Spring 4-12-2013

Exploring the Construct of Social Integration in a Community College Environment

Scott Mertes
University of Nebraska-Lincoln, sjmertes2002@yahoo.com

Exploring the Construct of Social Integration in a Community College Environment

By

Scott J. Mertes

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Educational Studies

(Educational Leadership and Higher Education Administration)

Under the Supervision of Professor Richard Hoover

Lincoln, Nebraska

April, 2013

Exploring the Construct of Social Integration in a Community College Environment

Scott J. Mertes, Ph.D.

University of Nebraska, 2013

Among current retention models, Tinto's Interactionalist Model has reached near paradigmatic status. When his model has been applied to two-year college settings, the social integration results have been inconsistent. This has led Maxwell (2000) and Deil-Amen (2011) to suggest that a different construct of social integration exists in community colleges, and that this construct may not be related to the traditional construct of social integration in four-year university settings. The current study sought to ascertain whether these two constructs of social integration were related. A random sample of two-year college students were asked to complete a survey consisting of questions aimed at assessing both social integration constructs. In addition, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration constructs. Furthermore, this study investigated whether each of these two constructs differed when interacting with demographic variables including gender and race. Finally, the influence of age on social integration was studied for both constructs of social integration, as well as its potential interaction with program of study (i.e. occupational vs. transfer students). After conducting the analysis, it was found that the two social integration constructs were highly related. In addition, no significant differences were found between transfer and occupational

students on either social integration construct. While significant correlations were found concerning age and social integration, they were all small and explained little of the overall variance. As such, the influence of age on social integration was minimal. However, it was found that social integration, using Tinto's construct, does significantly vary by gender, and that social integration, using the Maxwell (2000) and Deil-Amen (2011) construct does significantly vary when gender interacts with program of study (i.e. occupational vs. transfer students). Future research strategies including longitudinal analysis, regression analysis, investigation of campus ecology variables, and qualitative techniques were all recommended, as was the necessity of institutional-specific research.

Acknowledgements

Completing my doctorate has been the greatest academic challenge of my life. While I certainly am proud of the accomplishment, I couldn't have done it with the love and support of many individuals.

First off, I wish to thank my committee chairperson Dr. Richard Hoover. His support and guidance throughout the entire process was invaluable. I certainly could not have finished without his assistance. Additionally, I would like to thank Dr. Brent Cejda, Dr. Debra Mullen, and Dr. Gina Matkin for their willingness to serve on my doctoral committee. Their feedback on my dissertation proposal was instrumental in shaping the focus of my study. I would also like to thank Dr. Miles Bryant for his feedback on my publication submissions, and Mike Zweifel for his patience and his assistance with my seemingly endless line of questions concerning my data analysis.

In addition to the assistance I received from the faculty and staff at the University of Nebraska-Lincoln, I would also like to thank the people at Mid Michigan Community College. In particular, my supervisor, my staff, my co-workers, and my friends. Not only were they extremely generous in providing me with the flexibility needed, but they were supportive and patient in listening to my constant babble.

And finally, I would like to thank my amazing wife Michelle and my beautiful daughter Emma. Not only did they provide the ultimate support, but they were willing to make the sacrifices all families must make when one of them is pursuing a doctoral degree. Unfortunately their sacrifices often go unnoticed. But I cannot say enough about them. Thank you does not do it justice. They are truly my reason for living. I love you both!!!!

Table of Contents

List of Tables

List of Appendices

Chapter I

Introduction

Because of the potential for financial loss, decreased graduation rates, and negative perceptions from key stakeholders including legislators, parents and prospective students, student retention efforts have become increasingly prevalent on college campuses (Lau, 2003). As research shows, attrition rates currently stand at approximately 26% for first-year students at four-year institutions and 44% for first-year students at two-year institutions (Adams, 2011). Additionally, the greatest percentage of those that leave college do so within the first year (Braunstein & McGrath, 1997). These departures obviously have serious consequences for students. However, they also present a harsh reality for many institutions because of their heavy reliance on tuition revenue to support academic programs, manage physical plants, and deliver student services (Tinto, 1987). With retention being such a critical issue, in the 1970s, research began to focus on determining reasons why students do not persist.

Among the earliest endeavors in the study of retention was the development of theoretical models. Models such as Astin's Involvement Model, Bean's Psychological Model and Tinto's Interactionalist Model were created to help explain the phenomenon of student departure. Originally created using students from traditional, four-year universities, these models were quickly adapted and applied to many different types of institutions. While they have been thoroughly studied, the results concerning their utility have been mixed. This is especially true when they are applied to community colleges. As Wild and Ebbers (2002) discussed in their review of research on student retention, it is very difficult to generalize these models to other higher education institutions such as

community colleges. Community college students often have differing goals than traditional four-year university students, and community colleges themselves are much less homogenous in nature, which can lead to tremendous differences in the actual learning environment itself (Wild & Ebbers, 2002). In addition, socio-economic factors and social forces within the immediate community also render university-based models difficult to apply to community college students (Mohammadi, 1996).

Despite their shortcomings, of the models referenced above, Tinto's interactionalist model has reached near paradigmatic status (Berger & Braxton, 1998). In fact, it has become the most referenced retention model (Braxton & Hirschy, 2005). At the center of Tinto's model are the constructs of academic and social integration. While the link between academic integration and retention has generally been supported in community colleges, the link between social integration and retention has been less definitive. So what is it about the community college environment that has led to the inconsistent results concerning social integration? Recent research has suggested that perhaps it is not necessarily the applicability problem that was discussed by Wild and Ebbers (2000) and Mohammadi (1996). Instead, it may be that the construct of social integration in two-year college students is not as closely related to the social integration construct in four-year university students as previously thought (Deil-Amen, 2011; Maxwell, 2000). In addition, not only do community colleges serve students intending to transfer to four-year institutions, among other possible missions, they also serve those seeking to enter the workforce immediately after graduation. Does social integration differ when comparing these two critical populations? Do other factors, such as age,

gender, and race influence social integration, either individually or in combination with other factors? This study addressed these important issues.

Need for the Study

Nationally, the number of high school graduates in the United States peaked in 2011 and is now on the decline (Western Interstate Commission for Higher Education, 2012). With fewer available high school graduates, colleges must put an increased emphasis on retaining their current students if they wish to maintain current enrollment levels. This is particularly relevant for community colleges, which nationally, currently enroll 43% of all college students in the United States (Higher Education Research and Development Institute, 2011). With retention becoming so increasingly important, it is critical that retention practitioners use up to date and accurate retention models to build potential interventions. As mentioned above, Tinto's model is widely used, but may not necessarily be universally applicable. The research concerning social integration in community colleges is particularly inconsistent. While, as the literature review will describe, significant research has been conducted in an attempt to clarify the role of social integration in community college settings, much of it has utilized Tinto's construct of social integration. If practitioners are going to build successful retention interventions, more research is needed to investigate social integration in a community college setting. In particular, alternative constructs of social integration, and the role of other factors like program of study, age, gender, and race need to be explored. This research will not only aid higher education professionals in better understanding the concept of social integration in community colleges, but assist in the development of better assessments and interventions aimed at increasing retention rates among community college students.

Purpose Statement

A construct is defined as an abstract idea, underlying theme, or subject matter that one wishes to measure (Dew, 2008). Tinto (1975) defined his construct of social integration as social interactions outside the classroom between students and other campus individuals and/or groups. Other researchers such as Maxwell (2000) and Deil-Amen (2011) suggested that social integration in community colleges has less to do with purely social and outside-the-classroom activities, and instead focused on informal interactions between peers related to their studies, and inside the classroom peer-to-peer and faculty-to-peer interactions. The purpose of this study was to determine if the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was related to the construct of social integration as discussed by Tinto's (1975).

A secondary purpose of the study was to examine the impact of academic program of study on retention. Historically, research concerning the impact of academic program of study on persistence has been inconsistent (Pascarella & Terenzini, 2005). More recent research however has indicated that students enrolled in science, mathematics, engineering, or occupational programs such as business are more likely to persist than those majoring in transfer programs such as the social sciences, humanities, or education (Pascarella & Terenzini, 2005). Additionally, in these programs of higher persistence, factors such as classroom climate along with attitudes, values and culture in these disciplines have been critical (Seymour & Hewitt, 1997). The research cited above has generally dealt with four-year university students. Since many community colleges serve, among a variety of missions, the dual purpose of educating both occupational and

transfer students this study investigated whether differences existed between these two sub-populations in both the social integration constructs.

Furthermore, the study sought to examine the impact of other variables on retention including gender, age and race. Concerning gender, in previous research, some found that gender was significantly related to persistence (Feldman, 1993; Voorhees, 1987). And in a previous study conducted at the institution currently under study, significant chi square scores were also found between gender and persistence (Mertes & Hoover, in press). However, only in the Voorhees (1987) study was gender found to be a significant factor in regression analysis. Because of these conflicting results, further analyses were conducted to determine if each of these two constructs differed when comparing the demographic variable of gender.

The influence of age on persistence has shown varying results. Some research has indicated that as age increased, persistence rates decreased (Brooks-Leonard, 1991). Others have shown a positive relationship between age and persistence, with persistence rates increasing with age (Wall, 1996). Regarding social integration specifically, Sorey and Duggan (2008) found that social integration played a larger role in retention with non-traditional aged students than with their traditional aged counterparts. Because of these conflicting results, age was studied for both constructs of social integration, as well as its potential interaction with program of study (i.e., occupational vs. transfer students).

Race has also shown varying results concerning student retention. While some researchers such as Feldman (1993) found that retention rates were higher for white students than for minority students, others such as Voorhees (1987) and Brooks-Leonard (1991) found that race had no impact. Similar to gender and age, because of these

conflicting results, race was studies for both constructs of social integration, as well as its potential interaction with program of study.

Finally, while the study sought to investigate the impact of dichotomous (i.e. gender and program of study) and continuous variables (i.e., age) individually, humans are much more complex. In fact, previous research on retention at the institution under study found that while significant chi square results were found for variables such as ethnicity, credit hour load, and placement scores, when entered into a logistical regression analysis, none of these variables were found to be significant in combination with other variables including gender, age, and program of study (Mertes & Hoover, in press). This demonstrates that the interaction of variables may be significant. As such, this study investigated whether each of these two constructs differed when program of study interacted with variables such as age and gender.

Research Questions

To accomplish the aforementioned goals, the following research questions were used to guide the study:

1. Is the construct of social integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), related to the construct of social integration developed by Tinto (1975) in a four-year university setting?

   Research Hypothesis 1—The construct of social integration as suggested by Maxwell (2000) and Deil-Amen (2011) will be unrelated to the construct of social integration included in Tinto's (1975) model.

2. Are there significant differences in social integration scores, using Tinto's (1975) construct, when comparing occupational students to transfer students?

   Research Hypothesis 2—Social integration scores, using Tinto's (1975) construct, will differ significantly when comparing occupational students to transfer students.

3. Are there significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, when comparing occupational students to transfer students?

   Research Hypothesis 3—Social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, will differ significantly when comparing occupational students to transfer students.

4. Do social integration scores, using Tinto's (1975) construct, differ when comparing demographic variables including gender and race?

   Research Hypothesis 4—There will be significant differences in social integration scores, using Tinto's (1975) construct, in regards to gender.

   Research Hypothesis 5—There will be significant differences in social integration scores, using Tinto's (1975) construct, in regards to race.

5. Using Tinto's (1975) construct, does age significantly influence overall social integration scores?

   Research Hypothesis 6—There will be a significant relationship between social integration scores, using Tinto's (1975) construct, and age.

6. Do social integration scores differ, using Tinto's (1975) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race?

   Research Hypothesis 7—There will be a significant difference in social integration scores, using Tinto's (1975) construct, between occupational students and transfer students when interacting with gender.

   Research Hypothesis 8— There will be a significant difference in social integration scores, using Tinto's (1975) construct, between occupational students and transfer students when interacting with race.

7. Using Tinto's (1975) construct, does age significantly influence social integration scores when interacting with program of study?

   Research Hypothesis 9—There will be a significant relationship between social integration scores, using Tinto's (1975) construct, and age for occupational students.

