48. Write a decimal as a percent.
49. Add rational numbers.
50. Subtract rational numbers.
51. Multiply rational numbers.
52. Divide rational numbers.
53. Evaluate exponential expressions.
54. Simplify using the Order of Operations Agreement.
55. Evaluate variable expressions.
56. Recognize the following properties of real numbers and give examples which illustrate the use of each:
   - The Commutative Property of Addition
   - The Commutative Property of Multiplication
   - The Associative Property of Addition
   - The Associative Property of Multiplication
   - The Addition Property of Zero
   - The Multiplication Property of Zero
   - The Multiplication Property of One
   - The Inverse Property of Addition
   - The Inverse Property of Multiplication
   - The Distributive Property

57. Simplify variable expression s using the properties of addition.
58. Simplify variable expressions using the properties of multiplication.
59. Simplify variable expressions using the distributive property.
60. Translate a verbal expression into a variable expression given the variable.
61. Translate a verbal expression into a variable expression by assigning the variable.
62. Translate a verbal expression into a variable expression and simplify the resulting expression.
63. Write two related quantities in terms of one variable.
64. Translate application problems.

**TEST II**

16. Determine if a given number is a solution to an equation.
17. Solve equations in the form of $x + a = b$.
18. Solve equations in the form $ax = b$.
19. Use the Basic Percent Equation to solve percent problems.
20. Solve application problems involving percents.
21. Solve equations in the form of $ax + b = c$.
22. Solve equations in the form of $ax + b = cx + d$.
23. Solve equations containing grouping symbols.
24. Solve equations containing fractions.
25. Translate a sentence into an equation and solve.
26. Translate an application problem into an equation and solve.
27. Graph the solution set of an inequality on the number line.
28. Solve inequalities using the Addition Property of Inequalities.
29. Solve inequalities using the Multiplication Properties of Inequalities.
30. Solve general inequalities.

**TEST III**

15. Solve consecutive integer problems.
16. Solve coin and stamp problems.
17. Add two polynomials.
18. Subtract two polynomials.
19. Multiply two or more monomials.
20. Simplify powers of monomials.
21. Multiply a polynomial by a monomial.
22. Multiply two polynomials.
23. Multiply two binomials using the FOIL method.
24. Multiply binomials which have special products.
25. Divide two exponential expressions.
26. Divide a polynomial by a monomial.
27. Simplify expressions containing negative and zero exponents.
28. Convert between scientific notation and standard notation.

**TEST IV**

10. Find the Greatest Common Factor of two or more monomials.
11. Factor a monomial from a polynomial.
12. Factor polynomials in the form of $ax^2 + bx + cx + d$ by grouping.
13. Factor polynomials in the form of $x^2 + bx + c$.
14. Factor polynomials in the form of $ax^2 + bx + c$ where “$a$” is the common factor.
15. Factor polynomials in the form of $ax^2 + bx + c$.
16. Factor the difference of two squares.
17. Factor a perfect square trinomial.
18. Factor completely.

**TEST V**

(5) Solve quadratic equations by factoring.
(6) Simplify algebraic fractions.
(7) Solve application problems involving proportions.
(8) Solve literal equations.
(9) Solve perimeter problems.
(10) Solve problems involving the angles of a triangle.

**TEST VI**

15. Solve discount problems.
16. Graph points on a rectangular coordinate system.
17. Determine if a given ordered pair is a solution to a linear equation in two variables.
18. Given a linear equation in two variables and a value for $x$, find the ordered pair solution of the equation.
19. Graph equations in the form of \( y = mx + b \).
20. Graph equations in the form of \( Ax + By = C \).
21. Find the \( x \)– and \( y \)- intercepts of a straight line.
22. Graph equations in the form of \( x = a \) or \( y = b \).
23. Simplify numerical radical expressions.
24. Simplify variable radical expressions.
25. Add and subtract radical expressions.
26. Multiply numerical radical expressions.

THE FINAL EXAM IS CUMULATIVE AND WILL COVER THE OBJECTIVES LISTED FOR ALL SIX TESTS ABOVE.

CLAST SKILLS IN MAT 0024

The student will demonstrate proficiency in the area of arithmetic by:
1A3 - Calculates percent increase and percent decrease.
2A1 - Recognizes the meaning of exponents.
2A3 - Identifies equivalent forms of positive rational numbers involving decimals, percents, and fractions.
2A4 - Determines the order-relation magnitudes.
3A2 - Selects applicable properties for performing arithmetic calculations.
4A2 - Solves real-world problems which do not require the use of variables and which do require the use of percent.

The student will demonstrate proficiency in the area of algebra by:
1C1 - Adds, subtracts, multiplies, and divides real numbers.
1C2 - Applies the order-of-operations agreement to computations involving numbers and variables.
1C4 - Solves linear equations and inequalities.
IC5 - Uses given formulas to compute results when geometric measurements are not involved.
IC7 - Factors a quadratic expression.
2C1 - Recognizes and uses properties of operations.
2C2 - Determines whether a particular number is among the solutions of a given equation or inequality.
3C2 - Selects applicable properties for solving equations and inequalities.
4C1 - Solves real-world problems inviting the use of variables, aside from commonly used geometric formulas.
4C2 - Solves problems that involve the structure and logic of algebra.

The student will demonstrate proficiency in the area of geometry by:
2B1 - Identifies relationships between angle measures
3B2 - Selects applicable formulas for computing measures of geometric figures.
Students
The Learning Bill of Rights

- I have the right to take control of my own learning process.
- I have the right to be treated as a competent adult.
- I have the right to define success in my own terms.
- I have the right to feel good about myself regardless of my abilities.
- I have the right not to feel put down if I am slower than others.
- I have the right to ask questions.
- I have the right to need extra help.
- I have the right to say I don’t understand.
- I have the right to evaluate my instructors and course materials.

Adapted from the book “Overcoming Math Anxiety” by S. Tobias
Students
The Learning Set of Responsibilities

- I have the responsibility to take control of my own learning process.

- I have the responsibility to think and act positively.

- I have the responsibility to develop personal strategies for learning, for taking tests, for developing an overview of the subject material and for problem solving.

- I have the responsibility to actively attend class.

- I have the responsibility to complete assignments.

- I have the responsibility to ask questions.

- I have the responsibility to participate in classroom activities.

- I have the responsibility to help others when asked.

- I have the responsibility not to influence others negatively about the subject, the class or the teacher.

“The path to success lies on the road of responsibility.”

Adapted from the book “Overcoming Math Anxiety” by S. Tobias
## APPENDIX D

**MAT 0024C COHORT - COLLEGE SUCCESS STUDY – MATH PREPARATORY TRACK**

2006, 2007 FTIC Fall Term Enrollment in College Success and Concurrent Development Course Grades

### Fall Term 2006 ENC0020 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

<table>
<thead>
<tr>
<th>College Prep Area required</th>
<th>Enrolled in Fall College Success</th>
<th>No Fall College Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>1</td>
<td>27</td>
<td>82%</td>
</tr>
<tr>
<td>2</td>
<td>84</td>
<td>88%</td>
</tr>
<tr>
<td>3</td>
<td>177</td>
<td>63%</td>
</tr>
<tr>
<td>2 or more</td>
<td>261</td>
<td>69%</td>
</tr>
<tr>
<td>All students</td>
<td>289</td>
<td>69%</td>
</tr>
</tbody>
</table>

**Note.** All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1 College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008

2 All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.

### Fall Term 2006 MAT0002 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

<table>
<thead>
<tr>
<th>College Prep Area required</th>
<th>Enrolled in Fall College Success</th>
<th>No Fall College Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>20%</td>
</tr>
<tr>
<td>1</td>
<td>29</td>
<td>66%</td>
</tr>
<tr>
<td>2</td>
<td>80</td>
<td>66%</td>
</tr>
<tr>
<td>3</td>
<td>107</td>
<td>40%</td>
</tr>
<tr>
<td>2 or more</td>
<td>187</td>
<td>48%</td>
</tr>
<tr>
<td>All students</td>
<td>217</td>
<td>49%</td>
</tr>
</tbody>
</table>

**Note.** All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1 College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008

2 All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.
## Fall Term 2006 MAT0024 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td>1</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>66%</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>31%</td>
</tr>
<tr>
<td>2 or more</td>
<td>48</td>
<td>45%</td>
</tr>
<tr>
<td>All students</td>
<td>69</td>
<td>46%</td>
</tr>
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</table>

### Note
1. All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).
2. College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008
3. All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.

## Fall Term 2006 MAT0024C Grades as a Function Concurrent Enrollment in College Success (SLS1510).

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</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>63%</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
<td>67%</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>38%</td>
</tr>
<tr>
<td>2 or more</td>
<td>37</td>
<td>51%</td>
</tr>
<tr>
<td>All students</td>
<td>47</td>
<td>53%</td>
</tr>
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</table>

### Note
1. All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).
2. College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008
3. All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.

## Fall Term 2006 REA0001 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

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<tbody>
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<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>66%</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>71%</td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>83%</td>
</tr>
<tr>
<td>3</td>
<td>59</td>
<td>54%</td>
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<tr>
<td>2 or more</td>
<td>78</td>
<td>59%</td>
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</table>

231
<table>
<thead>
<tr>
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<th>No Fall College Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC N % DF N % AW/W N % Total</td>
<td>ABC N % DF N % AW/W N % Total</td>
</tr>
<tr>
<td>0</td>
<td>1 50% 2 66% 0 3</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>1</td>
<td>49 79% 7 11% 6 10% 62</td>
<td>26 84% 5 16% 0 31</td>
</tr>
<tr>
<td>2</td>
<td>148 84% 21 12% 7 4% 176</td>
<td>21 84% 4 16% 0 25</td>
</tr>
<tr>
<td>3</td>
<td>171 56% 88 29% 48 16% 307</td>
<td>31 54% 14 25% 12 21% 57</td>
</tr>
<tr>
<td>2 or more</td>
<td>319 66% 109 23% 56 12% 480</td>
<td>52 63% 18 22% 12 15% 82</td>
</tr>
<tr>
<td>All students&lt;sup&gt;2&lt;/sup&gt;</td>
<td>369 67% 118 22% 61 11% 548</td>
<td>78 69% 23 20% 12 11% 113</td>
</tr>
</tbody>
</table>

Note. All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1 College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008

2 All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.

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<table>
<thead>
<tr>
<th>College Prep Area required&lt;sup&gt;1&lt;/sup&gt;</th>
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<th>No Fall College Success</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>ABC N % DF N % AW/W N % Total</td>
<td>ABC N % DF N % AW/W N % Total</td>
</tr>
<tr>
<td>0</td>
<td>1 50% 1 50% 0 2</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>1</td>
<td>26 62% 14 33% 2 5% 42</td>
<td>5 83% 1 17% 0 6</td>
</tr>
<tr>
<td>2</td>
<td>92 68% 29 22% 14 10% 135</td>
<td>5 56% 3 33% 1 11% 9</td>
</tr>
<tr>
<td>3</td>
<td>177 62% 61 21% 46 16% 284</td>
<td>23 66% 6 17% 6 17% 35</td>
</tr>
<tr>
<td>2 or more</td>
<td>269 64% 90 21% 60 14% 419</td>
<td>28 64% 9 20% 7 16% 44</td>
</tr>
<tr>
<td>All students&lt;sup&gt;2&lt;/sup&gt;</td>
<td>296 64% 105 23% 62 13% 463</td>
<td>33 66% 10 20% 7 14% 50</td>
</tr>
</tbody>
</table>

Note. All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1 College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008

2 All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.
### Fall Term 2007 MAT0002 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

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<td>ABC</td>
<td>DF</td>
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<td>N</td>
<td>%</td>
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<td>3</td>
<td>75%</td>
</tr>
<tr>
<td>1</td>
<td>42</td>
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<tr>
<td>2</td>
<td>86</td>
<td>57%</td>
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<td>3</td>
<td>95</td>
<td>41%</td>
</tr>
<tr>
<td>2 or more</td>
<td>181</td>
<td>47%</td>
</tr>
<tr>
<td>All students</td>
<td>226</td>
<td>50%</td>
</tr>
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</table>

### Fall Term 2007 MAT0024 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

<table>
<thead>
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<th>College Prep Area required</th>
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</thead>
<tbody>
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<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1</td>
<td>21</td>
<td>53%</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>49%</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>30%</td>
</tr>
<tr>
<td>2 or more</td>
<td>32</td>
<td>42%</td>
</tr>
<tr>
<td>All students</td>
<td>53</td>
<td>46%</td>
</tr>
</tbody>
</table>

**Note.** All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1. College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008
2. All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.
### Fall Term 2007 MAT0024C Grades as a Function Concurrent Enrollment in College Success (SLS1510).

<table>
<thead>
<tr>
<th>College Prep Area required</th>
<th>Enrolled in Fall College Success</th>
<th>No Fall College Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>59%</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>34%</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>62%</td>
</tr>
<tr>
<td>2 or more</td>
<td>21</td>
<td>41%</td>
</tr>
<tr>
<td>All students</td>
<td>38</td>
<td>48%</td>
</tr>
</tbody>
</table>

**Note.** All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1. College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008

2. All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.

### Fall Term 2007 REA0001 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

<table>
<thead>
<tr>
<th>College Prep Area required</th>
<th>Enrolled in Fall College Success</th>
<th>No Fall College Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>78%</td>
</tr>
<tr>
<td>3</td>
<td>87</td>
<td>66%</td>
</tr>
<tr>
<td>2 or more</td>
<td>112</td>
<td>68%</td>
</tr>
<tr>
<td>All students</td>
<td>116</td>
<td>69%</td>
</tr>
</tbody>
</table>

**Note.** All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

1. College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)”. Data Warehouse Training Guide, November, 2008

2. All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.
### Fall Term 2007 REA0002 Grades as a Function Concurrent Enrollment in College Success (SLS1510).

