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UNDERPREPARED COMMUNITY COLLEGE STUDENTS: THE ROLE OF ACADEMIC SELF-CONCEPT AND SENSE OF BELONGING IN DEVELOPMENTAL EDUCATION

By

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ABSTRACT

UNDERPREPARED COMMUNITY COLLEGE STUDENTS: THE ROLE OF ACADEMIC SELF-CONCEPT AND SENSE OF BELONGING IN DEVELOPMENTAL EDUCATION

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The purpose of the current study was to explore the relationship between academic self-concept and sense of belonging in the final course grade of students in a developmental English course. In order to investigate this potential relationship the following research question was explored: what is the relative importance of psychosocial achievement characteristics (i.e., sense of belonging and academic self-concept) and demographic variables in the final course grade of a developmental education English course at the community college? Participants included 284 community college students enrolled in Developmental English courses at a rural community college in the Midwest. The study used an academic self-concept instrument and sense of belonging instrument. The survey also included demographic variables that were included as control variables in the study.

In order to investigate the central research question, a hierarchal multiple regression procedure was utilized to determine the amount of variance explained by the psychosocial characteristics. Results suggested that the overall model was statistically significant, but only explained a small amount of the total variance in the final course grade. In addition, the multiple regression procedure was used to investigate the contribution that psychosocial achievement characteristics and selected demographics contributed to the model of developmental education final course grade. Academic and

general self-concept were positive and significant predictors of students' final course grade. Unexpectedly, verbal and problem solving self-concept were negative and significant predictors of final course grade. Lastly, sense of belonging and the demographic variables included did not make a significant contribution to the final course grade.

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CHAPTER ONE

INTRODUCTION AND OVERVIEW

Despite the volume of research on college student retention (Hoffman, Richmond, Morrow, & Salomone, 2002) and the national calls for greater efficiency in graduating students (Spelling Commission, 2006), we know relatively little about the role of the community college in 4-year retention and bachelor degree completion. For the most part, the extensive literature on retention focuses on full-time residential students in 4-year institutions. Yet, the majority of college students today start their college careers in community colleges, not 4-year institutions (Adelman, 2004). This enrollment reality requires a shift in the focus of research toward the 2-year institution. In particular, many of the students who start postsecondary education at a two-year college drop out before achieving their academic and vocational goals (Fontana, Green, Wright, DiStefano Diaz, Johnson, Macia et al., 2006). Half of the students who enter two-year schools depart at the end of their first year (Braxton, 2000). Moreover, community colleges enroll a disproportionately high percentage of underprepared students who need some form of remediation or developmental education. The proportion of students starting in community colleges who require at least one developmental education course is above 60% (Adelman, 2004).

Problem Statement

According to Grant-Vallone, Reid, Umali, and Pohlert (2004), studying persistence of underprepared students is more complicated than studying students more likely to succeed in college. Underprepared students possess academic, social, and/or economic problems that challenge their success in college (Pérez, 1998; Thompson,

1998). Relevant indicators of lack of college-level preparation include age, race, or home language of the student, whether the student dropped out of high school or completed a GED, and whether the student needs additional work in reading, writing, or mathematics (Ignash, 1997; Merisotis & Phipps, 2000; Pérez, 1998; Thompson, 1998). Students lacking these skills are directed toward developmental education courses. The purpose of these courses is to enable students to gain the necessary skill set to complete college-level courses and academic programs successfully (McCabe & Day, 1998; Weissman, Silk, & Bulakowski, 1997).

Research suggests that students who complete developmental coursework are successful in college-level course work. Passing the gatekeeper courses in developmental education typically provide academically underprepared students with the same chances in their subsequent college-level courses. In fact, several studies demonstrate that developmental education students do as well, if not better than, non-developmental students in college-level courses at community colleges (Brien, Duffy, Fulwiler, Neill, & Siegrist, 1998; Klicka, 1998; Moriaty, Naigus, Wyckoff-Byers, Greenfield, & Mulligan, 1998). Studies that have examined the outcomes of developmental education seem to indicate that these programs are effective at improving the chances of collegiate success for underprepared students (Kozeracki, 2002; Merisotis & Phipps, 2000). In these studies, the most frequently used method to determine the effectiveness of the transition to college-level courses was a measure based on the GPA of students after enrollment in developmental courses and the student's GPA in subsequent courses.

Pascarella and Terenzini (2005) suggest that positive academic experiences may be disproportionately important to the academic success and persistence of underprepared

students. One way to investigate student persistence is through the understanding of student academic self-concept and the student's sense of belonging in college. Social and academic adjustment may include a positive perception of a student's own ability, motivation, and academic performance as well as perception of how well he or she fits in on the college campus and feels a sense of belonging in college (Grant-Vallone et al., 2004; Hurtado & Carter, 1997). Self-beliefs, particularly academic self-concept, are related to several achievement outcomes in postsecondary institutions and college persistence (House, 1992; 2002). House (1992; 1999; 2000a) describes some of the cognitive-motivational characteristics such as academic self-concept and achievement expectancies that are significantly correlated with course performance and school withdrawal. In addition, student success is tied to a number of experiences that students have on both the academic and social side of the college campus (Fontana et al., 2006).

Studies of changes in students' academic self-concept suggest that socializing with peers enhances their self-concept (Pascarella & Terenzini, 2005). These studies included tutoring experiences; however, the studies conducted focus on tutoring another student, but not the academic self-concept of the student who received the tutoring, involvement in student activities, and part-time work on campus (Astin, 1993). Many of the studies related to college students and academic self-concept occur at the 4-year institution with a traditional age population of students. Since community college students tend to have a higher mean age and do not live on campus, among other differences from the traditional 4-year college students, these studies may not be representative of the community college population. In addition, the few studies

including academic self-concept and the community college student are qualitative in nature.

The degree of change during the transition to college depends on a number of factors, among them the degree of difference between the norms and patterns of behavior associated with membership in past communities and those required for integration into the life of the college (Tinto, 1993). Most of the theories of persistence focus on some combination of academic and social encounters, experiences, and forces that shape persistence and attainment (Pascarella & Terenzini, 2005). Because students are in a social structure characterized by constant social interaction, the production of their identities in college is, at least to some extent, dependent on a student's role with peers (Kaufman & Feldman, 2004). Individuals who come from families, communities, and schools whose norms and behaviors are different from those of the communities of the college into which entry is made face especially difficult problems in seeking to achieve membership in the new communities (Tinto, 1993). As a result, academically underprepared students often experience isolation and alienation once they enter college (Commander & Valeri-Gold, 2003). College students who do not do as well as their peers may then measure themselves against their peers and subsequently perceive themselves differently than do their college peers (Kaufman & Feldman, 2004).

Academic self-concept refers to a student's perception of his or her academic abilities. Those perceptions are influenced by school experiences and the student's interpretations of those experiences in the context of the school environment (Shavelson & Bolus, 1982). Academic self-concept is a multi-faceted attribute that is continuously modified on the basis of school performance (House, 1992; Marsh, 1990). However, only

a limited number of studies have assessed the effects of college experiences and other variables on the development of academic self-concept (House, 2000a). There is considerable evidence that students' self-beliefs, such as academic self-concept and achievement expectancies, are significantly related to their undergraduate academic achievement (House, 2000b). For developmental students in community college, academic self-concept is tied to high school achievement (Cox, Friesner, & Khayum, 2003; House & Prion, 1998). The focus of this study was on developing a model that explores the relationship between academic self-concept and developmental education final course grade, taking into account other possible influences.

Research Question

What is the relative importance of psychosocial achievement characteristics (i.e., sense of belonging and academic self-concept) and demographic variables (age, gender, race/ethnicity, social class, education goal, number of dependents, and employment status) in the final course grade of a developmental education English course at the community college?

Conceptual Framework

The conceptual framework is broken down into three main sections. The first section concentrates on the many definitions of academic self-concept and the definition selected to guide this study. The second section discusses the importance of social comparison in the development of academic self-concept. The last section explains the relationship of academic self-concept to eventual academic achievement.

Academic Self-Concept

Definitions. Self-concept is considered to be one's self-perceptions, formed through experience with the environment, particularly with significant others (Pascarella & Terenzini, 2005). Self-concept, self-esteem, and self-efficacy are used almost interchangeably in the literature (Pascarella & Terenzini, 2005). Self-concept is considered to be one's self-perceptions formed through experience with the environment in relation to others (Shavelson, Hubner, & Stanton, 1976). The literature reviewed by Pascarella and Terenzini treats self-concept as a relational term with an emphasis on students' perception of their competence compared to that of others. In contrast, self-esteem is based more on individual and internal standards rather than external factors. Self-esteem is not specific to a particular dimension of the self and is based on the individual's comparison of a real and ideal self (Pascarella & Terenzini, 2005). Lastly, self-efficacy refers to how people feel about themselves. Self-efficacy is a person's belief in their ability to develop and act in order to pursue their goals (Bandura, 1997). Self-efficacy beliefs determine how people feel, think, motivate themselves and behave (Bandura, 1994). Unless a person believes that they can create the desired effects through their own actions they will lack the incentive to pursue their goals and eventually attain them. This study focused specifically on self-concept; however, the term is often vaguely defined and many terms are used in the literature to describe self-concept. The distinction used in this study is the perception of self in comparison to others, which is a person's self-concept.

A person's self-concept may or may not be altogether consistent from one situation to another, even within a particular identity domain (Kaufman & Feldman,

2004). Rutter (1987) and others (see Marsh, 1999) state that self-concept continues throughout life to be modified by life experiences and is not set in childhood. Measures of self-concept appear to be especially sensitive to different forms of involvement in college (Astin, 1993). Hurtado, Chang, Sáenz, Espinosa, Cabrera, and Cerna (2006) suggest that internal assessments, or a person's self-concept, are central to academic adjustment and that it is also associated with external assessments of academic competence. Individuals whose need for competence is met believe they can determine their success as well as understand what it takes to do well in an academic setting and to succeed (Fredricks, Blumenfeld, & Paris, 2004).

Academic self-concept differs slightly from a person's general self-concept. General self-concept refers to overall attitudes about physical appearances, social acceptance, and general skills and abilities (Shavelson et al., 1976). Academic self-concept is more closely related to achievement than a global structure of self-concept (Shavelson et al., 1976). Self-concept is multifaceted, which means that an individual's general self-concept can be theoretically and empirically differentiated from one's academic self-concept or social self-concept (Marsh, 1990; Pascarella & Terenzini, 2005). Academic self-concept is a multidimensional construct and involves internal and external comparisons (McCoach & Siegle, 2003). It is formed on the basis of past judgments, perceptions, and feedback and is a person's conception of his or her own ability to learn the accepted types of academic behavior in terms of performance of academic achievement (Shavelson & Bolus, 1982). For the purposes of this study, academic self-concept was the domain of focus. Academic self-concept includes the feelings and attitudes students have about their academic or intellectual abilities,

especially when comparing themselves to the other students (Cokley, 2002; Cokley & Patel, 2007).

Social Comparison. One source of self-knowledge comes from social comparison or comparing our abilities to the abilities of others and forming a judgment about self based on that comparison (Gigliotti & Gigliotti, 1998). Academic self-concept is developed through students' perceptions of their competence compared to that of other students (Pascarella & Terenzini, 2005). Interactions that seem to lead to enhanced academic self-concept all involve students' encounters with people different from themselves or those with different knowledge, ideas, or beliefs (Pascarella & Terenzini, 2005). Interactions of importance include student-faculty and student-student relationships. These encounters have the potential to stimulate reflection on students' knowledge, beliefs, and values and could lead to new ways of thinking and understanding the world and others (Pascarella & Terenzini, 2005).

Social comparison is a primary function of self-concept, and student contact with peers plays a central role in how students think about themselves (Pascarella & Terenzini, 2005). The social comparison process and sense of belonging to the peer group is especially important for understanding students during their first year of college. Hurtado et al. (2006) discovered that academic adjustment, which includes measures of academic self-concept, and sense of belonging are strongly linked for all students in the first year of college. Social comparison theory suggests that when people compare favorably to those around them, they are more likely to maintain high self-concepts (McCoach & Siegle, 2003). Wood (1989) states that the self-concept is responsive to changes in social context, which suggests that the social environment imposes comparisons that have an

impact on the individual. Students compare their own performance with that of their classmates as well as with their own performance in other academic areas (Bryne, 1996).

Information seeking and comparison with others is particularly salient for individuals involved in assessment of their own competence (Ruble & Flett, 1988, as cited in Hurtado et al., 2006). Socializing with peers, specifically through classroom interactions, positively impacts students' academic self-concepts (Pascarella & Terenzini, 2005). It may be that students with confidence in their own ability rely less on social comparisons and are more likely to achieve independent judgments about their competence (Ruble, 1994). The emphasis on social comparison increases students' certainty in the accuracy of their academic self-concepts (Trautwein, Ludtke, Koller, & Baumert, 2006).

If students use the immediate social context as their frame of reference, relatively low-achieving students should have higher perceptions of their competencies in a low group or track (Stipek, 1998). The synthesis of Marsh's "big fish, little pond effect" (BFLPE) provided by Stipek, predicts that ability grouping should, on average, have a positive effect on relatively low-performing students' perceptions of competencies. BFLPE occurs when students have "lower academic self-concepts when they compare themselves to more able students, and higher academic self-concepts when they compare themselves with less able students" (Marsh, 1990, p. 124). On the other hand, research based on group membership suggests the opposite (Stipek, 1998). To the degree that students base their perceptions of their abilities on their group membership, students placed in low groups should rate their academic abilities lower than students placed in the relatively high groups, regardless of their actual performance within the group (Stipek,

1998). If the students compare themselves to other academically underprepared students, such as the other students in developmental education courses, they may have a false sense of academic self-concept. Overestimating one's ability may result in unfounded academic confidence, encouraging students to take on academic challenges for which they may feel capable but actually lack the academic talents to be successful (Fielstein & Bush, 1998).

Community colleges are well-known for their student friendly environments and continue this reputation through higher quality of informal student-faculty interaction and teaching approaches that encompass different learning styles and preferences (Thompson, 2001). Even though the primary function of faculty is to teach and encourage learning, the student experience on a community college campus is so transitory that the faculty role becomes even more crucial (McArthur, 2005). Interactions with faculty outside and inside of the classroom help to promote a positive self-concept (Pascarella & Terenzini, 2005). Positive classroom experiences reinforce students' self-concept and perception as learners (Hawley & Harris, 2005-2006). Woodside, Wong, and Wiest (1999) found that student-faculty interactions are significantly associated with students' academically related self-concept. This research focused on the 4-year college student with a mean age of 27 years old. Interestingly the research only focused on student-faculty interactions within the classroom and not on the out of classroom interactions. Thompson suggests that as students increase the amount of informal interaction they have with faculty, they begin to place more value on their courses. As a result, they display positive attitudes towards learning and development. In addition, students who have developed interpersonal relationships with faculty members tend to reveal higher degrees of

academic skills development and are more satisfied with their institutional experiences (Thompson, 2001).

Relationship to Academic Achievement. A positive academic self-concept is valued as a desirable outcome in many educational settings. It is a mediating variable that facilitates the attainment of other desired outcomes such as academic achievement: "Academic self-concept has motivational properties such that changes in academic self-concept will lead to changes in subsequent academic achievement" (Marsh, 1990, p. 646). A relationship exists between academic self-concept and academic achievement although the casual ordering is not clear (Marsh, 1993). Academic self-concept is an important psychological construct because it has been found to be both a cause and effect of academic achievement (Cokley & Patel, 2007). Self-perceptions of ability figure into virtually every cognitive theory of achievement motivation; they are assumed to affect behavior and learning (Stipek & Mac Iver, 1989). Perceptions of ability influence information seeking, intended effort, persistence, thoughts and feelings while working on tasks, attribution about one's performance, and ultimately achievement (Marsh, 1990; Stipek, 1998). In addition, academic adjustment has much to do with a student's intrinsic assessment of his or her relative success in navigating a new academic environment (Hurtado et al., 2006).

Research indicates that students' evaluations of their academic abilities become more positive during their college years (Pascarella & Terenzini, 2005), which could impact retention and persistence of students. Pritchard and Wilson (2003) discovered that students who indicated their intent to drop out reported lower self-esteem than their peers who persisted. Napoli and Wortman (1998) found that academic self-esteem had a

significant positive impact on goal commitment for community college students. They concluded that the initial goal of earning a college degree is not only related to demographic factors but also to the student's overall willingness to commit to goals and have a positive self-image. Community college students appear to lack confidence in their abilities to succeed academically, and when successful, attribute part of that success to having selected the right college (Bers & Smith, 1991). Thompson (1998) discovered that developmental education students are often academically deficient, uncertain of their goals, and have a low self-concept. Grimes (1997) conducted a study that looked at underprepared community college students' persistence and academic success. She surveyed 91 underprepared students and 49 college-ready students. Included in this study was a measure of self-efficacy. Grimes did not find that self-esteem differed between underprepared and college ready students. Instead, she discovered that students from both groups who did not persist had higher general self-esteem. Grimes suggests that the complexity of self-esteem and self-concept make the need to investigate the specific academic areas further.

Loeb and Magee (1992) suggest the pattern of changes in personal characteristics indicates the extent of the adjustment necessary when the student is beginning college. This research was conducted at the 4-year institution where students typically have more recovery time for academics and the adjustments to college. However, it is important to note that these students were all at a commuter college with similar stressors as students in the community college. They found that students' academic self-esteem changed for the worse during the first year and then recovered late in the second year of college. College students are often moving from a high school where they achieved a good degree

of success and received encouragement to a university where their performance is marked less by academic success (Loeb & Magee, 1992). Loeb and Magee did find that students with low self-esteem who found it difficult to adjust to college academics benefit from the support of faculty, which leads to increased satisfaction in college and enhanced self-concept.

In his book, "What Matters Most in College: Four Critical Years Revisited," Astin (1993) investigated several variables in relation to academic self-concept. It is important to note that in the text Astin states that neither taking reading and study skills classes nor taking developmental courses is associated with any outcomes studied, including academic self-concept. The connection between academic self-concept and developmental education, while mentioned, does not seem fully developed in the text. The current review of the literature does not find any evidence to support this perspective.

Many students from traditionally marginalized populations lack role models and examples of academic success in their lives. "The faculty members represent the authority figure, the mentor, and the role model that may not appear anywhere else in the student's life" (McArthur, 2005, p. 2). Faculty at the community college typically assume greater responsibilities for developmental education students in terms of advising and counseling than do those faculty at 4-year institutions where research expectations are greater (Jacoby, 2006). Furthermore, students often lack the experience of academic success in their own lives that contributes to the development of further educational achievement (Brophy, 1996). In terms of community college students, interaction with faculty plays an essential role for a student's sense of belonging and the development of

his or her academic self-concept. One area of concern during the transition to postsecondary education is that courses are more difficult and require new strategies to approach learning (Hoover, 2003). This is especially true for developmental education students since they have to make up for the academic skills and experiences possessed by their college-ready peers (Moore, 2004-2005).