   Research Hypothesis 10—There will be a significant relationship between social integration scores, using Tinto's (1975) construct, and age for transfer students.

8. Do social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, differ when comparing demographic variables including gender and race?

   Research Hypothesis 11—There will be significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, in regards to gender.

Research Hypothesis 12—There will be significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, in regards to race.

9. Using the Maxwell (2000) and Deil-Amen (2011) construct, does age significantly influence overall social integration scores?

   Research Hypothesis 13—There will be a significant relationship between social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, and age.

10. Do social integration scores differ, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race?

    Research Hypothesis 14—There will be a significant difference in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students when interacting with gender.

    Research Hypothesis 15— There will be a significant difference in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students when interacting with race.

11. Using the Maxwell (2000) and Deil-Amen (2011) construct, does age significantly influence social integration scores when interacting with program of study?

    Research Hypothesis 16—There will be a significant relationship between

social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, and age for occupational students.

Research Hypothesis 17—There will be a significant relationship between social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, and age for transfer students.

Research Methodology

The research methodology in this study was a quantitative design, consisting of a survey which was distributed face-to-face to a sample of students enrolled in occupational classes and transfer classes during the winter 2013 semester. The Institutional Integration Scale, originally created by Pascarella and Terenzini (1980) and revised by French and Oakes (2004), was distributed to each sample. The original instrument included five subscales including: Peer-Group Interactions, Interactions with Faculty, Faculty Concern for Student Development and Teaching, Intellectual Development, and Institutional and Goal Commitment (Pascarella & Terenzini, 1980). The updated version categorized these five subscales into two broader categories of Faculty (Interactions with Faculty and Faculty Concern for Student Development and Teaching) and Student (Peer-Group Interactions, Intellectual Development, and Institutional and Goal Commitment) (French & Oakes, 2004). Of these five subscales, the following three constitute the social integration subscales: Peer Group Interactions, Faculty Concern for Student Development and Teaching, and Interactions with Faculty. In addition to the more traditional measures of social integration, six items were added to assess the alternative construct of social integration suggested by Maxwell (2000) and Deil-Amen (2011).

Target Audience

The results of this study could be useful to: community college administrators, community college faculty, and educational researchers. Community college administrators and faculty may benefit from the increased understanding of the differences in social integration between occupation and transfer student populations, as well as the potential influences of gender, race, and age. Future educational researchers may gain greater clarification of the relationship between the constructs of social integration proposed by Maxwell (2000) and Deil-Amen (2011) and Tinto (1975). Hopefully this research will lead to the development of better predictive instruments and assist community colleges in developing assessments that will allow them to target at risk students and interventions that will allow them to successfully work with these students to increase retention rates.

Definition of Terms

The following are definitions of key concepts and constructs used in this study:

Retention—The percentage of first-time degree or certificate seeking student from the previous fall who either re-enrolled or successfully completed their program by the current fall (National Center for Education Statistics, 2012).

Persistence—Refers to the maintenance of continued enrollment for two or more semesters, specifically from fall term to spring term (Crawford, 1999, p. 13).

Academic Integration—Range of individual academic experiences that occur in the formal and informal domains of the academic systems of the college (Tinto, 1993). Often reflects satisfaction with academic progress and choice of major (Kuh, Douglas, Lund, & Ramin-Gyurnek, 1994).

Social Integration—Interactions outside the classroom between students and other campus individuals and/or groups (Tinto, 1975). Often reflects peer-to-peer or faculty-to-peer interactions (Kuh et al., 1994).

Attrition—Leaving college prior to achieving a degree or credential (Schuetz, 2008).

Construct—An abstract idea, underlying theme, or subject matter that one wishes to measure (Dew, 2008).

Community College—Defined by Carnegie Foundation (2012) as institutions that offer the Associate's Degree as their highest degree awarded.

Part-Time Enrollment—Student enrolled in fewer than 12 credit hours during a specified academic term.

Full-Time Enrollment—Student enrolled in 12 credits or more during a specified academic term.

Occupational Programs—Those Associate's Degree or Certificate programs that are designed primarily to lead to employment upon graduation. Examples include Welding, Heating/Refrigeration, and Drafting.

Transfer Programs—Those Associate's Degree or Certificate programs that are designed primarily to transfer to a four-year university. Examples include Sociology, Psychology, and Foreign Language.

Ethnicity—People who share a common culture, including language, religion, norms, practices, customs, and history (Anderson & Taylor, 2007).

Race—Group treated as distinct in society based on certain characteristics, some of which may be biological, that have been assigned social importance (Anderson & Taylor, 2007).

Significance of Study

Community colleges nationally, enroll 43% of all college students in the United States (Higher Education Research and Development Institute, 2011). While community college funding varies greatly by state (Cohen & Brawer, 2008), for many institutions that rely on tuition as the major source of funding, retention of students is particularly critical. Additionally, many of the current retention models primarily focus on four-year universities (Wild & Ebbers, 2002), which could make their applicability to community college environments challenging (Mohammadi, 1996). While research has generally supported the construct of Academic Integration in community college environments, the results have been mixed in regards to social integration. That is why additional research is needed to gain a better understanding of the relationship between the traditional construct of social integration developed by Tinto (1975) in a four-year university environment and the alternative construct of social integration suggested by Maxwell (2000) and Deil-Amen (2011) that may be more suitable for community college environments. In addition, since many community colleges serve the unique needs of both occupational and transfer students, research is needed to determine if social integration differs between these unique sub-populations, and if gender, race, or age influence social integration. This study will contribute to a growing body of research focusing on community college students and will help clarify the critical role of social integration in community college retention.

Delimitations of the Study

Delimitations are those factors that limit generalization or relevancy to other populations (Bryant, 2004, p. 57). This is particularly important given that community colleges enroll students from a wide variety of backgrounds (Cohen & Brawer, 2008). Because of this, it is certainly possible that because of the heterogeneous population of community colleges in general, the community college under study is not representative of community colleges in general. Therefore, the fact that the current study focused on a single institution, limits the generalizability of the results. Furthermore, the institution under study is not particularly diverse from a racial standpoint. Since the population is not particularly diverse, this limits the ability to generalize to other racial groups. And finally, the current study focuses on the retention theory of Vincent Tinto (1987). As will be discussed in the literature review that follows, Tinto's theory is not the only relevant theory that discusses college student retention.

Limitations of the Study

Limitations are typically restrictions that are a result of the methodology chosen by the researcher (Bryant, 2004, p. 58). In this case, a quantitative design was selected. As part of the design, a survey was distributed to students enrolled in a random selection of courses. Due to the timing of the survey distribution (i.e. early winter semester), it is possible that some students may have already dropped out of college, eliminating them from the analysis. Furthermore, because the current project relied on a sample of the overall population, there was a possibility of discrepancies between the sample statistic and the corresponding population parameter (Gravetter & Wallnau, 2009). This standard error could impact the inferential statistical analysis. Additionally, the sample must

conform to the assumption of a normal distribution, which requires either a normally distributed population or a sufficiently large sample size (Gravetter & Wallnau, 2009).

Summary

Without question, retention is a critical issue for community colleges. While several collegiate retention models have been developed, the Interactionalist Model developed by Vincent Tinto (1987) is the most referenced retention model (Braxton & Hirschy, 2005). Like most models though, Tinto's model was developed using traditional four-year university students. This fact may help explain why the support for some of Tinto's constructs, particularly in regards to social integration, has been largely mixed when applied to community college populations. An alternative construct of social integration that may be more appropriate for community college students has been proposed by researchers such as Maxwell (2000) and Deil-Amen (2011). Through a quantitative design, the current study investigated whether these two constructs of social integration were related. Furthermore, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether social integration differs in these two populations. Finally, demographic factors including gender and age were studied both individually and in combination with program of study (i.e. occupational vs. transfer students) to ascertain their potential influence on social integration.

As mentioned above, this study used Tinto's (1987) Interactionalist Model of retention. However, there are many other avenues of retention research in the available literature. Chapter II will begin by reviewing other models of retention, and will discuss in more detail the research investigating the application of Tinto's model in a community

college environment, and in particular, research results involving social integration. This literature review will also discuss several practical retention interventions, along with retention in underrepresented populations, campus ecology theory.

Chapter II

Review of Literature

The purpose of this study was to explore the concept of social integration in a community college to determine if the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was related to the construct of social integration discussed in Tinto's (1975) model. Further analyses were conducted to determine if each of these two constructs differed when comparing demographic variable of gender. In addition, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration constructs. Furthermore, this study investigated whether each of these two constructs differed when program of study interacted with the demographic variable of gender. Finally, the influence of age on social integration was studied for both constructs of social integration, as well as its potential interaction with program of study (i.e. occupational vs. transfer students).

This literature review will begin by examining the three most prevalent theoretical models of retention. While each model will be described, the eventual focus will be on Dr. Vincent Tinto's Interactionalist Model. Furthermore, the review will discuss the criticisms of Tinto's model and attempts to quantitatively verify the model, particularly in the community college environment. Of particular emphasis will be the mixed results found in regards to the role of social integration and retention. Additionally, the review will detail additional research that has identified differences in the role of academic and social integration by the age of the student, as well as research that has explored the role of external factors such as localized unemployment. Practical retention efforts such as

bridge programs, intrusive advising, and first-year experience programs will be discussed, as will the literature on retention and underrepresented populations. Finally, college ecology theory will be discussed, with particular focus on Strange and Banning's (2001) model. The summary of the literature review will indicate further research is needed in the area of social integration in community college environments, and will suggest a line of inquiry for conducting research for the dissertation.

Theoretical Models of Retention

One of the first theoretical models of retention was put forth by Dr. Alexander Astin. Prior to developing his theoretical model, Dr. Astin (1999) observed that many faculty and administrators were guided by three pedagogical theories:

1. Subject-matter theory: Student learning and development depend primarily on exposure to the correct subject matter. Typically the student is a passive vassal, receiving the necessary information from the subject matter expert.
2. Resource theory: Student learning and development is a function of adequate resources being available all in a single area. These resources not only include physical resources such as the library, but also includes a high percentage of "top" faculty and high achieving students.
3. Individualized theory: This theory holds that student development is contingent on bringing the right content and instructional methods to each individual student. (pp. 520-521)

Central to all three of these theories is the viewpoint that the student is a passive recipient in the development process. In Astin's opinion, what was missing is all three of these theories is the principle of involvement. This principle of student involvement, according to Astin (1999), is the driving force behind college student retention. As such, involvement became the central tenant of his theory.

At its foundation, Astin's involvement theory possesses five basic postulates (Astin, 1999):

1. involvement means the investment of physical and psychological energy;
2. involvement occurs along a continuum;
3. involvement includes quantitative and qualitative components;
4. student learning and personal development is directly proportional to the quality and quantity of involvement; and
5. the effectiveness of a policy is measured by its ability to increase involvement. (p. 519)

Based on these postulates, Astin theorized that students who were involved in college life were much more likely to be retained than those that were not involved in college life (Astin, 1999). And in fact, in an earlier longitudinal study of college dropouts, in trying to identify factors that impacted student persistence, Astin (1975) found that virtually every significant effect could be rationalized in terms of the involvement concept. More specifically, every positive factor was likely to increase involvement, and every negative factor was likely to decrease involvement (Astin, 1975). This led Astin (1999) to theorize that the effectiveness of any education policy or practice was directly related to its ability to increase student involvement (p. 529).

Astin's (1999) theory was one of the first to step away from the prevalent developmental theories of the time that focused on the "what" of student development and advanced toward developing process that facilitate student development (the "how" of student development). His principle of involvement was picked up and expanded on in other theories including Tinto's (1975) model. But other models were created that moved in different directions. One such model was developed by Dr. John Bean (Bean & Eaton, 2000). Dr. Bean created a theoretical model focused on psychological principles that are based on the empirical research of multiple authors. Four psychological theories are of particular emphasis in Bean's model. The first is Attitude-Behavior Theory. This theory posits that behavior is the result of the intention to perform the behavior (Bean &

Eaton, 2000, p. 50). As Bean and Eaton (2000) described, intention is linked to attitudes toward behaviors, which in turn is based on beliefs about the consequences of the behavior (p. 50). Furthermore, intention is also based on subjective norms that come from beliefs about the behavior (p. 50). This eventually leads to a feedback loop where beliefs lead to attitudes, which lead to intentions, which lead to behaviors (Bean & Eaton, 2000, p. 50). According to Bean (Bean 1985; Bean, 1990), the link between intent and retention has been found to be the single strongest predictor of student departure.