<table>
<thead>
<tr>
<th>College Prep Area required¹</th>
<th>Enrolled in Fall College Success</th>
<th>No Fall College Success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABC</td>
<td>DF</td>
</tr>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>1</td>
<td>39</td>
<td>71%</td>
</tr>
<tr>
<td>2</td>
<td>134</td>
<td>73%</td>
</tr>
<tr>
<td>3</td>
<td>154</td>
<td>67%</td>
</tr>
<tr>
<td>2 or more</td>
<td>288</td>
<td>70%</td>
</tr>
<tr>
<td>All students²</td>
<td>328</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6%</td>
</tr>
</tbody>
</table>

### Note
All cohort data collected from the Data Warehouse datasets for SPSS (generated in September & October, 2008).

¹ College prep data comes from “demographic student information, and information about students at the time of application (emphasis added)” Data Warehouse Training Guide, November, 2008

² All students: All FTIC cohort students enrolled in the course. Overall enrollment for Fall 2006 FTIC cohort = 2,173 enrolled, Fall 2007 FTIC cohort = 2,272 enrolled.
APPENDIX E

QEP INITIATIVES PROGRESS REPORT 2006 - 2007

Student Engagement Initiative/Goal # 2
Develop learning community opportunities for all students.

This initiative continues to make slow but purposeful progress.

During the fall of 2006 semester, the following classes were linked:
- College Prep Reading II (REA 0002) and College Prep English (ENC 0020)
- College Prep Reading II and Elementary Algebra (MAT0024C)
- College Success (SLS 1510) and Computer Literacy (CGS 1060)
- College Success and Basic Mathematics (MAT 0002)
- College Success are College Prep Reading II
- American Experience I (AMH 1041) and American Experience II (AMH 1050) – these courses were fully integrated.

Integrative Assignments

Several of the faculty are continued to develop and refine integrative assignments.

- College Composition (ENC1101) and Physical Science (PSC1121). Fall 2006
- American History (AMH 1050) and Theater (THE 1000). Fall 2006 and Spring 2007
- Introduction to Business (GEB 1011) and Introduction to Physical Education (PET) fall 2006 and spring 2007.
- Spanish (SPN 2200) and Film (FIL). Fall 2006 and spring 2007.

Five faculty members in History and Social Sciences collaborated in piloting an ePortfolio project. The Blackboard technology to support ePortfolios has been purchased and more work will be done on this project in 2007-2008.

In accordance with the plan developed at the Washington Center, most of the linked classes are focused on novice learners in developmental studies (college prep). Developmental studies is undergoing a major revision of curriculum and delivery and it is anticipated that beginning in fall 2008, learning communities will play a significant role in helping students develop intellectually and make connections to TCC and to each other.

Offerings for Fall 2007 are limited as so many of the faculty will be engaged in the redesign process.

- College Prep Reading II (REA 0002) and College Prep English (ENC 0020)
- College Prep Reading II and Basic Math (MAT 0002)
- College Success are College Prep Reading II
A learning community that fully integrates Anatomy and Physiology I (BSC2085) and Chemistry for Allied Health (CHM1030) has been developed and will be offered in the fall, 2007 semester.

Integrative assignments continue to be between general education and elective classes and the same integrative assignments as last year are planned for 2007-2008. Faculty members are continuing to collaborate and refine their learning communities.

Success data for the learning communities has been compiled and is included in the table below.

### Fall 2006 Learning Communities Success Data

<table>
<thead>
<tr>
<th>Course</th>
<th>LC Type</th>
<th>LC ABC</th>
<th>Course ABC</th>
<th>LC ABCD</th>
<th>Course ABCD</th>
<th>LC W/AW</th>
<th>Course W/AW</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGS 1060</td>
<td>Linked</td>
<td>89.2</td>
<td>68.5</td>
<td>89.2</td>
<td>74.4</td>
<td>3.5</td>
<td>8.6</td>
</tr>
<tr>
<td>SLS 1510</td>
<td>Linked</td>
<td>89.2</td>
<td>68.8</td>
<td>89.2</td>
<td>74.1</td>
<td>3.5</td>
<td>8.3</td>
</tr>
<tr>
<td>ENC 0020</td>
<td>Linked</td>
<td>85.7</td>
<td>64.4</td>
<td>92.8</td>
<td>72.9</td>
<td>7.1</td>
<td>10.8</td>
</tr>
<tr>
<td>REA 0002</td>
<td>Linked</td>
<td>68.9</td>
<td>64.6</td>
<td>89.6</td>
<td>77.2</td>
<td>6.8</td>
<td>11.2</td>
</tr>
<tr>
<td>REA 0002</td>
<td>Linked</td>
<td>42.8</td>
<td>63.5</td>
<td>50.0</td>
<td>75.9</td>
<td>21.4</td>
<td>11.0</td>
</tr>
<tr>
<td>MAT 0024C</td>
<td>Linked</td>
<td>14.2</td>
<td>45.9</td>
<td>21.4</td>
<td>57.4</td>
<td>42.8</td>
<td>15.9</td>
</tr>
<tr>
<td>MAT 0002</td>
<td>Linked</td>
<td>62.9</td>
<td>52.1</td>
<td>66.6</td>
<td>58.5</td>
<td>18.5</td>
<td>19.2</td>
</tr>
<tr>
<td>SLS 1510</td>
<td>Linked</td>
<td>59.2</td>
<td>69.3</td>
<td>70.3</td>
<td>74.5</td>
<td>18.5</td>
<td>8.3</td>
</tr>
<tr>
<td>AMH 1050</td>
<td>Integrative</td>
<td>75.0</td>
<td>59.8</td>
<td>78.5</td>
<td>70.8</td>
<td>8.9</td>
<td>8.7</td>
</tr>
<tr>
<td>THE 1000</td>
<td>Integrative</td>
<td>78.3</td>
<td>N/A</td>
<td>83.7</td>
<td>N/A</td>
<td>5.4</td>
<td>N/A</td>
</tr>
<tr>
<td>ENC 1101</td>
<td>Integrative</td>
<td>80.0</td>
<td>70.4</td>
<td>83.3</td>
<td>74.2</td>
<td>13.3</td>
<td>11.7</td>
</tr>
<tr>
<td>PSC 1112</td>
<td>Integrative</td>
<td>67.5</td>
<td>54.5</td>
<td>72.5</td>
<td>59.1</td>
<td>15.0</td>
<td>9.1</td>
</tr>
<tr>
<td>GEB 1011</td>
<td>Integrative</td>
<td>69.0</td>
<td>72.6</td>
<td>89.6</td>
<td>77.9</td>
<td>1.8</td>
<td>8.0</td>
</tr>
<tr>
<td>PET 2000C</td>
<td>Integrative</td>
<td>78.1</td>
<td>N/A</td>
<td>78.1</td>
<td>N/A</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>SPN 2220</td>
<td>Integrative</td>
<td>61.5</td>
<td>63.6</td>
<td>61.5</td>
<td>63.6</td>
<td>19.2</td>
<td>9.1</td>
</tr>
<tr>
<td>FIL 1031</td>
<td>Integrative</td>
<td>73.0</td>
<td>N/A</td>
<td>73.0</td>
<td>N/A</td>
<td>19.2</td>
<td>N/A</td>
</tr>
<tr>
<td>AMH 1041</td>
<td>Fully Integrated</td>
<td>69.8</td>
<td>64.0</td>
<td>75.8</td>
<td>72.0</td>
<td>3.4</td>
<td>9.1</td>
</tr>
<tr>
<td>AMH 1050</td>
<td>Fully Integrated</td>
<td>69.8</td>
<td>60.1</td>
<td>75.8</td>
<td>71.3</td>
<td>3.4</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Note: Course data includes the averages for all other classes except the LC class and SPI.

In general, learning communities experienced higher success rates than traditional classes. There were some exceptions to this, particularly with learning communities that included math. Also, some courses are single section and so can only be compared to previous success data. Withdrawal rates were mixed and in some cases were much higher than traditional courses. This
is not totally unexpected when linking a course like college success which generally has a fairly low withdrawal rate with math that tends to have a very high withdrawal rate.

Qualitative data were also collected in fall 2006. A survey was developed for linked classes and a very similar survey for integrative assignments. Student response was, in general, very positive. However, it is a little misleading as the response rate was quite low. Not all faculty members requested that students complete the survey. In the linked class survey about two thirds of the responses were from one class. Data for linked classes are included below.

Learning Communities Survey
Linked-Class Version

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percent Strongly Agreed/Agreed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The topics or assignments in one class were relevant to assignments in the other class(es).</td>
<td>88%</td>
</tr>
<tr>
<td>I feel I learned more in my learning community classes than in the classes outside of the learning community.</td>
<td>70%</td>
</tr>
<tr>
<td>My grades in my learning community classes will fairly reflect my learning.</td>
<td>80%</td>
</tr>
<tr>
<td>Participating in this learning community helped me to see ways other classes (not in learning communities) relate to each other.</td>
<td>80%</td>
</tr>
<tr>
<td>Being part of the learning community encouraged me to remain in this/these class(es).</td>
<td>76%</td>
</tr>
<tr>
<td>My learning community experience helped me to interact with my classmates.</td>
<td>90%</td>
</tr>
<tr>
<td>My learning community experience helped me to participate in classroom discussion.</td>
<td>79%</td>
</tr>
<tr>
<td>My learning community experience encouraged me to ask classmates for help.</td>
<td>83%</td>
</tr>
<tr>
<td>As a result of the learning community, I formed one or more friendships that I will maintain after the semester.</td>
<td>83%</td>
</tr>
<tr>
<td>My learning community experience helped me to communicate with my professors.</td>
<td>90%</td>
</tr>
<tr>
<td>My involvement in this learning community has helped me to understand, relate, and apply key concepts between different classes.</td>
<td>83%</td>
</tr>
<tr>
<td>My involvement in this learning community has helped me to analyze and evaluate material.</td>
<td>76%</td>
</tr>
<tr>
<td>My involvement in this learning community has helped me to appreciate and learn from my classmates’ diverse backgrounds.</td>
<td>86%</td>
</tr>
<tr>
<td>Participation in this learning community has enhanced my sense of belonging in the TCC community.</td>
<td>72%</td>
</tr>
<tr>
<td>Participation in this learning community has enhanced my knowledge and use of campus resources (library, learning centers, computer facilities, BlackBoard…etc)</td>
<td>97%</td>
</tr>
<tr>
<td>Participation in this learning community has enhanced my interest in continuing my education at TCC.</td>
<td>66%</td>
</tr>
<tr>
<td>As a result of my participation in this learning community my ability to collaborate with my classmates increased.</td>
<td>90%</td>
</tr>
</tbody>
</table>

A brochure describing learning community opportunities for 2007-2008 has been produced and is being distributed to students at orientation. A video of faculty discussing the benefits to students and faculty of participating in learning communities has also been produced.

The focus for the 2007-2008 year will continue to be on expanding offerings for 2008-2009, especially linked classes in college prep, continuing to explore the role of ePortfolios, improving marketing, and data collection. There is now a mainframe designator for integrative assignments and linked classes making identification and data collection easier.
APPENDIX F

COLLEGE SUCCESS (SLS) AND LINKED COURSES
INSTRUCTOR QUESTIONNAIRE

Based on your experience, please answer the following questions:

1. What are limitations to teaching a linked course in general? And in particular, with SLS?

2. What are benefits to teaching a linked course in general? And in particular, with SLS?

3. What do you think are limitations for students taking a linked course in general? And in particular, with SLS?

4. What do you think are benefits for students taking a linked course in general? And in particular, with SLS?

5. What benefits does taking the College Success course (link or no link) provide to students?

6. What limitation does taking the College Success course (link or no link) put on students?

7. What are the benefits of teaching College Success?

8. What are the limitations of teaching College Success?

9. If you have already participated in a linked course (with SLS or with another discipline), would you again? Why or why not?

10. If you have never participated in a linked course (with SLS or with another discipline), would you be willing to in the future? Why or why not?
The secret to academic success.......FINISH WHAT YOU START!!!
Teaching Mission

The faculty is committed to creating a learning environment for all students which promotes, encourages, and fosters higher order thinking skills including critical thinking skills that are grounded in an understanding of the fundamental concepts of the disciplines in which they are taught.

Welcome and Expectations

Welcome to College Success! I am delighted to have the opportunity to work with you this semester. As the title of this course indicates, we will discuss many aspects of what it takes to be successful in college. Student success is a shared responsibility. My job is to provide a safe, equitable, accepting environment in which I can facilitate the development of characteristics and skills that promote success. Your job is to actively seek to develop or enhance those characteristics and skills. Some of those are listed below.

- clear goals
- commitment
- hard work
- careful planning
- well developed learning strategies
- an open and inquisitive mind
- the ability to think critically and creatively
- the ability to search out and utilize resources
- the ability to apply what you learn to a broad range of disciplines and situations
- the ability to maintain a balanced, healthy approach to life and college
- respect for yourself, your classmates, the faculty, and the educational environment
- a willingness to participate as a professional and productive member of the learning community.

#1 Learning Outcome for this class:

Learn how to be a responsible and independent student!

Extra Help

Please do not hesitate to come to my office for help at any time you experience any difficulty understanding material or assignments. I am very interested in helping you to be successful and
my job outside the classroom is just as important as my job inside the classroom. I welcome the opportunity to get to know each of you.

I also encourage you to ask for help from your fellow classmates and to utilize the resources that TCC has to offer its students. Asking for help is a sign of strength and self-confidence!

---

**Catalog Description**

SLS 1510 College Success (3) FA, SP, SU
This course is designed to build and reinforce skills necessary for college and career success. Topics include: motivation, goal setting, learning styles, time management techniques, test skills, reading textbooks, and memory skills. This course also covers topics such as wellness, interpersonal relationships, employability skills, financial management, choosing a college major and other career planning topics. Students will not be able to receive credit for both SLS 1510 and SLS 1301.