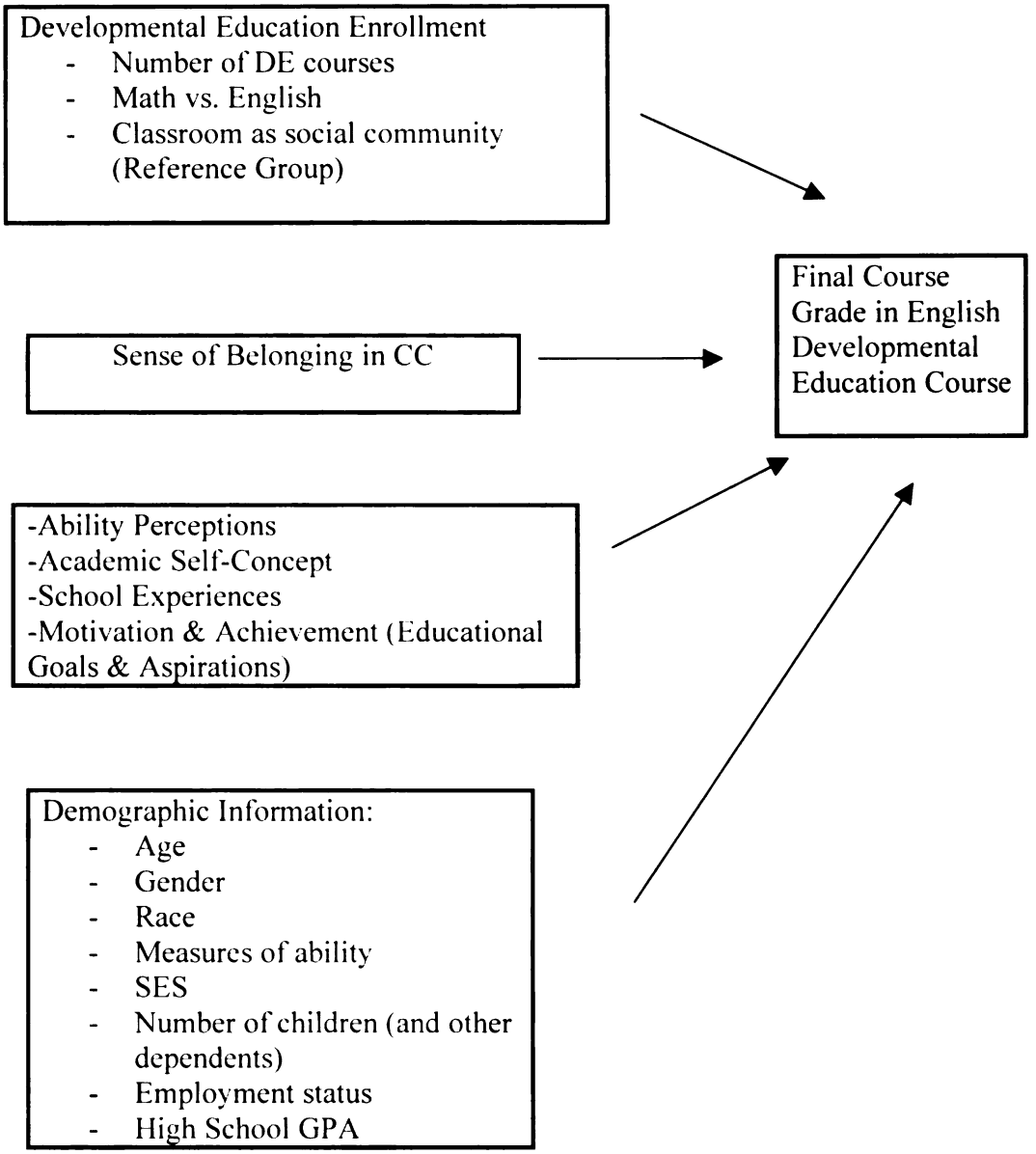
Academic success requires students to be willingly engaged in their education and motivated to learn (Moore, 2004-2005). Faculty and staff who work with underprepared students believe that success in developmental education courses improves student motivation and enhances self-confidence so that students are likely to enroll in college-level courses (Weissman, Bulakowski, & Jumisko, 1997). Moore states that developmental education students who drop out of the university cite a lack of motivation as the most frequent reason for quitting school. Student motivation as measured by attendance at lectures, help sessions, and summer orientation programs influences the academic success of developmental education students (Moore, 2004-2005).

Studies of students and their locus of control find that feelings of incompetence are associated with an individual's attribution of the source of his or her failure (McGrath & Van Buskirk, 1999). Often these students believe their failure is due to sources outside of their control. Low achieving students tend to believe that failure is due to stable, internal causes, such as low ability, and that success is a result of unstable, external causes such as luck (Robertson, 2000). Many students enter the classroom with expectancy-related motivational problems developed through prior experiences with failure and its consequences (Brophy, 2004). Academically underprepared students are no exception to the problems associated with motivation and failure in the classroom. They

may have compounded problems because as students experience more and more failure, low achievement due to limited academic ability becomes compounded by underachievement due to motivational problems (Brophy, 1996; 2004).

Harter (1986, as cited in Marsh, Byrne, & Yeung, 1999) suggests that higher academic self-concept is associated with more positive motivation, which in turn leads to better achievement outcomes. Research conducted at the 4-year institution indicates that students' affective characteristics, such as academic self-concept and achievement motivation, are significant predictors of subsequent academic achievement (see House, 1992; 1993; 2002). For traditional 4-year college students, academic self-concept is significantly related to college persistence, and programs designed to identify students with low academic self-concept or expectancies and provide experiences and counseling to improve those attitudes may benefit college persistence (House, 1992). Ability perceptions are assumed to affect behavior and learning and thus to have practical educational importance (Stipek & Mac Iver, 1989). Academically underprepared students may enter the college environment with lower levels of interest and ability in the academic areas central to their success than do students who are academically prepared for the college academic environment (Pascarella & Terenzini, 2005).

Figure 1. Model Development



This study sought to understand the relationship of academic self-concept and sense of belonging in community college to academically underprepared student success in a developmental education course. Figure 1 represents the model of final course grade in which the current study tested. The participants were all students at the community

college enrolled in developmental education, which may impact their ability perceptions and sense of belonging. The outcome of the study was the final course grade of an English developmental education course, which serves as a precursor of persistence.

Significance of the Study

Students are seeking out the community college in greater numbers to get an education, earn a certificate or associate's degree, enhance their job skills, and prepare for transfer (Laden, 2004). First-year students in the college setting must learn to adjust to the new demands of academic work and cope with an environment that is very different from the one they may have previously experienced academically (Pancer, Hunsberger, Pratt, & Alisat, 2000). These academic difficulties are compounded for students who come in with specific academic deficiencies, which could mean that academically underprepared students face additional challenges when making the transition to college-level courses.

Gaining an understanding of academically underprepared students is necessary to design effective developmental programs (Thombs, 1995). The important domains of social competence and academic self-concept are often ignored both in the assessment of a student's progress and in evaluating the effectiveness of educational practices (Stanovich, Jordan, & Perot, 1998). One way to assist academically underprepared students in their transition to higher education is to investigate their academic self-concept. Knowing students' academic self-concept and how they relate to their initial expectations regarding their success in college could help student affairs professionals conceptualize developmental obstacles and design proactive interventions to support

students in their transition from high school to college and help them attain their academic goals (Boyd, Hunt, Kandell, & Lucas, 2003).

Academically underprepared students requiring remediation often have not developed the skills that influence their ability to succeed academically in college (Grunder & Hellmich, 1997). Students who are motivated with high aspirations and academic self-concept, goal-oriented, and future-minded have the best chance for persistence beyond the first year at the community college (Hawley & Harris, 2005-2006). Unfortunately, students who enter the institution underprepared tend to have lower levels of interest and motivation (Pascarella & Terenzini, 2005). Developing life skills along with strengthening basic academic skills and improving a student's sense of belonging can positively influence student persistence and retention toward a degree (Grunder & Hellmich, 1997). Educational settings that engage students and transform them into active participants by inducing emotions such as hope for the future, respect for others, and confidence in their ability to succeed are essential to the underprepared learner's success (McGrath & Van Buskirk, 1999). Perceptions of ability have educational importance since the student's belief in his or her academic abilities affects behavior and learning (Stipek & Mac Iver, 1989). Designing programs to identify students with low academic self-concept and provide experiences and counseling to improve academic self-concept benefits college persistence (House, 1992). Students in this study were underprepared for college academically, based on prior performance. The consequences of this lack of preparation go beyond success in the classroom; it affects confidence, perception of future success, and a student's sense of belonging in college.

Research Design

All of the survey data was collected at one point in time. This study used an academic self-concept instrument and sense of belonging instrument to investigate students' perception of their academic self-concept and sense of belonging in college. In addition to the two instruments used, a demographic survey was included in the study.

The following two chapters address the literature and methodology used in the study. Chapter two is a review of the literature relating to academically underprepared students' sense of belonging in college, as well as persistence and community college student literature. Chapter three covers the methodology and research design. The methodology includes an explanation of the research design, data collection procedures, and scales utilized. Chapter four provides a description of the respondent group and the results of the data analysis. Lastly, Chapter five explains the findings of the data analysis, the implications for practice, and the recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

The literature review includes three sections. The first section provides an overview of the literature regarding community college student persistence. The second section discusses students' sense of belonging in college. The last section defines and explores the underprepared student and developmental education and the research available on student success when beginning in developmental education and making the transition to college-level courses.

Community College Student Persistence

Historically, the community college has embraced the role as an open door higher education institution. This means that all individuals regardless of their academic preparation or other demographic characteristics have the opportunity to participate in higher education (Crews & Aragon, 2007). Community colleges with their open admission policies have opened their doors to a broad range of students, resulting in a student population that is more heavily working-class, minority, and female than that of 4-year institutions (Shaw, Rhoads, & Valadez, 1999). The community college mission to assist all students tends to result in lower retention rates on campus (Hoyt, 1999). Community colleges educate a diverse mix of students with multiple educational goals, significant demands on their time, and a range of personal, academic, and financial challenges (CCSSE, 2005). Although community colleges and universities have commonalities in student attendance, curriculum, and achievement, the goals of the students often differ (Wild & Ebbers, 2002). A challenge that community colleges face is high attrition rates, something that is complicated by the multiplicity of reasons that

students attend community colleges (Levinson, 2005). In fact, students often enroll at the community college without the intent of obtaining a degree (Burley, Butner, & Cejda, 2001). Policies designed to retain 18-year-old students living in residence halls are not likely to be as effective for part-time enrollees or working students and especially adults with families and full-time jobs (Bailey & Alfonso, 2005).

Bailey and Alfonso (2005) identify the demographic risk factors that impact community college student persistence. These factors include delayed entry, part-time enrollment coupled with full-time work, financial independence, and community college attendance without a high school diploma. "In contrast to more traditional college students, community college students are more likely to be employed either part or full time; to have spouses, children, or both; and to encounter financial or logistical difficulties that make attending college a difficult endeavor" (Shaw, 1999, p. 153). The community college learning environment is less homogenous due to the different demands of work and family for the students who typically attend (Wild & Ebbers, 2002). Rendón (1999) describes community colleges students in the following passage:

> The profile of nontraditional students is in sharp contrast to that of traditional students whose parents and siblings have attended college, who come from middle-class backgrounds, who grow up feeling empowered to reach their goals, and who view college as a continuation of their life trajectory. For traditional students the transition to college is much easier. The passage represents a continuation of family expectations and traditions. (p. 197)

In attempting to cope with multiple demands, community college students are more likely to experience greater strain, leading to a reduced ability to participate and persist in college (Napoli & Wortman, 1998).

Students who integrate socially and academically into the community college have stronger goal and institutional commitments, and these commitments in turn influence persistence (Bryant, 2001). Students most likely to persist at the community college are active in campus activities, highly academic and high achievers; they are students who plan to attend the community college for several years (Hawley & Harris, 2005-2006). Bryant suggests the lack of social integration by community college students may be related to the extensiveness of many students' work schedules. Community college students are less involved on their campus compared to students at 4-year institutions, participating less frequently in campus organizations and rarely attending campus events (Maxwell, 2000). Students most at-risk are least likely to get involved in the social and academic infrastructures of institutions, as a result just offering opportunities is not sufficient to ensuring involvement (McGrath & Van Buskirk, 1999).

Students' commitments to work and family mean that they spend limited time on campus, which makes the need to engage students more difficult (CCSSE, 2005). Thompson (2001) discovered that the amount of time students spend working is inversely related to their time spent informally interacting with faculty. In other words, the actual amount of time spent at the job negatively affects the available amount of time students may interact with faculty outside the classroom, and this negatively affects the quality of effort they exert while in class (Thompson, 2001). Students most likely to dropout or stopout at the community college do not have focused educational goals, intend to

transfer to a 4-year institution, are highly active outside of the campus community, and expect to have trouble financing college and finding employment (Hawley & Harris, 2005-2006).

Community colleges cannot overlook the significance of the research indicating the importance of faculty in student retention (McArthur, 2005). In a review of the literature on community college student persistence, Bers and Smith (1991) found that social integration was negatively associated and academic integration was positively associated with persistence. Unlike 4-year institutions, where stopout behavior is less common and social ties and networks remain relatively stable over several academic semesters or years, social networks within community colleges are less likely to persist over time (Napoli & Wortman, 1998). The finding by Bers and Smith reflects the importance of faculty interaction and student persistence at the community college. These studies also indicate that students' perceptions of faculty members' concern for student development and teaching, as well as their availability to students, has a positive and statistically significant effect on persistence (Pascarella & Terenzini, 2005).

The literature on community college persistence clearly demonstrates that greater faculty-student interaction promotes higher levels of student satisfaction with the college experience (McArthur, 2005). Student contact with faculty members outside the classroom appears consistently to promote student persistence, educational aspirations, and degree completion (Pascarella & Terenzini, 2005). However, as is typical of most community college students, those who have to weigh their educational endeavors against family and workplace responsibilities may also find it difficult to develop and maintain informal relationships with faculty members (Thompson, 2001). Having a less than

positive experience with faculty negatively impacts the student's transition to the institution (Maestas, Vaquer, & Zehr, 2007). The bond between the student and the institution appears to be facilitated and promoted by positive interactions with faculty members and to a lesser extent with peers (Pascarella & Terenzini, 2005). Thompson found that informal student-faculty interaction has a significant influence on the attitudes, interests, and values of community college students especially in the beginning of their educational careers. Studies suggest that a student's perception of faculty members' availability and interest in them may be enough to promote persistence (Pascarella & Terenzini, 2005).

Separation from Community

Individuals who come from families, communities, and schools whose norms and behaviors are different from those of the communities of the college into which entry is made face especially difficult problems in seeking to achieve membership in the new communities (Tinto, 1993). Tinto believed that students' past had not adequately prepared them to deal with the future, and the students who have the most difficulty separating from the past are generally disadvantaged students, minority students, and nontraditional students. Almost all students experience some difficulty in making the transition to college though most students are able to cope with the problems of transition (Tinto, 1993). Students who experience entering college for the first time as stressful will have more difficulty adapting to the demands of the transition (Kerr, Johnson, Gans, & Krumrine, 2004). In addition, individuals whose prior academic training has not adequately prepared them for college-level work may have difficulty in adjusting to the more rigorous academic demands of college (Tinto, 1993). Tinto believed that the

students who are not able to cope with the transition to college and the separation of the past withdraw from college very early in their first academic year due to the inability to withstand the stresses that such transitions commonly induce. While Tinto's work is widely accepted, it does not speak directly to the essence of the underprepared student's most basic concern: that he or she is not ready for college-level work (Young, 2002).

Tinto (1993) stated that students must completely separate from past associations in order to adjust to the academic and social life in college. Many scholars have looked at the transition piece of Tinto's model (e.g. Bean & Bogdan Eaton, 2000; Hurtado & Carter, 1997; Rendón, Jalomo, & Nora, 2000). They proposed instead that individuals totally separating from their past associations might not be necessary, but instead students should be supported to transit between the two cultures (Rendón et al., 2000). "As individuals who juggle a myriad of roles in addition to that of student, community college students' sense of identity is complex and multifaceted" (Shaw, 1999, p. 163). Bean and Bogdan Eaton state that their model of retention works least well for students who lack the abilities or skill required for college academic work. The transition to community college is an eventful point in all students' lives; when this transition occurs powerful social and personal dramas are played out, for cultural membership helps define who we are in the eyes of others as well as ourselves (London, 1992, as cited in Laden, 1999).

Community college students are not only faced with the problems of adjusting to the demands of college but also adjusting to the demands of external communities such as family and work (Napoli & Wortman, 1998). The complete separation for students who are considered underprepared may not be possible. Rather, the meaning-making system, which is comprised of values, assumptions, and beliefs about what to expect from

college, the role of being a college student, and the value of the college degree, is informed by one's cultures of origin—family, school, community, and so forth (Kuh & Love, 2000). Students with ill-defined meaning-making systems about college and college-going will likely have vague or inaccurate ideas about college (Kuh & Love, 2000).

Sense of Belonging

A sense of belonging includes cognitive and affective elements in that the individual's cognitive evaluation of his or her role in relation to the group results in an affective response (Hurtado & Carter, 1997). In addition, Baumeister and Leary (1995) define belonging as an individual's sense of being accepted, valued, included, and encouraged by others. "The outcomes of students' sense of belonging may have more immediate effects on students' behaviors, such as the quality of students' social interactions, students' selection of academic programs, and their use of support services" (Hurtado & Carter, 1997, p. 341). Studying a sense of belonging allows researchers to assess the forms of social interaction, both social and academic, that further enhance students' identification with their college (Hurtado & Carter, 1997). Multiple student variables influence student satisfaction, sense of belonging, and willingness to attend the institution again (Strauss & Volkwein, 2004).

Hurtado et al. (2006) point to the importance of understanding the barriers and factors associated with student success at managing the academic community, as well as their sense of belonging within their overall college environment in their transition to college as a way to provide insight into a student's integration in the campus community. Bean and Bogdan Eaton (2000) suggest that as an individual recognizes his or her

competence that individual will demonstrate higher aspirations for persistence. The example the authors present uses an academically "at-risk" student who watches others succeed and begins to believe that he or she can succeed as well. The student is more likely to invest the emotional energy necessary to achieve academic goals when that student is surrounded by others who are successful. As a result, students who adopt the attitude that they fit in certain academic environments are likely to become more academically integrated at the institution (Bean & Bogdan Eaton, 2000).

Reducing the rate of withdrawal from college could be accomplished through mechanisms intended to promote more effective integration into both college systems, academic and social (Hoffman et al., 2002). Hoffman et al. state that the greater a student's sense of belonging to the university, the greater his or her commitment to the institution and satisfaction with the university, and the more likely it is that he or she will remain in college. Sense of belonging is theorized to reflect students' integration into the college system and their fit within the new setting (Hoffman et al., 2002). A key dimension for community college student success is the student's integration into the life of the college (Levinson, 2005). Hurtado and Carter (1997) suggest that students make sense of their environments through memberships in multiple peer groups that help them acquire the skills they need in college. The student's peer group is the single most potent source of influence on growth and development during the undergraduate years for the traditional aged student (Astin, 1993). Many students in the study conducted by Dennis, Phinney, & Chuateco (2005) reported that peer support was the most helpful strategy for dealing with academic problems. A nurturing academic environment is essential to feeling a part of campus life in the first year for all students (Hurtado et al., 2006).

Students develop confidence in their skills and academics in many ways, and those who are confident about their skills are more likely to engage in activities (McCoach & Siegle, 2003). Students who perceive that they share common interests and academic abilities with other students feel a sense of integration in the college environment (Stovall, 2000).

In academic settings, members of socially stigmatized groups are more uncertain of the quality of their social bonds and more sensitive to issues of social belonging. Walton and Cohen (2007) defined this state as belonging uncertainty. Belonging uncertainty may take the form of a belief from the student perspective that "people like me do not belong here" (Walton & Cohen, 2007). The authors conducted two experiments testing how belonging uncertainty undermines the motivation and achievement of people whose group is negatively characterized in academic settings. Undergraduate students were grouped based on race in both studies. The evidence supported the original hypothesis that stigmatization can create uncertainty about the quality of one's social bonds in academic settings and ultimately have large effects on the academic motivation and achievement of those contending with a threatened social identity (Walton & Cohen, 2007). Although this study was based on the belonging of minority students, there may be a similar stigmatization for students who are grouped as unprepared for college. The label could have a similar impact on a student's sense of belonging and, in turn, academic self-concept.