The second theory discussed in Bean's model is Coping Behavioral Theory. Students feel stress when they respond ineffectively to situations (Bean & Eaton, 2000). Coping consists of a variety of behaviors that help individuals adapt to stressful situations (Lazarus, 1966). Students who cope well will reduce stress and experience more positive outcomes (p. 51). In an empirical study, Eaton and Bean (1995) found that those students who used avoidance techniques (passive ways to avoid stressors) had a negative relationship to academic integration, while those that utilized approach techniques (asking questions in class or seeking tutoring) had a positive relationship to academic integration (p. 633). Similar results were found for social integration, with avoidance techniques (frequent weekends at home and hours worked at an off campus job) were negatively associated with social integration, and approach techniques (involvement with social organizations) was positively associated with social integration (Eaton & Bean, 1995, p. 632).

The third theory utilized in Bean's model is Self-efficacy Theory. The basic premise behind this theory is that individuals acquire their perception of their ability to perform certain tasks or deal with certain situations through past experiences and

observations (Bandura, 1996). As students gain confidence, the individual will eventually demonstrate higher aspirations in regards to persistence, achievement, and goal attainment (Bean & Eaton, 2000). Furthermore, in regards to retention, those students who observe others succeeding, will raise their own self-efficacy, leading to an increase in self-confidence and a striving for goal achievement (p. 53).

Finally, the fourth theory discussed in Bean's model is Attribution Theory. Of particular interest is the premise of locus of control. Those who possess an internal locus of control recognize that personal attributes are responsible for an outcome (Weiner, 1986). Students who possess an external locus of control believe that external factors outside of their control dictate outcomes (Weiner, 1986). Applying these concepts to higher education, students who possess an internal locus of control are more motivated to respond to challenges that those who possess an external locus of control (Bean & Eaton, 2000, p. 55).

To summarize Bean's model, past behaviors and beliefs determine where a student falls in regards to the aforementioned four theories. For example, a student's past experiences may have led him/her to have a certain locus of control, or a level of self-efficacy. This, in turn, influences how the student initially interacts with the college environment. As the student begins to react to new stimuli, he/she will learn new strategies for navigating the new environment. Success in navigating this new environment hopefully will lead to higher self-efficacy and a more positive attitude. Success in coping with new situations will help reduce stress, which will in turn lead to shift in locus of control. Taken together, development in the areas discussed by the four

psychological theories will increase a student's social and academic integration and motivation, which will lead to the ultimate goal of persistence.

Tinto's Interactionalist Model

While the Bean and Astin models have been prevalent in the literature, Dr. Vincent Tinto's Interactionalist model of student persistence has become the dominant sociological perspective (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006), and has reached near paradigmatic status (Berger & Braxton, 1998). In fact, Tinto's model is the most studied, tested, and critiqued model in the literature (Bensimon, 2007; Braxton & Hirschy, 2005). This model borrows many of its underpinnings from two sociological theories. The first, Arnold Van Gennep's rites of passage theory, which theorized that individuals progress through identifiable stages as they move from one group to another (Elkins, Braxton, & James, 2000). The second, Emile Durkheim's suicide theory, postulated that individuals who lack intellectual and social integration into society are more likely to commit suicide (Sorey & Duggan, 2008). Applying these principles to student retention, Tinto stated that students enter a higher education institution with a variety of characteristics (i.e., gender, race, academic aptitude and achievement, family socioeconomic background, and parental educational levels) that impact their initial commitment to a higher education institution and their eventual goal of graduation (Elkins et al., 2000). As they progress, students proceed through three stages. In the first stage, the separation stage, students leave behind past support groups including families, friends, previous educational institutions and communities of residence (Elkins et al., 2000). This is often a very traumatic stage for students as they disassociate themselves to some extent from these former groups and perhaps even reject some long held norms and

expectations of these groups. In the next stage, the transitions stage, the student feels a greater distance with his/her past support network, while not yet feeling incorporated into their new environment (Elkins et al., 2000). The student often feels a sense of "not belonging" as he/she searches for new support networks to replace the ones shed during the separation stage. Finally, a student progresses to the incorporation stage, where they achieve full incorporation into the academic and social systems of the college or university (Elkins et al., 2000). As students pass through these three stages, their background characteristics constantly interact with the academic and social systems of the institution, influencing a student's commitment to the institution and his/her graduation goal. The degree to which students can successfully integrate into an institution's social and academic systems ultimately will define a student's commitment to the institution and determine whether her/she persists or eventually exits an institution.

Because of their prominent role in student retention, the constructs of academic and social integration form the pillars of Tinto's (1975) model. While sometimes difficult to quantify, academic integration generally includes activities where students can engage on an academic level, such as: academically-related discussions with faculty and advisors, using the library, etc. (Gatz, 1998). Social integration on the other hand, can be defined as behaviors related to social involvement, including: making friends in extra-curricular activities, and attending social and cultural events on campus (Gatz, 1998).

Overall, research has provided support for the Tinto's constructs of social and academic integration (Pascarella & Terenzini, 2005). However, that does not mean Tinto's model is without its critics. One of the most vocal critics was Dr. William Tierney. At the heart of Tierney's criticism are two overarching concerns. First of all,

Tierney (1992) stated that Tinto "misinterpreted the anthropological notions of ritual" (p. 603). If a theory such as Tinto's is going to employ a term like "ritual," then one must take into account the culture in which that "ritual" exists (Tierney, 1992). In the world of higher education, the dominant culture is generally white. Following Tierney's logic then, applying Tinto's model to cultures other than white might not be entirely appropriate. In addition, the word ritual itself can have vastly different meanings within certain cultures. In Tinto's model, students move through Gennep's rites of passage, and may choose to stop at any time along the way. As Tierney (1992) pointed out, in many cultures, individuals do not choose to participate and, therefore, have no choice to stop. In Tierney's view, Van Gennep's model was never intended to describe movement of an individual from one culture to another, therefore applying it to the higher education environment is inappropriate and potentially harmful.

In addition to a misrepresentation of the term "ritual," Tierney (1992) further criticized Tinto's model for focusing too much on conformity to a dominant cultural norm rather than discussing any cultural differences. As Tierney (1992) stated, "a model of integration that never questions who is to be integrated and how it is to be done assumes an individualistic stance of human nature and rejects differences based on categories such as class, race, and gender" (p. 611). While Tinto's model is an admirable attempt to draw "blame" away from the student by focusing on interactional factors, according to Tierney, integration models like Tinto's tend to apply dominant frames of reference to minorities in ways that may do more harm than good (Tierney, 1992).

In addition to theoretical concerns, others have questioned the applicability of Tinto's model. In a very thorough assessment, Braxton, Sullivan, and Johnson (1997)

reviewed the results of multiple studies that attempted to empirically "test" one of the 15 propositions stated in Tinto's model:

1. Student entry characteristics affect the level of initial commitment to the institution;
2. Student entry characteristics affect the level of initial commitment to the goal of graduation from college;
3. Student entry characteristics directly affect the student's likelihood of persistence in college;
4. Initial commitment to the goal of graduation from college affects the level of academic integration;
5. Initial commitment to the goal of graduation from college affects the level of social integration;
6. Initial commitment to the institution affects the level of social integration;
7. Initial commitment to the institution affects the level of academic integration;
8. The greater the level of academic integration, the greater the level of subsequent commitment to the goal of graduation from college;
9. The greater the level of social integration, the greater the level of subsequent commitment to the institution;
10. The initial level of institutional commitment affects the subsequent level of institutional commitment;
11. The initial level of commitment to the goal of graduation from college affects the subsequent level of commitment to the goal of college graduation;
12. The greater the level of subsequent commitment to the goal of college graduation, the greater the likelihood of student persistence in college;
13. The greater the level of subsequent commitment to the institution, the greater the likelihood of student persistence in college;
14. A high level of commitment to the goal of graduation from college compensates for a low level of commitment to the institution, and vice versa, in influencing student persistence in college; and
15. A high level of academic integration compensates for a low level of social integration, and vice versa, in influencing student persistence in college. (p. 108)

For their analysis, the researchers attempted to determine the level of empirical support for each of the propositions, and if this support varied by type of institution (i.e., commuter; residential) and student (Braxton et al., 1997). The level of support for each of the propositions was broken into several categories:

1. Strong—66% of three or more tests were statistically significant;
2. Moderate—34%-65% of three or more tests were statistically significant;
3. Weak—33% or less of three or more tests were statistically significant;
4. Indeterminate—only one test was made, therefore, additional research is necessary; and
5. No support—two or more test found non-significant results.

Overall, the researchers found strong support across both multi-institutional and single institutional studies for only 2 of the 15 propositions:

1. The initial level of institutional commitment affects the subsequent level of institutional commitment (number 10).
2. The initial commitment to the goal of graduation from college affects the subsequent level of commitment to the goal of college graduation (number 11).

In multi-institutional studies only, the researchers found strong support for two additional propositions:

1. Student entry characteristics affect the level of initial commitment to the goal of graduation from college (number 2).
2. The greater the level of subsequent commitment to the goal of college graduation, the greater likelihood of student persistence in college (number 12).

Strong support in single institutional studies was found for five additional propositions including:

1. Student entry characteristics affect the level of initial commitment to the institution (number 1).
2. The greater the level of social integration, the greater the level of subsequent commitment to the institution (number 9).
3. The greater the level of subsequent commitment to the institution, the greater the likelihood of student persistence in college (number 13).
4. A high level of commitment to the goal of graduation from college compensates for the low level of commitment to the institution (and vice versa) in influencing student persistence in college (number 14).
5. Academic integration and social integration are mutually interdependent and reciprocal in their influence on student persistence in college (number 15).

Unfortunately, multi-institutional tests were not carried out on all 15 propositions, so it was difficult for the researchers to determine if the level of support was significantly different between residential and commuter universities. However, single institutional tests were conducted for all 15 propositions for both residential and commuter universities, with strong support found for the initial level of institutional commitment affects the subsequent level of institutional commitment among both university types (Braxton et al., 1997). The researchers also found that student entry characteristics affected the level of initial commitment to the institution for commuter universities (Braxton et al., 1997).

Among residential universities, strong support was found for six additional propositions including:

1. Initial commitment to the institution affects social integration (number 6).
2. The greater the level of social integration, the greater the level of subsequent commitment to the institution (number 9).
3. The initial commitment to the goal of graduation from college affects the subsequent level of commitment to the goal of college graduation (number 11).
4. The greater the level of subsequent commitment to the institution, the greater the likelihood of student persistence in college (number 13).
5. A high level of commitment to the goal of graduation from college compensates for the low level of commitment to the institution (and vice versa) in influencing student persistence in college (number 14).
6. Academic integration and social integration are mutually interdependent and reciprocal in their influence on student persistence in college (number 15).

The work done by Braxton et al. (1997) helped to shed light on the validity of Tinto's model. While the researchers found empirical support for at least some of Tinto's propositions; the support was hardly overwhelming and varied significantly by institutional type. This suggested that Tinto's model cannot be universally applied to all institutions of higher education.

Tinto's Model in a Community College Environment

While many of the attempts to validate Tinto's model focused on four-year colleges and universities, several have attempted to study his model in a two-year college environment. And in fact, early studies found support for Tinto's model. For example, as part of a comprehensive national study of long-term persistence of two-year college

students, Pascarella, Smart, and Ethington (1986) analyzed data from a sample of 825 students who had enrolled in 85 two-year institutions. Data were drawn from the Cooperative Institutional Research Project, which in 1971, administered an initial survey to students entering two-year colleges who reported that their intent was to eventually earn a four-year degree (Pascarella et al., 1986). Follow up surveys were administered in 1980 to collect data on students' actual college experiences (Pascarella et al., 1986). In addition to academic and social integration, the researchers also studied the impact of other variables on long term degree persistence including: background characteristics (i.e., family background, precollege schooling), initial commitment (i.e., precollege commitment to obtaining a degree, institutional commitment), and subsequent goal and institutional commitment (Pascarella et al., 1986). After analyzing the data, the researchers found that the two variables with most consistent pattern of positive effects on degree persistence and completion were academic and social integration (Pascarella et al., 1986, p. 65). This obviously lends direct support to the academic and social integration constructs of Tinto's theory in a community college environment.