---

**Course Objectives**

Upon completion of this course, the student will be able to:

1. Develop a personal definition of success in the college environment.
2. Elaborate on locus of control and demonstrate an internal locus of control.
3. Clarify academic, personal and career goals.
4. Establish short and long-term goals along with objectives designed to facilitate the accomplishment of these goals.
5. Determine personal learning styles and develop strategies to adjust to teaching styles.
6. Understand the significance of time management and demonstrate the ability to manage time effectively.
7. Compare and evaluate various tools to get organized and establish priorities.
8. Synthesize effective listening skills and understand the direct relationship between listening and note-taking.
9. Apply logical systems (Cornell System and SQ3R) for taking good notes during lectures.
10. Demonstrate an understanding of and the ability to use different of textbook reading covered in the course.
11. Determine the necessary steps for successful test preparation. Analyze cause and effect between preparation and outcome.
12. Accurately perceive strategies for taking different types of tests such as true/false, multiple choice, matching and essay tests.
13. Understand reasons contributing to test anxiety and list aids to counteract them.
14. Discuss the relevance of stress management; identify signs of stress and reduction techniques.
15. Describe strategies to prepare for and take math and science tests.
16. Evaluate the importance of concentrating and list methods for improving the ability to recall information.
17. Describe specific memory techniques and steps to create mnemonic devices.
18. Understand the relationship between retention and learning.
19. Evaluate the role that relationships play in success in college and in the workplace. Provide methods for maintaining healthy relationships in college, at home and in the workplace.

20. Describe the cause and effect relationship of physical, emotional, and mental health in achieving academic success.

21. Evaluate the role of nutrition and fitness in a healthy lifestyle, and illustrate components of each.

22. Understand the positive effects of diversity in the workplace and in college and the perspectives of others.

23. Understand the value of a diverse campus and describe ways to deal with differences.

24. List, locate, and describe the functions of the Financial Aid Office, the Library, the Counseling department, the Career Center, the Learning Labs, the Student Activities programs, and his/her instructors’ office hours.

25. Apply the skills learned in this course to other academic classes. Assess personal attitudes to learning.

26. Understand the changes in the career world and future career needs. Determine the relevant information required to make career decisions.

27. Assess personal interests and values and determine their purpose(s) in college and life in general.

28. Identify personality preferences and be able to elaborate on the significance of this knowledge (Myers-Briggs/Please Understand Me).

### Methods of Instruction

This course will be taught using many methods, including but not limited to:

1. Class discussions
2. Lectures
3. Required readings and assignments
4. Student presentations
5. Videos
6. Guest lectures

### Attendance Policy and Withdrawing from Class

1. Please note the course attendance policy is tied to the participation grade and homework grade. Class begins promptly. Please demonstrate professional behavior and be on time.

2. All students are expected to attend every class. In accordance with the College policy, any students absent from any class for more time than that class meets in one week may be withdrawn. **PLEASE NOTE THAT I WILL NOT WITHDRAW YOU FROM THIS CLASS. EACH STUDENT IS RESPONSIBLE FOR WITHDRAWING HIMSELF/HERSELF FROM THE CLASS AND SHOULD FILE THE APPROPRIATE PAPER WORK WITH ENROLLMENT SERVICE OR THE**
STUDENT SUCCESS CENTER. Please be aware that withdrawing from any class may potentially have an impact on financial aid, scholarships or future registration.

3. Class attendance is expected and required. Each student is allocated 4 (MWF) 3 (TR) absences throughout the main-term semester. (includes excused and unexcused). Any absences thereafter will affect your participation grade.

4. Additionally, on days when group participation is required, an unexcused absence will automatically result in a reduction of the participation grade (others will have to take up the slack for the absence of a classmate). These participation days may be unannounced.

Please be aware that the last day for you to withdraw yourself from a class is March 24, 2008.

Please refer to the course schedule on separate page. This schedule is subject to change. Any changes to the schedule will be announced in class and it will be your responsibility to make sure you are aware of those changes should you miss a class day.

Attendance is critical to your success and is therefore required. It is your responsibility to attend class regularly. A student absent from class bears full responsibility for all subject matter, procedural information covered and assignments that are due.

Course Requirements

Attendance and Class participation – 10% of grade

Attendance is required in this class and directly tied to the participation grade. Class begins promptly at 11:15am and ends at 12:05pm. Please demonstrate professional behavior and arrive on time and stay for the duration of the class. Students that continue to arrive late and/or leave early will not earn participation points for those days.

Students are expected to participate in class discussions and contribute actively to group exercises and projects. Often times the best resource for learning something is from each other. We will work hard in this class to strengthen our own understandings and skills, but also our ability to work well with our fellow classmates and people we communicate with in our daily lives.
This class is going to be highly interactive and will require participation from ALL students. Please be prepared to participate in discussions and group activities with your fellow classmates.

**T.E.A.M. work! (Together Everyone Achieves More)**

**Homework / Class Assignments / Quizzes – 10% of grade**

Homework assignments are given throughout the semester to aid in the understanding of material presented in the textbook and in the classroom. Refer to the course schedule for due dates and announcements made in class for due dates. Homework is due on the specified date or earlier. Any late homework or assignments need to be approved by the instructor. **Please see the course requirements information given in this syllabus.**

Quizzes will be given throughout the semester. These will be short and used primarily to assess your knowledge and understanding of the assigned reading and class discussions. The format for quizzes may include fill-in-the-blank, matching, multiple choice, true/false, and short answer.

*Please be aware that quizzes cannot be made up. Quizzes may start as soon as the class starts. If you are late to class, and the quiz has already been collected, you will not be allowed to take the quiz. This is to show fairness to those students who showed up on time for class.*

Class assignments and their due dates will be listed on the course schedule or announced in class. If you miss class, it is your responsibility to find out the assignment and due date. Class assignments will relate to the course content and to resources available at TCC.

**Class Notebook – 10% of grade**

Students will be required to keep and maintain a class notebook. This notebook should contain: any materials handed out in class, the course syllabus and course schedule, any class assignments, quizzes, tests, and any other resource material that you would like to add. This notebook should be neat, organized, and clearly legible. The evaluation of this notebook will be based on the thoroughness of its contents, its organization, and its appearance. The goal in maintaining this notebook is to allow students to keep track of all class materials and grades, as well as provide a resource guide for the future. Feel free to be creative in your notebook setup, just make sure that it is organized in a fashion that any one looking through it can understand it easily. **NEATNESS COUNTS!**
Interview / Research Paper – 10% of grade

Each student will be required to complete an interview and compose a paper based on this interview. Each student will interview one of your past or current professors or someone who works in an occupation of interest to you. This assignment affords the opportunity to meet one of your professors, or someone working in an occupational field of your interest, through a brief interview and become more familiar with the knowledge and skills needed for their particular occupation.

Interview Guidelines are included in this syllabus at the end.

The written report must be AT LEAST TWO PAGES TYPED– DOUBLE SPACED – WITH A FONT NO LARGER THAN 13. This paper should be written in a formal paper/essay type format. It should not be in question-answer or bullet format. Please be aware of TCC’s strict policy on plagiarism and know that it will be enforced in this class. The due date for this paper is listed on the course schedule. However, you can always turn it in early!

Additional information on this assignment will be provided in class.

I encourage you to utilize the writing center here at TCC for assistance with this assignment. They are here to help you!

Group Presentation – 10% of grade

Students will be assigned to groups. Each group will give an interactive presentation on a topic from the text or an application of a topic to a specific discipline. The highlights of the group’s findings are to be addressed during this presentation. The presentation should last 15-20 minutes. Please be prepared for this amount of time.

Students are encouraged to use visual aids to enhance the presentation’s effectiveness. The group is required to have a handout for their classmates with the major points to be discussed. The instructor will assign the presentation dates in advance.

Please note that everyone in the group will be required to participate in the project and in the presentation to the class. Attendance on all group presentation days is required. Points will be deducted from your personal group grade should you be absent on these days.

Each group will be required to get their presentation topic approved by me. This is to ensure there are no repetitions in the topics. Additional information on this assignment will be provided in class.

4 In-Class Tests – 20% of grade

There are four tests during the semester in addition to the final exam. The format can include, but not be limited to, fill-in-the-blank, matching, multiple-choice, true/false, and short answer.
Please see the course schedule for details regarding which chapters the tests will cover. Any information discussed in class, along with the chapter readings, is subject to being on the tests. The book has a lot of information in it and we cannot possibly cover it all in our short class time. Remember, you are responsible for all readings in the chapter.

Please remember there are no make ups for missed tests. If you miss a test, I will count it as a zero until you take your Final Exam. Then I will replace that zero on your Class Test with the score you received on your Final Exam. In other words, your final will count twice – once for the missed test, and once for the Final Exam grade. Please note that I will only do this for 1 missed test. If you miss another test(s), the zero score will remain for those missed tests.

**Final Exam – 30% of grade**

The final exam is comprehensive and comes in two parts as discussed below. All material covered in class and in the text is subject to be included on the final exam. The format will include fill-in-the-blank, matching, multiple-choice, true/false, and short answer. Review of all previous class tests, quizzes and notes will be a very useful tool in preparing for the final exam.

Final Exam’s Two Parts:

- **Part I:** Critical Thinking Scenario worth 25 points
- **Part II:** Comprehensive Exam worth 75 points

**REMEMBER:** The Final Exam (both parts together) is worth 30% of your final grade!

### Grading Scale

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<th>Percent</th>
<th>Grade</th>
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<tr>
<td>90 – 100</td>
<td>A</td>
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<td>80 – 89</td>
<td>B</td>
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<td>70 – 79</td>
<td>C</td>
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<td>60 – 69</td>
<td>D</td>
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<td>59 and below</td>
<td>F</td>
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### Assignments

<table>
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<tr>
<th>Assignments</th>
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<tr>
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<tr>
<td>Homework / Class Assignments / Quizzes</td>
<td>10</td>
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<tr>
<td>Class Notebook</td>
<td>10</td>
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<tr>
<td>Interview / Research Paper</td>
<td>10</td>
</tr>
<tr>
<td>Group Presentation</td>
<td>10</td>
</tr>
<tr>
<td>4 – In Class Tests</td>
<td>20</td>
</tr>
</tbody>
</table>
Final Exam (2 parts) | 30
---|---
Total Percentage Points | 100

If you have any questions regarding the assignments, grading scale, or anything else on this syllabus and the requirements of the course, please do not hesitate to ask me. I am here to help you succeed!

Remember the grade you receive in this class does count in your overall TCC grade point average (GPA). Let’s work hard together to ensure it’s the best grade possible for you.

Additional Class Information

Credit for this class and others

Students may not earn credit for SLS 1301 (Career Planning) if enrolled in SLS 1510 College Success.

Cell Phones

Cell phones are a great instrument of technology - but not in the classroom. Please make sure you do the following:

1) Don’t bring your cell phone to class if at all possible
2) If you bring your cell phone to class, please put it on vibrate – no ringers
3) Please keep your cell phone out of site during class time

When a cell phone goes off during class, it can be disruptive to the instructor and your fellow classmates. If your phone does not have a vibrate option on it and you are waiting for an “important” call, please let me know PRIOR to class and we will discuss options.

Please be aware that any student allowing there cell phone to go off during class time is subject to losing 5 points on their attendance/participation points for that day. If the cell phone goes off on a test day, the student may lose 5 points on their test for the disruption.

Please keep cell phones out of the classroom or on vibrate. Thank you for your understanding with this request.
Additional information on these and other assignments will be provided in class.

**MSLO: Motivated Strategies for Learning Questionnaire**

Students must complete this survey online ([http://content.tcc.fl.edu/surveys/mslo](http://content.tcc.fl.edu/surveys/mslo)) AND print out their results.

There is a pre and post questionnaire. You will need to print your results and turn them in to your instructor to receive full points credit. See the course schedule for exact due dates for the results. The windows for the pre will be Jan 7 – Jan 20, 2008. The window for the post will be April 7 – 20, 2008.

**Myers-Briggs – Personality Test**

This exercise will give the student insight into what personality type he/she has. You will be required to turn this printout into me for an assignment grade. Please see due date in course schedule. I will return it to you afterwards for you to keep in your notebook. This is a great exercise in helping you find out your personality type, which in essence will help you discover what techniques for studying, taking exams, and communicating with others is best for you. It is a fun exercise and exciting to compare results with others – which we will do in class. So be honest in your answers – there are no wrong answers – only right answers that fit you best!

Here is the information to access this assessment on-line and the instructions for what needs to be printed and turned in to your instructor. Additional information on this assignment will be discussed in class. Please see the course schedule for the due date. However, it can always be turned in early!

**Myers-Briggs Personality Type**

(On-line version)

[www.humanmetrics.com](http://www.humanmetrics.com)

1. Look for Jung Typology Test
   a. Click “Take Test”
   b. Click “Do It!”… Take 72-question test

**Print the results of your test!**

**ALSO PRINT OUT:**

Click on ____ type description by D. Keirsey – print this
Click on ____ type description by J. Butts, etc. – print this
You should have a total of 3 printouts to turn in when you are finished!

**Self Direct Search (SDS)**

This assessment is based upon self reported interests and abilities derived from Holland’s six themes of areas of work. It is a guide to educational and career planning. For this assignment, the student must purchase the SDS (Form r) assessment booklet at the bookstore. Please see course schedule for when this booklet is due in class.

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**School Policy Information**

**Academic Alert**

Students enrolled in the same college prep or college-level course for the 3rd time will pay 100% (full cost) of instruction except in approved cases of documented extenuating circumstances. Students may not withdraw on the 3rd attempt and will receive a grade of A, B, C, D, or F in the course.

**Academic Honesty**

Academic dishonesty and plagiarism will not be tolerated in this class. Academic dishonesty may result in a student receiving a zero for the assignment or test, a letter sent to the student affairs office to be placed in the students’ file and possible disciplinary actions by TCC administration. Please refer to the Student Code of Conduct section in the TCC Catalog. It is the student’s responsibility to read this policy and to understand its contents.

**Students with Disabilities**

It is the policy of Tallahassee Community College to comply with the requirements of the Americans with Disabilities Act. Please refer to the college catalog for specific information regarding students with disabilities. If special accommodations are necessary, please let me know immediately so I can assist you in getting your needs met and help you be successful in this class.

---

This syllabus is a guide for the course and is subject to change.
The course schedule and due dates are also subject to change. I will announce any changes to the schedule and due dates in class. Should you miss a class, you are still responsible for any changes discussed in class.