Students who are experiencing academic and adjustment problems feel the need for someone to provide help, guidance, or emotional support, whereas those who are doing well are less likely to feel a lack of support (Dennis et al., 2005). The perception about their skills and their belonging influences the type of activities selected and the

possibility of seeking help and guidance (McCoach & Siegle, 2003). Stage and Hossler (2000) state that student behaviors that provide positive academic and social results lead to increasingly positive expectations, goals, and beliefs about college and the ability to perform well in academic settings. College students who do not do as well as their peers may then measure themselves against their peers and subsequently they perceive themselves differently than do their college peers (Kaufman & Feldman, 2004). The community college student tends to differ from the student who enters the 4-year college. The goals and aspirations of this student group are often unclear and ambiguous (Fontana et al., 2006). A history of academic struggles is a common reason why students choose to attend community colleges as opposed to 4-year colleges; these students tend to need some sort of academic support before they can put forth quality effort (Silver, Smith, & Greene, 2001). Additionally, traditional-age students entering the community college typically arrive with less academic momentum than those starting at 4-year colleges (Adelman, 2005).

Student success is dependent on student involvement in the social and academic communities of the college, along with the personal characteristics that make the student a good fit with the institution (Burley et al., 2001). Strauss and Volkwein (2004) discovered that the classroom experience and faculty interaction is more influential at 2-year colleges than at 4-year colleges. Perceptions of faculty academic support and comfort and perceptions of faculty as being empathetic and understanding contribute directly to students' affiliation or attachment with the institution (Maestas et al., 2007). Students whose teachers reported them as being highly engaged and connected to the classroom community demonstrated advanced levels of achievement (Booker, 2006).

Maestas et al. found that faculty interest in a student's development increased a student's sense of belonging. When students perceive that their faculty take an interest in them, they have a greater sense of belonging (Maestas et al., 2007).

Students derive statistically significant benefits from talking with faculty members outside of class and interacting with faculty they perceive as supportive and intellectually challenging (Pascarella & Terenzini, 2005). Hawley and Harris (2005-2006) state that more informal contact outside of the classroom between students and faculty positively impacts community college persistence. Students who interacted more frequently with faculty performed better academically than what was predicted from their pre-enrollment characteristics (Woodside et al., 1999). Students feel comfortable sharing their thoughts and information with faculty and other college staff. As a result, these interactions appear to fuel students' desire to achieve and encourage feelings of belonging and connection with the academic community.

Developmental Education and the Underprepared Student

Definitions

The literature presents multiple definitions of developmental education as well as identifying the students who need developmental education. "Remedial education," "developmental education," "college prep," or "basic skills" are all terms that refer to offering coursework below college-level in the areas of reading, writing, and mathematics in higher education institutions (Merisotis & Phipps, 2000). The term "remedial" historically has been used to describe courses that strengthen or rectify basic skills deficiencies, while "developmental" is focused on the full personal development of students (Kozeracki, 2002; McCabe & Day, 1998; Pérez, 1998). Remedial education and

developmental education are often used interchangeably by the general public and scholars, but those in the field prefer the use of developmental education since it reflects a broader approach to teaching and a different attitude about the student who enrolls in these courses (Kozeracki, 2002). For the purposes of this study, the term developmental is preferred and will be used to discuss courses taken and programs designed to prepare students to enter into college-level courses.

The underprepared student is generally identified as one who possesses academic, social, and economic problems that challenge his or her success in college (Pérez, 1998; Thompson, 1998). Several student variables are related to the need for extra support: age, race, or home language of the student, whether the student dropped out of high school or completed a GED, and whether the student needs additional work in reading, writing, or math (Ignash, 1997; Merisotis & Phipps, 2000; Pérez, 1998; Thompson, 1998). The underprepared students in this study were identified by their enrollment in developmental education.

Student Success in College-Level Courses

As access to higher education has increased the number of underprepared students has risen as well, so that over half of all students who enter the community college need some form of developmental education and supportive services (Adelman, 2004; McCabe & Day, 1998). Almost all public community colleges offer some form of developmental education, and increasingly, community colleges have become the primary site for developmental education in higher education (Levinson, 2005). "If basic writing could act as a conduit, taking in underprepared students and allowing them to be successful in regular academic work, the institution would live up to the promise of open access

without having to change standards of academic excellence" (Goto, 1999, p. 41). Students' success should be measured by their ability to move from developmental courses to college-level courses and then to achieve success in the transfer process or completion of vocational programs of study (Kozeracki & Brooks, 2006). There is a growing need to accommodate the expanding developmental student population; greater attention to students' unique needs and more adequate accommodations are expected in the future which may further facilitate academically underprepared student achievement (Thompson, 1998). Developmental education programs seek to help students succeed in higher education by providing them with the academic fundamentals that the institution believes are necessary for success in college, yet the student is currently lacking in this background area (Kreysa, 2006-2007). These students' often less-than-adequate academic preparation may require underprepared students not only to make the typical adjustments to college learning, but also to make up for knowledge they lack and to cope with professors and peers who expect particular levels of prior knowledge and academic skills that the students may not have mastered before coming to college (Pizzolato, 2004). According to Kozeracki and Brooks (2006) the primary purpose of developmental programs is to facilitate students' transition from remedial to college-level courses and to improve students' chances of success in transfer and vocational programs.

Exacerbating the problems associated with retention for many community college students are learning deficiencies that require developmental education (Burley et al., 2001). Community college students have a history of academic struggles, which is a common reason why students choose to attend the community college as opposed to 4-year colleges (Silver et al., 2001). "Many of these students, often labeled

"nontraditional," do not consider themselves to be college material, have never made an "A" in their lives, and have been retained in high school" (Rendón, 1999, p. 196). Developmental education is a necessary part of the enrollment path for many community college students (Calcagno, Crosta, Bailey, & Jenkins, 2006). These students typically will need some type of study strategy intervention before they can put forth quality effort (Silver et al., 2001). Passing these gatekeeper classes can substantially increase the probability of earning a secondary credential (Adelman, 2006; Calcagno et al., 2006).

Hoyt (1999) indicates that first-term academic performance had the strongest relationship to retention when looking at a student's need for remediation and their eventual retention. Crews and Argon (2007) found that the developmental writing course appeared to launch developmental students with short-term momentum. These students may make higher grades in the subsequent English courses; however, the momentum seems to be short lived in that initial participants do not persist for more semesters to complete degrees or transfer at higher rates. Enrollment in remedial courses is an educational pathway that may have a different impact on the probability of attaining a positive outcome for older and younger students (Calcagno et al., 2006). Older students seem to be less impacted by taking remedial coursework than younger students. Calcagno et al. found that older students have a higher probability of graduating than younger students at the community college. One reason offered for these results is that older students were less negatively affected by enrolling in remedial courses because they have been out of school longer and may just need basic skills refreshed rather than having a serious deficiency (Calcagno et al., 2006).

Many first semester students do not seem to have a clear understanding of what is expected of them, and professors often see this characteristic demonstrated by students experiencing academic difficulties (Commander & Valeri-Gold, 2003). Students with more idealized expectations of what college life is supposed to be like tend to perform more poorly in their academics (Pancer et al., 2000). Many of the students in these basic writing courses came to college without a clear idea of what they wanted to achieve in higher education (Goto, 1999). This gap between their optimism and the commitment needed to be successful academically often translates into students failing to meet the academic challenges of adjusting to college life (Grunder & Hellmich, 1997). This adjustment appears to be particularly difficult for the underprepared community college student (Grunder & Hellmich, 1997). While internal and external factors influence all students who matriculate into the community college, these factors may have a more severe impact on students in developmental education (Burley et al., 2001). Unexpectedly low grades tend to trigger powerfully negative appraisals, strengthening feelings of uncertainty, thus making students wonder whether they had made a mistake in entering the college environment (McGrath & Van Buskirk, 1999). Hawley and Harris (2005-2006) discovered that students who understand their potential barriers to completion of their academic goals seem to plan for the solutions well before they go to college. For these students their motivation to stay in school may be driven by the barriers they expect to become problems and their planning ahead allows them to move forward in spite of them.

Burley et al. (2001) studied the dropout and stopout patterns of community college students in Texas. Almost two thirds of the students were enrolled in

developmental education classes. They found the best predictor of continuous course enrollment was the student's age. The younger students in the study were more likely to continue in courses at the community college. Younger in the study was defined at under the age of 21 years old. Students needing developmental education were older than students with no remedial needs. In this study, enrollment in a mathematics developmental education course was not highly associated with academic success. However, enrollment in either reading or writing developmental education courses was negatively associated with academic success. In addition, students with all three deficiencies (math, reading, and writing) consistently performed worst than any other group.

Simmons and Musoba (2004) used data on over 11,000 first-generation college students enrolled in public and private institutions of higher education in a Midwestern state to investigate variables that affect student persistence. This study is one of the few instances in the developmental education literature that investigates beyond a single institution and the community college, but the main focus of the study was not on developmental education, rather on first generation students. In this study, persistence was defined as continuous enrollment, full or part time, from initial enrollment through the second semester of the second year. One finding they report is that taking developmental mathematics and language arts college coursework had a statistically significant impact on college persistence among first-generation students. Over one-fourth of the college students in this study took some form of developmental coursework, either in mathematics, language arts, or both. Taking these courses had a positive influence on persistence in this population of students. Also, attending a research

university was positively associated with persistence when compared to attending a two-year college. Simmons and Musoba suggest that the positive relationship between developmental coursework and academic success helps these students perform well in college and gives first-generation students who performed poorly in high school the opportunity to recover academically.

In a study conducted by Hopper, Taylor, and Wolford (1997), students who took developmental English and then took college-level English were investigated. Hopper et al. found that students in the developmental education courses had equal or greater rates of success as non-developmental students at one community college. The final grades of the students enrolled in this course were collected and reviewed as passing (60 or above on a 100 point scale) or failing (below 60 points). In addition a no pass category was comprised of student failures, withdrawals, and incompletes. Of the 357 developmental students, about 70% passed; almost 13% failed; and approximately 17% withdrew or received incompletes. Of the 460 non-developmental students, about 80% passed; almost 11% failed; and about 10% withdrew or received an incomplete. While this information is helpful in assessing the effectiveness of this particular developmental course, there is still a significant population of students who failed, withdrew, or received an incomplete in the subsequent college-level course.

Weissman, Silk, and Bulakowski (1997) studied students at one community college who indicated on entrance that they intended to complete the requirements for a community college degree and/or they intended to transfer to a four-year college. The total number of students included 1,226 students who were considered college-level, 239 students who were determined skill deficient and enrolled in basic skill courses, and 179

students were determined skill-deficient, but did not enroll in basic skill courses. There was a significant difference in the GPA of the college-level students (2.44), the GPA of the students who took developmental courses (2.17), and the GPAs of the students who were considered underprepared but did not take developmental courses (1.52). Students who were considered underprepared and took developmental courses were averaging above a "C" average but still were not as successful as their college-level counterparts. Although underprepared students who took developmental courses earned passing grades in their college-level courses, their GPAs and completion rates were lower than those in the general college student body.

The strands of literature reviewed (1) college student persistence (2) sense of belonging, and (3) developmental education and underprepared students in higher education indicate a void in the research surrounding academically underprepared students' academic self-concept and sense of belonging. Overall the research on non-cognitive characteristics of community college developmental students was quite limited (Saxon & Boylan, 1999). The purpose of this study was to fill the gap in the literature by investigating academic self-concept and sense of belonging for students enrolled in developmental education who are still working toward completion of their degree.

Studies examining the outcomes of developmental education seem to indicate that these programs are effective at improving the chances of collegiate success for underprepared students (Kozeracki, 2002; Merisotis & Phipps, 2000). In these studies, the most frequently used method to determine the effectiveness of the transition to college-level courses is a measure based on the GPA of students as a result of their

enrollment in developmental courses and the students' GPA in subsequent courses in college-level courses.

Chapter three provides detailed methodology used in the study. The methodology includes an explanation of the research design, data collection procedures, and instruments and the data analysis.

CHAPTER THREE

RESEARCH METHODS AND DESIGN

This chapter describes the methodological approach to the question being studied. The methodology includes an explanation of the research design, data collection procedures, scales utilized, and data analysis. The purpose of the study was to examine the potential relationship between academic self-concept, sense of belonging, and developmental education final course grade. The specific question being answered is as follows: What is the relative importance of psychosocial achievement characteristics (i.e., sense of belonging and academic self-concept) and demographic variables in the final course grade of a developmental education English course at the community college? In order to answer this question, this study used an academic self-concept instrument and sense of belonging instrument to investigate students' perception of their academic self-concept and sense of belonging in college. In addition, the survey included demographic variables that were included as control variables in the study.

Research Design

Location

Data were collected from Mid-Western Community College (MWCC), during the fall 2007 semester. Focusing on the community college was important since a large portion of developmental education courses are housed in the community college and not at the 4-year institution. In addition, most studies of the relationship between achievement expectancies and academic performance have focused on elementary and secondary school students (House, 1992). The little research (Astin, 1993; House, 1992; 1993; 2002; Pascarella & Terenzini, 1991; 2005) in postsecondary education has mainly

focused on the 4-year student. Research at the community college level is scant. Studies of academic self-concept at the community college are needed to understand student perceptions of academic ability and how these perceptions relate to the student's sense of belonging in college. In addition to a lack of research at the community college, many students enrolled in community colleges are identified as academically underprepared. Public 2-year colleges are more likely than other types of institutions to provide developmental education (Parsad & Lewis, 2004).

MWCC serves an area in Michigan, which has one of the highest unemployment rates in the nation (ATD, 2007). As is the case for most of the state of Michigan, they are suffering high unemployment rates mainly as a result of the lack of manufacturing jobs tied to the automotive industry (ATD, 2007). MWCC has noticed an increase in the number of underprepared students enrolling in the community college. In response to this enrollment shift, the institution is attempting to make changes in policy and programming change to assist these students in successful completion of their educational goals. The Department of Foundation Studies was created in 2003, with a focus on providing academic support services to underprepared students and students with special needs (Systems Portfolio, 2006). Foundation Studies monitors the progress of policies and programs that serve underprepared students, primarily those students placing into developmental education programs (Foundation, 2005-2006). A main goal of this department is improving success in second semester classes and improving the ability of developmental education students to complete degrees. The strategic plan of the community college includes identifying ways to strengthen students' academic performance, particularly in developmental education courses (Systems Portfolio, 2006).

As a result, the college is putting forth efforts to identify reasons and ways to address the needs of this student population. Placing the investigation of student academic self-concept and sense of belonging at MWCC provides a further profile of the developmental education student. In addition to the internal changes the institution is putting forth, MWCC is an Achieving the Dream institution. Achieving the Dream is an initiative focused on student success and works to identify ways to assist students who are at-risk at the institution (ATD, 2007). Based on the intensive research conducted at the institution, MWCC has designed and implemented intervention strategies that are intended to increase the success of these at-risk groups (ATD, 2007).

A comparison of MWCC to the national data on enrollment in developmental education shows that MWCC has a larger number of students enrolling in developmental education coursework. Nationally, approximately 40% of entering freshmen at community colleges enroll in one of more developmental education courses (Kozeracki & Brooks, 2006). MWCC has a mandatory assessment policy for incoming students to complete in order to determine their placement into developmental or college-ready courses. For the 2005-2006 academic year at MWCC, there were 1,930 new students. Of these students, 63% had at least one developmental requirement (Foundation, 2005-2006). Students are required to complete pre-requisite courses or demonstrate equivalent skills based on assessment. Any exceptions made based on employer, parent or student insistence must be documented and approved by an academic advisor (Foundation, 2005-2006). Fifty percent of the new students placed into developmental reading, while only 36% placed into developmental writing (Foundation, 2005-2006). During the fall 2005 semester, 87% of students who were required to take an English writing course and 66%

of students with a reading requirement enrolled (Foundation, 2005-2006). The low percentage of students who enrolled in the reading course may be attributed to the fact that many MWCC courses do not have a reading prerequisite. However, there were over 400 students enrolled in reading, but only 120 students enrolled in the writing course. MWCC is unusual in that developmental reading has a higher percentage of students than the developmental writing course. Nationally, the proportion of students enrolled in developmental courses at public 2-year institutions was larger for writing (23%) than reading (20%) (Parsad & Lewis, 2004).

Participants

Participants were selected from one of two classes: English 080 Reading Essentials (ENG 080) or English 085 College Reading (ENG 085). As expected, there was significant overlap in the students enrolled in the developmental reading and writing courses. As a result, students from English 090 Introduction to Writing were not surveyed in their classes. Instead, the survey was only administered to the ENG 080 and ENG 085. The course description for English 080 states that the "course provides the most fundamental support for students who need to develop college-level reading skills. Students must show an ability to read some pre-college writing independently" (MWCC Course Catalog, 2007-2008). The placement into this course is based on a reading level that falls between fourth through eighth grade. English 085 is described as "a course intended for students who have developed their reading skills nearly to college level" (MWCC Course Catalog, 2007-2008). Students place into this course if their reading level is above eighth grade, but below a college reading level. A more detailed analysis of the participants is provided in Chapter 4.

Sampling Framework

The participants in this study were selected from developmental education courses focused in both English reading. English courses were selected for several reasons. The decision to focus on English and not include math developmental education was based on previous research citing developmental English as a key impediment to student success. When students are enrolled in an English developmental education course, they are twice as likely to be enrolled in more than one developmental education course (Adelman, 2006). Low reading skills are seen as a significant barrier to completion of coursework and potential fulfillment of the student goal for being in the community college (Calcagno et al., 2006). Students who are judged to have low reading skills are more likely to need extensive remediation and less likely to earn a degree (Bailey, Alfonso, Calcagno, Jenkins, Kienzl, & Leinbach, 2004). The need for developmental reading appears to be the most serious barrier to degree completion and is associated with a higher total need for developmental coursework and lower rates of degree attainment than other developmental course-taking patterns (NCES, 2004). Adelman (1999) has shown that the more developmental courses a student is required to take, the less likely the student is to earn a degree.

Basic English classes are often prerequisites to English prerequisites, not only for transfer, but also for a variety of non-transfer programs (Goto, 1999). The literature seems to indicate that a deficiency in English is more difficult to overcome than a deficiency in math alone. In fact, students with a reading deficiency are more likely to have multiple academic deficiencies than other underprepared students (Cox et al., 2003). Developmental English courses tend to enroll a broad cross-section of individuals from

the general student body (Goto, 1999). As a result in order to capture the most underprepared students, English courses tend to have the highest amount of overlap with other developmental education requirements.

Research (see House, 1999; Marsh 1990; 1999) suggests that math self-concept differs from verbal self-concept. There is a separation of the verbal and mathematical self-concepts that are distinct and cannot be incorporated into a general academic self-concept (Marsh & Shavelson, 1985). In addition, verbal and math self-concepts, rather than a single academic self-concept factor, are considered to be part of the multiple subject-matter academic self-concepts in their respective domain (Bong & Clark, 1999). When students have one deficiency only in math, they have a higher success rate than those students placing into remedial reading or two or three remedial courses (Adelman, 1996). Also, research (see Stipek & Mac Iver, 1989) cites a decline in academic competence in math, but the decline was not seen in the students' perception of English competence. Students who enter college unable to read at the college level have clearly had problems with reading achievement in the past, and these previous difficulties impact how students view their ability to complete college level coursework (Cox et al., 2003). Lastly, more students enroll in developmental courses during the fall semester than any other semester at MWCC. For these reasons, students were selected from community college developmental English courses during the fall 2007 semester.

Procedure

Participants were asked to complete a demographic survey and two additional measures: Self-Description Questionnaire III (Marsh, 1992) and the Sense of Belonging Instrument (Hoffman et al., 2002). Each of these measures is discussed in further detail in

the subsequent sections and the complete measures are provided in the Appendices. In order to determine if the measures were appropriate for the students in the developmental reading course, the head of the developmental English program read over the surveys. Once the director gave the approval for the appropriate reading level, the surveys were distributed during the tenth week of classes at Mid-Western Community College (MWCC). The participants completed the surveys during the first half hour of the developmental reading courses. The researcher was present during the administration of the survey in order to answer student questions related to the survey. In addition, the course instructor was in the classroom and provided definitions for students when they had a question about the survey statements. Administering the surveys toward the end of the first semester gave students the ability to judge their connection with college as well as the time to have developed their self-concept as a college student. Also, students at this point in the semester have had the chance to utilize the services available to them.