While similar studies also found support for the positive relationship between academic and social integration in retention (Williamson & Creamer, 1988), others found the complete opposite. One such example was a single-institution study completed by Richard Voorhees (1987). In this study, Voorhees (1987) randomly selected 56 classes and administered the American College Testing Program Student Opinion Survey in combination with a locally developed survey to a total of 369 community college students. Several independent variables including sex, full-time/part-time status, purpose of enrolling, minority status, intent to return, satisfaction with the college, self-reported

grade-point average, informal interactions with faculty, and weekly study hours were considered for their impact on the dependent variable of student persistence (Voorhees, 1987).

While the study didn't specifically address social integration variables, using a log linear logit analysis, Voorhees (1987) found that variables associated with academic integration (i.e., grade point average, number of hours informally interacting with faculty, and number of hours spent studying each week) were not associated with persistence. These results appear to directly contradict previously discussed research, and suggest that Tinto's model may not necessarily apply to a community college environment.

While Pascarella et al. (1986) and Voorhees (1987) seem to represent the extremes in terms of support vs. no support for academic and social integration in community college persistence and/or retention, still others found support for only one of Tinto's integration concepts. For example, in a single institution study, Halpin (1990) distributed a questionnaire to first-time, full-time freshmen that were enrolled in a freshmen composition class at an open-door, non-residential community college located in New York state. This particular class was chosen because it enrolled 90% of his target population. The researcher chose the third week before the end of the semester to administrator, in part to ensure students had gained at least some "college" experience, and also to ensure that a reasonable number of students who likely would not persist would be included in the sample.

The initial questionnaire administration and two subsequent mailings netted a total of 291 useable questionnaires, which were similar to the one developed by

Pascarella and Terenzini (1980), including 30 statements about the students' experiences with and perceptions of college.

Questionnaires representing 76% of the target population were collected. Good sample representation was indicated for age, education background of parents and college major through Chi-square goodness-of-fit tests (Halpin, 1990). However, female students were over-represented in the sample, which led to a corrective weighting process through the statistical analysis software (SPSS). In addition, the researcher gathered data from a much higher percentage of persisters than non-persisters. To correct for any potential skewing of results, the researcher randomly selected a sub-sample of 20% of the persisters and performed an additional Chi-square good-of-fit test. Through that test, it was determined that this sub-sample was representative of the overall persisters' sample.

After performing his analysis, Halpin (1990) found that levels of both academic and social integration were significant predictors of persistence, even when controlling for background and environmental variables. Furthermore, Halpin (1990) found that academic integration exercised a greater influence than social integration. In fact, factors including faculty concern for teaching and student development, academic and intellectual development and interaction with faculty accounted for nearly 75% of the explained variance. A significant portion of the social integration construct was not statistically significant.

This general pattern of support for the construct of academic integration but not social integration in persistence and/or retention has been supported by a number of researchers. For example, in a study on commuter students, Fox (1986) distributed surveys to 435 freshmen students at the beginning of their first year, then re-tested

students who returned for a second year. Using regression analysis, Fox (1986) found that both academic and social integration account for 31% of the variance. However, academic integration exerted a stronger influence on persistence than social integration. In another study testing Tinto's integration constructs, Nora, Attinasi, and Matonak (1990) surveyed 253 community college students not only found academic integration to be positively related to persistence, but that social integration actually was negatively associated with persistence. And finally, Pascarella and Chapman (1983) distributed the Student Involvement Questionnaire to 2,326 full-time freshmen at 11 different institutions of higher education. Institutional representation included four-year residential universities, two-year colleges, four-year commuter universities, and four-year private liberal arts colleges (Pascarella & Chapman, 1983). Variables used to assess academic integration included: first semester GPA, expected GPA for the second semester, academic/intellectual activities (i.e., time spent studying, books read for pleasure, and attendance at cultural events), honors program participation, special skills program participation, informal contact with faculty on academic topics, peer conversations on academic matters, and career planning participation (Pascarella & Chapman, 1983). Variables used to assess social integration included: average number of dates each month, number of best friends on campus, participation in organized extracurricular activities, participation in informal social activities, number of weekends spent on campus each month, peer conversations on social topics, informal contact with faculty on social topics (Pascarella & Chapman, 1983). After analyzing the data, Pascarella and Chapman (1983) found that academic integration exerted indirect effects

on persistence by impacting institutional commitment, but social integration was unrelated.

To further complicate matters though, other researchers have found that social integration actually exerts a larger influence on persistence and/or retention than academic integration. For example, in an attempt to differentiate persisters from non-persisters, Bers and Smith (1991) distributed a 30-item survey developed by Pascarella and Terenzini (1980) to 1142 two-year college students. The intent of the survey was to operationalize the concepts of academic and social integration (Bers & Smith, 1991). Factor analysis was also performed on the Pascarella and Terenzini instrument to determine if a similar factor pattern would appear in two-year environments (Bers & Smith, 1991).

After analyzing the data, Bers and Smith (1991) not only found that the factor patterns of Pascarella and Terenzini's (1980) instrument were replicated in a two-year environment, but the researchers also found that while both academic and social integration variables discriminated between persisters and non-persisters, social integration variables made a larger contribution than academic integration. While these findings do not necessarily directly refute previously cited research, they certainly point to a larger role of social integration in persistence and/or retention.

While many of the studies mentioned above studied the impact of social and academic integration and their ability to differentiate persisters from non-persisters, Sorey and Duggan (2008) took one step further by first breaking up the sample into adult and traditional-aged student groups, and then attempting to differentiate persisters and non-persisters. To do so, the authors randomly selected 350 degree-seeking community

college students from both an "adult" cohort (25 years or older) and a "traditional-aged" cohort (24 years or younger) and asked them to complete a survey on issues including: finances, encouragement and support from significant others, degree utility, intent to leave, institutional commitment, goal commitment, academic and social integration (Sorey & Duggan, 2008). Unfortunately, as with many surveys of this nature, the response rate was low, with only 68 traditional-aged responses (19%) and 55 adult responses (16%). Because of this, Chi-square tests were conducted for both the traditional-aged and adult sample. For the traditional-aged group, the sample was representative in regards to racial affiliation, age, and degree type. But there were variations in gender (higher percentage of female students in sample) and enrollment status (higher percentage of full-time students in sample). However, the authors concluded that the effect size for these variations was small and would not impact the data analysis. For the adult group, significant variations were found for age and racial affiliation; however, the authors again concluded that the effect size was small and would not impact the data analysis.

Analysis of the data showed some surprising results. For example, in the traditional-aged sample, encouragement and support and academic integration had the strongest relationship to persistence, whereas social integration, finances and institutional commitment had the weakest relationship. For the adult sample, social integration and institutional commitment were the most highly related to persistence, while fall semester GPA and academic integration showed the weakest relationship. While these results show clear differences between the variables impacting persistence of traditional-aged and adult samples, they seem to conflict with other researchers. For example, in Halpin's

study, academic integration was clearly the primary factor in persistence. While admittedly he did not specifically study the differences between traditional-aged and adult students, one would not expect to find academic integration to be on opposite sides of the spectrum for both groups as it was in Sorey and Duggan's (2008) study. In addition, Sorey and Duggan's results seem to contradict certain aspects of the Tinto model, which labels social integration and institutional commitment as key components among traditional-aged populations (Tinto, 1987). However, these inconsistencies could be a function of the small sample size, which by the authors' own admission, renders the study's reliability questionable (Sorey & Duggan, 2008).

Given the tremendous amount of variability in the research concerning academic and social integration and their relationship to persistence and retention, Napoli and Wortman (1998) attempted to clarify the issue by performing a meta-analysis on the available literature. Searching the literature available between 1980-1996 in three large electronic databases (ERIC, PsychINFO, and Dissertation Abstracts Online), the authors identified 11 articles including their desired search terms of persistence, attrition, Tinto, academic integration, social integration, two-year colleges, and community colleges (Napoli & Wortman, 1996). After eliminating five articles that did not match the desired parameters, the authors analyzed the results of the remaining six and found a large and positive impact between academic integration and persistence, but only mixed results for social integration (Napoli & Wortman, 1996). While the combined overall effects of social integration were found to be significant, social integration exercised a stronger influence when the researchers used fall-to-spring semester persistence as the dependent variable as opposed to fall-to-fall retention (Napoli & Wortman, 1996).

Re-conceptualizing Social Integration in Community Colleges

As cited previously, in general, research has supported the notion that social and academic integration matter (Pascarella & Terenzini, 2005). Nonetheless, other researchers have expressed legitimate concerns that since Tinto's model is based on research conducted in four-year, residential university settings, it is not necessarily applicable to community college environments (Mohammadi, 1996; Wild & Ebbers, 2002). While many researchers have found a relationship between academic integration and retention in two-year college environments (Bers & Smith, 1991; Fox, 1986; Halpin, 1990; Mulligan & Hennessy, 1990; Napoli & Wortman, 1996, 1998; Nora et al., 1990; Pascarella & Chapman, 1986; Pascarella et al., 1986; Sorey & Duggan, 2008) the relationship between retention and social integration is less clear. While some found a significant relationship between social integration and retention (Bers & Smith, 1991; Pascarella et al., 1986), several studies found no relationship between social integration and retention (Fox, 1986; Halpin, 1990; Mulligan & Hennessy, 1990; Nora et al., 1990; Pascarella & Chapman, 1986). Still others found that the relationship of social integration to retention depended on other factors including the student's age (Sorey & Duggan, 2008) and on how far along the student was in his or her higher education career (Napoli & Wortman, 1996).

With such mixed results concerning social integration, the question begging to be answered is what is it about social integration that makes its impact on retention in a community college so difficult to pinpoint? Perhaps the true answer lies in how the construct of social integration is measured. Tinto defined social integration as interaction outside the classroom between students and other campus individuals and/or groups

(Tinto, 1975). While there have been many attempts to measure Tinto's construct of social integration, three instruments stand out as the most prevalent.

1. Pascarella and Terenzini (1980): This instrument is a multidimentional instrument designed to measure the constructs of Tinto's model (Pascarella & Terenzini, 1980). Titled the Institutional Integration Scale (IIS), the instrument was created by mailing a questionnaire concerning college expectations to a random sample of 1,905 incoming freshmen students at a major four-year university. A follow up survey consisting of 34 items was mailed to 1,457 students who completed the first questionnaire to gather data on the reality of their college experiences (Pascarella & Terenzini, 1980). This second mailing yielded usable data from 773 students (Pascarella & Terenzini, 1980). Using factor analysis, multivariate analysis of covariance, and discriminant analysis was used to determine predictive validity and their ability to discriminate pesisters from non-persisters (Pascarella & Terenzini, 1980). Results indicated support for both the predictive validity and the instrument's ability to discriminate persisters from non-persisters (Pascarella & Terenzini, 1980).
2. In an effort to update and improve the original instrument French and Oakes (2004) reworded negatively worded items into positively worded items and re-wrote several items for readability. Additionally, the researchers combined the five original subscales into two more general categories (French & Oakes, 2004). The first of the two new categories, titled Faculty, included the original subscales of Interactions with Faculty and Faculty Concern for

Student Development and Teaching, which the second new category, titled Student, included the original subscales of Academic and Intellectual Development, Peer-Group Interactions, and Institutional and Goal Commitment (French & Oakes, 2004). These revisions resulted in higher internal consistency reliability, higher item discrimination, and higher correlations among the subscale scores and between the subscale and total scale scores (French & Oakes, 2004).

3. College Student Experiences Questionnaire: Originally designed by Robert Pace, this survey measured students' quality of effort in taking advantage of what the university has to offer (Ethington & Polizzi, 1996). The original version was heavily geared to activities offered at traditional four-year universities. Therefore, a revised survey was designed specifically to apply to two-year environments. This survey, called the Community College Student Experiences Questionnaire (CCSEQ) included eight individual scales (vs. 14 for the original version) that asked students questions on topics such as: courses and course work; library usage; contacts with faculty; contacts with student acquaintances; art, music, and theater; writing; science and mathematics; and vocational experiences (Ethington & Polizzi, 1996).