ONLY YOU CAN DETERMINE YOUR PATH TO SUCCESS!
I BELIEVE IN YOU
NOW YOU MUST BELIEVE IN YOURSELF!
Interview Guidelines
SLS 1510

The interview is to take place with a current or former professor or someone who works in an occupation of interest. Below you will find areas that need to be covered in the interview and included in your written report.

**Interview Must-Haves:**

1. Biographical Information
   - Education
   - Hometown
   - Family, etc.
2. Current Job Title / Status
3. Beginning Salary Information
4. Opportunities for advancement in career information
5. Hobbies / Interests
6. Why they chose their current career path
7. Future plans (career / family / education, etc.)
8. Any other information you wish to share

**Examples of Interview Questions:**

1. How did you become interested in your career?
2. What type of education does your career require?
3. What type of advancement does your career offer?
4. What is the beginning salary range for this type of career?
5. Is there a dress code for this particular career?
6. Do you work in the office or out in the field?
7. Is travel required for this career?
8. What kind of benefits are available – retirement, health care, etc.?
9. How long have you been in this job?
10. Is there job security in this career?
11. What do you like best about your chosen field?
12. What do you find most challenging in this career?

**Written Report Must-Haves:**

The written report must be **AT LEAST TWO PAGES TYPED – DOUBLE SPACED – WITH A FONT NO LARGER THAN 13.** The due date for this paper is listed in the course schedule. However, you can always turn it in earlier! Grading for this assignment will be based on thoroughness, content and grammar. This paper should be written in an essay / formal paper format, NOT in bullet or question/answer format. Be aware that TCC has a strict policy on plagiarism and it will be enforced in this class. Please make sure the paper is YOUR work only.
Any student caught turning in something that is not their own work will receive an F on the assignment and be turned into student affairs for disciplinary measures.

I encourage you to utilize the writing center here at TCC for assistance with this assignment. They are there to help you!
APPENDIX H

TEST ANALYSIS

Use your most recent graded math test to evaluate your mistakes. Count the number of problems missed and decide what type of error each was. Use your conclusion to fill out the chart below:

Course ______________________

Number of:

<table>
<thead>
<tr>
<th>Test (Topics incl. on test)</th>
<th>Problems Wrong</th>
<th>Misread Direction Errors</th>
<th>Careless Errors</th>
<th>Concept Errors</th>
<th>Application Errors</th>
<th>Test Taking Errors</th>
<th>Study Errors</th>
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</table>

1. In which of these categories did you have the most errors?
   Why that category? (i.e., Why do you think you made that kind of error?)

2. What are some steps you could take to cut down on that type of error?

3. On the back of this sheet of paper, write down 3-5 of the problems that show some of the different kinds of mistakes you made. Show how you would correct them.
APPENDIX I

HUMAN SUBJECTS COMMITTEE APPROVAL

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-6633 • FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 1/10/2008

To: Rebecca Guiberti
3109 Ansley Park Dr.

Dept. MIDDLE AND SECONDARY EDUCATION

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research Benefits and Limitations of Linking a College Success Course with a College Preparatory Mathematics Course

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Human Subjects Committee at its meeting on 12/12/2007. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals which may be required.

If the project has not been completed by 12/11/2008 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. The principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

cc: Elizabeth Jakubowski
HSC No. 2007.1055
Informed Consent Form

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled "Benefits and Limitations of Linking a College Success Course with a College Preparatory Mathematics Course."

This research is being conducted by Rebecca Gabitti, a graduate student at Florida State University, under the supervision of Elizabeth Jakubowski, Ph.D. I understand the purpose of the study is to better understand student defined limitations and benefits of a linked course with the same instructor, and instructor defined limitations and benefits in teaching a linked course. I understand that if I participate in the project I will allow the researcher to analyze and maintain copies of documents created as part of my regular coursework in SLS 1510 (College Success) and MAT 0024C (Beginning Algebra); However all names and other identifying information will be removed.

I understand that Dr. Matthew Robinson will be a participant in this research study as the main researchers’ Project Coordinator. This means that Dr. Robinson will be the main contact person for students participating in this research study. He will initiate communication with the students and administer the consent form to participants. He will administer, collect, and retain all consent forms, surveys, questionnaires and interview documentation from the participants. The main researcher, Rebecca Gabitti, will not be allowed access to this information until May 1, 2008, which is after the Spring 2008 semester has concluded and final student grades have been provided. He will provide a website where students can contact him should they have any questions or concerns regarding their involvement in the study. Dr. Robinson’s role will be to communicate with the students in regards to the research study only and administer documentation that needs to be completed. In order to maintain the integrity of the study and his own neutrality, he will keep his contact with the students to a minimum.

I am at least 18 years of age and I understand that my participation in this study is strictly voluntary. If I choose not to participate, or should I withdraw from the study at any time, there will be no penalty. Withdrawing from or not participating in the study will not affect my grade for either SLS 1510 (College Success) or MAT 0024C (Beginning Algebra).

I understand that if I participate in this project, I will serve as a student in a classroom setting, and will actively participate in class discussions, group activities, and complete all assignments as required by both courses. I also understand that I may be asked to participate in approximately two one-hour interviews, one mid-semester and one at the end of the semester. During these interviews I will be asked questions related to the experience under investigation and they will be recorded as referential data. If conducted, the total time commitment for the interviews will be approximately two hours.

I understand that all documents, as well as audio- and video-tapes made during the study, will be kept by the Project Coordinator in a locked cabinet in his Academic Support Division office, at Tallahassee Community College, for the duration of the project. Only the researcher will have access to these documents and tapes after the end of the Spring 2008 semester, and all tapes will be destroyed by May 31, 2013. I understand my name will not be known or reported in any published research that results from this study, and that information obtained during the course of the study will remain confidential to the extent allowed by law.

I understand there are no foreseeable risks or discomforts beyond those routinely associated with normal day-to-day activities and functions. However, if any discomfort arises as a result of the study, participation can stop immediately and if requested, I will be directed to someone to discuss my discomfort. If I have questions about my rights as a participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the FSU Office of the Vice President for Research at 850-644-8633.
I understand I will not be paid, but that there are benefits for participating in this research project. I will be providing instructors with valuable insight into student perceptions of benefits and limitations of linking SLS 1510 (College Success) with MAT 0024C (Beginning Algebra). This information will assist the Academic Support Division, and the institution, in future offerings of linked courses for students. Additionally, my involvement in this research project will increase my awareness of linked courses and what they can offer to the student.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Rebecca Gubitti, Tallahassee Community College, ASP 295, (850) 201-8209, gubittir@tcc.fl.edu or Dr. Elizabeth Jakubowski, Florida State University, College of Education, MCH 209, (850) 644-8428, ejakubow@coe.fsu.edu for answers to questions about this research or my rights. Research results will be sent to me upon my request.

I have read and understand this consent form and AGREE to participate in this project.

Participant Signature

Date
Students participating in the research study involving the linked courses of SLS 1510 (ref # 055516) and MAT 0024C (ref # 055167) for Spring 2008

To submit a question, concern or comment to Dr. Robinson, please go to the following website:
http://www.drrobinson.com/gubitti.htm
His contact information here on campus is:
Dr. Matthew Robinson
Academic Support Division
Office # 271
Phone Number: 201-8379
robinson@tcc.fl.edu
<table>
<thead>
<tr>
<th>DATE</th>
<th>SLS 1510</th>
<th>Homework</th>
<th>MAT 0024C</th>
<th>Homework</th>
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<tbody>
<tr>
<td>Mon., Jan. 7</td>
<td>Introductions / Choosing Success</td>
<td>Purchase books / activate TCC ID / pay tuition</td>
<td>Introductions/ Ch 1, Sect 1.1 Obj 1 Handout: Union &amp; Intersection</td>
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<td></td>
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<td></td>
<td>1.1 (1) page 6 1 – 45 EOO</td>
<td>Handout</td>
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<tr>
<td>Wed., Jan. 9</td>
<td>High School to College</td>
<td>Do MSLQ Pre</td>
<td>Ch 1, Sect 1.1 Obj 2</td>
<td>1.1 (2) page 7 47 – 75 EOO</td>
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<td></td>
<td>MSLQ Handout</td>
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<td>Ch 1, Sect 1.2 Obj 1 and 2</td>
<td>1.2 (1) page 17 1 – 27 EOO</td>
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<td>MSLQ Pre – Open – DUE JAN 18</td>
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<td>1.2 (2) page 17 29 – 55 EOO</td>
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<td></td>
<td>Complete online &amp; print out results to turn in</td>
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<tr>
<td>Fri., Jan. 11</td>
<td>Course Overview / Syllabus and Pacing Schedule</td>
<td>Read Chapter 1 Finish MSLQ on line</td>
<td>Ch 1 Sect 1.2 Obj 3, 4 and 5</td>
<td>1.2 (3) page 18 57 – 95 EOO</td>
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<td>Ch 1 Sect 1.3 Obj 1</td>
<td>1.2 (4) page 19 97 – 133 EOO</td>
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<td>1.3 (1) page 31 1 – 31 EOO</td>
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<td>Mon., Jan. 14</td>
<td>Chpt 1 - Resources &amp; Diversity</td>
<td>Finish MSLQ Start reading Chapter 2</td>
<td>Ch 1 Sec 1.3 Obj 2 and 3</td>
<td>1.3 (2) page 32 35 – 65 EOO</td>
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<td>Campus Scavenger Hunt</td>
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<td>Reminder – MSLQ Pre – due JAN 18</td>
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<td>1.3 (3) page 33 67 – 105 EOO</td>
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<tr>
<td>Date</td>
<td>Section</td>
<td>Assignment</td>
<td>Ch1 Sec</td>
<td>Ch2 Sec</td>
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<td>Wed., Jan. 16</td>
<td>Chpt 1 cont’d</td>
<td>Finish reading Chapter 2</td>
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<td>Chpt 2 – Locus of Control / Motivation</td>
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<td>Fri., Jan. 18</td>
<td>Chpt 2 cont’d</td>
<td>Read Chapter 3</td>
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<td>MSLQ-PRE DUE!!!</td>
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<tr>
<td>Mon., Jan. 21</td>
<td>HOLIDAY NO CLASSES</td>
<td>Be sure to have read Chapters 1 – 3 up till now</td>
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<td>Wed., Jan. 23</td>
<td>Chpt 3 – Goal Setting</td>
<td>Complete Time Management Worksheet – start preparing for Test</td>
<td>2.2(2)</td>
<td>2.2(3)</td>
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<td>Time Management Worksheet – Due Jan 30</td>
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<td>Fri., Jan. 25</td>
<td>Review for Test #1</td>
<td>Study for Test</td>
<td>2.3</td>
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<td></td>
<td>– Chpts 1, 2 and 3</td>
<td>Read Chapter 6 and TAKE NOTES ON IT - continue to fill out Time Management Sheet</td>
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<td>Mon., Jan 28</td>
<td>TEST #1 Chpts 1, 2, &amp; 3</td>
<td>Reminder – Read Chpt 6 and TAKE NOTES ON IT Complete Time Management Sheet</td>
<td>2.3 (2)</td>
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<td>Wed., Jan 30</td>
<td>Chpt 6 –</td>
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261
<table>
<thead>
<tr>
<th>Date</th>
<th>Notes/Assignments</th>
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<tr>
<td>Fri., Feb. 1</td>
<td>Chpt 6 cont’d</td>
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<td>Read Chpt 4</td>
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<td>Ch 3 Sec 3.1 Obj 1,2 and 3</td>
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<td>3.1 (1) page 118 1-25 EOO</td>
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<td>3.1 (3) page 120 85 – 139 EOO</td>
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<tr>
<td>Mon., Feb. 4</td>
<td>Chpt 6 cont’d</td>
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<td></td>
<td>Chpt 4 Time Management</td>
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<td></td>
<td>Ch 3 Sec 3.1 Obj 5</td>
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<td>Ch 3 Sec 3.2 Obj 1 and 2</td>
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<td>3.1 (5) page 123 161-189 EOO</td>
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<td>3.2(1) page 136 1-85 EOO</td>
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<td>3.2(2) page 138 89-139 EOO</td>
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<td>Wed., Feb. 6</td>
<td>Chpt 4 Time Management</td>
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<td>Interview paper due this month</td>
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<td>Ch 3 Sec 3.2 Obj 3</td>
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<td>Handout: Fractional Equations</td>
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<td>3.2(3) page 139 141-167 EOO</td>
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<td>Handout 1-10 odds</td>
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<td>Fri., Feb. 8</td>
<td>Chpt 4 cont’d</td>
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<td>Read Chpt 7</td>
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<td>Ch 3 Sec 3.3 Obj 1 and 2</td>
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<td>3.3(1) page 150 1-45 EOO</td>
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<td></td>
<td>3.3(2) page 151 51-95 EOO</td>
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<tr>
<td>Mon., Feb. 11</td>
<td>Chpt 7 Concentration &amp; Memory</td>
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<tr>
<td></td>
<td>Have you finished your interview paper yet?</td>
</tr>
<tr>
<td></td>
<td>Ch 3 Sec 3.3 Obj 3</td>
</tr>
<tr>
<td></td>
<td>Ch 4 Sec 4.1 Obj 1</td>
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<td>3.3(3) page 153 107 – 145 EOO</td>
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<td>4.1 (1) page 169 1-23 EOO</td>
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<tr>
<td>Wed., Feb. 13</td>
<td>Chpt 7 cont’d</td>
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<td>Reminder – Interview Paper Due Feb 22</td>
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<td></td>
<td>Ch 4 Sec 4.1 Obj 2</td>
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<tr>
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<td>Review for test</td>
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<td>4.1 (2) page 170 27 – 45 EOO</td>
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<tr>
<td></td>
<td>Study for Test</td>
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<tr>
<td>Fri., Feb. 15</td>
<td>Review for Test #2 - Chpts 4,6 and 7</td>
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<td></td>
<td>TEST #2</td>
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<tr>
<td>Mon., Feb.</td>
<td>TEST #2</td>
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<tr>
<td></td>
<td>Read Chpt 8</td>
</tr>
<tr>
<td></td>
<td>Ch 7 Sec 7.1</td>
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<tr>
<td></td>
<td>7.1(1) page 372</td>
</tr>
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<td>Date</td>
<td>Assignment</td>
</tr>
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<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18</td>
<td><strong>Chpts 4,6 &amp; 7</strong>&lt;br&gt;Myers Briggs Handout – Due Feb 27 (complete on line, printout results to turn in)**</td>
</tr>
<tr>
<td>Wed., Feb. 20</td>
<td>Chpt 8 – Test Taking Strategies and Test Anxiety</td>
</tr>
<tr>
<td>Fri., Feb. 22</td>
<td>Chpt 8 cont’d&lt;br&gt;INTERVIEW&lt;br&gt;PAPER DUE!!!</td>
</tr>
<tr>
<td>Mon., Feb. 25</td>
<td>Chpt 8 cont’d</td>
</tr>
<tr>
<td>Wed., Feb.27</td>
<td>Review for Test #3 – Chpt 8&lt;br&gt;Myers Briggs DUE!!!</td>
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<td>Fri., Feb. 29</td>
<td><strong>TEST #3&lt;br&gt;Chpt 8</strong></td>
</tr>
<tr>
<td>Mon., Mar. 3</td>
<td>Group Presentation Information / Group Assignments</td>
</tr>
<tr>
<td>Wed., Mar. 5</td>
<td>Myers Briggs Type Indicator</td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Fri., Mar.7</td>
<td>Chpt 10 - Health and Well-Being</td>
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<tr>
<td>Mon – Fri</td>
<td>Spring Break</td>
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<td>Mar. 10 – 14</td>
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<td>Mon., Mar.17</td>
<td>Chpt 10 cont’d</td>
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<tr>
<td>Wed., Mar.19</td>
<td>Chpt 5 – Money Management</td>
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<tr>
<td></td>
<td>Bring in SDS booklet – due Mar 31</td>
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<tr>
<td>Fri., Mar.21</td>
<td>Chpt 5 cont’d GROUP TIME</td>
</tr>
<tr>
<td></td>
<td>Group presentations next week – no absences!!</td>
</tr>
<tr>
<td>Mon., Mar.24</td>
<td>GROUP PRESENTATION</td>
</tr>
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<tr>
<td>Wed., Mar.26</td>
<td>GROUP PRESENTATION</td>
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<tr>
<td>Date</td>
<td>Activity</td>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fri., Mar. 28</td>
<td><strong>GROUP PRESENTATION</strong> Finish reading Chpt 9 <strong>Reminder – SDS booklet due Mar 31</strong></td>
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<tr>
<td>Mon., Mar. 31</td>
<td>Chpt 9 – Career Skills &amp; Choosing a Major <strong>SDS Booklet DUE!!!</strong></td>
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<tr>
<td>Wed., Apr. 2</td>
<td>Review for Test #4 Chpts 5 and 10 <strong>Reminder – Notebooks due Apr 7</strong></td>
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<tr>
<td>Fri., Apr. 4</td>
<td><strong>TEST #4</strong> Chpts 5 and 10 Work on Notebook to turn in</td>
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<tr>
<td>Mon., Apr. 7</td>
<td>Chpt 9 cont’d Complete SDS booklet in class <strong>Notebooks DUE!!!</strong></td>
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<tr>
<td>Wed., Apr. 9</td>
<td>SDS – Self Directed Search</td>
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<tr>
<td>Fri., Apr. 11</td>
<td>Review for Final Exam Part 1 – <strong>Reminder – MSLQ Post</strong></td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
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<td>--------------------------------------------------------------------------</td>
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<tr>
<td>Mon., Apr. 14</td>
<td><strong>Critical Thinking</strong></td>
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<td>Final Exam Part 1 – Critical Thinking Scenario</td>
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<tr>
<td>Wed., Apr. 16</td>
<td>Review for Final Exam Part II</td>
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<tr>
<td></td>
<td>Cum laude / Magna cum laude / Summa cum laude</td>
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<tr>
<td></td>
<td>MSLQ Post DUE!!!</td>
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<tr>
<td>Fri., Apr. 18</td>
<td>Final Exam Part II</td>
</tr>
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<td>All chapters and course info</td>
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<tr>
<td>Mon, Apr. 21</td>
<td>NO SLS CLASSES THIS WEEK</td>
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</table>