The students were asked to complete the surveys at the beginning of their developmental education class. The head of the developmental education department granted permission to have students fill out the surveys during class time, but participation was completely voluntary. Students' final grades in the course were provided by MWCC. MWCC determines successful completion of developmental coursework with a 2.0 grade point or higher (Administrative Policy Manual, 2006-2007).

The total number of students enrolled in the two courses during the fall semester was 494. There were 25 sections of ENG 085 and 8 sections of ENG 080 during the fall 2007 semester. The response rate was approximately 61% (301/494), but only 284 of the surveys were usable. The response rate is only a rough estimate because the total number

of students enrolled includes all students under 18 years old. The exact number of students enrolled who are over 18 years old is unknown. Participant responses were screened for identical responses throughout the survey (circling all "5" or all "1" throughout the survey) and for students who were under the age of 18 years old. A total of 17 surveys were excluded from analyses for these reasons. After excluding these surveys, there were a total of 284 surveys used in the data analysis.

The researcher assigned a code to each individual survey and the survey cover sheet that included the participant's name. The measures were also labeled with the participant's code. The participant's name was immediately removed from the survey packet and used later only to match with the student's final grade information. The achievement data, obtained from the school in a spreadsheet, included students' names. The researcher recoded the data so that the final course grade was labeled with the identification code rather than names. All students who completed and returned the consent letter and surveys were eligible to receive one of four gift certificates at a local store through random selection.

Measures

Academic Self-Concept

Academic self-concept was measured using the Self-Description Questionnaire III (SDQIII). The SDQIII comprises a multidimensional structure that is firmly rooted in the Shavelson et al. (1976) theoretical model of self-concept. This instrument was specifically developed using Shavelson et al.'s multidimensional model of self-concept (Leach, Henson, Odom, & Cagle, 2006). This model proposed a general self-concept construct that was divided into academic and nonacademic components, which then were

divided into a number of subscales (Leach et al., 2006). The SDQIII is the third instrument in a series designed to measure the self-concept in three major domains of academic, non-academic, and general self-concept (Leach et al., 2006). The questionnaires are separated by the age range of the participants. The SDQI measures the self-concepts of elementary-aged children in grades 4-6. The SDQII was developed for junior high and high school students in grades 7-10. Lastly, the SDQIII was produced specifically for the college student population. The SDQIII is an Australian instrument with local norms and is widely regarded internationally as the best available self-concept instrument (Marsh & O'Neill, 1984).

The SDQIII 136-item scale is designed to measure multiple dimensions of self-concept for college students. The scale has a total of 13 subscales, however only 4 of the subscales were used in this study resulting in a 42-item survey (see Appendix B for item layout). The scale was reduced for three reasons. First, eight of the subscales are focused on nonacademic factors that were not of interest in the current study. Second, the subscale related to math self-concept was omitted since the surveys were only administered in English courses. Lastly, reduction of the instrument most likely assisted with response rate for the survey.

The four dimensions selected for use in this study, verbal, problem solving, academic, and general, were based on their relevance to community college student academic self-concept (see Table 1 for a brief description of each scale). Each of the dimensions is measured by 10-12 items. Participants responded on an 8-point likert-type scale, from "1-Definitely False" to "8-Definitely True." The entire breakdown is as follows: definitely false, false, mostly false, more false than true, more true than false,

mostly true, true, and definitely true. Half of the items for each subscale are negatively worded and are included to reduce positive response bias (Leach et al., 2006). Reverse scores were calculated for 19 of the variables on the scale. Once the 19 negatively worded items were reverse scored, a score of 1 was allocated to positive items (definitely false) and a score of 8 for definitely true.

Table 1

Summary of the four self-concept scales from the SDQIII

Subscale	Number of Items	Description
Verbal	10	Ratings of skills and ability in English and reading
Problem Solving	10	Ratings of own capability to engage in problem solving
Academic	10	Ratings of general academic skills and ability
General Self-Concept	12	Ratings of effectiveness, capability with individuals, who are proud and satisfied with the way they are

The 4 subscales (42 items) that were administered were: verbal (10 items), problem solving (10 items), general academic self-concept (10 items), and a global perception of self (12 items) (see Table 2 for the breakdown of each scale). Example items include "I enjoy working out new ways of solving problems" and "I am not particularly interested in most academic subjects." This scale is designed to investigate self-concept with the belief that self-concept is multidimensional and there are differences between academic and general self-concept such that general self-concept is the higher-order function. The statements included in the subscales are designed to measure the student's perception of their ability in each academic area. Each scale measures the ways in which the student views their own ability in the domain studied.

For example, the verbal scale measures the student's perception of their ability in English reading. It is necessary for the subscales to measure each construct related to the students the in developmental education English course.

The SDQIII instrument serves to determine the multi-dimensional factors of self-concept relevant to this study. Boulter (2002) discovered that self-perception of intellectual ability was a positive influence on adjustment in college for both men and women. These findings are consistent with the research by Tinto (1993) that students who have confidence in their intellectual ability, set high educational goals for themselves, and believe that they have the ability to meet these goals were predicted to successfully adjust to the academic demands of college. This study focused on the motivational construct associated with students' self-concepts of ability, expectancies for success, academic beliefs, and perceived control stem from the question, "Can I succeed on this task?" (Eccles, Wigfield, Midgley, Reuman, Mac Iver, & Feldlaufer, 1993). The SDQIII takes into account these perceptions of ability.

Table 2

SDQIII Subscale Factors

Verbal: Ratings of skills and ability in English and reading. • I have trouble expressing myself when trying to write something. • I can write effectively. • I have a poor vocabulary. • I am an avid reader. • I do not do well on tests that require a lot of verbal reasoning ability. • Relative to most people, my verbal skills are quite good. • I often have to read things several times before I understand them. • I am good at expressing myself. • In school, I had more trouble learning to read than most other students. • I have good reading comprehension
Academic: Ratings of general academic skills and ability • I enjoy doing work for most academic subjects. • I hate studying for many academic subjects.

Table 2 (cont'd).

- I like most academic subjects.
- I have trouble with most academic subjects.
- I am good at most academic subjects.
- I am not particularly interested in most academic subjects.
- I learn quickly in most academic subjects.
- I hate most academic subjects.
- I get good grades in most academic subjects.
- I could never achieve academic honors, even if I worked harder.

Problem Solving: Ratings of own capability to engage in problem-solving.

- I am never able to think up answers to problems that haven't already been figured out.
- I am good at combining ideas in ways that others have not tried.
- I wish I had more imagination and originality.
- I enjoy working out new ways of solving problems.
- I am not much good at problem solving.
- I have a lot of intellectual curiosity.
- I am not very original in my ideas thoughts and actions.
- I am an imaginative person.
- I would have no interest in being an inventor.
- I can often see better ways of doing routine tasks

General Esteem: Ratings of effectiveness, capability with individuals, who are proud and satisfied with the way they are.

- Overall, I have a lot of respect for myself.
- Overall, I lack self-confidence.
- Overall, I am pretty accepting of myself.
- Overall, I don't have much respect for myself.
- Overall, I have a lot of self-confidence.
- Overall, I have a very good self-concept.
- Overall, nothing that I do is very important.
- Overall, I have pretty positive feeling about myself.
- Overall, I have a very poor self-concept.
- Overall, I have pretty negative feelings about myself.
- Overall, I do lots of things that are important.
- Overall, I am not very accepting of myself.

Marsh (1988) states that the correlation between factors is relatively low. The correlation between verbal self-concept and verbal achievement is cited as evidence of the validity of SDQIII scores. Marsh and O'Neill (1984) determined that "language achievement is most highly correlated with Verbal self-concept, less correlated with other academic self-concepts, and uncorrelated with self-concepts in nonacademic areas" (p. 162). In fact, the size of these academic self-concept and achievement correlations is

larger than those found in previous studies of self-concept (Marsh & O'Neill, 1984). As a result of these connections, Marsh and O'Neill claim that the relationships provide strong support for the construct validity of self-concept and for interpretation of responses to the SDQIII.

Measures of internal consistency were derived from a sample of 2,436 Australian individuals between the ages of 13 and 48, with 92% of the individuals ranging between the ages of 16 and 26 (Leach et al., 2006). Reliability has been reported at 0.89. Cronbach's coefficient alpha was used to measure the scale's internal consistency, or the extent to which items that comprise the scale measure the same underlying construct of self-concept. In the current study, the internal consistency of the subscales is as follows: Verbal Self-Concept ($\alpha = 0.827$), Problem Solving Self-Concept ($\alpha = 0.56$), Academic Self-Concept ($\alpha = 0.88$), and General Self-Concept ($\alpha = 0.92$).

Sense of Belonging

Participants' sense of belonging at the community college were measured using the Sense of Belonging Instrument (SB Instrument) created by Hoffman et al. (2002). The SB instrument was constructed to assess sense of belonging to the postsecondary institution and to develop an instrument that could be used to understand why students persist in, or withdraw from, college (Hoffman et al., 2002). The initial measure contained 50 items concerned with student/peer relationships and 35 items investigating student/faculty relationships. The 85 items were generated from review of the literature, focus groups with first-year students at a 4-year institution, and evaluation of the items for relevancy, clarity, and conciseness (Hoffman et al., 2002). Because student satisfaction with the university and intention to persist to graduation are factors known to

correlate most highly with sense of belonging, the focus groups were designed to investigate student perception of the environment and how these perceptions were developed (Hoffman et al., 2002). The students involved in both the focus groups and the pilot testing of the instrument were enrolled in the university's freshman seminar course. The freshman seminar course at the institution was offered in two different forms: (1) the first option was a class based on major or interest group and (2) the second option was a learning community structure with the course founded in a content area.

The participants for the pilot testing of the instrument were 205 students (144 women and 61 men) from a 4-year institution on the East Coast, all between 18-20 years old. Approximately 85% of the sample was white and the remaining 15 % were students of color. All students who participated were first year students, 83% of whom lived on campus. After pilot testing, the instrument was reduced to 26 items: 16 items that comprised the three factors related to student/peer interactions and 10 items that comprised the two factors related to student/faculty interactions (see Table 3 for the breakdown of statements). Example items include "I feel comfortable asking a teacher for help if I do not understand course-related material" and "It is difficult to meet other students in class." The items were scored on a 5-point scale, from 1 (completely untrue) to 5 (completely true). The entire breakdown is as follows: completely untrue, mostly untrue, equally true and untrue, mostly true, and completely true. Reverse scores were calculated for 4 of the variables on the scale. Once the 4 negatively worded items were reverse scored, a score of 1 was allocated to positive items (completely untrue) and a score of 5 for completely true.

Table 3

SB Instrument Subscale Factors

Perceived Peer Support
- I could call another student from class if I had a question about an assignment.
- I have met with classmates outside of class to study for an exam.
- Other students are helpful in reminding me when assignments are due or when tests are approaching.
- I have discussed personal matters with students who I met in class.
- I have developed personal relationships with other students in class.
- I discuss events which happen outside of class with my classmates.
- If I miss class, I know students who I could get the notes from.
- I invite people I know from class to do things socially.

Perceived Faculty Support/Comfort
- I feel comfortable asking a teacher for help if I do not understand course-related material.
- If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (i.e. during office hours, etc.).
- I feel comfortable seeking help from a teacher before or after class.
- I feel comfortable socializing with a faculty member outside of class.
- I feel comfortable asking a teacher for help with a personal problem.
- I feel comfortable talking about a problem with faculty.

Perceived Classroom Comfort
- I feel comfortable asking a question in class.
- I feel comfortable volunteering ideas or opinions in class.
- Speaking in class is easy because I feel comfortable.
- I feel comfortable contributing to class discussions.

Perceived Isolation
- I rarely talk to other students in my classes.
- I know very few people from my classes.
- No one in my classes knows anything personal about me.
- It is difficult to meet other students in class.

Empathetic Faculty Understanding
- I feel that a faculty member would take the time to talk to me if I needed help.
- I feel that a faculty member really tried to understand my problem when I talked about it.
- I feel that a faculty member would be sensitive to my difficulties if I shared them.
- I feel that a faculty member would be sympathetic if I was upset.

This 26 item scale assesses sense of belonging in college specifically for first-year students. Together the 5 subscales cover perceived peer support, perceived classroom comfort, perceived isolation, and perceived faculty support, and empathetic faculty understanding (see Table 4 for an explanation of the subscales). These five factors

explain a total of 63.3% of the variance among the 26 items, or 38.8%, 9.0%, 6.4%, 4.9%, and 4.2% of the total variance respectively.

Table 4

Summary of the five subscales for the Sense of Belonging Instrument

Subscale	Number of Items	Description
Perceived Peer Support	8	Perception of academic and social support by peers
Perceived Faculty Support/Comfort	6	Perception of academic and social support by faculty
Perceived Classroom Comfort	4	Perception of personal comfort within the classroom setting itself both with faculty and students
Perceived Isolation	4	Perception of the student's ability to establish relationships with peers
Empathetic Faculty	4	Perception of the student's ability to approach instructors for guidance regarding personal matters

Morrow (2004) reported internal consistency of the subscales is as follows: Perceived Peer Support ($\alpha = 0.89$), Perceived Classroom Comfort ($\alpha = 0.92$), Perceived Isolation ($\alpha = 0.85$), and Perceived Faculty Support ($\alpha = 0.89$); however, Morrow did not utilize the last subscale, empathetic faculty understanding, in her study. In the current study, the Cronbach alpha coefficient for the subscales is as follows: Perceived Peer Support ($\alpha = 0.85$), Perceived Classroom Comfort ($\alpha = 0.90$), Perceived Isolation ($\alpha = 0.76$), Perceived Faculty Support ($\alpha = 0.81$), and Empathetic Faculty Understanding ($\alpha = 0.67$).

The SB instrument indicates that sense of belonging to the institution stems from perceptions of valued involvement in the college environment (Hoffman et al., 2002). This perception of valued involvement was predicated on: 1) establishing functionally

supportive peer relationships and 2) the belief that faculty are compassionate and that the student is more than just another face in the crowd (Hoffman et al., 2002). Even though this instrument was designed and tested at a 4-year residential institution, there are several reasons the survey can be applied to the community college student. The inclusion of student-faculty interactions both inside and outside of the classroom is necessary for investigating community college students. In fact, Bailey et al. (2004) state the importance of understanding students' sense of belonging or fit at the community college starts with the classroom. They suggest that one way to shift the research focus is to put less emphasis on extracurricular activities a student is involved in and devote more attention to the classroom experiences of the student since this is the place where commuter students have the most contact with other students and faculty (Bailey et al., 2004).

Feeling connected to the institution inside the classroom at the community college is especially important since the students are generally commuter students and do not spend much time on campus other than in the classroom. Hoffman et al. (2002) found that students' perception of faculty as supportive and empathetic contributes directly to students' attachment to the institution. Faculty are some of the most visible representatives of an institution; having less than positive interactions with an instructor could impact a student's transition into a university setting (Maestas et al., 2007). In addition, when research on sense of belonging in the school setting involves a measure of student perception of teacher support, encouragement, and warmth, academic achievement is directly and significantly related (Booker, 2006).

The student-peer relationship is examined mainly through classroom-related activities. For example, "I could call another student from class if I had a question about an assignment" is one statement used to understand the perceived peer support of the students. Including student-peer interactions is important for the community college student even thought the faculty support tends to be a more important factor in determining student persistence at the community college. One reason the peer relationships can impact the community college student is through the small class size of developmental education courses. Fielstein and Bush (1998) state that these courses tend to have a small class size and more individualized instruction and increased social interaction. Additionally, community college students are less involved on their campus compared to students at 4-year institutions, participating less frequently in campus organizations and rarely attending campus events (Maxwell, 2000).

Demographic Questionnaire

Participants were asked to complete a brief survey requesting demographic information (see Appendix A). The purpose of this survey was to allow the researcher to ensure that the sample was representative of the total population of the community college and to have a complete profile of the students studied. Participants were asked to indicate their gender, race/ethnicity, age, social class, achievement information from high school, employment status, frequency of visits to faculty, advisors, and/or the center for student success, their educational goals, their parents' highest education attainment, and the number of dependents and number of people living in their household. Some of these factors were used in creating the model of final course grade.

Data Analysis

The findings from the analysis of the survey data are presented in detail in Chapter 4. This section provides an overview of the data analysis conducted.

Chi-square Analyses. Chi-square tests for independence were used to determine the respondents' representation of the population and a test of sampling bias. Chi-square was used to determine whether the respondents were representative of the developmental education population at MWCC or the individual school population (i.e., all the students at MWCC) for categorical variables.

One-sample t-tests. One sample t-tests were used to test the mean difference for continuous variables. The test of mean difference was used to determine if the mean of the sample was representative of the MWCC population.

Bivariate correlations. Bivariate correlations were used to access the relations between the self-concept and sense of belonging subscales and demographic characteristics, as well as their relation to the key outcome variable.

Multiple Regression

As outlined in the literature review, there are many factors (psychosocial achievement characteristics, pre-entry academic characteristics, and demographic variables) that influence a student's ability to complete developmental education courses at the community college. To what extent do these factors explain the student's final course grade in the developmental education course? In order to examine the degree to which a student's final course grade in a developmental education English course could be predicted from the student's psychosocial achievement characteristics and demographics, a hierarchical multiple regression analysis was conducted. Furthermore,

the researcher will investigate which of the variables entered in the second step is the best predictor of final course grade.

Final course grade in the English developmental education course was used as the dependent or outcome variable. The control variables in the model were self-reported high school grade point average and the number of developmental education courses in which the student was required to enroll. The independent variables in the study included the four subscales from the SDQIII (Verbal, Academic, Problem Solving, and General Self-Concept), the five subscales from the SB Instrument (Perception of Peer Support, Perceived Classroom Support, Perceived Isolation, Perceived Faculty Support, and Empathic Faculty Understanding), and demographic variables (Age, Gender, Race/Ethnicity, Social Class, Education Goal, Number of Dependents, and Employment Status).

Dependent or outcome variable. The dependent variable used in the model was the student's final grade in the developmental English course. The institution provided the final grade of consenting participants on a 4.0 scale. Studies (see Marsh, Byrne, & Shavelson, 1988) show that the responses on the SDQIII academic scales are related to school grades. Maximizing individual's academic potential is also an important outcome that can be impacted by self-concept change. The connection between positive self-concept and academic performance has long been perceived as an important linkage by educators in assessing academic performance (Gerardi, 2005). Research (Ethington, 1991; Meece, Wigfield, & Eccles, 1990) suggests that there was a relationship between self-concept and grades. In these studies, a student's self-concept and grade were related to wanting to pursue a subject further even if taking more courses was not required.

In a study by Gerardi (2005) academic self-concept proved to be more influential in predicting community college GPA than the traditional academic performance measurements such as prior academic performance in the form of SAT or ACT scores. This study was conducted using a low-income, minority population at an urban, technical community college. These students had been classified as academic high-risk students, or academically underprepared, because of their poor academic performance. However, the results of the study indicate that a positive student academic self-concept worked to counter veiling force in combating the compounding socio-economic disabilities associated with the previous academic environment (Gerardi, 2005).