Even with the instruments' updates designed to apply more appropriately to community college populations, these measures are still built from existing four-year university models. And it is not clear that the social integration construct in community colleges is related to the social integration construct at four-year institutions. In fact, some researchers have even suggested that the traditional construct of social integration is

unsuited for community college populations (Hagedorn, Maxwell, Rodriguez, Hocevar, & Fillpot, 2000). For example, in a study on peer relations at a community college, Maxwell (2000) sought to explore student relationships as they relate to "sharing their studies" (p. 210) relationships or more traditional four-year college activities. Specifically, Maxwell (2000) surveyed 744 students from a large and ethnically diverse community college with items measuring extracurricular social activities including clubs, music and drama activities. In addition to these activities, which are more closely associated with four-year universities, two items were added to that included studying with other students and joining a study group outside the classroom (Maxwell, 2000).

While most of the students (71%) reported that it was not difficult to make friends on campus, suggesting an overall cordial and sociable atmosphere on campus, few actually engaged in extracurricular activities more closely aligned with four-year universities (Maxwell, 2000). Instead, peer activities seemed to center around studying together, discussing coursework, or talking informally on campus (Maxwell, 2000). As Maxwell (2000) put it, "there was social life among the community college students surveyed, but it was not like researchers' and others' visions of college dormitories, fraternity and sorority houses, or the historical four-year residential college" (p. 214). These results suggested that social integration assessments may be incongruent with the reality of social life on community college campuses.

In a more detailed qualitative study, Deil-Amen (2011) interviewed 125 students from 7 public and 7 private two-year colleges in an attempt to explore how students described their experiences of belonging, to identify how and when integration occurred, and what experiences led to feelings of integration. And similar to Maxwell, Deil-Amen

(2011) found that purely social activities (i.e., going places with friends, attending social events, or participating in sports) were not primary avenues for establishing social integration. Instead, students listed in-class interactions, study group activities, interactions and mentor relationships with faculty, communication with similar students, and academically-related clubs and activities as the primary driving forces behind integration (Deil-Amen, 2011). The author further noted that "in the two-year college setting, the diversity of potential interactions within the classroom, the intersection of in-class and out-of-class interactions, and the students' subjective interpretation of those interactions should all be considered as central to a commuting students' integration process" (Deil-Amen, 2011, p. 66).

Taken together, the results of Maxwell (2000) and Deil-Amen (2011) seem to point to a different construct of social integration. This construct focuses much less on the social activities included in Tinto's (1975) model, and more on peer groups centered around academically-related activities, and interactions with faculty and students inside the classroom. Perhaps the varying results concerning social integration in community college settings are partially a result of the possibility that the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011), which they suggested is the true construct in community college settings, is unrelated to the social integration construct suggested by Tinto (1975). This question is explored in Chapters 3-5.

Additional Factors Related to Retention

Given the variability in the research discussed and the inconsistencies in the support for the previously discussed retention models, there certainly are other potential factors that have not been covered by theoretical models that may have an impact as well.

In a study of a Texas community college, Fike and Fike (2008) attempted to determine the relationship between retention and several independent variables including; gender, age, ethnicity; student completion of developmental math, reading and writing courses; participating in Student Support Services programs; receipt of financial aid; enrollment in internet courses; semester hours enrolled in and dropped during the first semester, and education level of parents. While this was also a single-institution study, unlike the Halpin (1990) and Sorey and Duggan (2008) studies, Fike and Fike (2008) used a cross-sectional approach in studying first time college students across four different semesters. In addition, they did not rely on survey data nor were they attempting to validate a pre-existing retention model. They simply analyzed all first time college student data across the fall 2001, 2002, 2003 and 2004 years in regards to the independent variables listed above. This had the effect of creating a very large sample size (N = 9200). Furthermore, they divided their dependent variable (retention) into two tracts (fall-to-spring retention; fall-to-fall retention). This allowed the researchers to differentiate the impact of the independent variables on the two dependent variables, which could potentially be very useful given the multiple definitions of retention discussed in the literature.

Overall, the researchers found that successful completion of a developmental reading course had the strongest positive correlation to retention (both fall-to-spring and fall-to-fall). Other positive correlates for both dependent variables included: successful completion of a developmental math course, not taking a developmental reading course, receiving financial aid, taking an internet course, semester hours enrolled in the first semester, and participation in Student Support Services programs. Negative correlates for

both dependent variables included not taking a developmental math course and semester hours dropped.

On the surface, completing a developmental reading course and not taking a developmental reading course seem counter-intuitive. However, upon further inspection, it is likely that those that did not take a developmental reading course already had the necessary reading skills. In addition to these, the results concerning online courses were particularly curious. While the authors did not provide a reason for why taking online courses had such a strong positive relationship with retention, it is an interesting phenomenon worthy of additional study, particularly since online course offerings are expected to grow in the future

While the authors did not specifically relate their findings to other retention models, it seems logical that their findings concerning the positive relationship between retention and participation in Student Support Services programs verify some of the results of Sorey and Duggan (2008) who found encouragement and support to be among the most important variables in retention for traditional-aged students. In addition, Fike and Fike's (2008) finding concerning the positive relationship between financial aid and retention seems to be congruent with Bean's notion that the student's handling of stress is critical, assuming that having financial aid reduces concerns regarding tuition payment. Furthermore, the importance of reading could be related to Tinto's and Bean's notion of the importance on beginning characteristics each student possesses upon entry into college. Although admittedly, such a conclusion is based on assumption rather than research.

Curiously Fike and Fike (2008) found differences between fall-to-spring and fall-to-fall retention that appear to have little explanation. For example, passing a developmental writing course is a statistically significant predictor for fall-to-fall retention, but not for fall-to-spring. With reading being such an important factor, one would think writing would also be important. The researchers had no adequate explanation as to why it would be important for fall-to-fall retention, but not for fall-to-spring. Also of note were the results concerning level of parental education. It has been well documented that parental education level typically is positively related to retention (Fike & Fike, 2008). In this particular study, the level of maternal education had a negative relationship with fall-to-spring retention but not fall-to-fall. These varying results (depending on the dependent variable) show some similarity to Sorey and Duggan's (2008) study, where retention correlates varied by age of the student. As with Sorey and Duggan, perhaps Fike and Fike's (2008) results further demonstrate that retention is not so simply defined, and that different constructs of retention models take precedence for certain sub-populations.

So far, all of the community college retention studies discussed have dealt with student-related variables or variables that the colleges themselves can control. In a study of 16 community colleges in South Carolina, the researcher attempted to determine if retention was more related to external factors, particularly those that are community-centered (Wyman, 1997). Unlike the previous studies relating to community colleges, Wyman's study was multi-institutional, evaluating fall-to-fall retention rates for all 16 colleges over the course of two years (1990 and 1991). He identified 158 independent variables including headcounts, revenue and expenditures, faculty salaries,

unemployment, crime, and many others and used data from these variables to develop a regression model in an attempt to predict retention.

Through his analysis, Wyman (1997) determined that an impressive 66% of the variance in retention rates across the 16 community colleges in South Carolina was explained by two variables: regional employment per capita and the ratio of institutional instruction and academic support spending per headcount student to regional income per job. In addition, while the retention rates varied considerably across the 16 community colleges, they were remarkably consistent within each individual college. These findings have serious implications for higher education professionals in that they suggest retention is stable and largely a function of external forces, most of which cannot be controlled by higher education institutions themselves.

Even though Wyman's (1997) study was multi-institutional, the results still lack the same generalization power as the other studies listed due to the fact that the external forces listed can be very sensitive to specific regional considerations. Undoubtedly the economic conditions in South Carolina are at least somewhat different from other areas of the country. In addition, a two-year time frame is too short to establish a true trend. So it would be difficult to definitively say retention rates are consistent based on such a short frame of reference. Additionally, economic conditions can also vary widely across time. To get an accurate picture of how external forces truly impact retention, more longitudinal data are needed.

Even though Wyman's (1997) study focused mainly on external factors, the results do indirectly support some of the results of previously discussed models and studies. For example, Wyman suggested that colleges that serve communities with a high

employment per capita will have higher retention rates. Presumably, stress levels on aggregate are lower when employment is high, which lends some creditability to Bean's model. In addition, Wyman's assertion that colleges that spend more on instruction and academic support as compared to the average income level of residents residing within their region will have higher retention levels verifies some of the results of Sorey and Duggan (2008) (who found encouragement and support to be positively related to retention in traditional-aged students) and Fike and Fike (2008) (who found participation in student support services to be positively related to retention).

Practical Retention Efforts

In additional to the theoretical body of work concerning retention, there are many more practical applications that colleges and universities across the country are implementing. One such example is the bridge program. Just as community colleges are broad and diverse in terms of mission and overall student body, bridge programs in community colleges are equally diverse. Some programs are designed to educate students on issues including study skills, time management, and typical college vernacular (College Parent Central, 2011). Others are more intensive and attempt to bring students up to speed, so to speak, in topics such as basic math and writing (College Parent Central, 2011). Many attempt to assist students in both arenas, primarily working to help students improve in developmental math and/or English, and sprinkling in some basic information on navigating the college environment. While many different types of dual enrollment programs have been available for decades to academically gifted students, recently community colleges have begun to offer opportunities to underprepared students in an attempt to prepare them for the rigors of college life. For example, the

Community College of Vermont offers high school students the opportunity to take classes in a variety of areas, and combines these courses with non-credit workshops on "college studies" (Lords, 2000). Similar programs are offered at community colleges in New York, Georgia, Texas, and many other states around the country (Lords, 2000). The problem with many summer bridge programs is that they lack comprehensive and documented assessment plans. As Garcia and Paz (2009) discovered, many assessment plans included nothing more than end of the session surveys that makes the results difficult to quantify. In an attempt to address this issue, the Texas Higher Education Coordinating Board, in partnership with the National Center for Postsecondary Research, undertook a large-scale, multi-year evaluation of eight college and/or university summer bridge sites (Canales, Gardner, Hughes, & Weissman, 2010). While the focus of the study was not necessarily based solely on community colleges, all the bridge programs under consideration contained common elements of: accelerated instruction in developmental math, English and/or reading, student cohorts to facilitate bonding, academic and student services support, college knowledge components, and small student stipends for participants (Canales et al., 2010). While the results were not overwhelming, students completing the bridge programs eventually enrolled in fewer developmental courses, and were more likely to meet state standards in reading, writing and math (Canales et al., 2010). These findings led the authors to conclude the bridge programs under review provided the participating students with an advantage over non-participants (Canales et al., 2010).

While they may take different forms and have varying names, the main purpose of bridge programs is to provide incoming students with the skills they will need to be

successful in college prior to their first year (College Parent Central, 2011). Usually though, pre-college experiences represent only a portion of a comprehensive retention program. Another strategy that is gaining in popularity is so called intrusive advising. Since many of the theoretical principles that underlie many retention programs point to the importance of "connecting" with the college, intrusive advising is seen as opportunity to facilitate this process. In fact, as Glennen (1995) described it, intrusive advising includes several intervention strategies that connote interest in and involve the advisor in affairs of the student. This particular strategy has been particularly effective in department-specific studies. For example, at Atlantic Cape Community College faculty re-designed their academic advising process in the Arts and Humanities department. Rather than passively mailing out a general informational piece providing students with the name of their academic advisor, faculty members instead mailed out a personal letter to students, and followed up with a phone call in an attempt to individually connect with students. Data were tracked over the course of a 4-year period. Prior to the newly formed advising procedure, the retention rate of students in the Arts and Humanities department lagged behind the general college population by 12%. After four years, the program retention rate increased to a level 3% higher than the overall population (McArthur, 2005).