**Dates to remember – March 24, 2008 – Last day to withdraw with a W**

**Note:** This schedule may be modified by your instructor. All changes will be discussed in class. If you are absent from class, YOU are still responsible for any changes made to this schedule.

**If you would like your final exam grade and class grade, please email me at gubittir@tcc.fl.edu with your request.** Final class grades will be available on Eaglenet after April 30, 2008.
APPENDIX L

MYERS-BRIGGS ASSESSMENT

Myers-Briggs – Personality Test

This exercise will give the student insight into what personality type he/she has. You will be required to turn this printout into me for an assignment grade. Please see due date in course schedule. I will return it to you afterwards for you to keep in your notebook. This is a great exercise in helping you find out your personality type, which in essence will help you discover what techniques for studying, taking exams, and communicating with others is best for you. It is a fun exercise and exciting to compare results with others – which we will do in class. So be honest in your answers – there are no wrong answers – only right answers that fit you best!

Here is the information to access this assessment on-line and the instructions for what needs to be printed and turned in to your instructor. Additional information on this assignment will be discussed in class. Please see the course schedule for the due date. However, it can always be turned in early!

Myers-Briggs Personality Type
(On-line version)

www.humanmetrics.com

1. Look for Jung Typology Test
   a. Click “Take Test”
   b. Click “Do It!”... Take 72-question test

Print the results of your test!

ALSO PRINT OUT:

Click on ____ type description by D. Keirsey – print this
Click on ____ type description by J. Butts, etc. – print this

You should have a total of 3 printouts to turn in when you are finished!
# APPENDIX M

## TIME MANAGEMENT WORKSHEET

<table>
<thead>
<tr>
<th></th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
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<th>Friday</th>
<th>Saturday</th>
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APPENDIX N

PERSONAL TIME SURVEY

To begin managing your time you first need a clear idea of how you now use your time. The Personal Time Survey will help you to estimate how much time you currently spend in typical activities. To get a more accurate estimate, you might keep track of how you spend your time for a week. This will help you get a better idea of how much time you need to prepare for each subject. It will also help you identify your time wasters. But for now complete the Personal Time Survey to get an estimate. The following survey shows the amount of time you spend on various activities. When taking the survey, estimate the amount of time spent on each item. Once you have this amount, multiply it by seven. This will give you the total time spent on the activity in 1 week. After each item's weekly time has been calculated, add all these times for the grand total. Subtract this from 168, the total possible hours per week.

HERE WE GO:

1. Number of hours of sleep each night _______ × 7 = _______
2. Number of grooming hours per day _______ × 7 = _______
3. Number of hours for meals/snacks per day—
   include preparation time _______ × 7 = _______
4a. Total travel time weekdays _______ × 5 = _______
4b. Total travel time weekends _______
5. Number of hours per week for regularly scheduled
   functions (clubs, church, get-togethers, etc.) _______
6. Number of hours per day for chores, errands, extra
   grooming, etc. _______ × 7 = _______
7. Number of hours of work per week _______
8. Number of hours in class per week _______
9. Number of average hours per week socializing, dates,
   etc. Be honest! _______

Now add up the totals: _______
Subtract the above number from 168 168 − _______ = _______

The remaining hours are the hours you have allowed yourself to study.

By George Mason University
## Personal Budget

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<th>Income</th>
<th>Monthly Amount</th>
<th>Percent</th>
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<td>Net pay</td>
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<tr>
<td>Investments</td>
<td></td>
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<tr>
<td>Interest</td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total income</strong></td>
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<table>
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<tr>
<th>Fixed Expenses</th>
<th>Monthly Amount</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Rent or mortgage</td>
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<tr>
<td>Car payments</td>
<td></td>
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<tr>
<td>Credit card payments</td>
<td></td>
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<tr>
<td>Telephone</td>
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<td>Utilities</td>
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<tr>
<td>Taxes</td>
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<td>Child care</td>
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<tr>
<td>Cable TV</td>
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<tr>
<td>Insurance (personal and property)</td>
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<td>Other</td>
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<tr>
<td><strong>Total fixed expenses</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Variable Expenses</th>
<th>Monthly Amount</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Food</td>
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<tr>
<td>Clothing</td>
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<tr>
<td>Transportation (Including car and taxis)</td>
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<tr>
<td>Vacation</td>
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<td>Tuition and schooling</td>
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<td>Babysitting</td>
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<td>Other</td>
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<tr>
<td><strong>Total variable expenses</strong></td>
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</table>

| Total fixed and variable expenses |               |         |
| Difference between income and expenses |            |         |
APPENDIX P

CREDIT CARD WORKSHEET

Using the attached form, research the costs and features of:

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<thead>
<tr>
<th></th>
<th>CARD ONE</th>
<th>CARD TWO</th>
<th>CARD THREE</th>
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<tbody>
<tr>
<td>Type of Account:</td>
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</tr>
<tr>
<td>Credit Card</td>
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<tr>
<td>Charge Card</td>
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<td></td>
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<tr>
<td>Company name, address, phone</td>
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<tr>
<td>Website</td>
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<tr>
<td>Locations where card is accepted</td>
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</tr>
<tr>
<td>Annual fee (if any)</td>
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<tr>
<td>Grace period</td>
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<td>Annual Percentage Rate (APR)</td>
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<td>Finance charge calculation method</td>
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<td>Minimum payment</td>
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<td>Other fees:</td>
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<td>Late payment</td>
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<tr>
<td>Other features</td>
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</table>
LEARNING STYLE MODALITY PREFERENCE INVENTORY

Read each statement and select the appropriate number response as it applies to you.

3 = Often  2 = Sometimes  1 = Seldom/Never

A:

____ I remember information better if I write it down.
____ Looking at the person helps keep me focused.
____ I need a quiet place to get my work done.
____ When I take a test, I can see the textbook page in my head.
____ I need to write down directions, not just take them verbally.
____ Music or background noise distracts my attention from the task at hand.
____ I don’t always get the meaning of a joke.
____ I doodle and draw pictures on the margins of my notebook pages.
____ I have trouble following lectures.
____ I react very strongly to colors.
____ Total

B:

____ My papers and notebooks always seem messy.
____ When I read, I need to use my index finger to track my place on the line.
____ I don’t follow written directions well.
____ If I hear something, I will remember it.
____ Writing has always been difficult for me.
____ I often misread words for the text (i.e., then for than).
____ I would rather listen and learn than read and learn.
____ I’m not very good at interpreting an individual’s body language.
____ Pages with small print or poor quality copies are difficult for me to read.
____ My eyes tire quickly, even though my vision checkup is always fine.
____ Total

C:

____ I start a project before reading the directions.
____ I hate to sit at a desk for long periods of time.
____ I prefer first to see something done and then do it myself.
____ I use the trial-and-error approach to problem solving.
____ I like to read my textbook while riding an exercise bike.
____ I take frequent study breaks.
____ I have a difficult time giving step-by-step instructions.
____ I enjoy and do well at several different types of sports.
____ I use my hands when describing things.
____ I have to rewrite or type my class notes to reinforce the material.
____ Total

Scoring Instructions

Total the score for each section. A score of 21 points or more in a modality indicates a strength in the area. The highest of the three scores indicates the most efficient method of information intake. The second-highest score indicates the modality that boosts the primary strength.

A = Visual Modality Score  B = Auditory Modality Score  C = Tactile/Kinesthetic Modality Score
APPENDIX R

FACTORIZING FLOWCHART

---

Note: Are we finished? If yes, write your final answer as the product of the GCF and all other factors. If no, then look at the factors and start over on the flowchart. Make sure that all factors are not factorable further.
These are just guidelines – be sure to use your book, class notes and math lab materials for additional information on factoring.

1. ALWAYS look for a GCF (Greatest Common Factor) – if it exists – take it out

2. How many terms are in the polynomial?

Two Terms:
- Difference of Perfect Squares: \( a^2 - b^2 = (a + b)(a - b) \)
- Sum of Perfect Squares: \( a^2 + b^2 \) Non-Factorable (or Prime)

Three Terms:
- Perfect Square Trinomials:
  \( a^2 + 2ab + b^2 = (a + b)(a + b) = (a + b)^2 \)
  \( a^2 - 2ab + b^2 = (a - b)(a - b) = (a - b)^2 \)

If not a Perfect Square Trinomial >>> then use one of the other methods:

Trial – n – Error: setting up Multiplier Sum Product

Grouping: changing a trinomial into a 4 term polynomial

Four Terms:

Factor by Grouping:
- Group the first two terms
- Group the second two terms
- Look for common factor in each binomial
- Pull out the “common” binomial
- Put remaining values in second binomial

3. Check to see if a factor can be factored further

4. Remember – you cannot have a common factor within a binomial

Example: \((4x + 2)\) can’t have this since 2 is a common factor within the binomial

5. Signs:

<table>
<thead>
<tr>
<th>Trinomial</th>
<th>Binomials</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ax^2 + bx + c )</td>
<td>(( + ) ( + )) both positive</td>
</tr>
<tr>
<td>( ax^2 - bx + c )</td>
<td>(( - ) ( - )) both negative</td>
</tr>
</tbody>
</table>
all other combinations will have one of each sign – meaning one + and one –

6. ALWAYS CHECK YOUR ANSWERS WITH FOIL!!!

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## APPENDIX S

### PROPERTIES OF REAL NUMBERS

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Example of Property</th>
<th>Property Rule</th>
<th>Hint</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Commutative Property of Addition</td>
<td>$a + b = b + a$</td>
<td>$a + b = b + a$</td>
<td>think &quot;order&quot;</td>
</tr>
<tr>
<td>The Commutative Property of Multiplication</td>
<td>$(a + b) + c = a + (b + c)$</td>
<td>$(a + b) + c = a + (b + c)$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Associative Property of Addition</td>
<td>$a + 0 = a$</td>
<td>$a + 0 = a$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Associative Property of Multiplication</td>
<td>$(a + b) + c = a + (b + c)$</td>
<td>$(a + b) + c = a + (b + c)$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Multiplication Property of Zero</td>
<td>$a 	imes 0 = a$</td>
<td>$a 	imes 0 = a$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Multiplication Property of One</td>
<td>$a 	imes 1 = a$</td>
<td>$a 	imes 1 = a$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Inverse Property of Addition</td>
<td>$a + (-a) = 0$</td>
<td>$a + (-a) = 0$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Inverse Property of Multiplication</td>
<td>$a 	imes (\frac{1}{a}) = 1$</td>
<td>$a 	imes (\frac{1}{a}) = 1$</td>
<td>think &quot;grouping&quot;</td>
</tr>
<tr>
<td>The Distributive Property</td>
<td>$a + (b + c) = a + b + c$</td>
<td>$a + (b + c) = a + b + c$</td>
<td>think &quot;grouping&quot;</td>
</tr>
</tbody>
</table>

**HINTS**
- **think "order"**
- **think "grouping"**

**Hints**
- Adding a number to any number gives you that number again - the value of the number stays the same.
- Any number multiplied by one is that number.
- Any number multiplied by zero is zero.
- Any number multiplied by the opposite (additive inverse) equals zero.
- Multiplying a number by its reciprocal (multiplicative inverse) equals one.
- The term outside the parenthesis (or bracket) is multiplied by each term inside the parenthesis (or bracket).
- Distributive Property helps you remove parenthesis and brackets in an expression.