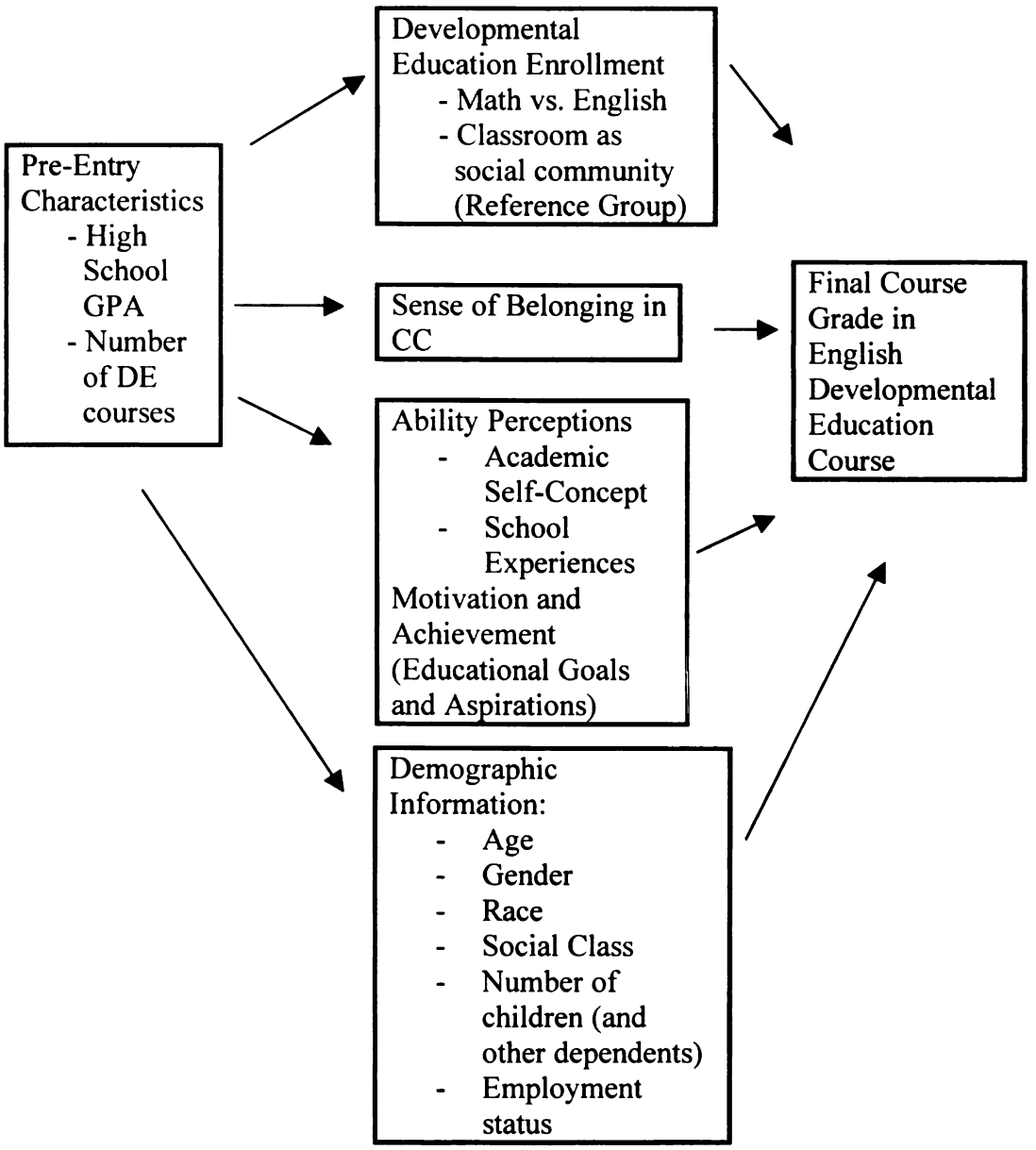
Pre-entry academic characteristics. High school grade point average and the number of developmental education courses required by the student were entered as control variables because prior academic experiences directly impact final course grade. House (1992) stated the importance of controlling for a student's past academic achievement when studying self-concept. It is important to determine the effect of prior academic self-concept on subsequent academic achievement even if prior academic achievement also affects subsequent academic self-concept (Marsh, 1990). Hawley and Harris (2005-2006) found that among the highest predictors of dropout was the amount of developmental coursework that students are required to complete.

Academic self-concept. Students' self-perception of their academic abilities may be an important factor in academic success for students who enter the institution labeled as high-risk (Fielstein & Bush, 1998). Community college students appear to lack confidence in their abilities to succeed academically (Bers & Smith, 1991). Majors and Sedlacek (2001) state that students with a low academic self-concept and low academic

preparedness are at high-risk for dropping out. Woodside et al. (1999) found that student-faculty interactions are significantly associated with students' academically related self-concept.

Sense of belonging. Social and academic integration are central to a student's connection to campus life, the classroom experience, and the social experience (Maestas et al., 2007). Students whose teachers reported them as being highly engaged and connected to the classroom community demonstrated advanced levels of achievement (Booker, 2006). In addition, Strauss and Volkwein (2004) discovered that the classroom experience and faculty interaction is more influential at 2-year colleges than at 4-year colleges.

Figure 2. A Model of Developmental Education Final Course Grade



CHAPTER FOUR

RESULTS

This study attempted to investigate the relationship of academic self-concept and sense of belonging in community college to academically underprepared student success in developmental education English courses. In this chapter I describe the sample and compare it to the population under study, looking for potential sampling bias. Next I examine the multidimensional ways of measuring sense of belonging and self-concept to gain a better understanding of the constructs. I elaborate these results by discussing the usefulness of the smaller subscales, which allowed for more substantial understanding of sense of belonging and self-concept instead of just having a general measure.

Following the discussion of sample and measurement issues, I explore the principal research question: what is the relative importance of psychosocial achievement characteristics (i.e., sense of belonging and academic self-concept) and demographic variables in the final course grade of a developmental education English course at the community college? I carried out a hierarchical multiple regression procedure to determine the total variance in the final course grade in the developmental education English course explained by psychosocial achievement characteristics (academic self-concept and sense of belonging) and demographic variables (employment, race/ethnicity, gender, educational goal, gender, number of dependents, social class, and age) after controlling for high school grade point average and the number of developmental education courses for which the student was required to enroll. The multiple regression procedure was also used to determine the relative importance of predictors of final course grade.

Demographic Factors

This section provides the description of the respondent group in addition to results from analyses utilized to determine the represetativeness of the sample. The respondent group is described and presented and compared not only to the developmental education population at MWCC, but also to the larger community college population. Chi square analyses and one-sample t-tests were conducted to determine whether respondents were representative of the developmental education population (i.e., all developmental education English students enrolled at MWCC). When the raw data specific to the developmental education population were unavailable, chi square analyses were conducted to determine whether the respondents were representative of the MWCC population as a whole. Demographic information was obtained from the National Center of Educational Statistics (NCES) and the Achieving the Dream Institutional Report for Mid-Western Community College (ATD).

Gender

The survey respondents included 165 (58%) female and 119 (42%) male students. The gender breakdown is similar to MWCC's developmental education population with a breakdown of 60% female and 40% male (see Table 5). Chi-square analyses were conducted to determine whether participants were representative of the developmental English population at MWCC. Demographic information was obtained from the Achieving the Dream (2007). Chi-square analyses indicated that there was not a significant difference in the number of male and female student representation when compared to the population ($\chi^2 = 0.428$, $p = 0.513$).

Table 5

Chi-Square Analysis: Gender of Student

Gender	Students	Population Total	Chi-Square	p
Male	119 (42%)	345 (40%)	0.428	.513
Female	165 (58%)	514 (60%)		

When looking at the national developmental education population, studies (see Boylan, Bonham, & Bliss, 1994; Knopp, 1996) found that women are the majority. Slightly more than half of the population is female. The female population ranges from 53% to 57% of the developmental education population (Boylan et al., 1994; Knopp, 1996). MWCC consistently has a higher percentage of females in developmental education than male students (Foundation, 2005-2006). These findings are consistent with the community college population as a whole since the female population is typically larger than the male population (Cohen & Brawer, 2003).

Race/Ethnicity

For the purposes of the analyses in the current study, individuals who self-identified as Black/African American, American Indian, Hispanic/Latino, Multiracial, and other were collapsed into a student of color variable. The number of students in each race/ethnicity category was too small to conduct an individual statistical analysis. The racial/ethnic breakdown of the sample was as follows: 230 White (81%), 28 Black/African American (10%), 7 American Indian (2.5%), 10 Hispanic/Latino (3.5%), 6 Multiracial (2.1%), 1 other (.4%), and 2 provided no answer to this question.

The collapsed student of color variable represented 18.5% of the sample. The small number of participants in each racial or ethnic group made it necessary to collapse

them for analysis even though students of color have different experiences (Wawrzynski & Pizzolato, 2006). Chi-square analyses indicated that there was not a significant difference between respondents and the developmental English population at MWCC in terms of race/ethnicity when the participants are grouped based on white and the collapsed student of color variable ($\chi^2 = 0.881$, $p = 0.348$) (see Table 6).

Table 6

Chi-Square Analysis: Race/Ethnicity of Student using collapsed variable

Race/Ethnicity	Students	Population Total	Chi-Square	p
White non-Hispanic	230 (81%)	682 (79%)	0.881	0.348
Students of Color	53 (19%)	177 (21%)		

The student body at MWCC is predominately white (84%), which is similar to the other community colleges in the state of Michigan (NCES, 2007). In addition, the majority of students enrolled in developmental education at MWCC are white (79%). Results from the National Study of Developmental Education (Boylan et al., 1994) indicated that the vast majority of developmental education students are white. Less than one-third of the population were minorities (Boylan et al., 1994). The largest minority group represented was African American followed by the Hispanic population (Boylan et al., 1994).

Age

Comparison with MWCC population. The age of the participants ranged from 18 years old to 54 years old. In the current study, the mean age of the sample was 20.49 years old with a standard deviation of 6.4. The number of students categorized by traditional-age student (24 years old and younger) and adult student (25 years old and

older) was reported by the Achieving the Dream Institutional Report (2007). Approximately 27% of the developmental English population were traditional-age students (N=629), and 27% were over 25 years old (N=230). However, the mean age was not reported by the Achieving the Dream report. Since age is a continuous variable, the mean age of the MWCC population was used for analysis.

A one-sample t-test of mean difference was conducted to compare the age of the sample to the entire MWCC population (see Table 7). In 2003, the average age of students at MWCC was 25 years old, down from 28 years old in 1998 (MWCC website, 2007). Based on the average age provided by the community college, the test value was set at 25. The results of the one-sample t-test revealed a difference in the mean age of the respondents ($\underline{M}$=20.49, $\underline{SD}$=6.4) and the MWCC population ($\underline{M}$=25; $\underline{t}(277) = -11.764$, $\underline{p} < 0.001$). The sample is significantly younger on average than the MWCC population.

Table 7

One-Sample T-Test: Age of Student

	$\underline{M}$	$\underline{SD}$	Test Value	t(277)	p
Age	20.49	6.4	25	-11.764	<0.001

Comparison with MWCC developmental education population. When comparing the composition of the student body in developmental education courses to that of the entire MWCC student population, there was a higher percentage of students under the age of 25 in all developmental courses (ATD, 2007). With regard to the age of students, an overwhelming majority of respondents in this study were under the age of 24 years old. A majority of the students were either 18 years old (53%) or 19 years old (26%). The

student population taking developmental education courses at MWCC is significantly younger than the MWCC population as a whole. According to the Achieving the Dream Institutional Report the population of the two courses studied (ENG 080 and ENG 085) saw the highest percentage of students under the age of 25 (76.5% and 72.4% respectively). Younger students in the developmental courses at MWCC seem to be a function of an enrollment shift at the community college.

Developmental students not only include older students; they also include underprepared traditional high school students who had no intention of attending college (Maddox, 2002). Although there is a shift to a larger percentage of traditional-age community college students, nationally the majority of students enrolled at the community college are older than 24 years old. A study conducted by Burley et al. (2001) found that students in developmental education tend to begin their studies at older ages than expected. This finding is contrary to the findings in the sample discussed here and the trends at MWCC. A majority of the students in developmental education at MWCC are 24 years old or younger. Approximately 57% of all new students at MWCC who placed into all three developmental areas were in the age group of 18 and 19 years old (ATD, 2007). Additionally, nearly 60% of all new students enrolling at MWCC who were 18 and 19 years old placed into at least one developmental education course (ATD, 2007).

Full-Time versus Part-Time Status

Of the 284 participants, 219 (77%) attend the community college full-time. The enrollment patterns of the population at MWCC were obtained from the National Center of Educational Statistics (NCES, 2008). Chi-square analysis indicated that there was a

significant difference between the study respondents and the total population (χ^2 = 162.423, $p < 0.001$). The number of students in the sample attending full-time is significantly different from the overall population at MWCC. A larger percentage of the respondent group attends MWCC full-time than the MWCC population. Based on the NCES website, the number of students attending the community college part-time was reported to be nearly 60% of the population. A large majority of respondents in this study were enrolled full-time (see Table 8). According to the Achieving the Dream Institutional Report (2007) 58% of the students in developmental education at MWCC were enrolled full-time. It may be that students did not understand what it means to be a full-time student at MWCC. This question may have been confusing and resulted in erroneous responses that appeared to be an "overrepresentation" of this group.

Table 8

Chi-Square Analysis: Enrollment Status of Student

Enrollment Status	Students	Population Total	Chi-Square	p
Full-Time	219 (77%)	2358 (40.6%)	162.423	<0.001
Part-Time	62 (23%)	3449 (59.4%)		

The influx of traditional-age students will continue to contribute to an increase in the number of full-time enrollees in community college (Bryant, 2001). As stated previously, the number of students in this study who are considered traditional-age students is significantly higher than the non-traditional student representation. The large percentage of traditional-age students may contribute to the large percentage of full-time students represented. A national study of developmental education students found that 68% of the students enrolled full time at the community college (Boylan et al., 1994).

Transfer

Approximately 28% of the students enrolled at MWCC transfer to four-year universities (NCES, 2007). For the purposes of the chi square analysis, the educational goal variable from the survey was collapsed into two groups (Group One: No intent to transfer; Group Two: Intent to transfer). Students with no degree aspirations, plans to complete a certificate, or a 2-year degree were placed into Group One. Those students indicating a desire to complete a 4-year degree or beyond were coded as Group Two. Chi square analysis indicated that there was a significant difference between the study participants and the MWCC population as a whole ($\chi^2 = 59.732$, $p < 0.001$) when looking at the intent to transfer (see Table 9). The respondents were on average more likely to indicate intent to transfer than the typical MWCC student.

Table 9

Chi-Square Analysis: Transfer

Educational Goal	Students	Population Total	Chi-Square	p
No intent to transfer	146 (51%)	4181 (72%)	59.732	<0.001
Intent to transfer	138 (49%)	1626 (28%)		

Traditional-age students tend to be similar to older community college students in both race and gender; however, they are more likely to intend to complete a four-year degree than older students (Bettinger & Long, 2005). Since the sample has a high number of traditional-age students, the degree aspirations of the respondents may reflect this bias and cause the transfer goals to be significantly different from the MWCC population. The raw data related to the developmental education students who intend to transfer was not

available for this analysis. Overall, 59% of traditional-age community college students stated a bachelor's degree as their educational goal or expectation (Adelman, 2005).

Students' reasons for attending community college can range from curiosity to career enhancement or vocational preparation (Burley et al., 2001). Most of the students enrolled in developmental education do so with the intention of completing either an associate's degree or transferring to a 4-year institution (Knopp, 1996). "A high percentage of students who begin their collegiate careers at community colleges do so with the intent of transferring to four-year colleges in order to complete their studies" (Trujillo & Diaz, 1999, p. 125). The students in the sample may have the intent to transfer, but may not actually be aware of what it takes to complete the transfer process. A study of community college students in California discovered that during the first semester students have higher degree aspirations than they do in the subsequent semesters (Driscoll, 2007). A majority of the traditional-age students entered the community college with the goal of transferring to a 4-year institution, but after the first semester lower their expectations (Driscoll, 2007). The students that successfully transfer are more likely to have high levels of initial commitment to the institution and their educational goals; high levels of academic and social integration; parents with higher levels of educational attainment; positive attitudes towards transferring to a senior institution; and engagement in some form of transfer behavior at the two-year institution (Nora & Rendón, 1990).

Course Completion

Mid-Western Community College determines successful completion of developmental coursework with a 2.0 grade point or higher (Administrative Policy

Manual, 2006-2007). At MWCC, approximately 70% of the students who take the English developmental education courses pass on their first attempt with a 2.0 grade or better (Foundation, 2005-2006). It is unknown how many times the participants in the current study have enrolled in the course. The overall pass rate for the course is typically 75% of the students passing with a 2.0 or better, regardless of the number of times the student has enrolled in the course (Foundation, 2005-2006). Chi square analysis indicated that there was a significant difference between the study respondents and the total developmental education population ($\chi^2 = 24.147$, $p < 0.001$). A higher percentage of the students in the sample (84%) passed the course than the overall MWCC developmental English population (70%) (see Table 10).

Table 10

Chi-Square Analysis: Course Completion

Course Completion	Students	Population Total	Chi-Square	p
Pass (Grade 2.0 or higher)	216 (84%)	531 (70%)	24.147	<0.0001
Fail (Grade below 2.0)	41 (16%)	228 (30%)		

In the current study, a slightly higher percentage of students passed the developmental English course with 76% passing, 14% failing, and 9.5% of the final grades missing from the data set. The final breakdown of grades in the course on a 4.0 scale is presented in Table 11.

Table 11

Final Course Grades

Final Course Grade Population	Sample		MWCC Developmental English	
0.0	17	(6%)	123	(16.4%)
0.5	7	(2.5%)	3	(0.5%)
1.0	9	(3.2%)	16	(2.1%)
1.5	8	(2.8%)	35	(4.7%)
2.0	30	(10.6%)	90	(12%)
2.5	34	(12%)	73	(9.8%)
3.0	56	(19.7%)	137	(18.3%)
3.5	50	(17.6%)	122	(16.3%)
4.0	46	(16.2%)	149	(19.9%)
Missing Data	27	(9.5%)		

The mean grade in the course was 2.71 with a standard deviation of 1.13. The total developmental English population at MWCC has a final grade mean of 2.5 on a 4.0 scale. A one-sample t-test to compare mean difference was conducted with a test value of 2.5 (see Table 12). The results of the analysis indicated that there was a difference in mean scores between the sample participants and the MWCC developmental English education population $t(256) = 2.984$, $p = 0.003$). Study participants on average passed the course with a higher grade (2.71) when compared with the MWCC developmental education population (2.5).

Table 12

One-Sample T-Test: Final Course Grade

	M	SD	Test Value	t(256)	p
Grade	2.71	1.13	2.5	2.984	0.003

Weissman, Bulakowski, and Jumisko (1997) found that 73% of students enrolled in development English successfully completed their coursework. Grimes (1997) found a slightly higher completion rate (88%) for those students who not only completed, but also persisted to the second semester. The students who successfully completed, but did not persist had a lower completion rate of only 58% successfully completing their developmental English coursework (Grimes, 1997). MWCC students who complete developmental English courses (ENG 080, ENG 085, and ENG 090) pass at a 75% completion rate.

Sampling Bias: Summary

Chi-square tests for independence were used to determine the respondents' representation of the population and a test of sampling bias for the categorical variables. Chi-square analysis was used to determine whether the respondents were representative of the developmental education population at MWCC. When the raw data for the developmental education population were not available the sample was tested against the individual school population (i.e., all the students at MWCC). One-sample t-tests were utilized to test the difference from the mean for the continuous variables (age and final course grade). No significant differences were found for the gender or race/ethnicity of the sample and the developmental education population.

Significant differences were found for the age of students, the enrollment status of the students, and the intent of the students to transfer for the sample and the MWCC population. All three of these analyses used the MWCC population as a whole and not the developmental education population. These results are not a clear indication of sampling bias. Instead it might be the same distribution as for developmental students overall at

MWCC. It is possible that the sample was representative of the developmental education population. Lastly, there was a significant difference between the final course grade in the sample and the developmental education population at MWCC. The developmental education population grade point average includes student who were enrolled in ENG 080 and ENG 085 during the 2006-2007 school year (ATD, 2007). A larger number of students fail these courses during the winter term at MWCC (Foundation, 2005-2006). The ¼ point higher GPA for the sample made the group a bit higher in performance but the bias is less than would have been the case if the population average was under a 2.0 GPA. Both the sample and the MWCC developmental population were above a 2.5 GPA on a 4.0 scale.