Another popular program that many colleges and universities are using to aid in persistence and retention efforts is the First Year Experience (FYE) program. While FYE programs take on many different forms, typically the most basic FYE courses consist of regular class meetings, taught by a college instructor or team of instructors, and are designed to introduce new students to the college or university and assist with time

management and study skills (Jamelske, 2009). Some FYE programs go further by creating learning communities, which may or may not be tied to particular academic programs (Jamelske, 2009). But at their core, the purpose is to increase student performance, persistence and graduation by socially and academically integrating students into the college community (Pascarella & Terenzini, 2005). The idea of a first year experience began in 1972 with the creation of "University 101" at the University of South Carolina (Pascarella & Terenzini, 2005). And throughout its history, this program has been very successful. In comparing participants vs. non-participants of "University 101" between 1973-1996, each entering cohort of participants were more likely to persist into their second year than non-participants (Pascarella & Terenzini, 2005).

With the popularity of FYE programs growing, the literature in this area has exploded. And the results have been overwhelming in finding a consistent positive statistically significant impact of FYE participating on student retention (Pascarella & Terenzini, 2005). What has been less clear, however, is what individual aspects of FYE programs are impacting student persistence and retention. In an effort to ascertain which variables are most critical, Porter and Swing (2006) surveyed 20,000 students at 45 colleges nationwide. Porter and Swing (2006) grouped survey items into five measures of learning outcomes: study skills and academic engagement, campus policies, campus engagement, peer connections, and health education. Of the five, only study skills and academic engagement and health education had statistically significant impacts on students' intent to persist (Porter & Swing, 2006). Although given that the study specifically addressed early intent to persist, the authors noted that these variables may play a more important role later in a student's college career (Porter & Swing, 2006).

An additional consideration not widely considered in the FYE literature is the degree to which precollege variables play in the FYE-student retention relationship. In two separate single-institution studies, researchers matched both FYE participants and non-participants on precollege variables including: gender, race/ethnicity, high school achievement, and admissions test scores, and found that even when matching these variables, students that participated in FYE programs had a significant advantage over those that did not (Boudreau & Kromrey, 1994; Sidle & McReynolds, 1999).

Retention and Underrepresented Populations

While the studies cited above both suggest variables including race and ethnicity may not have a strong impact on FYE programs, these issues still need to be thoroughly explored. As Tierney (1992) pointed out, applying retention models to minority students may be problematic. And the research has to some degree supported this notion. For example, in Tinto's separation stage, students must leave behind past support groups including families, friends, previous educational institutions and communities of residence. By breaking ties with previous support groups, students can begin the process of integrating into new ones. But in several minority cultures, this practice can be seen as counterproductive. For example, in a study of black college students and their families, O'Leary, Boatwright, and Sauer (1996) after distributing a survey to 137 graduating seniors from predominantly white campuses, found that frequent contact with family members was beneficial for black students. In a separate study, Herndon and Hirt (2004) interviewed 20 African-American college seniors at predominantly white public institutions (one rural and one urban). Unlike O'Leary et al. (1996), Herndon and Hirt (2004) also interviewed the family members of the 20 college students. Among other

things, students and their family members were asked to describe how families provided support to students and to describe their roles. After analyzing their results, the authors found that families, including extended families, laid the groundwork for a college education long before black students entered college (Herndon & Hirt, 2004). Furthermore, families were particularly influential in motivating black students (Herndon & Hirt, 2004).

Without question, motivation is a critical aspect of college success. In a study on the persistence of Native American students, Guillory and Wolverton (2008) conducted focus group interviews with 30 Native American students attending public institutions that were close in proximity to Native American populations. Students were asked to expound on the 3-4 most important factors that have helped them persist thus far, as well as the 3-4 biggest barriers to their persistence (Guillory & Wolverton, 2008). Guillory and Wolverton (2008) found that for Native Americans, "it's all about the family" (p. 84). They further stated that "institutions that serve Native American students cannot continue to operate using traditional approaches to student retention" (p. 84). Clearly this is strong evidence that calls into question Tinto's premise that breaking away from family support groups is critical to the retention of students.

In addition to the foundational theory of many community college retention programs, the interventions themselves may marginalize minority populations. For example, among immigrant students, one of the most common issues is the language barriers in school (Gandara & Contreras, 2009). While many summer bridge programs have at their core the goal of developing college reading and writing skills, as with most retention programs, they typically are only designed to assist native English-speaking

students. However, even among second-generation students, language can still be a barrier due to the fact that many live in a household where multiple languages are spoken at home (Buenavista, 2010). With little sensitivity to the needs of minority students such as the first or even second-generation non-native English speaking students discussed above, the bridge programs that are designed to bring students up to speed, yet do not contain English as a second language (ESL) as part of the curriculum, do nothing more than further the advantages of majority culture students. Furthermore, given how important families are to minority student success, it would seem appropriate that within intrusive advising retention strategies, consideration should be given to the inclusion of family members in the overall college experience. Although federal law prohibits the sharing of protected information, there are still opportunities to introduce family members to what is involved in attending college, and educate them on the services colleges have to offer. However, this process may be difficult for some students due to the language barriers discussed above. Despite the research on the importance of families, and the language barriers that exist for many immigrants, few if any colleges train advisors on how to handle conversations with non-native English speaking family members (Garcia, 2010). In the long run, failure to consider such issues serves only to marginalize minority students and renders many retention strategies ineffective.

Another marginalizing aspect of some retention interventions, particularly those like bridge programs, centers on cost. Logically, the students that will have the opportunity to benefit from bridge programs are those that can afford to pay for it. Generally this applies mostly to the white majority students, and greatly limits the opportunity for low income students (which typically includes a higher proportion of

minority students) to enroll in such programs. But that is only part of the issue. Usually not only is there the issue of the actual program cost, but there is also an opportunity cost involved. For example, due to the overall occupational downgrading of Filipino immigrants, many families engage in consolidation, or the practice of combining multiple nuclear families in one household (Buenavista, 2010). This practice serves to counter the socioeconomic difficulties faced by each family individually. Because of the additional financial obligations, these students simply cannot afford the loss of wages that would result from participating in a summer bridge program. And therefore, do not even have the opportunity to benefit from such a program.

Finally, another key element lacking in most community college retention programs is the presence of counter stories. As Solorzano and Yosso (2009) stated, the counter story is a tool for "exposing, analyzing, and challenging the majoritarian stories of racial privilege" (p. 138). Because most community college retention programs are based on theory developed for the white majority, the only stories told are those of the majority. This practice not only makes it difficult for minority students to find any personal relevance in retention programs, but also serves to isolate these students. As Herndon and Hirt (2004) pointed out, black students benefit from hearing stories about navigating the academic and social environments of college from other black students and/or alumni. In addition, through these relationships, black students will often develop their own networks of other black students and faculty members. While this process is beneficial, it also can serve as a marginalizing influence for the black student and faculty mentors, as they take on the additional pressures of providing support and guidance. This is especially difficult for minority faculty members, who already are very few in numbers

compared to their white counterparts. Because they are in the minority, it is often an assumption that they will serve as mentors to all minority students. This not only puts undue pressure on minority faculty members, but it essentially lumps all minority students into one large group, failing to recognize the differences that exist between the individual minority cultures. As a result, both minority faculty and students end up being marginalized by the lack of counter stories in community college retention programs.

Campus Ecology Theory

As Schuetz stated, "while individual characteristics and behaviors definitely matter in attrition, environmental influences do too" (2005, p. 62). While generally overlooked in attrition research, campus ecology research could provide an effective framework for studying retention in community colleges (Schuetz, 2005). As Strange and Banning (2001) stated, "environments exert their influence on behavior through an array of natural and synthetic physical features" (p. 200). A hallmark of developmental ecology theory is that development is actually a function of the interaction between the individual and the environment (Evans, Forney, Guido, Patton, & Renn, 2010). One of the first pioneers was Urie Bronfenbrenner who, after developing his initial theory by studying individuals in their early childhood years, refined his theory over the course of several decades to apply to a wide range of age groups. At the center of Bronfenbrenner's model are four components: process, person, context and time (Bronfenbrenner & Morris, 2006). These four components, entitled PPCT, interact in ways that both encourage or discourage development. Of the four components, the process component formulates the core of the model. Essentially, development of the individual is an evolving function of the person-environment interaction

(Bronfenbrenner, 1993, p. 10). These "processes," called proximal processes, operate over time and should be progressively more complex, yet not too overwhelming to the individual, to ensure optimal development (Evans et al., 2010).

The second component, the personal component, generally includes various attributes like family background, race, ethnicity, gender, socioeconomic class, etc. (Renn, 2003). The personal attributes most likely to shape development are those that encourage or inhibit dynamic dispositions toward the immediate environment (Evans et al., 2010). Bronfenbrenner labeled these attributes the developmentally instigative characteristics and identified four types (Bronfenbrenner, 1993). The first type includes those characteristics that either invite or inhibit certain responses from the environment (Bronfenbrenner, 1993). For example, "different students elicit particular responses from peers and faculty, administrators and coaches" (Renn & Arnold, 2003, p. 268). The second type, labeled selective responsivity (Bronfenbrenner, 1993), includes those characteristics that demonstrate how individuals react to explore their surroundings (Bronfenbrenner, 1993). For example, some students become highly involved in student activities, while others prefer to stay more to themselves. The third type, called structuring proclivities (Bronfenbrenner, 1993), "relate to how individuals engage or persist in increasingly complex activities" (Renn & Arnold, 2003, p. 269). One such example is the phenomenon of some students actively seeking out activities that are intellectually and/or socially more challenging, and others preferring not to seek out such activities. And finally, the fourth type, directive beliefs (Bronfenbrenner, 1993), relates to "how individuals view their agencies in relation to their environment" (Renn & Arnold, 2003, p. 269). For example, those who earn high grades believe they understand

their academic environment and the reality that their effort is proportional to their grades. Together, these four developmentally instigative characteristics interact and determine not only how a person experiences an environment but also how the environment responds to the person (Evans et al., 2010).

The third component, the context component, includes a series of four levels, with the individual at the center (Bronfenbrenner & Morris, 2006). These four levels create a nested network of interactions that generally move from more individual, one-on-one interactions to more distal and societal-based interactions (Renn & Arnold, 2003). The four levels are as follows:

1. Microsystem: a "pattern of activities, roles, and interpersonal relations experienced by the developing persons in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit or inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment" (Bronfenbrenner, 1993, p. 15). Examples of this particular level include work settings, family relationships, and residential living environments.
2. Mesosystem: comprised of "linkages and process taking place between two or more settings" (Bronfenbrenner, 1993, p. 22). Essentially, mesosystems are interconnected webs of two or more microsystems. The interactions of family relationship and work setting microsystems or roommate and faculty relationship microsystems may form separate mesosystems.
3. Exosystem: does not contain the developing individual at all. Instead, they exert external influences on an individual's microsystems. For example,

changes in the maximum financial aid award could potentially impact a person's work microsystem or a family emergency with a roommate may impact a person's residential microsystem.

4. Macrosystem: "consists of the overarching pattern of micro-meso-and exosystems characteristic of a given culture, subculture, or other extended social structure" (Bronfenbrenner, 1993, p. 25). The macrosystem provides structure to the other systems and is culturally, place and time dependent (Renn & Arnold, 2003). The conditions that govern college choice are one example of a macrosystem.

The fourth and final component of the PPCT model is the component of time. Bronfenbrenner divided the concept of time into three levels: "Microtime refers to continuity versus discontinuity in ongoing episodes of proximal process. Mesotime is the periodicity of these episodes across broader time interviews, such as days and weeks. Finally, Macrotime focuses on the changing expectations and events in the larger society, both within and across generations" (Bronfenbrenner & Morris, 2006, p. 796). So while time has multiple individual affects, particularly in relations to biological and social transitions routed in cultural and age-related norms, people are very much influenced by the time macrosystem of the particular era when they attended college (Renn & Arnold, 2003).

As Evans et al. (2010) stated, there have been few instances of developmental ecology being directly applied in a student affairs setting. This phenomenon is curious. Perhaps, in the case of Bronfenbrenner's theory, the model is too complex and difficult to use (Evans et al., 2010). Or maybe the fact that Bronfenbrenner's model was initially

developed for children created applicability concerns for college researchers and practitioners. Rather than its applicability, perhaps, as Evans et al. (2010) stated, the true value of Bronfenbrenner's model is that it provides "a way to look inside the interactions between individuals and their environments to see how and why outcomes may occur as they do" (p. 161). In this respect, there have been several influential theories that have incorporated at least a portion of developmental ecology principles. For example, Alexander Astin utilized concepts similar to Bronfenbrenner's proximal processes to develop his input-environment-outcome model, which postulated that outputs (earning a degree) must be evaluated in terms of inputs (ability, gender, age) and the environment (peers, faculty, college facilities) (Fike & Fike, 2008). Similarly, Tinto developed a model of retention that theorized that a student's pre-college characteristics (i.e., skills, abilities, family background) interact with the collegiate environment (i.e., extracurricular activities, interactions with faculty and peers) to create varying levels of academic and social integration (Tinto, 1987). Research like that of Astin and Tinto has been very beneficial in understanding the complex issue of student persistence.