- Example of Property: $2 + 3 = 3 + 2$
- Property Rule: $a + b = b + a$
- Hint: think "order"
### APPENDIX T

**ADDITIONAL GROUP ACTIVITIES**

**MATH RACE**

**Directions:** You are to get other students in class to answer each question. As they do, you should check their work. They should sign their names in the square. **You are not allowed to do any problems on your own sheet!** The person(s) with the highest number of problems correct will win a special prize.

| Convert 45% into a simplified fraction. | Evaluate: $-|2| - (-(−3))$ | $\frac{5 + 11}{9} - \frac{1}{12}$ - 4 |
|----------------------------------------|-------------------------------|---------------------------------------|
| **Convert 4 \frac{1}{2}% into a decimal.** | 8 | \[\frac{8}{15} - \frac{16}{60}\]  |
| **Divide:** | &nbsp; | Simplify: $24 + \frac{3}{8 - 5} - (-5) \times 2$ |
| **Translate:** The product of 5 and the sum of a number and two less three. | Simplify: $5x - 2(y - 3x) + 2(7x - y)$ | Evaluate $-2x^2 - 3x^3 - x$ when $x = -1$. |
Sum & Product Puzzle: Set 1

In each diagram below, write the two numbers on the sides of the “X” that are multiplied together to get the top number of the “X,” but added together to get the bottom number of the “X.”

1. \[ \begin{align*}
9 & \times \\
-6 & \\
\end{align*} \]

2. \[ \begin{align*}
4 & \times \\
4 & \\
\end{align*} \]

3. \[ \begin{align*}
-30 & \times \\
-13 & \\
\end{align*} \]

4. \[ \begin{align*}
-84 & \times \\
5 & \\
\end{align*} \]

5. \[ \begin{align*}
-24 & \times \\
-5 & \\
\end{align*} \]

6. \[ \begin{align*}
6 & \times \\
-5 & \\
\end{align*} \]

7. \[ \begin{align*}
-15 & \times \\
-14 & \\
\end{align*} \]

8. \[ \begin{align*}
-75 & \times \\
-10 & \\
\end{align*} \]

9. \[ \begin{align*}
12 & \times \\
7 & \\
\end{align*} \]
AWARENESS CHECK: What is Your Locus of Control?

Circle the number if you agree with a statement; cross out the number if you do not agree.

1. If I can do the work, I can get a good grade in any course no matter how good or bad the instructor is.
2. If the teacher isn’t a good speaker or doesn’t keep me interested, I probably won’t do well in the class.
3. I believe that I have the power to control what happens to me.
4. I believe that I have very little control over what happens to me.
5. When I make a mistake, it’s usually my fault.
6. When I make a mistake, it’s usually because someone didn’t make clear to me what I was supposed to do.
7. My grades are the result of how much studying I do.
8. My grades don’t seem to be affected by the amount of studying I do.
9. I can adapt easily to a change of plans or events.
10. Adapting to change has always been difficult for me. I like things to be as predictable and orderly as possible.
11. When I fail a test, it’s either because I didn’t study or I didn’t understand the material.
12. When I fail a test, it’s either because the test was unfair or the instructor didn’t cover the material.
13. I usually don’t need anyone to push me or make me study.
14. I can’t seem to make myself study.
15. I am a self-motivated person.
16. I need someone to motivate me.

If you circled mostly odd-numbered statements, then you may have an internal locus of control. If you circled mostly even-numbered statements, then you may have an external locus of control.

## Monthly Management Worksheet

<table>
<thead>
<tr>
<th>MONTHLY INCOME</th>
<th>Income/salary after taxes</th>
<th>Investment income</th>
<th>Other income (student loans, parents, etc)</th>
<th>Total Monthly Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONTHLY EXPENSES</td>
<td>Housing</td>
<td>Rent/Mortgage</td>
<td>Groceries</td>
<td>Food</td>
</tr>
<tr>
<td>Association Dues</td>
<td>Eating out</td>
<td>Total Housing</td>
<td>Total Food</td>
<td>Car/Transportation</td>
</tr>
<tr>
<td>Other</td>
<td>Other</td>
<td>Total Utilities</td>
<td>Total Car/Transportation</td>
<td>Loan/Credit Balance</td>
</tr>
<tr>
<td>Utilities</td>
<td>Laundry (dry cleaning, laundrymat)</td>
<td>Car/Transportation</td>
<td>Total Monthly Expenses</td>
<td>Total Monthly Income</td>
</tr>
</tbody>
</table>
**Investment Exercise**

NAME: ___________________________ DATE: ___________________________

**EXERCISE**

You have been given the option to invest in either a safe investment, or one that has more risk. The safe investment will give you a return of 5%. The risky investment’s return will vary. Finish filling in the following table, and answer the questions that follow:

SAFE INVESTMENT: Here is the return for the safe investment. It will always give the same return.

<table>
<thead>
<tr>
<th>Money to Invest</th>
<th>Return</th>
<th>Gain/Loss</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,000.00</td>
<td>5%</td>
<td>$50.00</td>
<td>$1,050.00</td>
</tr>
</tbody>
</table>

RISKY INVESTMENT: The risky investment’s return will vary and may be one of the following. Finish filling in the following table. Round each calculation to the nearest penny.

<table>
<thead>
<tr>
<th>Money to Invest</th>
<th>Return</th>
<th>Gain/Loss</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $1,000.00</td>
<td>−8%</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>2. $1,000.00</td>
<td>−2%</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>3. $1,000.00</td>
<td>6%</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>4. $1,000.00</td>
<td>17%</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>5. $1,000.00</td>
<td>1%</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>6. $1,000.00</td>
<td>−6%</td>
<td></td>
<td>$</td>
</tr>
</tbody>
</table>

Should you choose the safe investment or the risky investment? Why?
Self-Analysis/Planning Paper

The purpose of this paper is to get you to take a look at some of the factors that have been most influential in contributing to the person you are now, analyze some of the ways you learn academic material and discuss your goals and plans for the semester and the means by which you will be able to achieve them. The following outline should serve as a guide as you write your paper; however, you may modify the outline in ways which will help you to write a paper that is personally significant.

I. Summary of your present position.
   - How do you see yourself now (include some of your major strengths and weaknesses). Which strengths will you depend on for success at college and which weaknesses do you seek to overcome?
   - Past influences in shaping your personhood (parents, siblings, friends, schools, critical experiences, successes and failures).
   - What makes you unique?
   - How do others see you now?
   - Describe any struggles or conflicts you are experiencing.

II. Learning Style
Using the learning styles worksheet from the textbook and the questions below, describe what you know about your needs and preferences as a learner.
   - Where do you study best?
   - What motivates you to study?
   - Your time of concentration in different subjects--15,30,45,60 minutes?
   - Who is responsible for your learning?
   - What sort of structure do you need for your learning - daily plan, teacher requirements, your requirements?
   - What kinds of learning do you do well with others and what kinds do you do better alone?
   - Do you tend to be more of a visual, auditory, or tactile learner?
   - What time of day is best for you to study?
   - When you are reading, in what position do you learn best?
   - Do you learn well from individual instruction (tutor)?
   - Describe yourself as an independent learner.
   - The kind of presentation that really motivates you to learn: media, physical involvement, lecture, discussion, competition, change of pace, anything active, etc.

III. Your Goals and Plans for the Semester
   - What do you plan to accomplish this semester?
   - Describe some of the study/work/self-management habits/skills that you have acquired that will be helpful to you in accomplishing your goals.
   - What plans have you made to change non-productive work/study habits, if at all? How will you go about making these changes?
     - What goals have you set for the courses you are now taking?
**DAILY FOOD DIARY**

Date: ____________  
Day of Week: ______________

As most nutritionists will tell you, keeping track of the calories you consume is one of the most effective ways to lose and/or maintain healthy weight. Try it for one day. Use this chart to record everything you eat in one day. No cheating! Record every morsel. From the handful of nuts, to the candy bar on the way to school, the drinks at the club, and everything in between—write it down. This is the only way to truly know where you are in your weight program. Use a standard calorie counter or the label on your food to find calories per serving, and, if you eat more than one, don't forget to include that in your number.

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>TIME OF DAY</th>
<th>WHAT I ATE</th>
<th>CALORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snack</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snack</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beverages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Calories</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Initial Student Questionnaire

1. What do you know about linked classes?
2. Why did you sign up for a linked class?
3. Do you have any hesitations about being in a linked course? Please explain.
4. What are your expectations of this linked class of College Success and Elementary Algebra?
5. What are your expectations of the instructor in this linked class?
6. What are your expectations of your classmates in this linked class?
7. Do you feel that having the same instructor for these two classes will be a benefit or a limitation to your learning? Please explain your answer.
8. What advantages or disadvantages do you think there will be in having this linked course back-to-back with respect to time?
9. What advantages or disadvantages do you think this linked course will have on you learning the material and being successful in you SLS 1510 - College Success class?
10. What advantages or disadvantages do you think this linked course will have on your learning the material and being successful in your MAT 0024C - Elementary Algebra class?
Mid-Semester Student Questionnaire

1. At this midpoint in the semester, how are your expectations of the linked course being met?

2. At this midpoint in the semester, how are your expectations of this linked course NOT being met?

3. At this midpoint in the semester, what are the difficulties of having this linked course of SLS 1510 and MAT 0024C?

4. At this midpoint in the semester, what are the benefits of having this linked course of SLS 1510 and MAT 0024C?

5. What changes do you think need to be made at this midpoint in the semester regarding this linked course?

6. At this midpoint in the semester, have you performed better in one class of the linked courses (SLS 1510 and MAT 0024C) than the other? If so which one, and why?

7. At this midpoint in the semester, are your grades in both classes (SLS 1510 and MAT 0024C) of the linked course what you would like them to be? Please explain your answer.

8. During class registration and the advising period, was this linked course option explained to you for your understanding?

9. Has this linked course of SLS 1510 and MAT 0024C enabled you to develop better relationships and communication skills with your classmates? Please explain your answer.

10. Has this linked course of SLS 1510 and MAT 0024C enabled you to develop better relationships and communication skills with your instructor? Please explain your answer.
APPENDIX X

SLS 1510 / MAT 0024C

SPRING 2008

Concluding Student Interview

1. What would you define as the benefits of this linked course of SLS 1510 and MAT 0024C?

2. What would you define as the limitations of this linked course of SLS 1510 and MAT 0024C?

3. Were there any advantages in having the same classmates for these two classes?

4. Were there any disadvantages in having the same classmates for these two classes?

5. Were there any advantages in having the same instructor for these two classes?

6. Were there any disadvantages in having the same instructor for these two classes?

7. Do you think having a linked course for SLS 1510 and MAT 0024C made a difference in your performance in the class and final grade?

8. With respect to the order in which the classes were taken during the day, do you think that having SLS 1510 first and MAT 0024C second was an advantage or a disadvantage?

9. With respect to the timing of the classes, was it an advantage or a disadvantage to have classes meet Monday, Wednesday, and Friday with SLS 1510 from 11:15am – 12:05pm and MAT 0024C from 12:25pm – 1:50pm?

10. Which aspects, if any, of the linked course helped you with:

- Math skills
- Study skills
- Time management
- Stress management
- Locus of Control
- Knowledge and utilization of resources
- Development of relationships and communication with other classmates
- Development of a relationship and communication with the instructor

11. What changes would you make in a linked course of SLS 1510 and MAT 0024C that would better meet the needs of the students?
12. Would you recommend a linked class of SLS 1510 and MAT 0024C to your peers (i.e. friends, classmates, etc.)?

13. Would you recommend any combination of a linked class (i.e. History, Science, and English) to your peers (i.e. friends, classmates, etc.)?

14. This was a linked course of SLS 1510 and MAT 0024C, what other linked courses do you think would be beneficial to students?

15. Do you think establishing relationships and communication with your fellow classmates is important to your success in college?

16. Do you think establishing a relationship and communication with the instructor is important to your success in college?

17. What are your final thoughts on this experience of a linked course?
APPENDIX Y

INFORMED CONSENT LETTER

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled "Benefits and Limitations of Linking a College Success Course with a College Preparatory Mathematics Course."

This research is being conducted by Rebecca Gubitti, a graduate student at Florida State University, under the supervision of Elizabeth Jakubowski, Ph.D. I understand the purpose of the study is to better understand student defined limitations and benefits of a linked course with the same instructor, and instructor defined limitations and benefits in teaching a linked course. I understand that if I participate in the project I will allow the researcher to analyze and maintain copies of documents created as part of my regular coursework in SLS 1510 (College Success) and MAT 0024C (Beginning Algebra); However all names and other identifying information will be removed.