Description of Respondent Group

This section provides an overview of the demographic variables included in the model for which there is no raw data available to compare to the population. Many community college students have to make difficult decisions regarding attending college and working full or part-time to financially assist their families (Hawley & Harris, 2005-2006). Potential impediments to degree completion for community college students may include being a first generation college student, having poor academic skills, being burdened by family and work pressures, and lacking a consistent connection to college (McArthur, 2005). Students are entering an environment where they are no longer among peers of their same age group and are making a significant transition in their lives. Saxon and Boylan (1999) summarize the developmental student as a student similar to most community college students:

> In essence, students participating in community college remedial courses are very much like most other community college students. There are no demographic, economic, or personal characteristics in which they differ significantly from the typical community college student. The only factor that appears to separate them from non-remedial students is that they have lower scores on institutional assessment tests. (p. 7)

Community college students represent a diverse mix of students with varying goals, significant demands on their time, and a range of personal, academic, and financial challenges (CCSSE, 2005). These students often bring many complicating life issues to the educational setting including employment and family responsibilities (Crews & Aragon, 2007). Community colleges serve a disproportionate number of poor, working-class, ethnic or racial minority, and female students (Crews & Aragon, 2007; McCabe & Day, 1998; Shaw, 1999). In addition, students are more likely to be older, are more likely to be working, and are more likely to interrupt their enrollments (Bailey & Alfonso, 2005).

Dependents

A large percentage (76%) of the respondents did not have any dependents; 13% of the participants had 1 dependent, 5% had 2 dependents, 4% had 3 dependents, and the last 2% had 4 or more dependents. According to Laden (2004) over a third of the population of community college students are responsible for dependents; of these, over 16% are also single parents.

Employment Status

The number of participants who work off campus was 187 (66%); 92 (32%) do not work at all, and 4 (2%) had work study positions. A little more than half (51%) of the participants who were employed indicated they worked more than 20 hours a week. Regardless of age, over 80% of the community college student population is employed and, of these, almost 54% work full time and over 30% work part time (Bryant, 2001; Laden, 2004).

Social Class

Most of the students in the sample indicated that their social class growing up was either Middle class (45%) or Working class (22%). The remaining students in the sample claimed they were Upper-Middle class (19%) or in Poverty (10%). Students taking developmental courses tend to come from low-income families (Maddox, 2002). Research (see McCabe & Day, 1998) cites low socioeconomic status as a common characteristic of developmental education students.

High School GPA

The self-reported high school grade point average mode of the respondents in the sample was a 2.5-2.99 on a 4.0 scale. Table 13 provides the breakdown of high school grades. Saxon and Boylan (1999) reported a mean cumulative high school grade point average of entering community college developmental education students as 2.40 on a 4.0 scale.

Table 13

High School Grade Point Average

High School Grade	Sample Frequency	Sample Percentage
1.0-1.49	1	0.4%
1.5-1.99	11	3.9%
2.0-2.49	44	15.5%
2.5-2.99	88	31.0%
3.0-3.49	80	28.2%
3.5-3.99	46	16.2%
4.0	4	1.4%
Missing Data	11	3.8%

Number of Developmental Courses Required

All students in the sample were enrolled in at least one developmental course (either ENG 080 or ENG 085). The respondents self-reported the number of developmental courses for which they were enrolled. Approximately 15% (N=42) of the sample was enrolled in only one developmental course, 30% (N=87) were enrolled in two developmental education courses, and 33% (N=93) were enrolled in all three developmental education courses. Overall, 21% of the respondents did not know how many developmental education courses they were required to take.

Relationship of Psychosocial Achievement Characteristics and Demographic Variables

Hierarchical multiple regression analysis was conducted to examine the degree to which a student's final course grade in a developmental education English course could be predicted from the student's psychosocial achievement characteristics and demographics characteristics. In addition, the best predictor from the set of independent variables was determined based on the beta values in the model. The β values describe to what degree each predictor impacts the dependent variable if the effects of all other predictors are held constant (Tabachnick & Fidell, 2007).

The student's final grade in the developmental education English course was used as the dependent variable. The student's self-reported high school grade point average and the self-reported number of developmental education courses the student placed into were entered at the first step of the analysis. Controlling for students' entering characteristics was important given the considerable research suggesting that these measures predict college success (see House, 1992). At step 2, the subscales for the SDQIII (Verbal, Academic, Problem Solving, and General Self-Concept) and the SB Instrument (Perception of Peer Support, Perceived Classroom Support, Perceived Isolation, Perceived Faculty Support, and Empathic Faculty Understanding) were entered along with several demographic variables thought to influence the final grade in the developmental course. These demographic variables were the student's educational degree goal, number of dependents, self-reported social class growing up, the collapsed race or ethnicity variable, age, gender, and employment status. The independent variables were entered together since this model is exploratory in nature. House states that in studies of the relationship between attitudes and academic outcomes, it is important to utilize a design that allows for an analysis of the contribution of multiple variables.

Dependent or outcome variable. The outcome variable of the model was determined as the final course grade in the developmental English course. For the purposes of the analysis, the graded scale was used to evaluate the outcome. In terms of community colleges, semester-to-semester persistence is more meaningful than year to year (Napoli & Wortman, 1998). Cox et al. (2003) found that underprepared readers' success in college is directly and significantly related to taking and passing a reading skills course. The grades were provided by the institution following the end of the fall

2007 semester. MWCC considers successful completion of the course to be a 2.0 grade or higher in the developmental English course (Administrative Policy Manual, 2006-2007). Hoyt (1999) indicates that first-term academic performance had the strongest relationship to retention when looking at a student's need for remediation and their eventual retention.

Pre-entry academic characteristics. Self-reported high school grade point average and the self-reported number of developmental education courses the student enrolled in during the fall 2007 semester were entered into the model as control variables. House (1992) states that academic self-concept is continuously modified based on the result of school performance. Being placed into developmental courses is based on a student's ability to do college coursework and is determined by a placement exam or the ACT score of the student. Students enrolled in developmental education courses start with weaker academic skills. As a result, it is hard to identify the causal relationship between developmental education and subsequent course work (Bailey & Alfonso, 2005).

Academic self-concept. Previous research suggests that developmental education students have a lower self-concept than those students entering the community college as college-ready (Thompson, 1998). Based on Marsh, Byrne, and Shavelson's (1992) work on multidimensional, hierarchical self-concept there is strong support to approach this construct as having multiple dimensions and being multifaceted versus a global measure of the self; indicating that there are multiple dimensions of a persons self-concept that relate to their academic performance. The model tested in this study includes student responses to four of the subscales from the SDQIII created by Marsh (1990). All four subscales are comprised of 10-12 separate statements without any overlap in the

formation of the subscales (Verbal, Academic, Problem Solving, and General Self-Concept).

Sense of belonging. Institutional commitment is a precursor or predictor of student persistence behavior and can be defined as a student's sense of belonging with the institution (Strauss & Volkwein, 2004). Feeling connected to the institution outside of classes and developing social connections are the keys to creating a sense of belonging (Maestas et al., 2007). In addition, making connections with faculty and engaging academically are crucial to both succeeding and feeling like a member of the college community (Maestas et al., 2007). Sense of belonging was measured using the SB Instrument which includes five subscales: Perception of Peer Support, Perceived Classroom Support, Perceived Isolation, Perceived Faculty Support, and Empathic Faculty Understanding (Hoffman et al., 2002).

Demographic variables. Factors such as expectancies (educational goal), socioeconomic status (social class), age, employment, number of children, and previous academic experiences play an important role for the success of developmental education students (Burley et al., 2001). Based on the characteristics of developmental education students described by Saxon and Boylan (1999), all of the demographic variables included in the model were considered to contribute to the risk status of the students. The race/ethnicity of students was included because previous research has shown that this background characteristic impacts sense of belonging and persistence (Hurtado & Carter, 1997). In addition, differences based on gender, race/ethnicity, and age were found to be significant when studying academic self-concept (House, 1992; 1993). The social class variable was included because Ostrove and Long (2007) found a relationship between

social class (indicated by students' self-identifying with a social class group) and sense of belonging in college. Table 14 provides the means and standard deviations for the variables included in the model.

Table 14

Means and Standard Deviations: Multiple Regression

	Mean	Standard Deviation
Final Grade in Course	2.71	1.13
Self-reported High School GPA	3.42	1.13
Self-reported Number of DE courses	2.22	0.75
Number of Dependents	0.44	0.95
Social Class Growing Up	1.84	0.95
Age	20.49	6.40
Employment Status	0.33	0.47
Race/Ethnicity Collapsed Variable	0.19	0.39
Gender	0.58	0.49
Educational Degree Goal	1.77	0.83
Verbal Self-Concept	5.09	1.15
Academic Self-Concept	5.34	1.12
Problem Solving Self-Concept	5.20	0.78
Overall Self-Concept	6.62	1.04
Perceived Peer Support	3.43	0.89
Perceived Faculty Support/Comfort	3.64	0.80
Perceived Classroom Comfort	3.63	1.04

Table 14 (cont'd).

Perceived Isolation	3.67	0.94
Empathetic Faculty Understanding	3.78	0.72

Collinearity

Bivariate correlations. The correlations between the variables in the model are presented in Table 15. Tabachnick and Fidell (2007) suggest that variables that correlate at .7 or above should not be included in the multiple regression. None of the variables reach this height; however, two of the variables are approaching this high correlation. The highest correlation is 0.68 (see Table 15) between Perceived Peer Support and Perceived Isolation from the SB Instrument. All of the variables were retained in the model since there is no indication of multicollinearity.

Although there is no correlative overlap suggesting multicollinearity, it is possible there is a definitional overlap. This overlap means that students who indicate a high self-concept might include in the definition some of the factors used to assess the other forms of self-concept measured. It is possible that general self-concept is so broad in practice that it covers the other dimensions of self-concept studied. It may be that components of the measures that comprise both scales are so similar that they measure the same thing. In this analysis, the correlation is not that high, but the built-in definition-based correlation is high.

Table 15

Correlation between Variables: Multiple Regression

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. HS GPA	-	.02	-.02	.01	.10	.01	.00	-.17**	.01	-.14*	-.34**	-.13*	-.11	-.14*	-.10	-.11	-.19**	-.15*	-.16*
2. DE classes	-	-	-.09	-.04	.00	.03	-.01	.12	.02	.02	.08	.05	.11	.13	.08	.10	.07	-.01	-.08
3. Degree	-	-	-	-.14*	-.03	.09	-.28**	-.02	-.01	.14*	.19**	.10	.07	.17*	-.02	.04	.12	-.13	.036
4. Dependents	-	-	-	-	.07	.04	.50**	.15*	.17**	.01	.13*	.06	.08	.05	.19**	.15**	.10	.10	.13*
5. Social Class	-	-	-	-	-	-.02	.18**	.02	.02	-.09	-.01	-.03	-.13*	-.18**	-.01	.01	-.16**	.04	.08
6. Race/Ethnicity	-	-	-	-	-	-	.03	.01	.06	.13*	.13*	.17**	.16**	.01	.08	.12*	.02	-.01	-.06
7. Age	-	-	-	-	-	-	-	.08	.12	-.07	.05	-.03	-.08	-.14*	.09	.10	-.08	.11	.09
8. Gender	-	-	-	-	-	-	-	-	-.03	.05	.23**	-.13*	-.03	.16**	.06	-.06	.18**	.12*	.19**
9. Employment	-	-	-	-	-	-	-	-	-	-.01	.05	.03	-.02	-.11	-.06	-.07	-.13*	.05	-.09
10. Verbal SC	-	-	-	-	-	-	-	-	-	-	.54**	.37**	.41**	.23**	.33**	.34**	.21**	.19**	-.03
11. Academic SC	-	-	-	-	-	-	-	-	-	-	-	.36**	.42**	.17**	.37**	.29**	.21**	.30**	.21**
12. PS SC	-	-	-	-	-	-	-	-	-	-	-	-	.27**	.11	.28**	.35**	.15*	.12*	-.12
13. Overall SC	-	-	-	-	-	-	-	-	-	-	-	-	-	.28**	.35**	.42**	.33**	.26**	.16**
14. Peer Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.34**	.33**	.68**	.26**	.07
15. Faculty Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.56**	.27**	.55**	.10
16. Classroom Comfort	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.42**	.34**	.04
17. Isolation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.21**	.09
18. Empathetic Faculty	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.12
19. Final Grade	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Correlation is significant at the 0.05 level (2-tailed)*

***Correlation is significant at the 0.01 level (2-tailed)*

Tolerance. Collinearity statistics were performed as part of the multiple regression analysis. Tolerance was calculated for each variable. The formula for tolerance is $1\text{-}R^2$ for each variable. Tabachnick and Fidell (2007) state that if the value for each variable is very low (near 0), then this result indicates that there are multiple correlations with other variables that are high, and this result would indicate multicollinearity. The result of this analysis indicates that this assumption has not been violated and no sign of multicollinearity is evident (see Table 16).

Variance Inflation Factor (VIF). The VIF statistic was calculated. The guidelines provided by Tabachnick and Fidell (2007) suggest that a large VIF (greater than 10) is a cause for concern and a variable with that outcome should be removed from the model. For the current model the VIF values are well below 10 (see Table 16). These results indicate that there is not a multicollinearity concern within the current model.

Table 16

Collinearity Statistics: Tolerance

Variable	Tolerance	VIF
Final Grade in Course	0.910	1.099
Self-reported High School GPA	0.831	1.204
Verbal Self-Concept	0.983	1.656
Academic Self-Concept	0.843	2.072
Problem Solving Self-Concept	0.985	1.372
General Self-Concept	0.968	1.567
Perceived Peer Support	0.971	2.144
Perceived Faculty Support/Comfort	0.978	2.061

Table 16 (cont'd).

Classroom Comfort	0.980	1.906
Perceived Isolation	0.963	2.188
Empathetic Faculty Understanding	0.966	1.666
Employment Status	0.999	1.094
Collapsed Race/Ethnicity	0.999	1.102
Gender	0.939	1.276
Educational Degree Goal	0.992	1.251
Number of Dependents	0.994	1.497
Social Class	0.999	1.108
Age	0.989	1.554

Model of Final Course Grade

The survey data were transformed in the following ways. First, the race/ethnicity variable was divided into two groups (Group One: Students who identified as White or Caucasian; Group Two: Students who identified as a Student of Color). Second, participants were divided into groups according to their educational degree aspirations (Group One: No degree plans, or None; Group Two: Vocational, Certificate, Associate's Degree, or 2-year Degree; Group Three: Bachelor's Degree, or 4-year Degree; Group Four: Master's Degree; Group Five: Doctorate, Medical, Law Degree, or Professional Degree; Group Six: Missing Data). Missing values were excluded pairwise so that the data were excluded only from calculations involving the variable for which there was no score. The unstandardized regression coefficients (B) and intercept, the standard error of

the unstandardized regression coefficients (SE B), and the standardized regression coefficients (β) are provided in Table 17.

After the variables in step 1 (High School GPA, Number of Developmental Education Courses) were entered, the overall model explains 4.7% of the variance in final course grade. After the independent variables were entered in step 2, an additional 13.7% of the variance in final course grade, even when the effects of high school GPA and number of developmental education courses required were controlled for statistically. With all independent variables in the equation, the model of final course grade was statistically significant [$R^2 = .184$, $F(18, 161) = 2.023$, $p = 0.011$]. It is important to note that the value of 18.4% includes all the variables from both steps of the model, not just those entered in the second step. The R^2 change value of 0.137 indicates a majority of the variance in a student's final course grade in an English developmental education course is predicted by the psychosocial achievement variables (i.e., self-concept and sense of belonging) and the demographic variables thought to contribute to the model. This is a statistically significant contribution to the model at the $p = 0.05$ level.

Table 17

Predicting Final Course Grade: Multiple Regression

Variable	B	SE B	β
High School GPA	0.102	0.08	.102
Number of DE courses	-0.157	0.113	-0.104
Verbal Self-Concept	-0.176	0.090	-0.179*
Academic Self-Concept	0.211	0.105	0.210*
Problem Solving Self-Concept	-0.248	0.121	-0.171*

Table 17 (cont'd).

General Self-Concept	0.214	0.096	0.198*
Perceived Peer Support	0.021	0.132	0.016
Perceived Faculty Support/Comfort	0.051	0.144	0.036
Classroom Comfort	-0.018	0.107	-0.017
Perceived Isolation	-0.008	0.127	-0.006
Empathetic Faculty Understanding	0.009	0.145	0.005
Employment Status	-0.219	0.179	-0.091
Collapsed Race/Ethnicity	-0.182	0.216	-0.063
Gender	0.225	0.184	0.099
Educational Degree Goal	0.064	0.108	0.047
Number of Dependents	0.084	0.104	0.070
Social Class	-0.094	0.089	-0.079
Age	0.006	0.016	0.035

* $p<0.05$

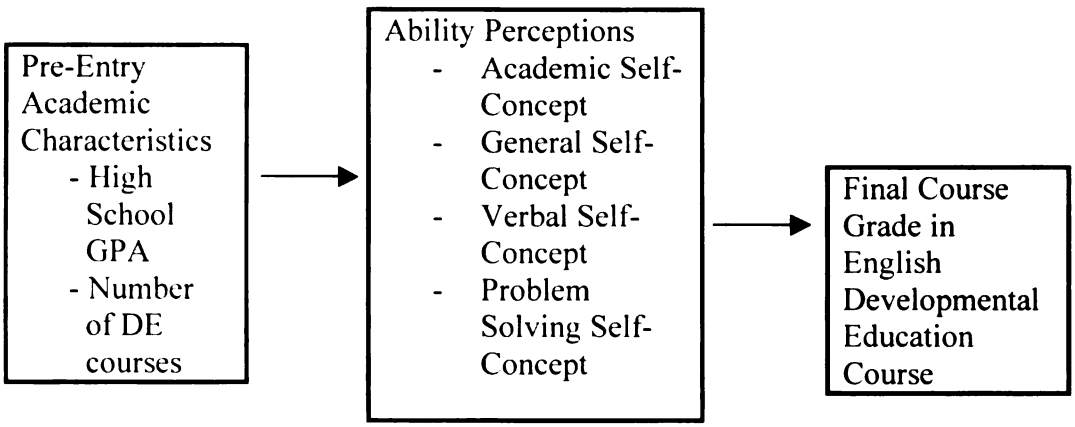
The standardized regression coefficients (β) value, or beta, explains the number of standard deviations that the outcome will change as a result of one standard deviation measured in standard deviation units so that all variables are directly comparable (Tabachnick & Fidell, 2007). Each of the different variables has been converted to the same scale so that comparison can be made. The unstandardized regression coefficients (B) values provide information about the relationship between the final course grade and each of the individual predictors in the model. Additionally, B values explain to what degree each predictor impacts the outcome when controlling for all other predictors.

Four significant predictors were found in the model. Two of the predictors, academic and general self-concept, were positive and significant at the 0.05 level. The other two variables that were significant, verbal and problem solving self-concept were negative and significant at the 0.05 level. The beta values reported in Table 17 represent the unique contribution of each variable, when the overlapping effects of all other variables are statistically removed (Tabachnick & Fidell, 2007). As shown in Table17, student's self-concept measures emerged as significant predictors of student's final course grade in the developmental English course. When the variance explained by all other variables in the model was controlled for, Academic Self-Concept ($\beta = .21$) made the strongest unique contribution to the amount of variance in the final course grade. The beta indicates that the relationship between academic self-concept and final course grade was 0.21. General Self-Concept ($\beta = .198$) made the second strongest contribution. The beta indicates that the relationship between general self-concept and final course grade was 0.198.