Strange and Banning's Campus Ecology Model

While models like Bronfenbrenner's were not necessarily designed for application on college campuses, during the 1970s and 1980s, the theme of reciprocal relationships between people and their environments was eventually applied to the specialized environment of higher education by way of a theoretical approach called campus ecology (Evans et al., 2010). Campus ecology was defined as "the study of the relationship between the student and the campus environment . . . incorporates the influence of

environments on students and the students on environments" (Banning, 1978, p. 4). The base of campus ecology is built on six different theoretical foundations:

1. Behavior-setting theory: People tend to behave in similar ways in specific environments regardless of their individual differences (Walsh, 1978, p. 7). As such, people tend to seek environments that they enjoy, and try to change those environments they do not. Thus, according to Walsh (1978), campus environments should be viewed as behavior settings, and should be taken into account when predicting behaviors (p. 8).
2. Subculture approach: This approach tends to describe environments in terms of attitudes, values, behaviors, and roles of its members (Walsh, 1978, p. 9). Campus ecologists use subculture analyses to understand institutional cultures and the contexts for student learning and development (Evans et al., 2010). Among the more prevalent theorists using the subculture approach are Clark and Trow (1966), who developed four distinct subcultures: academic, nonconformist, collegiate, and vocational. According to their theory, dominance of one particular subculture certainly could shape institutional culture.
3. Personality types: Most prevalent in this area is the work of Holland (1966). Rooted in vocational testing, Holland developed six personality types and their corresponding environmental preferences (Holland, 1966). These types included: realistic, investigative, artistic, social, enterprising, and conventional (Holland, 1966). According to campus ecologists, the degree of congruence

between the student's personality types and their environment may influence choices like college major and career choice (Evans et al., 2010).

4. Need x Press = Culture: Developed by Stern (1970), this theory posits that behavior is the function of the relationship between individual need and environment press. A college culture then is defined as "a composite of the environmental press and the needs of its inhabitants" (Walsh, 1978, p. 11). Campuses are generally populated with those whose needs match the available presses (Evans et al., 2010).
5. Socio-ecological approach: Based mostly on the work of Dr. Rudolf Moos, this approach proposed that students' stability depended on the interaction of the environment and personal system (Moos, 1979). Thus, student behavior is the outcome of environmental perceptions, personal characteristics, and their interaction in a dynamic system (Evans et al., 2010). Of particular note for campus ecologists is the inclusion of the physical environment and the physical aspects of campus life (Evans et al., 2010).
6. Transactional approach: Developed by Pervin (1968), according to this approach, behavior can be best understood in terms of interactions of transactions between the student and the environment. People in general work to reduce the differences between their ideal and perceived selves, and as such, seek out environments that help them achieve their ideal state (Pervin, 1968).

Utilizing these six theoretical foundations, campus ecology focuses the attention on the individual, the environment, and the interactions between them (Evans et al., 2010). It is

this combination of psychosocial and physical environments that brings these six theoretical approaches into the practical setting of the college campus (Evans et al., 2010).

Integrating all six theoretical approaches, Strange and Banning (2001) developed a campus design that identified four goals: inclusion, safety, involvement, and community building. Furthermore, Strange and Banning (2001) identified four sources of environmental influence on student behavior. The first source involves the physical characteristics of the campus (Strange & Banning, 2001). Both verbal and non-verbal signals emanate from the physical characteristics of college campuses. Undoubtedly students interact with faculty, staff and other students. However, they also interact with the physical environment including buildings, grounds, artwork, etc. The messages that are sent to students through their physical environment help set and frame expectations that colleges have. This in turn may influence student behavior. As Strange and Banning (2001) stated, "the physical aspects of any campus environment offer many possibilities for human response, rendering some behaviors more probable than others" (p. 15). In terms of retention, a well-designed campus environment can help encourage certain behaviors, and help with the integration process known to be important (Schuetz, 2005).

A second environmental source discussed by Strange and Banning (2001) involves what they termed the human aggregate. As Strange and Banning (2001) stated, "human characteristics influence the degree to which people are attracted to, satisfied within, and retained by those environments" (p. 35). While many researchers have used this "birds of a feather flock together" philosophy to build typologies, Clark and Trow (1966) were among the first to apply it to college students. Through an interaction of

how students identify with ideas, and how they identify with their higher education institution, Clark and Trow (1966) developed four distinct subcultures:

1. academic: Identifying as much with ideas as with the institution, these students typically make up the most serious students who work hard, achieve high grades, and participate in campus life;
2. nonconformist: Identifying far more with ideas than with the institution, these students value individual rewards and individual styles, and are generally detached from the college and its faculty;
3. collegiate: Identifying far more with the institution than with ideas, these students place a premium on college life but not to intellectual demands; and
4. vocational: These students do not identify with either ideas or with the college. Essentially these students view college as preparation for a career or vocation.

Dominance of one particular subculture certainly could shape institutional culture. Congruence, or the degree of fit between a student and the dominant subculture ultimately could impact his or her decision to persist (Schuetz, 2005).

A third environmental source involves an institution's organizational environment (Strange & Banning, 2001). As Etzioni (1964) stated, organizations are characterized by three characteristics:

1. deliberately planned divisions of labor, power and communications, Organizations such as higher education institutions are planned, organized, and structured for specific purposes;
2. presence of one or more power centers which direct organization toward goals; and
3. potential for the substitution of personnel in cases of underperformance. (p. 3)

Clearly, colleges and universities exhibit all three of these characteristics. However, they are also made up of several structural components. Strange and Banning (2001) identified several structural components critical to higher education environments:

1. Complexity: Concerns the number of occupational subunits and specialties present, along with the intensity, knowledge, and expertise required (p. 63).
2. Centralization: Centralized environments are those where few individuals share power while decentralized environments are those where many share power (p. 64).

3. Formalization: Formalization refers to the importance of rules and regulations in an organization (p. 65).
4. Stratification: Highly stratified systems have many different levels of status, distinguished by differentiated rewards, as well as a reflection of the degree of mobility members have in moving from lower to higher levels in the organization (p. 66-67).
5. Production: All organizations produce a product to justify their existence. In higher education environments, products generally consist of credit hours, program enrollments, FTE faculty, retention rates, etc. (p. 68).
6. Efficiency: Typically involves discussion of costs, which can be difficult to measure in colleges. Even though cost containment is difficult, efficiency concerns must be addressed (p. 71).
7. Morale: Higher morale is associated with lower turnover, and high turnover is associated with lower morale (p. 71).

The aforementioned structures and characteristics combine to create a continuum from dynamic (flexible in design and respond easily to change) to static (rigid and resistant to change) (Hage & Aiken, 1970). As Strange and Banning (2001) stated, "dimensions of complexity, centralization, formalization, stratification, production, efficiency, and morale contribute to varying degrees of flexibility or rigidity in the environment" (p. 82). Flexible environments that encourage innovation and engage students are necessary (Strange & Banning, 2001).

Finally, the fourth environmental source discussed by Strange and Banning (2001) is the constructed environments of higher education institutions. Different from the first three sources, constructed models of the environment focus on the perceived and subjective views of the participants (Strange & Banning, 2001). Central to constructed environments is the concept of environmental press. Among the first to articulate this was Stern (1970). According to Stern (1970), the various identified presses in an environment may or may not correspond to students' needs or those organizational tendencies that seem to give unity and direction to a person's behavior (Stern, 1970, p. 6). Individual levels of congruence between a student's perceptions and the environment

itself creates "presses," which ultimately impact growth (Strange & Banning, 2001). Whereas one student may view an environment as "cold" based on his or her own subjective experiences, another may view the same environment as quite friendly.

In addition to the concept of environmental press, the impact of social climate is critical in Strange and Banning's concept of constructed environment. As discussed earlier, much of the work on the socio-ecological approach is based mostly on the work of Dr. Rudolf Moos (1979). This approach proposed that students' stability depended on the interaction of the environment and personal system (Moos, 1979). According to Moos (1979), social climate is comprised of three domains:

1. Relationship dimensions: the extent to which people are involved in the setting, support and help one another, and express themselves openly (p. 14).
2. Personal growth and development dimensions: measuring the basic goals of the setting, areas in which personal development and self-enhancement tend to occur (p. 16).
3. System maintenance and system change dimensions: the extent to which the environment is orderly and clear in its expectations, maintains control, and responds to change (p. 16).

Each of the social climate dimensions may vary along a continuum of high to low and may create a special focus or orientation depending the setting (Moos, 1979).

As Zwerling (1980) stated, "to reduce significantly the staggering attrition at the average community college, it appears necessary to shift the focus from what is wrong with the student to what is wrong with the institution" (p. 56). Strange and Banning's model has the potential to assist researchers and practitioners understand how campus environmental variables may contribute to retention. For example, the fact that approximately two thirds of community college faculty are part-time employees (Snyder, Tan, & Hoffman, 2004) certainly has the potential to impact students' integration given the fewer opportunities to have formal and/or informal discussions with these part-time

faculty members. While there is an overall lack of research in the area of campus ecology and social integration, it seems reasonable that collegiate environments that consist of rigid bureaucratic barriers, outdated, inadequate, or inefficient physical characteristics and environments that cater only to those "in the know" so to speak certainly would be damaging to social integration, and subsequently, retention.

Summary and Future Direction

As discussed, there is ample research concerning retention in a variety of areas including practical settings, underrepresented populations, campus ecology theory, and established theoretical retention models. One theme that seems to connect many of these areas is that of integration. For example, in many of the practical retention efforts including bridge, intrusive advising, and FYE programs, the goal is usually to connect students to the college's systems and integrate them into the collegiate environments. In much of the research on underrepresented populations and retention, it is not only important to integrate the student, but the family as well. Many of pillars of Strange and Banning's (2001) campus ecology theory are built on principles of people integrating into their environments. And of course, all three retention models discussed have at their core, the goal of increased integration. So based on the available literature, integration appears to be critical in student retention.

While there are many different retention avenues in the current literature, Tinto's interactionalist model is by far the most studied, tested, and critiqued (Braxton & Hirschy, 2005). While the basic constructs of academic and social integration have been generally supported (Pascarella & Terenzini, 2005), the fact that they was primarily developed using four-year university students makes it difficult to apply to community

college environments (Mohammadi, 1996). This notion could at least partially explain the overall variability in the research concerning the application of Tinto's model to community college environments. Generally though, many researchers have found a relationship between academic integration and retention in two-year college environments (Bers & Smith, 1991; Fox, 1986; Halpin, 1990; Mulligan & Hennessy, 1990; Napoli & Wortman, 1996, 1998; Nora et al., 1990; Pascarella & Chapman, 1986; Pascarella et al., 1986; Sorey & Duggan, 2008). It is the social integration construct that has produced mixed results. As the work of Deil-Amen (2011) and Maxwell (2000) suggested, perhaps the varying results concerning social integration in community college settings are partially the result of the possibility that what Maxwell (2000) and Deil-Amen (2011) suggested is the true construct of social integration in community college settings is unrelated to Tinto's (1975). This is the central question that will be explored in the chapters that follow. Additionally, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration construct. Other factors including gender and age will be explored to determine if they exercise any influence on social integration scores.

Chapter III

Methodology

The purpose of this study was to explore the concept of social integration in a community college to determine if the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was related to the construct of social integration discussed in Tinto's (1975) model. Further analyses were conducted to determine if each of these two constructs differed when comparing demographic variable of gender. In addition, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration constructs. Furthermore, this study investigated whether each of these two constructs differed when program of study interacted with the demographic variable of gender. Finally, the influence of age on social integration was studied for both constructs of social integration, as well as its potential interaction with program of study (i.e. occupational vs. transfer students).