I understand that Dr. Matthew Robinson will be a participant in this research study as the main researchers’ Project Coordinator. This means that Dr. Robinson will be the main contact person for students participating in this research study. He will initiate communication with the students and administer the consent form to participants. He will administer, collect, and retain all consent forms, surveys, questionnaires and interview documentation from the participants. The main researcher, Rebecca Gubitti, will not be allowed access to this information until May 1, 2008, which is after the Spring 2008 semester has concluded and final student grades have been provided. He will provide a website where students can contact him should they have any questions or concerns regarding their involvement in the study. Dr. Robinson’s role will be to communicate with the students in regards to the research study only and administer documentation that needs to be completed. In order to maintain the integrity of the study and his own neutrality, he will keep his contact with the students to a minimum.

I am at least 18 years of age and I understand that my participation in this study is strictly voluntary. If I choose not to participate, or should I withdraw from the study at any time, there will be no penalty. Withdrawing from or not participating in the study will not affect my grade for either SLS 1510 (College Success) or MAT 0024C (Beginning Algebra).

I understand that if I participate in this project, I will serve as a student in a classroom setting, and will actively participate in class discussions, group activities, and complete all assignments as required by both courses. I also understand that I may be asked to participate in approximately two one-hour interviews, one mid-semester and one at the end of the semester. During these interviews I will be asked questions related to the experience under investigation and they will be recorded as referential data. If conducted, the total time commitment for the interviews will be approximately two hours.

I understand that all documents, as well as audio- and video-tapes made during the study, will be kept by the Project Coordinator in a locked cabinet in his Academic Support Division office, at Tallahassee Community College, for the duration of the project. Only the researcher will have access to these documents and tapes after the end of the Spring 2008 semester, and all tapes will be destroyed by May 31, 2013. I understand my name will not be known or reported in any published research that results from this study, and that information obtained during the course of the study will remain confidential to the extent allowed by law.

I understand there are no foreseeable risks or discomforts beyond those routinely associated with normal day-to-day activities and functions. However, if any discomfort arises as a result of the study, participation
can stop immediately and if requested, I will be directed to someone to discuss my discomfort. If I have questions about my rights as a participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the FSU Office of the Vice President for Research at 850-644-8633.

I understand I will not be paid, but that there are benefits for participating in this research project. I will be providing instructors with valuable insight into student perceptions of benefits and limitations of linking SLS 1510 (College Success) with MAT 0024C (Beginning Algebra). This information will assist the Academic Support Division, and the institution, in future offerings of linked courses for students. Additionally, my involvement in this research project will increase my awareness of linked courses and what they can offer to the student.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Rebecca Gubitti, Tallahassee Community College, ASP 295, (850) 201-8209, gubittir@tcc.fl.edu or Dr. Elizabeth Jakubowski, Florida State University, College of Education, MCH 209, (850) 644-8428, ejakubow@coe.fsu.edu for answers to questions about this research or my rights. Research results will be sent to me upon my request.

I have read and understand this consent form and AGREE to participate in this project.

____________________________________________________   ________________________________
Participant Signature                                           Date
Consent Form to Conduct Research at Tallahassee Community College

I have read the letter of consent to be signed by the participants in the research of Rebecca Gubitti, under the supervision of Dr. Elizabeth Jakubowski, and give my permission for Mrs. Gubitti to conduct this research on the Tallahassee Community College campus during the Spring semester of 2008. I understand there are no foreseeable risks or discomforts beyond those routinely associated with normal day-to-day activities and functions. However, if any discomfort arises as a result of the study, participation can stop immediately and participants will be directed to someone to discuss their discomfort. If participants have questions about their rights as a participant in this research, or if they feel they have been placed at risk, they can contact the FSU Chair of the Human Subjects Committee, Institutional Review Board, through the FSU Office of the Vice President for Research at 850-644-8633.

(Signature)  
Dr. Sally Search,  
Dean, Academic Support Division  

11/15/07  
Date
APPENDIX Z
MAT 0024C INFORMATION SHEET

Name ______________________________  SS# __________________________
Phone ______________________________  E-Mail________________________

Hometown: _____________________________
Is this your first year in college? __________________________
What is your intended major? __________________________
What are your career goals? (What would you like to be doing in say 10 years?)
___________________________________________________________________

What is one thing that is interesting about you? _________________________________
What are three words that describe you?
____________________  _____________________  _____________________
What are your biggest fears with learning math?
_____________________________________________________________________

What study problems do you have? __________________________

_______________________________________________________________________

Do you have a job?  How many hours a week do you work? _______________________

Copy your class schedule here:
Course       Day (s)       Time       Instructor
_______________________________________________________________________
Math requires practice to learn it – are you willing to do the practice? ____________

INFORMATION FORM FOR MAT 0024C

Print your full name ____________________________________________________________

Your social security number ______________________________________________________

Telephone number ___________________ Local address ______________________________

Are you repeating this course? Circle one. YES NO

If yes, how many times have you been enrolled in MAT 0024 or MAT 0024C before this term?

If yes, semester and year last taken. Semester ________________ Year ________________

Where did you go to high school? __________________________________________________

What math courses did you take in high school? ________________________________

Before you are allowed to remain in this course, you must have completed one of the following requirements below. Please check the appropriate item.

_____ I took a placement test and the results indicated that I should take this course.
_____ I took MAT 0002 or MAT 0013 and made a grade of C of better (or S if prior to Fall, 1990)

_____ I placed into a more advanced course, _________________, but I have chosen to take MAT 0024C.

_____ Other (be very specific) __________________________________________________________

You are taking this course to prepare yourself for the next level of mathematics that you need in college. This course does not carry college credit. It is intended to prepare you for the MAT 1033 course. Some students want to avoid this course and immediately go into the higher level even though the placement score indicated otherwise. Your placement score requires that you complete this course before going to the next level.

My signature at the bottom of this form indicates that I have received the course syllabus and have filled out the information on this form correctly. I have not given any false information on this form.

Signature ________________________________

Some instructors may require more information than the above. Please answer any additional questions on the back of this form.
APPENDIX AA

SLS 1510 CRITICAL SCENARIO

Scenario Question:
Analyze the student’s situation described below. Help the student find solutions to his problems. Offer as many strategies as possible. Look at the major issues and concerns presented, and use what you have learned in this course. Specifically, discuss:

1. Goal Setting
2. Locus of Control
3. Time Management
4. Study Skills
5. TCC Resources

Terry’s Situation:
Terry is a freshman at TCC. He is four weeks into the present semester and is considering dropping out of school. He is experiencing typical adjustment problems for a new college freshman. Terry is taking five classes, working 40 hours per week at his job to pay for school and likes to party with his friends (he calls it chillin’). He is having trouble managing his time. He is already behind in his work at school, particularly in his Math class. He has several tests and assignments due next week. He claims he has no idea where to find help on campus.
Compounding his many issues, Terry never needed to study much in high school. He has always had trouble finding time to study. He sometimes blames his high school teachers and his parents for not making him study more or to read his text books. He feels he would be better prepared for college if they had done their job! When Terry did have a test in high school, he would normally wait until the last possible moment to prepare. He is having a hard time determining the types of goals he needs to set to be successful.
## SLS Rubric

### Levels of Achievement

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Beginning</th>
<th>Developing</th>
<th>Competent</th>
<th>Strategies/Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sets goals; establishes priorities</td>
<td>Student may or may not mention that Chris needs to set goals, but no specific goals are mentioned.</td>
<td>Student mentions Chris needs to set goals and one goal is stated.</td>
<td>Student mentions at least two goals that will help Chris work through his issues.</td>
<td>• Positive attitude • Responsible for actions • Self-confidence • Goal setting • Sets priorities • Positive self-talk • Responsible for health • Gets involved with others • Understands success comes from effort • Has healthy relationships</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>Student does not understand the concept of locus of control. Student does not give specific examples of an internal locus.</td>
<td>Student shows some knowledge of an internal locus. One example is mentioned.</td>
<td>Student shows knowledge of an internal locus. Two or more examples are included.</td>
<td></td>
</tr>
<tr>
<td>Time Management</td>
<td>Student includes one time management strategy.</td>
<td>Student mentions two or three time management strategies.</td>
<td>Student mentions four or more time management strategies.</td>
<td>• GRAB method • Semester calendar • Weekly schedule • Daily list • Schedule wisely: build travel time into schedule; spread classes and study time over entire week and alternate class periods with free periods • Schedule reading time • Schedule important activities during optimum time of day • Avoid procrastination</td>
</tr>
<tr>
<td>Applies Study Skills</td>
<td>Student includes one or two specific study skills.</td>
<td>Student includes three to four specific study skills.</td>
<td>Student includes at least five study skills.</td>
<td>• SQ3R or other reading strategy • Specific reading techniques, such as use of a marker • Setting aside study time • Designating study space • Importance of note taking • Specific note taking systems, such as Cornell • Understanding test preparation • Test taking skills • Stress management techniques • Importance of concentration and limiting distractions</td>
</tr>
<tr>
<td>Uses Resources</td>
<td>Student includes at least one resource of any type: people, places or things.</td>
<td>Student mentions contact with an instructor or counselor/advisor AND one additional resource of any type: people, places, or things.</td>
<td>Student mentions contact with an instructor or counselor/advisor AND two or more additional resources of any type: people, places, or things.</td>
<td>Learning Centers</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Beginning</th>
<th>Developing</th>
<th>Competent</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sets goals; establishes priorities</td>
<td>Does not state the need to set goals. <em>(0 points)</em></td>
<td>States the need to set goals and one goal or two goals are stated. <em>(2 – 3 points)</em></td>
<td>States three or more goals that will help the student work through his/her issues and prioritizes the goals. <em>(4 - 5 points)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>States the need to set goals but no specific goals are stated. <em>(1 point)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of Control</td>
<td>Does not show understanding of the concept of locus of control. <em>(0 points)</em></td>
<td>Shows some understanding of an internal locus of control. One example is included. <em>(2 – 3 points)</em></td>
<td>Shows a clear understanding of an internal locus of control. Two or more examples are included. <em>(4 - 5 points)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shows some understanding of locus of control but does not give specific examples of an internal or external locus. <em>(1 point)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Management</td>
<td>Does not discuss time management. <em>(0 points)</em></td>
<td>Discusses the importance of time management and includes one to two time management strategies. <em>(2 - 3 points)</em></td>
<td>Discusses the importance of time management and includes three or more time management strategies. <em>(4 - 5 points)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discusses the importance of time management but does not suggest any specific strategies. <em>(1 point).</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applies Study Skills</td>
<td>Does not discuss the use of study skills. <em>(0 points)</em></td>
<td>Discusses the importance of study skills and suggests one to two specific skills. <em>(2 – 3 points)</em></td>
<td>Discusses the importance of study skills and suggests three or more specific skills. <em>(4 - 5 points)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discusses the importance of study skills but does not suggest any specific skills. <em>(1 point)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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| Uses Resources | Does not discuss resources. (0 points) Discusses the importance of using resources but does not include any specific resources. (1 point) | Discusses the importance of using resources and mentions contact with an instructor or counselor/advisor AND one additional resource of any type: people, places, or things. (2 – 3 points) | Discusses the importance of using resources and mentions contact with an instructor or counselor/advisor AND two or more additional resources of any type: people, places, or things. (4 – 5 points) |
Problems on this practice exit exam came from the Florida College Basic Skills Exit Test, Item Specifications for Mathematics, State of Florida, Department of State.

1. Simplify:

   \[ 8 - 4 \div 2 - 10 \div 2 \]

   A. \(-4\)
   
   B. \(1\)
   
   C. \(-3\)
   
   D. \(4\)

2. Simplify:

   \[ 12 - (-3)^2 \div (7 - 4) \]

   A. \(1\)
   
   B. \(7\)
   
   C. \(9\)
   
   D. \(15\)
3. Simplify:

$$|{-8}| - |{-5}|$$

A. $-13$
B. $3$
C. $3$
D. $13$

4. Simplify:

$$-2[x + 9(x + 1)]$$

A. $20x + 18$
B. $20x + 2$
C. $-20x - 2$
D. $-20x - 18$

5. Evaluate the given expression when $w = -2$:

$$3w^2 + 5w - 8$$

A. $14$
B. $6$
C. $-11$
D. $-30$
6. Solve for x:

\[
2 \cdot 6x + 5 = 5x - 11
\]

A. \(x = -21\)
B. \(x = -16\)
C. \(x = \frac{-21}{11}\)
D. \(x = -1\)

7. Solve for x:

\[
\frac{1}{2}x + 6 = 3 + 2x
\]

A. \(x = 3\)
B. \(x = 2\)
C. \(x = 0\)
D. \(x = -3\)

8. Solve for x:

\[
5w + 4x = 7k
\]

A. \(x = \frac{7k + 5w}{4}\)
B. \(x = 3kw\)
C. \(x = \frac{7k - 5w}{4}\)
D. \(x = 7k - 5w\)
9. Solve:

\[ 2x + 1 < 3x + 4 \]

A. \( x < 3 \)

B. \( x > 3 \)

C. \( x < -3 \)

D. \( x > -3 \)
10. If 4 times a number is increased by 7, the result is 15 less than the square of the number. Choose the equation that could be used to find this number, $x$.

A. $4x + 7 = 15 - x^2$

B. $4(x + 7) = x^2 - 15$

C. $4x + 7 = x^2 - 15$

D. $11x = x^2 - 15$

11. The length of a rectangle is 2 feet more than the width. The perimeter of the rectangle is 20 feet. Find the length.

A. 4 feet

B. 6 feet

C. 9 feet

D. 11 feet

12. Identify the proportion listed below that solves this problem. 

A car can travel 189 miles on 9 gallons of gasoline. How far can the car travel on 13 gallons?