The t-test associated with the B value measures whether the predictor is making a significant contribution to the model. The amount of variance explained by Academic Self-Concept [$t(281) = 2.015$, $p = 0.046$] and General Self-Concept [$t(281) = 2.227$, $p = 0.027$] each made a statistically significant unique contribution to the model. Total Verbal Self-Concept [$t(279) = -1.946$, $p = 0.05$] and Total Problem Solving Self-Concept [$t(279) = -2.052$, $p = 0.042$] each made a statistically significant contribution to the model. However, both verbal and problem solving self-concept had a negative contribution to the final course grade, i.e., as verbal self-concept and problem solving self-concept had an inverse relationship with final course grade. The two self-concept

variables that were negatively contributing to the model also have correlations (see Table 15) that are negatively associated with the dependent variable. There was a small negative correlation between Verbal Self-Concept and Final Course Grade (r = -0.03, n = 280, p = 0.61). There was also a small negative correlation between Problem Solving Self-Concept and Final Course Grade (r = -0.12, n = 280, p = 0.06).

Figure 3. Model of Developmental Education Course Grade with Significant Predictors



From the magnitude of the t-statistics it should be noted that the academic and general self-concept measures had a similar impact on the dependent variable. The magnitude of the t-statistics for the verbal and problem solving self-concept also had a similar negative impact on the dependent variable. The subscales for Sense of Belonging did not predict the final course grade for the developmental education course. In addition, the demographic variables entered into the model did not predict the final course grade.

Conclusion

This chapter presented the findings from the survey data collection. A hierarchal multiple regression procedure was utilized to determine how much of the total variance in final course grade was explained by psychosocial achievement characteristics (self-concept and sense of belonging) and demographic characteristics (employment, race/ethnicity, gender, educational goal, gender, number of dependents, social class, and age). Results from the hierarchical multiple regression suggested that the overall model was statistically significant, but only explained 18.4 % of the total variance in the final course grade. Given that the model explained a small amount of variance, it is suggested that there are other moderating factors affecting students' final course grade in the developmental education course.

The multiple regression procedure was also used to investigate the contribution that psychosocial achievement characteristics and selected demographics contributed to the model of developmental education final course grade. The four self-concept variables were the only statistically significant predictors in the model. Thus, self-concept affects a student's final course grade in the developmental education course to a greater degree than sense of belonging and demographic variables. The findings presented in this chapter will be discussed further in Chapter 5.

CHAPTER FIVE

DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS

This chapter presents a discussion of the findings of this study. The conceptual framework presented in Chapter 1 is used to explore the relationship of academic self-concept and final course grade for students in the developmental English course. Limitations of this research and recommendations for future research are reviewed. Finally implications for practice are discussed.

The purpose of this study was to determine the relative importance of psychosocial achievement characteristics (i.e., academic self-concept and sense of belonging) and demographic variables (student's educational degree goal, number of dependents, social class, race/ethnicity, age, gender, and employment status) in explaining the final course grade in a developmental English course. The findings indicate that (1) the model of final course grade was significant, but only explained a small amount of variance; (2) academic self-concept and general self-concept were significant and positive predictors of the final course grade; (3) verbal self-concept and problem solving self-concept were significant and negative predictors of final course grade; (4) sense of belonging did not have a significant contribution to the final course grade; and (5) the demographic variables included in the model did not significantly predict the final course grade or have strong unique contribution to the model.

The overall multiple regression model was significant, indicating that the joint set of predictor variables explained a significant proportion of the total variance. However, the results of this study also indicated that sense of belonging and demographic variables were not significant predictors of students' final course grades. According to the model,

only academic variables impacted the student's final course grade. Consistent with previous research on community college students (Napoli & Wortman, 1998), academic integration significantly affects a student's GPA, while social integration for community college students does not impact GPA. Unexpectedly, there was no relationship between faculty and student interaction in the model for final course grade. Strauss and Volkwein (2004) and others (see Gigliotti & Gigliotti, 1998; Jacoby, 2006) found that community college students' interaction with faculty inside the classroom significantly impacted student success. In fact, Gigliotti and Gigliotti found that students' perceived ability to interact with professors was seen by students as critical for their success at passing courses as well as for grades achieved. Unlike previous investigations (Kreysa, 2006-2007) no relationship was found between common demographic predictors and final course grade. The use of demographic variables and sense of belonging did not fully explain the academic success of developmental students in this sample.

Relationship to Academic Achievement

Academic and General Self-Concept

Of the variables measuring academic integration, two were significant and positive in the model of final course grade. In line with previous research (Gerardi, 1990; Reynolds, 1998), students' academic self-concept and general self-concept were related to their academic achievement and GPA. While context and environment impact the influence that self-concept has on the student, in general a positive relationship has been demonstrated between academic self-concept and achievement (see Marsh, 1990, Trautwein et al., 2006). Consistent with these results, Gerardi found academic self-concept was the best predictor of academic success when compared with other variables.

While context and environment impact the influence that self-concept has on the student, in general there has been a positive relationship between academic self-concept and achievement (Caya, 2002; Chapman, Tunmer, & Prochnow, 2000; Marsh, Trautwein, Ludtke, Koller, & Baumert, 2005). Based on Marsh, Byrne, & Shavelson's (1992) work on multidimensional, hierarchical self-concept there is strong support to approach this construct as having multiple dimensions and being multifaceted versus a global measure of the self; indicating that there are multiple dimensions of a persons self-concept that relate to their academic performance and global self-concept. Academic self-concept is clearly differentiable from general self-concept and that academic self-concept is more highly correlated with academic achievement and other academic behaviors than is general self-concept (Marsh, 1990). However, the results of this study suggest that academic and general self-concept are more closely related than initially determined. Although academic self-concept had the strongest, unique contribution to the model, general self-concept was also a positive and significant predictor in the model. These results seem to indicate that the difference between academic and general self-concept is not as separate as the discussions presented by Marsh would suggest. Instead, there is an overlap in the connection between academic and general self-concept such that both constructs of self-concept predict the final course grade in the current model. This overlap means that students who indicate a high self-concept might include in the definition some of the factors used to assess the other forms of self-concept measured.

Similar to the research conducted by Richardson and Sullivan (1994) for students who were required to take remedial classes, academic confidence was the strongest predictor of freshman grade point average. Clearly, finding ways to positively influence

students' academic self-concept in the developmental education course at the community college brings about increases in students' final grades. Previous research (House, 1992) conducted at the 4-year institution found similar results and in follow-up investigation demonstrated that academic self-concept was also significantly related to overall persistence at the institution.

Academic self-concept is an important area in which to assist students and help the students improve because, as the results in this study indicate, as academic self-concept increases so does the student's final course grade. A positive self-concept of academic ability helps students feel more satisfied, which in turn leads to their taking more courses and performing better (Gigliotti & Gigliotti, 1998). Weissman, Bulakowski, and Jumisko (1997) comment about the importance of building self-confidence and self-concept in developmental education students. They found that as faculty members worked with students to improve their self-concept, faculty indicated that the students had more drive to persist in the community college.

The building of confidence and self-concept allows students to improve on the successes in the developmental course and take that confidence into the college-level courses. Faculty who work with underprepared students believe that success in developmental education classes enhances motivation and confidence so that students are likely to enroll in college-level courses and continue at the community college (Weissman, Bulakowski, & Jumisko, 1997). The community college experience has fostered a sense of meaning and confidence in their abilities not evident in their recollections of prior schooling (Dirkx, Smith, & Amey, 2001). In addition, the developmental courses tend to have small class sizes and more individualized instruction

and increased social interaction (Fielstein & Bush, 1998). As a result, underprepared students are initially protected against academic confidence issues and dissatisfaction with the college environment. Developmental education courses help students build a new academic resume with positive experiences instead of the previous experiences with failure. Community college developmental education programs can make a difference for these students and help them turn their lives around and get on track academically (Dirkx et al., 2001).

Previous research (Marsh et al., 1992) also found academic self-concept to be a positive predictor of academic achievement. Consistent with the theoretical framework described by Marsh (1990; 1993), these findings show that academic and general self-concept are related to final course grade, further supporting the link between academic self-concept and academic achievement. When students' need for competence is met, they believe that they can determine their success, understanding what it takes to do well and to succeed academically (Fredricks et al., 2004). The results of this study are important because of the clear demonstration of a positive relationship between academic and general self-concept with academic performance of developmental education students. The significant and positive relationship between academic self-concept and GPA is important because GPA is one of the key criteria of success for college students (Lounsbury, Huffstetler, Leong, & Gibson, 2005).

Verbal and Problem Solving Self-Concept

Contrary to the expected results of the study, problem solving self-concept and verbal self-concept were negatively associated with academic achievement and final course grade. A possible explanation for the present results is that the academically

underprepared students in this sample might have had unrealistic expectations for their verbal and problem solving abilities. Research indicates that underprepared students tend to leave high school with unrealistic self-appraisals of their abilities and the academic demands of further schooling (Trippi & Stewart, 1989). Many of the students in this sample just left high school in the last year, and these students may have an inflated belief in their verbal and problem solving abilities. Trippi and Stewart suggest that only realistic appraisals of preparation and performance outcomes are significantly and positively related to student academic outcomes. Dismissing or misjudging weak performance may represent a denial of objective reality, resulting in an unrealistic self-appraisal of ability (Fielstein & Bush, 1998). Burley et al. (2001) also point to unrealistic expectations demonstrated by developmental education students. These unrealistic expectations are evidenced by the negative association with final course grade for the verbal and problem solving self-concepts.

Beyond students making unrealistic judgments of their abilities in courses, students might actually have difficulty understanding what it means to be a learner. The students enrolled in these courses have a previous history with difficulty in this academic subject area. The students might have trouble knowing themselves as learners and not know how to evaluate their abilities in the classroom. These unrealistic expectations take on the form of inaccurate evaluations of themselves as a learner in the classroom. Kaufman and Feldman (2004) investigated the formation of a college student identity and found that one particularly important piece of the identity is the belief that just being in college appears to give students a sense of being intelligent and knowledgeable. This knowledge could be indicated by the students in the current study having a positive

academic and general self-concept. The students have a higher sense of self-concept because they have made it into the college environment. As such, attending college is a symbolic marker that suggests both to oneself and to others that one has a certain degree of intellectual competence and knowledge (Kaufman & Feldman, 2004).

Students may not have the ability to think of themselves as a learner in the context of different academic areas because they do not know what it takes to be in the classroom and be successful. McGuire (2006) suggests that underprepared students enter college without knowing how to learn or how to study, and therefore have difficulty succeeding in courses that require critical thinking. The reasons for this lack of knowledge about how to learn can often be traced to their high school experiences (McGuire, 2006) and other aspects of their developmental history. When a student encounters problems early on in learning, the normal trajectory is that the student will face even more challenges later in their learning (Clark, 1997). If early training goes wrong, then the network is often unable to recover (Clark, 1997) or at the very least needs extra support to assist in the development of certain abilities.

Overestimating one's ability may result in unfounded academic confidence, encouraging students to take on academic challenges for which they may feel capable, but in actuality lack sufficient academic talents (Fielstein & Bush, 1998). Grimes (1997) found an unexpected relationship between self-esteem and persistence in her study of underprepared community college students when compared to college-ready students. The non-persisting students in her study had higher self-esteem than the students who persisted to the next semester. She found an inverse relationship between students' self-esteem and their GPAs. Students with higher self-esteem were the same students with

lower GPAs over one semester. One explanation provided for these results is that the students may view inflated self-esteem as a defensive mechanism and unrealistically self-appraise their ability based on group ratings. The ability grouping of students in the developmental course may reflect the negative association between verbal and problem solving self-concept and final course grade. According to the "Big Fish Little Pond Effect" (BFLPE), academic self-concept will depend on a student's own academic ability and the ability levels of other students within the same class (Marsh, 1984). The impact that this frame of reference has on academic self-concept can be seen in courses where the ability levels of the students are averaged across ability groupings, so that in a developmental course where students are roughly in the same ability group, BFLPE will become a factor. Students in these courses based on low ability grouping will have better self-concepts (Marsh, 1990).

BFLPE seems to be a factor in the current study, especially when looking at the verbal and problem solving self-concepts. Marsh (1990) found that being in a low ability group will produce a higher academic self-concept, but a somewhat lower level of subject specific student ability. In fact, when developing the model of BFLPE, Marsh discovered a negative association between student ability and academic self-concept. The students in this study most likely used the immediate social context as their frame of reference. The relatively low-achieving students had higher perceptions of their competencies in a low group or track (Stipek, 1998). This ability grouping has a positive impact on relatively low achieving students' perception of their abilities and competencies. The students compared themselves to other academically underprepared students, such as the other

students in developmental education courses, and seem to have a false sense of verbal and problem solving self-concept.

Previous experiences with academics impact students' self-concept as well as social comparison. Stipek and Mac Iver (1989) point to a connection between self-concept and specific academic disciplines. They found that the greater declines in perceived competence suggest that the declines may be explained primarily by experiences tied to certain academic subjects (Stipek & Mac Iver, 1989). Students in the developmental English course have demonstrated previous academic problems in this subject area. According to this connection, the association between verbal and problem solving self-concept and final grade is due to the fact that the students experience difficulty in the English domain. The participants in this study demonstrated an inverse relationship between their verbal and problem solving self-concept, and their final course grades.

Social Comparison

Sense of Belonging

Sense of belonging factors in this study did not predict the final course grade of students in the developmental English course. It was expected that students' sense of belonging would impact final course grade, especially when looking at the subscales related to faculty and student contact. The literature on student persistence in the community college (Dirkx et al., 2001; Napoli & Wortman, 1998; Pascarella & Terenzini, 2005) indicates a strong connection between faculty contact and student persistence. Sense of belonging was significantly and positively correlated to the academic self-concept measures in this study but was not correlated with final course

grade. It may be that the measure of sense of belonging is a factor in a student's academic self-concept but not a significant factor in a student's final course grade. In this case, sense of belonging acts as a mediator of academic self-concept, but not as a predictor of final course grade. Since final course grade can be seen as an eventual measure of persistence, it seems that sense of belonging is not predictive of student persistence in this study. These data do not validate the assumptions found in the persistence literature that sense of belonging of community college students is associated with student persistence. Sense of belonging is still an important construct to consider since it is related to a student's self-concept and self-concept was found to be predictive of final course grade.

Another factor that contributes to a lack of significance for the sense of belonging factors is the large number of adjunct faculty teaching the developmental English courses at MWCC. According to Achieving the Dream (2007) a large number of the courses that were studied employed adjunct faculty. Research on part-time faculty at the community college (see Jacoby, 2006) indicates that a reliance on part-time faculty reduces student graduation rates. The study by Jacoby found that community college graduation rates decrease as the proportion of part-time faculty increases. While the current study did not investigate graduation rates, the relationship between part-time or adjunct faculty and these is still relevant. The findings in this study that indicate sense of belonging and faculty-student interaction are not related to final course grade could develop because of a reliance on adjunct faculty. The students do not have a chance to associate with their professors as often and the professors may not have a strong connection with the campus themselves.

The sense of belonging results in the current study are not altogether different from the literature regarding community college students and social integration, specifically with student-student interaction. Previous research (see Nora, Attinasi, & Matonak, 1990) found similar results that academic self-perception, and not social integration, had a significant direct effect on student success at the community college. In fact, Nora et al. found that social integration was actually negatively associated with persistence for community college students. Similar to the findings in the current study, Fox (1986, as cited in Bers and Smith, 1991) also found academic integration to be a significant influence on persistence of underprepared students at a commuter institution, and social integration was non-significant for that group. Unlike 4-year institutions where social ties and networks remain relatively stable over several semesters, social networks at the community colleges are less likely to persist over time (Napoli & Wortman, 1998). It is important to note that the studies mentioned classify faculty-student interaction as an academic integration measure and not part of social integration. The sense of belonging instrument utilized in this study included the faculty-student interactions as part of the social integration model.

Limitations and Future Research

Although the findings in this study expand on the relationship between academic self-concept and final course grade for underprepared students, this study has several limitations that should be noted. First, this study is limited in its generalizability since the research was conducted at one institution in only one academic area. Future research should attempt to involve a sample with multiple institutions and multiple academic disciplines. Involving students across disciplines may help to further understand the

academically underprepared student and the different needs based on academic content. Second, as stated in Chapter 3, the sense of belonging measure used in this study was developed and tested on first-year students at a 4-year institution. It is possible that the measure does not translate to the community college student. Future research should work to investigate whether the instrument created by Hoffman et al. (2002) is the best measure to use with the community college population. Third, the timing of the study may have impacted the perceptions of the students involved.

As mentioned previously, this study only included participants from one institution. Although the sample was representative of the developmental education population at MWCC, caution should be used when generalizing the results. Future research should include students from different community colleges, urban, suburban, and rural in order to increase the generalizability of the results. Also, the inclusion of students from both urban and rural community colleges could increase the understanding of the experience of developmental education students at the community college. Future research should also expand this study to include the writing developmental education courses to capture the students who do not overlap with the reading courses studied. This expansion may also include math developmental education as a separate study. The math self-concept scale could be included in a study that compares the outcomes of English and math developmental students in order to gain an understanding of the differences these deficiencies make in persistence of community college students.

This study was completed toward the end of the fall semester at MWCC. It is possible that some student attrition may have already occurred. Hurtado and Carter (1997) indicate that when sense of belonging is studied during a student's career may

affect the results of the study. The students who remained in the course until the tenth week of the semester when data were collected could have higher commitment to the institution and self-concepts from having made it through more than half of the semester. Future research should attempt to capture students earlier in the academic year in order to get a complete profile of the students who enroll in developmental courses. Additionally, students enrolled during the winter semester should be surveyed in order to understand the differences between the students who begin in the fall and those who start developmental education in the winter. MWCC continually sees a decline in GPA for developmental education students during the winter semester (Foundation, 2005).

The use of the student's final course grade as a precursor to persistence is a limitation in the study. House (1993) suggests that the use of course grades as the dependent measure is a possible limitation to studies of competence and persistence. He states that course grades may reflect a number of student characteristics in addition to competence; attributes such as the effort and persistence required to complete homework assignments and exhibit classroom learning are different from examinations. On the other hand, Kreysa (2006-2007) points to the importance of studying GPA for developmental students. He suggests that an increase in grade point is a positive influence on student persistence, and improving developmental students' GPAs helps the students improve academically overall. Future research should implement a longitudinal study design of developmental education student persistence rather than just following one semester of study.

A longitudinal study of the students at MWCC could be helpful to understand what changes in self-concept and sense of belonging occur once students move on from

the developmental education courses. Seeing how students perform in the college-level English course and how their self-concept may change as a result of being in a non-developmental classroom would provide further insight into the relationship of sense of belonging and academic self-concept. It is possible that as students move from the comfort of the developmental classroom to more diverse courses that the sense of belonging and self-concept of previously underprepared students could be impacted. Following up with these students to see who is still on track with their educational goals could provide a broader scope to the study and allow for a more direct measure of persistence at the community college. The opportunities to expand on this study are many and could prove fruitful in providing useful information to academic advisors and student affairs professionals who work with students in developmental education.

Implications for Practice

Despite these limitations, the findings in the study do indicate several implications for practice. The results of this study are useful to program planners within the community college and faculty who work with underprepared students. Programs designed to identify students with low academic self-concept or expectancies provide experiences and counseling to improve those attitudes to benefit college persistence (House, 1992). A greater understanding regarding the impact that self-concept has on final developmental course grade provides another avenue to assist students who enter the community college academically underprepared. Many of the students enrolled in developmental education could benefit from improvements to their academic self-concept. Improvements to the self-concept of these students contribute to increases in course grade and, eventually, to persistence in college-level courses.

The implications for practice presented are separated into three sections. The first section focuses on improving academic self-concept within the developmental education classroom. The second section suggests an avenue to connect students to the larger campus community through the use of campus mentors. Lastly, it is suggested that the community college bridge the connection with the local high schools in the area to improve the transition for students just leaving the high school and attending the community college through the summer bridge program already in place at the institution.