A. \( \frac{9}{189} = \frac{x}{13} \)

B. \( \frac{189}{9} = \frac{x}{13} \)

C. \( \frac{189}{13} = \frac{x}{9} \)

D. \( \frac{189}{x} = \frac{13}{9} \)
13. Simplify:

\[(a^2b^3)^2\]

A. \(a^4b^9\)
B. \(a^2b^9\)
C. \(a^6b^6\)
D. \(a^4b^6\)

14. Simplify:

\[\frac{x^{-3}y^6}{x^{-4}y^4}\]

A. \(xy^2\)
B. \(\frac{y^2}{x}\)
C. \(\frac{y^2}{x^7}\)
D. \(x^7y^2\)

15. Simplify:

\[(a^2b^0c^{-1})^3\]

A. \(a^6b^3c^{-2}\)
B. \(\frac{a^6b^3}{c^3}\)
C. \(\frac{a^5}{c^3}\)
D.  \[ \frac{a^6}{c^3} \]
16. Convert to standard form:

\[ 7.96 \times 10^{-2} \]

A. 0.00796
B. 0.0796
C. 796
D. 7,960

17. Simplify:

\[(3x^2 + 2x - 6) - (x^2 - x + 2)\]

A. \(2x^4 + 3x^2 - 8\)
B. \(2x^2 + x - 4\)
C. \(2x^2 + 3x - 4\)
D. \(2x^2 + 3x - 8\)

18. Simplify:

\[4x^3(2x^2 - 7)\]

A. \(8x^5 - 28x^3\)
B. \(8x^6 - 7\)
C. \(6x^5 - 28x^3\)
D. \(8x^6 - 28x^3\)
19. Simplify:

\[(5x - 9)(x + 6)\]

A. \(5x^2 + 39x - 54\)
B. \(5x^2 + 21x - 3\)
C. \(5x^2 - 3x - 15\)
D. \(5x^2 + 21x - 54\)

20. Factor completely:

\[12a^2b^2 - 3ab\]

A. \(3ab(4ab)\)
B. \(3ab(4ab - 1)\)
C. \(3ab(4a^2b^2 - ab)\)
D. \(ab(12ab - 3)\)

21. Factor completely:

\[4x^2 - 9\]

A. \((2x^2 + 3)(2x^2 - 3)\)
B. \((2x + 3)(2x - 3)\)
C. \((2x + 1)(2x - 9)\)
D. \((2x - 3)((2x - 3)\)
22. Factor completely:

\[ ax - a + bx - b \]

A. \((x + 1)(a + b)\)
B. \((x + 1)(a - b)\)
C. \((x - 1)(a + b)\)
D. \((x - 1)(a - b)\)

23. Identify a factor of the trinomial below:

\[ 5x^2 - 9x - 2 \]

A. \((5x + 2)\)
B. \((5x + 1)\)
C. \((x + 2)\)
D. \((x + 1)\)

24. Simplify:

\[ \frac{x^2 - 4x + 3}{1 - x} \]

A. \(-x + 3\)
B. \(-x + 1\)
C. \(x - 3\)
D. \(x + 3\)
25. Solve:

\[ x^2 - 5x + 6 = 0 \]

A. \( x = 2, x = 3 \)
B. \( x = -2, x = -3 \)
C. \( x = 1, x = 6 \)
D. \( x = -1, x = 6 \)

26. Solve:

\[ 3a^2 + 14a + 8 = 0 \]

A. \( a = -\frac{2}{3}, a = -4 \)
B. \( a = \frac{2}{3}, a = 4 \)
C. \( a = -\frac{3}{2}, a = -4 \)
D. \( a = -\frac{4}{3}, a = -2 \)

27. Assuming the variable represents a non-negative number, simplify completely:

\[ \sqrt{18x^3} \]

A. \( 3x \sqrt{2x} \)
B. \( 6x \sqrt{3x^2} \)
C. \( 9x \sqrt{2x} \)
D. \( 3 \sqrt{6x^3} \)
28. Find the graph that best matches the given linear equation:

\[ y = 3x + 2 \]

A.  

![Graph A](image1)

B.  

![Graph B](image2)

C.  

![Graph C](image3)

D.  

![Graph D](image4)

29. Simplify:

\[ \sqrt{3} (\sqrt{3} + \sqrt{6}) \]

A. 6 \(\sqrt{2}\)

B. 9

B. 3 + 3\(\sqrt{2}\)

C. 21
30. Find the x-intercept for:

\[ 2x - 3y = 6 \]

A. (0, 3)
B. (0, -2)
C. (3, 0)
D. (3, 2)
SLS 1510 College Success
Critical Thinking Points

I. SETTING THE STAGE FOR SUCCESS

1. GETTING MOTIVATED.

   **Critical Thinking Pt.:** "What is the relationship between motivation and success in school?"

   a. Discovering your Locus of control: internal/external
   b. Defining your personal, academic, social and career goals
   c. Exploring your learning style
   d. Becoming a lifelong learner

2. THE WILL TO LEARN. Knowing who you are and where you are going are essential elements to achieve personal growth and success in school.

   **Critical Thinking Pt.:** "How is self-assessment relevant to your personal growth?"

   a. Identify your strengths and weakness
   b. Defining your values
   c. Assessing your interests
   d. Gaining confidence

3. AWARENESS AND USE OF SUPPORT RESOURCES.

   **Critical Thinking Pt.:** "What are student support resources?" Students will be able to clarify the services rendered by various TCC resources.

   a. Student Success Center and Career Services
   b. Financial Aid
   c. Library
   d. Learning Centers
   e. Student activities, etc.
II. MANAGING YOUR TIME

1. TAKING CONTROL OF YOUR TIME. Managing your time effectively is the foundation of academic success.

   Critical Thinking Pt.: "How is the concept of time management and college success perceived by students?"

   a. Setting your priorities
   b. Organizing your semester
   c. Using effective tools to get organized
   d. Fighting procrastination
   e. Writing and following your plan

III. PREPARING FOR AND TAKING TESTS

1. SHOWING WHAT YOU KNOW. Being prepared physically and mentally for a test is a crucial ingredient for effective performance.

   Critical Thinking Pt.: "How can a student determine his/her readiness for an exam?"

   a. Knowing what to do before, during, and after a test
   b. Learning specific test-taking strategies
   c. Conquering test anxiety
   d. Learning from your mistakes

IV. LISTENING AND NOTE TAKING

1. LEARNING IN THE CLASSROOM. There is a direct relationship between active listening and effective note taking.

   Critical Thinking Pt.: "Compare the relationship between active listening and effective note taking."

   a. Differentiating listening from hearing
   b. Recognizing factors contributing to poor listening
   c. Improving your listening skills
   d. Becoming an active listener

2. TAKING EFFECTIVE NOTES.

   a. Learning tips for better note taking
   b. Taking the right kind of notes by knowing what is important
c. Making the most of class notes
d. Using note taking systems

V. LEARNING FROM TEXTBOOKS

1. READING WITH A PURPOSE. Learning through active reading is a vital key to knowledge.

   Critical Thinking Pt.: "How does a student read to analyze the main ideas, facts and details in a reading passage?"

   a. Identifying the challenges of reading
   b. Understanding the big picture without disregarding details
   c. Emphasizing the importance of previewing
   d. Putting the SQ4R method of reading textbooks to work

2. READING CRITICALLY. Seeking understanding through critical thinking.
   a. Identify keys to thinking
   a. Engage critical thinking processes while reading
   b. Seek answers to your questions
   c. Improve arguments and explanations

VI. REMEMBERING INFORMATION

1. MEMORY TECHNIQUES. There is no learning without retention.

   Critical Thinking Pt.: "How can a student synthesize learning concepts to improve retention of information?"

   a. Understanding why you forget
   b. Involving all your senses
   c. Learning specific memory strategies
   d. Practicing repetition and recitation
   e. Putting visualization and association to work
   f. Using mnemonic devices to boost your memory power

VII. RELATING TO OTHERS

1. APPRECIATING YOUR DIVERSE WORLD. Learning about others who are different from you will enable you to learn more about yourself.

   Critical Thinking Pt.: "What are my fundamental assumptions about people who are different from me?"

   a. Appreciating the diversity of campus culture
   b. Understanding the perspectives of others
c. Understanding the positive effects of diversity
d. Accepting and dealing with differences in society and the workplace

VIII. PERSONAL WELLNESS

1. KEEPING HEALTHY. Taking care of your body is extremely important for personal and academic success.

   Critical Thinking Pt.: "What is the implication of my level of wellness in regard to reaching my long term goals?"

   a. Eating right and getting sufficient sleep
   b. Exercising and keeping fit
   c. Making choices about drugs and alcohol
   d. Dealing with and responding to peer pressure.

2. MANAGING STRESS. Nurturing a healthy mind is also a necessary ingredient for success.

   a. Identifying signs of stress
   b. Protecting yourself from excessive stress
   c. Using stress reduction techniques

3. MAINTAINING RELATIONSHIPS. Your personal life directly affects your academic life.

   a. Building a healthy self-esteem
   b. Learning to communicate effectively
   c. Differentiating between being assertive and aggressive
   d. Dealing with conflicts, criticism, and feedback
   e. Handling failure as well as success

4. MONEY MANAGEMENT and FINANCIAL WELL BEING

   a. Understanding Credit and Debt
   b. Saving and investing for your future

IX. CAREER PLANNING

1. MYTHS AND REALITIES OF THE WORKPLACE

   Critical Thinking Pt.: "What are the key questions a student must answer in finding a satisfying career?"

   a. Access information and be able to use career planning resources in the career center.
   b. Develop a flexible career plan.
c. Choose an appropriate major.
d. Assess career opportunities and future work trends.
e. Understand the career planning process and be able to make appropriate decisions

2. SELF-ASSESSMENT
   Career interest profile   Goals and Priorities
   Work related personality preferences   Content and transferable skills
   Personal values
Linked Class

What are linked classes?
Linked classes are two classes with the same students. The professors teaching the classes work together and prepare lessons, assignments, and activities that integrate content and enrich the curriculum.

How do I enroll?
When students enroll in one linked class they must also enroll in the co-requisite linked class. For example, a student who enrolls in a linked section of SLS 1510 (College Success) must also enroll in the corresponding linked section of CGS 1060 (Computer Literacy).

Why should I enroll in linked classes?
It is a pathway to success! In linked classes faculty and students collaborate to form a learning community.

Participation in a learning community offers several benefits to students.

- Students and faculty work together providing a range of learning opportunities including active learning and teamwork.
- Student learning and achievement are increased.
- Students develop and strengthen critical thinking skills through integration of content and collaborative activities.
- Students see the connections between different disciplines and develop an understanding of how concepts and skills can be applied in other areas of study.
- Students have enhanced opportunities to build relationships with each other and with faculty.
# APPENDIX EE

## PLACEMENT EVALUATION CHART – BASED ON COLLEGE PLACEMENT TEST

<table>
<thead>
<tr>
<th>PLACEMENT EVALUATION CHART COURSE</th>
<th>CPT SCORE</th>
<th>SAT SCORE</th>
<th>ACT SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>REA 0001 College Prep Reading I</td>
<td>Reading = 0-59</td>
<td></td>
<td>Students with SAT or ACT scores below: SAT 440 Verbal ACT 18 Reading Must take the CPT Reading Test to determine placement.</td>
</tr>
<tr>
<td>REA 0002 College Prep Reading II</td>
<td>Reading = 60-82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENC 0020 College Prep English</td>
<td>Sentence Skills = 0-82</td>
<td>Verbal = 1-439</td>
<td>English = 1-16 If English is second language, select EAP</td>
</tr>
<tr>
<td>ENC 0020 Eng/Academic Purposes I</td>
<td>Sentence Skills = 0-64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENC 0020 EAP 0440** Eng/Academic Purposes II</td>
<td>Sentence Skills = 65-82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENC 1101 College Composition</td>
<td>Reading = 83</td>
<td>Verbal = 440+</td>
<td>Reading = 18 English = 17+</td>
</tr>
<tr>
<td>ENC 1101 Sentence Skills = 83-120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP 0384**, EAP 0440** Eng/Academic Purposes II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>If English is second language, select EAP</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 0002, Basic Mathematics</td>
<td>Arithmetic = 0-55 Algebra = 0-71</td>
<td>Students with SAT or ACT math scores below: SAT: 440 ACT: 19 Must take the CPT to determine math placement.</td>
<td></td>
</tr>
<tr>
<td>MAT 0024C, Elementary Algebra</td>
<td>Arithmetic = 56+ Algebra = 0-44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 0024, Elementary Algebra</td>
<td>Arithmetic = 56+ Algebra = 45-71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 1033, Int. Algebra</td>
<td>Algebra = 72-87 Mathematics = 440- 549</td>
<td>Mathematics = 19-20</td>
<td></td>
</tr>
<tr>
<td>MAC 1105, STA 2023 MGF 1106, MGF 1107</td>
<td>Algebra = 88+ Mathematics = 550+</td>
<td>Mathematics = 21+</td>
<td></td>
</tr>
</tbody>
</table>

Revised 9/2008
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BIOGRAPHICAL SKETCH

Rebecca L. Gubitti was born in Taylorville, IL, and raised in Naples, Fl. She is a graduate of the Collier County School System from kindergarten through twelfth grade. In 1988, Rebecca graduated with a Bachelor of Science Degree in Mathematics and in 1989, with a Master of Science Degree in Mathematics Education, both from Florida State University. She received her Doctorate of Philosophy in Mathematics Education from Florida State University in 2009.

Rebecca has worked for the Naval Oceanographic Office at Stennis Space Center in Bay St. Louis, MS, as a mathematician and software designer; for the Florida Department of Education as a training specialist and educational loan analyst; the Agency for Health Care Administration as a hospital budget analyst; and for the Florida Department of Revenue as a program trainer and tax analyst. Her teaching experience consists of training Navy personnel on software built in-house; working with dyslexic students at Woodland Hall Academy in Tallahassee, FL; teaching an undergraduate level course at Florida State University; and as a community college instructor in the areas of college level mathematics, college preparatory mathematics and college success skills.

Rebecca is currently working as a full time Associate Professor of College Preparatory Mathematics and College Success at Tallahassee Community College. She hopes to continue teaching in these two areas, as well as branch out into the colleges’ Educator Preparation Institute. Her future interests include developing a specific course curriculum for veterans in the areas of mathematics and college success and also becoming an active instructor and presenter in The Florida Chair Leadership Academy.