Improving Self-Concept in the Classroom

Research suggests that the attainment of a positive academic self-concept impacts multiple academic aspects of the student's life. Marsh (1993) lists academic behaviors, academic choices, educational aspirations, and subsequent academic achievement as the main areas impacted by increases in academic self-concept. The developmental curriculum provides protection against what would otherwise be difficult coursework for underprepared students (Fielstein & Bush, 1998). These programs increase the likelihood that these skills will be used by promoting a high degree of hope and self-confidence in students about their ability to surmount whatever difficulties they may face (McGrath & Van Buskirk, 1999). The linking of perceived competence and experiences is especially important because the students in this study have an academic deficiency and are enrolled in developmental education courses.

It is possible to improve students' academic self-concept within the developmental classroom and through the academic services on campus. Programs such as developmental education should be designed to help students reduce their sense of

anxiety and uncertainty by enhancing their ability to manage difficult situations (McGrath & Van Buskirk, 1999). Working with students to improve their academic self-concept is especially important in breaking a self-perpetuating cycle of low performance exhibited by many underprepared students (Grimes & David, 1999). When a student's academic self-concept increases, the student is more likely to approach achievement situations with confidence and engage in the activity willingly and persistently (Brophy, 2004). However, if academic self-concept decreases, the students will doubt their capabilities for succeeding, try to avoid the situation, or easily give up when they encounter frustration or failure (Brophy, 2004).

Building academic self-concept begins with providing students with experiences where they have the opportunity to be successful, exposing students to successful models, and delivering positive feedback (Schunk & Ertmer, 2000). Students who are motivated with high aspirations and academic self-concept, goal-oriented, and future-minded have the best chance for persistence beyond the first year at the community college (Hawley & Harris, 2005-2006). Successful interventions assist students in assessing progress toward planned goals and objectives (Adelman & Taylor, 1983). Faculty need to work with students to set and strive for reasonable proximate goals and to approach larger goals through smaller steps in the process (Brophy, 2004). The work of improving self-concept within the classroom should focus on the appropriate amount of challenge and support in academic tasks and realistic self-appraisals through the development of goals and providing positive feedback to students. These goals should be designed in ways which not only highlight the student's effectiveness, but also the role the student is now playing

in making decisions and which relate the outcomes back to the student's intrinsic reasons for pursuing outcomes (Adelman & Taylor, 1983).

The last suggestion for improving self-concept in the classroom is through the type of feedback faculty provide to the students. The classroom should be a safe environment where students are able to ask questions and approach instructors. Although sense of belonging was not significantly related to the model of final grade, the student responses on the survey indicate a supportive classroom environment, proving positive feedback helps students achieve success. Brophy (2004) describes an effective method to working with a student who is struggling. He suggests communicating using positive expectations and providing a specific suggestion about how to proceed, without giving the answer or doing the work for the student. In addition, making positive statements that help students appreciate the development of their academic abilities by accepting challenges and applying effort helps to improve academic self-concept (Brophy, 2004).

Campus Mentors

Improving academic self-concept does not occur only in the classroom; students may receive academic counseling and advising from support staff on campus. Connecting the students in the developmental classroom with mentors from the campus community is one way to help students become more academically integrated. These mentors should work with students in an academic realm to help students improve on their skills for the classroom. The networks of support offer numerous settings where students can have close contact with mentors, can practice defining problems, and can try out new behavior and new identities (McGrath & Van Buskirk, 1999). "The problem is not so much that low-income students lack ambition, it is that these students have not received the

socialization, encouragement, or mentoring to take full advantage of higher education" (Rendón, 1999, p. 197). The identification of specific psychosocial achievement characteristics can assist in developing supportive micro-institutional environments for this group of students within institutions (Grimes & David, 1999).

Programs established on campus to work specifically with developmental populations, such as providing opportunities for frequent informal interaction and providing a mix of support, information, and advocacy, create social capital (McGrath & Van Buskirk, 1999). This social capital, in the form of dense networks of relationships, maximizes the types of supportive interactions that promote self-management skills among students and helps translate these supportive interactions into emotional capital which generates feelings of self-concept (McGrath & Van Buskirk, 1999). Since a high percentage of the developmental education courses at MWCC are taught by adjunct faculty (ATD, 2007), connecting students with other contacts on campus creates another way to develop student self-concept and campus connection. Strong networks of social support provide a path for involvement, which enhances the likelihood of student involvement and commitment (McGrath & Van Buskirk, 1999). Dense networks of support offer students a mix of information, pragmatic advice, emotional support, and advocacy (McGrath & Van Buskirk, 1999).

Connection with Local High Schools

Community colleges need to establish an open dialogue and a working relationship with high schools in the area to set the foundation for helping students at the community college and assist with their transition. A large number of students in this study were 18 or 19 years old and entering the community college almost immediately

after graduating from high school. Community college developmental education faculty and staff should collaborate with the secondary school leaders in the area to make sure that students have the proper preparation when entering the community college. Spann (2000) suggests that an increase in communication between the community college and high schools should include a discussion of the knowledge, skills, and attitudes essential for successfully entering a regular degree or certificate program. In addition, Spann indicates that the state department of education needs the information of which high school feeder systems are producing students that possess the basic academic skills and attitudes essential for college success so that curriculum at other schools can be modified to produce students with basic academic skills.

Knowing students' academic self-concept and how they relate to their initial expectations regarding their success in college could help student affairs professionals conceptualize developmental obstacles and design proactive interventions to support students in their transition from high school to college and help them attain their academic goals (Boyd et al., 2003). MWCC began a summer bridge program for high school students transitioning to the community college during the summer of 2005. A very small number of participants from this study (10 participants) took the summer course. This transition program targets students from the area who are expected to begin at the community college during the fall semester. Attempting to target the students who are academically underprepared and making the transition to the community college is necessary. Summer bridge courses seek to alleviate the anxiety associated with entering college and to provide high-risk students with an understanding of what is expected of them in the community college setting. Since many community college students have

previously experienced limited academic success, one important goal of the student success course is to help the students develop positive attitudes about learning and confidence in their abilities (Stovall, 2000).

MWCC currently requires students to enroll in a First Year Success course, but most students take the course concurrently with the developmental education courses. As students go through this process of development, the way they think, their self-concept, and the lens through which they view the world change (Crews & Aragon, 2004). Encouraging students to enroll in the summer course, separate from other courses, may give the students the ability to develop their academic self-concept and better prepare them for the expectations in the developmental classroom.

Grimes and David (1999) state that successful programs to assist underprepared students must include bridge programs to ease the transition from high school to college or work to college, which may be the case for community college students. In addition, these bridge programs can help students develop positive and realistic evaluations of their abilities in academic courses. Developmental education literature indications that many students enter developmental courses with negative attitudes about school, and faculty have a difficult time motivating them to commit to their coursework (Kozeracki, 2005). Low self-concept can decrease motivation and lead to more focus on the external contributions to successes and failure. As stated in Chapter 1, underprepared students are more likely to attribute their success and failure to sources outside of their control. If underprepared students attribute poor performance to low ability, this attribution will negatively influence their motivation to invest effort in a similar task in the future and will perpetuate a cycle of failure (Grimes & David, 1999).

Conclusions

The purpose of the current study was to explore the relationship between academic self-concept and sense of belonging in the final course grade of students in a developmental English course so that community college faculty and staff can more precisely implement developmental programs that heighten the probability of academic success for underprepared learners. In order to investigate this potential relationship, the following research question was explored: what is the relative importance of psychosocial achievement characteristics (i.e., sense of belonging and academic self-concept) and demographic variables in the final course grade in a developmental education English course at the community college?

The results of the study support the connection between academic and general self-concept and academic achievement presented by Marsh (1990; 1993). The results also indicate that the students had unrealistic self-appraisals of their verbal and problem solving self-concept such that higher evaluations in these areas occurred in concert with lower final course grades. An unexpected result of the study was the lack of connection between student and faculty interaction in the final course grade as measured by the subscales in the sense of belonging instrument. As a result, this study refutes the connection between sense of belonging and academic achievement. Finally the results illustrate the importance of academic integration at the community college for developmental education students.

Students need to meet institutional minimum standards of academic performance. The results of the current study indicate that achieving both social and academic integration at the community college may not be as important to academic achievement.

Ultimately academic integration is more important so that students meet the minimum standards to remain at the community college. Academic integration is a necessary condition for persistence. For academically underprepared students, improving academic performance is imperative to their ability to continue at the community college and persist to the college-level courses.

APPENDIX A – DEMOGRAPHIC QUESTIONNAIRE

Demographic Information

1. Age on November 1, 2007: _____

2. Sex:

   Female Male Trans

3. What is your racial or ethnic identification?

   White/Caucasian Non-Hispanic
   Black/African American Non-Hispanic
   American Indian/Alaskan Native Asian/Pacific Islander (Asian American)
   Hispanic/Latino
   Multiracial
   Other
   International Student
   I prefer not to respond

4. Did you graduate from high school or complete a GED?

   High School GED

5. In what year did you graduate from high school or complete your GED?

   _____

6. What was your high school GPA?

4.0 or higher	2.5-2.99	1.0-1.49
3.5-3.99	2.0-2.49	0.0-.99
3.0-3.49	1.5-1.99	

7. What is your current major at MWCC: _____

8. Is English your first language?

   Yes No

9. When will (or did) you complete your first semester at MWCC:

   Winter/Spring 2007 or earlier Summer 2007 Fall 2007

10. Is this your first time in college?

Yes No

11. Is this your first time in courses at Mid-Western Community College?

Yes No

12. How old were you when you decided to go to college?
Since I can remember
Since elementary/middle school
Since high school
After graduation from high school
I don't know

13. Does your family support your decision to attend college?

Yes No

14. Enrollment

Full-time (at least 12 credits) Part-time (less than 12 credits)

15. Other courses currently enrolled in:

16. How are you financially supporting yourself while in college?

17. Do you have a job outside of school?

Yes No

If yes, how many hours do you work a week

0-5	21-25	more than 40
6-10	26-30	
11-15	31-35	
16-20	36-40	

18. Did you or are you take FYS 105?

Yes No

19. How frequently have you visited with your academic advisor over the past semester?

1
2
3
4 or more

20. How frequently have you visited with a faculty member outside of class over the past semester?

1
2
3
4 or more

21. How many hours a week do you use the center for student success (CSS)?

1
2
3
4 or more

22. What is the highest academic degree **you** plan to earn?

None
Certification
Vocational (2-year) Degree
Associate's (2-year) Degree
Bachelor's (4-year) Degree
Master's Degree
Doctorate
Medical Degree
Law Degree
I do not know yet

23. What is the highest level of education that your **mother** completed?

Did not finish high school
High school graduate or GED
Some college
Vocational Certificate
Associate's Degree
Bachelor's Degree
Master's Degree
Doctorate Degree
Medical Degree
Law Degree
I do not know

24. What is the highest level of education that your **father** completed?

Did not finish high school
High school graduate or GED
Some college
Vocational Certificate
Associate's Degree
Bachelor's Degree
Master's Degree
Doctorate Degree
Medical Degree
Law Degree
I do not know

25. Which of the following best describes your social class growing up?

Upper Class
Upper-Middle Class
Middle Class
Working Class
Low income or poor

26. Number in household

1
2
3
4 or more

27. Number of dependents (children that you are responsible for)

1
2
3
4 or more

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INSTRUMENT

All information supplied will be kept strictly confidential

NAME:
DATE:

PLEASE READ THESE INSTRUCTIONS FIRST

This is not a test - there are no right or wrong answers.

This is a chance for you to consider how you think and feel about yourself. **This is not a test** – there are no right or wrong answers, and everyone will have different responses. The purpose of this study is to determine how people describe themselves and what characteristics are most important to how people feel about themselves.

On the following pages are a series of statements that are more or less true (or more or less false) descriptions of you. Please use the following eight-point response scale to indicate how true (or false) each item is as a description of you. Respond to the items as you now feel even if you felt differently at some other time in your life. In a few instances, an item may no longer be appropriate to you, though it was at an earlier period of your life (e.g., an item about your present relationship with your parents if they are no longer alive). In such cases, respond to the item as you would have when it was appropriate. Try to avoid leaving any items blank.

After completing all the items, you will be asked to select those that best describe important aspects – either positive or negative – of how you feel about yourself. Consider this as you are completing the survey.

1	2	3	4	5	6	7	8
Definitely False	**False**	**Mostly False**	**More False Than True**	**More True Than False**	**Mostly True**	**True**	**Definitely True**

1. Overall, I have a lot of respect for myself.

   1 2 3 4 5 6 7 8

2. I have trouble expressing myself when trying to write something.

   1 2 3 4 5 6 7 8

3. I enjoy doing work for most academic subjects.

   1 2 3 4 5 6 7 8

4. I am never able to think up answers to problems that haven't already been figured out.

   1 2 3 4 5 6 7 8

5. Overall, I lack self-confidence.

   1 2 3 4 5 6 7 8

6. I can write effectively.

   1 2 3 4 5 6 7 8

7. I hate studying for many academic subjects.

   1 2 3 4 5 6 7 8

8. I am good at combining ideas in ways that others have not tried.

   1 2 3 4 5 6 7 8

9. Overall, I am pretty accepting of myself.

   1 2 3 4 5 6 7 8

10. I have a poor vocabulary.

    1 2 3 4 5 6 7 8

1	2	3	4	5	6	7	8

Definitely False	False	Mostly False	More False Than True	More True Than False	Mostly True	True	Definitely True

11. I like most academic subjects.

1 2 3 4 5 6 7 8

12. I wish I had more imagination and originality.

1 2 3 4 5 6 7 8

13. Overall, I don't have much respect for myself.

1 2 3 4 5 6 7 8

14. I am an avid reader.

1 2 3 4 5 6 7 8

15. I have trouble with most academic subjects.

1 2 3 4 5 6 7 8

16. I enjoy working out new ways of solving problems.

1 2 3 4 5 6 7 8

17. Overall, I have a lot of self-confidence.

1 2 3 4 5 6 7 8

18. I do not do well on tests that require a lot of verbal reasoning ability.

1 2 3 4 5 6 7 8

19. I am good at most academic subjects.

1 2 3 4 5 6 7 8

20. I am not much good at problem solving.

1 2 3 4 5 6 7 8

Definitely False	False	Mostly False	More False Than True	More True Than False	Mostly True	True	Definitely True

21. Overall, I have a very good self-concept.

1 2 3 4 5 6 7 8

22. Relative to most people, my verbal skills are quite good.

1 2 3 4 5 6 7 8

23. I am not particularly interested in most academic subjects.

1 2 3 4 5 6 7 8

24. I have a lot of intellectual curiosity.

1 2 3 4 5 6 7 8

25. Overall, nothing that I do is very important.

1 2 3 4 5 6 7 8

26. I often have to read things several times before I understand them.

1 2 3 4 5 6 7 8

27. I learn quickly in most academic subjects.

1 2 3 4 5 6 7 8

28. I am not very original in my ideas, thoughts, and actions.

1 2 3 4 5 6 7 8

29. Overall, I have pretty positive feelings about myself.

1 2 3 4 5 6 7 8

30. I am good at expressing myself.

1 2 3 4 5 6 7 8

Definitely False	**False**	**Mostly False**	**More False Than True**	**More True Than False**	**Mostly True**	**True**	**Definitely True**

31. I hate most academic subjects.

1 2 3 4 5 6 7 8

32. I am an imaginative person.

1 2 3 4 5 6 7 8

33. Overall, I have a very poor self-concept.

1 2 3 4 5 6 7 8

34. In school I had more trouble learning to read than most other students.

1 2 3 4 5 6 7 8

35. I get good marks in most academic subjects.

1 2 3 4 5 6 7 8

36. I would have no interest in being an inventor.

1 2 3 4 5 6 7 8

37. Overall, I have pretty negative feelings about myself.

1 2 3 4 5 6 7 8

38. I have good reading comprehension.

1 2 3 4 5 6 7 8

39. I could never achieve academic honors, even if I worked harder.

1 2 3 4 5 6 7 8

40. I can often see better ways of doing routine tasks.

1 2 3 4 5 6 7 8

1	2	3	4	5	6	7	8
Definitely False	**False**	**Mostly False**	**More False Than True**	**More True Than False**	**Mostly True**	**True**	**Definitely True**

41. Overall, I do lots of things that are important.

1 2 3 4 5 6 7 8

42. Overall, I am not very accepting of myself.

1 2 3 4 5 6 7 8

APPENDIX C – SENSE OF BELONGING INSTRUMENT

1	2	3	4	5
Completely Untrue	**Mostly Untrue**	**Equally True and Untrue**	**Mostly True**	**True**

1. I feel comfortable asking a teacher for help if I do not understand course-related material
2. I feel comfortable asking a question in class.
3. I feel comfortable volunteering ideas or opinions in class.
4. If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (i.e. during office hours, etc.)
5. Speaking in class is easy because I feel comfortable.
6. I feel comfortable seeking help from a teacher before or after class.
7. I feel comfortable socializing with a faculty member outside of class.
8. I feel comfortable talking about a problem with faculty.
9. I rarely talk to other students in my classes.
10. I feel comfortable asking a teacher for help with a personal problem.
11. If I miss class, I know students who I could get the notes from.
12. I feel that a faculty member would take the time to talk to me if I needed help.
13. I could call another student from class if I had a question about an assignment.
14. I feel that a faculty member really tried to understand my problem when I talked about it.
15. Other students are helpful in reminding me when assignments are due or when tests are approaching.
16. I feel comfortable contributing to class discussions.
17. I feel that a faculty member would be sensitive to my difficulties if I shared them.
18. I know very few people from my classes.
19. I feel that a faculty member would be sympathetic if I was upset.
20. No one in my classes knows anything personal about me.
21. I have discussed personal matters with students who I met in class.
22. It is difficult to meet other students in class.
23. I have developed personal relationships with other students in class.
24. I invite people I know from class to do things socially.
25. I discuss events which happen outside of class with my classmates.
26. I have met with classmates outside of class to study for an exam.

APPENDIX D – CONSENT FORM

Community College Students' Educational Goals Survey
Participant Consent Form

Because you are a student at Mid-Western Community College enrolled in either ENG 080, ENG 085, or ENG 090, you are being asked to compete three surveys about your academic self-concept, sense of belonging, and your educational goals as well as to provide some information about your self.

Your participation is completely voluntary and will in no way effect the grade you receive in this course. You may discontinue participation at anytime and leave out any questions to which you prefer not to respond. There are no known risks to you in participating in this study.
The surveys should take thirty minutes to complete. Your name will not be attached to your completed survey and therefore your identity will not be revealed. Your privacy will be protected to the maximum extent allowable by law.

After completing all the surveys, you will be asked to voluntarily write down your email address in order to be entered into a random drawing for one of four $50 Amazon.com gift cards as appreciation for your participation. Your email address will not be linked to your specific survey responses. Email addresses will be kept in a separate file and will be shredded as soon as the drawing is complete.

If you have any questions about this survey, please contact Kathryn King, by phone: (919) 681-3145, email: heinmill@msu.edu, or USPS mail: 3104 Broomsedge Way, Durham, North Carolina, 27712. You may also contact Dr. Reitumetse Mabokela, Dissertation Chair, by phone: (517) 353-6676, email: mabokela@msu.edu, or USPS mail: 425 Erickson Hall, East Lansing, MI 48824.

If you have any questions or concerns about your rights as a research participant, please feel free to contact Peter Vasilenko, Ph.D., Director of the Human Subjects Protection Programs at Michigan State University: (517) 355-2180, fax: (517) 432-4503, email: irb@msu.edu, or USPS mail: 202 Olds Hall, East Lansing, MI 48824.

You must be 18 years or older to participate.

I voluntarily agree to participate in this survey

Signature: _____ Date: _____

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