The data were obtained from students attending a mid-sized Midwestern community college. This institution is a comprehensive two-year institution of higher education, with a 2013 winter semester enrollment of approximately 4,500 students, that offers over 50 Associate Degree, Certificate, and Training Credential programs. The institution consists of two distinct campuses: a main campus, which houses a majority of the institution's occupational programs such as Welding, Heating/Refrigeration, and Drafting, and an extension campus which is generally populated with students enrolled in transfer-oriented programs like Sociology, Psychology, and Foreign Language. The main campus generates approximately 30% of the institution's on-campus credit hours, and the

average student age is 26. The extension campus tends to attract younger students (average age of 24) and generates approximately 70% of institution's on-campus credit hours.

The following research questions guided the study:

1. Is the construct of social integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), related to the construct of social integration developed by Tinto (1975) in a four-year university setting?

   Research Hypothesis 1—The construct of social integration as suggested by Maxwell (2000) and Deil-Amen (2011) will be unrelated to the construct of social integration included in Tinto's (1975) model.

2. Are there significant differences in social integration scores, using Tinto's (1975) construct, when comparing occupational students to transfer students?

   Research Hypothesis 2—Social integration scores, using Tinto's (1975) construct, will differ significantly when comparing occupational students to transfer students.

   Null Hypothesis 1—There will be no significant difference in social integration scores, as defined by Tinto (1975), when comparing occupational students to transfer students.

3. Are there significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, when comparing occupational students to transfer students?

Research Hypothesis 3—Social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, will differ significantly when comparing occupational students to transfer students.

Null Hypothesis 2—There will be no significant difference in social integration scores, as defined by Maxwell (2000) and Deil-Amen (2011), when comparing occupational students to transfer students.

4. Do social integration scores, using Tinto's (1975) construct, differ when comparing demographic variables including gender and race?

   Research Hypothesis 4—There will be significant differences in social integration scores, using Tinto's (1975) construct, in regards to gender.

   Null Hypothesis 3—There will be no significant differences in social integration scores, as defined by Tinto (1975), in regards to gender.

   Research Hypothesis 5—There will be significant differences in social integration scores, using Tinto's (1975) construct, in regards to race.

   Null Hypothesis 4—There will be no significant differences in social integration scores, as defined by Tinto (1975), in regards to race.

5. Using Tinto's (1975) construct, does age significantly influence overall social integration scores?

   Research Hypothesis 6—There will be a significant relationship between social integration scores, using Tinto's (1975) construct, and age.

6. Do social integration scores differ, using Tinto's (1975) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race?

Research Hypothesis 7—There will be a significant difference in social integration scores, using Tinto's (1975) construct, between occupational students and transfer students when interacting with gender.

Null Hypothesis 5—There will be no significant differences in social integration scores, as defined by Tinto (1975), between occupational students and transfer students when interacting with gender.

Research Hypothesis 8— There will be a significant difference in social integration scores, using Tinto's (1975) construct, between occupational students and transfer students when interacting with race.

Null Hypothesis 6—There will be no significant differences in social integration scores, as defined by Tinto (1975), between occupational students and transfer students when interacting with race.

7. Using Tinto's (1975) construct, does age significantly influence social integration scores when interacting with program of study?

   Research Hypothesis 9—There will be a significant relationship between social integration scores, using Tinto's (1975) construct, and age for occupational students.

   Research Hypothesis 10—There will be a significant relationship between social integration scores, using Tinto's (1975) construct, and age for transfer students.

8. Do social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, differ when comparing demographic variables including gender and race?

Research Hypothesis 11—There will be significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, in regards to gender.

Null Hypothesis 6—There will be no significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, in regards to gender.

Research Hypothesis 12—There will be significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, in regards to race.

Null Hypothesis 7—There will be no significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, in regards to race.

9. Using the Maxwell (2000) and Deil-Amen (2011) construct, does age significantly influence overall social integration scores?

   Research Hypothesis 13—There will be a significant relationship between social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, and age.

10. Do social integration scores differ, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race?

    Research Hypothesis 14—There will be a significant difference in social integration scores, using the Maxwell (2000) and Deil-Amen (2011)

construct, between occupational students and transfer students when interacting with gender.

Null Hypothesis 8—There will be no significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students when interacting with gender.

Research Hypothesis 15— There will be a significant difference in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students when interacting with race.

Null Hypothesis 9—There will be no significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students when interacting with race.

11. Using the Maxwell (2000) and Deil-Amen (2011) construct, does age significantly influence social integration scores when interacting with program of study?

Research Hypothesis 16—There will be a significant relationship between social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, and age for occupational students.

Research Hypothesis 17—There will be a significant relationship between social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, and age for transfer students.

Research Design

The purpose of this study was to determine if the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was related to the construct of social integration as discussed by Tinto (1975). Further analyses were conducted to determine if each of these two constructs differed when comparing the demographic variable of gender. In addition, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration construct as described by Maxwell (2000) and Deil-Amen (2011) and the four-year social integration construct as defined by Tinto (1975). Furthermore, this study investigated whether each of these two constructs differed when interacting with the demographic variable of gender. Finally, the influence of age on social integration was studied for both constructs of social integration demographic variables, as well as its potential interaction with program of study (i.e. occupational vs. transfer students). To achieve these goals, a survey design was used.

Prior to survey distribution, the researchers received approval from the University of Nebraska-Lincoln's Institutional Review Board, as well as the Executive Dean of Student and Academic Support Services of the college under study. As previously stated, the college under study consists of two very distinct campuses. However, while the main campus houses a majority of the institution's occupational programs, and the extension campus primarily consists of students enrolled in transfer-oriented programs, each campus does not exclusively serve one sub-population or the other. To minimize sampling error, the survey was distributed to students enrolled in a stratified random

sample of 20 individual course sections offered in the 2013 winter semester. To accomplish this, all course sections offered during the 2013 winter semester were downloaded from the institution's data management software into an Excel spreadsheet. Then, the Excel spreadsheet was uploaded into the Statistical Package for the Social Sciences (SPSS) version and 20 course sections were randomly selected from the total course offerings.

Instructors were contacted late in the 2012 fall semester and were given a brief overview of the project. Actual survey distribution occurred during the first two weeks of the 2013 winter semester. During the survey distribution, instructors were asked to leave the room. Students were given a plain manila envelope containing a copy of the survey and a copy of the informed consent letter. They were asked to read the informed consent letter prior to completing the survey, and to keep the letter for their records. Once they completed the survey, students were instructed to return the surveys to the envelope, at which time, surveys were collected by the researcher. Results were entered by the researcher into an Excel spreadsheet and coded into simple numerical codes (i.e., 0, 1, 2, 3) for statistical analysis using SPSS. Cronbach's Alpha scores were then calculated to determine the internal consistency of the instrument.

The number of sections representing each campus mirrored the percentages that each campus contributes to the institution's overall credit hour total. Since approximately 30% of the on-campus credits are generated at the main campus, 6 of the 20 sections surveyed were located on the main campus. The remaining 14 sections surveyed were located on the extension campus. Additionally, since the proportion of students enrolled in transfer programs versus occupation programs is approximately two-

to-one, the main campus sample consisted of 2 occupational sections and 4 transfer sections while the extension campus sample consisted of 5 occupational sections and 9 transfer sections.

Instrumentation

In 1976, Pascarella and Terenzini (1980) initiated a longitudinal study at a large New York university to examine the validity of Tinto's constructs of social and academic integration and determine if a multidimensional measure would be able to discriminate between persisters and non-persisters. An initial survey asking students questions about their expectations of their college experiences was sent to incoming freshmen during the fall of 1976, with 1,457 freshmen returning the survey (Pascarella & Terenzini, 1980). A follow up survey asking students to detail their actual college experiences was collected from 773 freshmen who enrolled the following spring semester (Pascarella & Terenzini, 1980). Using a chi square goodness of fit analysis, the authors determined that this sample was representative of the entire freshmen population (Pascarella & Terenzini, 1980).

According to Tinto (1975) academic integration is typically determined by the student's academic performance and level of intellectual development. Social integration, on the other hand, consists of interactions outside the classroom between students and other campus individuals and/or groups (Tinto, 1975). To assess academic and social integration, Pascarella and Terenzini (1980) developed 55 items to tap the integration dimensions of peer-group interactions, interactions with faculty, faculty concern for student development and teaching, intellectual development, and institutional and goal commitment. The list of questions was eventually trimmed to 34 "institutional

integration items (Pascarella & Terenzini, 1980). Controlling for factors including: sex, race/ethnicity, initially program of study, academic aptitude, high school achievement, high school extracurricular activities, expected number of informal contacts with faculty, parental income, parental formal education level, highest expected degree, importance of graduating from college, choice in attending the university, confidence in college choice, freshman year GPA, and freshman year extracurricular activity, the researchers used multivariate analysis of covariance to determine the instrument's ability to differentiate between persisters and non-persisters (Pascarella & Terenzini, 1980). Through their analysis, the researchers found that the instrument was useful in measuring the constructs of Tinto's model and may be useful in predicting persisters/drop out decisions (Pascarella & Terenzini, 1980). The instrument was titled the Institutional Integration Scale (IIS) (Pascarella & Terenzini, 1980).

Since the original instrument is quite old, French and Oakes (2004) revised the instrument in an effort to update and improve it. To do so, the researchers first distributed the survey to a sample of 773 university students (French & Oakes, 2004). After this first distribution, the researchers reworded negatively worded items into positively worded items and re-wrote several items for readability (French & Oakes, 2004). Additionally, the researchers combined the 5 original subscales into 2 more general categories (French & Oakes, 2004). The first of the 2 new categories, titled Faculty, included the original subscales of Interactions with Faculty and Faculty Concern for Student Development and Teaching; the second new category, titled Student, included the original subscales of Academic and Intellectual Development, Peer-Group Interactions, and Institutional and Goal Commitment (French & Oakes, 2004). The

researchers then administered the revised survey to a separate sample of 1734 students (French & Oakes, 2004). After comparing the 2 samples, the researchers found that the revisions resulted in higher internal consistency reliability (.83 for the older version to .92 for the revised version), higher item discrimination (ranging from .15 to .51 in the original sample vs. a range of .26 to .64 in the revised sample), and higher correlations (ranging from .19 to .33 in the original sample vs. a range of .57 to .70 in the revised sample) among the subscale scores and between the subscale and total scale scores (French & Oakes, 2004). As a result of these improvements, this updated Institutional Integration Scale was used in the current study.

As Maxwell (2000) and Deil-Amen (2011) have suggested, the construct of social integration in community colleges may not be as closely related to the social integration in four-year institutions. As such, it is possible that measures such as the IIS, are not necessarily sufficient in assessing social integration in community college environments. As both Maxwell (2000) and Deil-Amen (2011) found, in community college, social activity is not centered around student group participation, art, theater or other extracurricular attendance, or residence hall living. Instead, socialization in community college environments tends to center around academically-related peer group activity and supportive in-class interactions with students and faculty. It is within these interactions with faculty and study group sessions where social integration truly manifests itself in community college students (Deil-Amen, 2011; Maxwell, 2000). As mentioned earlier, in the context of survey research, Dew (2008) defined a construct as an abstract idea, underlying theme, or subject matter that a researcher wants to measure through survey questions. Because of the findings discussed above, several questions were added to

assess the alternative construct of social integration including studying with students in informal groups inside and outside of class, joining informal study groups, and communicating with faculty inside the classroom as suggested by Maxwell (2000) and Deil-Amen (2011). The new questions were as follows:

1. I find value in studying with other students outside of class.
2. I find value in joining a study group outside of class.
3. I find the other students in my classes to be supportive in the classroom.
4. I find the other students in my classes to be approachable in the classroom.
5. I find my instructors to be supportive in the classroom.
6. I find my instructors to be approachable in the classroom.

As with the revised IIS, the students were given five response choices: strongly disagree, somewhat disagree, not sure, somewhat agree, strongly agree.

Once the six new items were combined with the IIS, internal consistency reliability calculations were performed to assess the interrelatedness and cohesiveness among the combined items. More specifically Cronbach's Alpha calculations were performed on the entire survey instrument, as well on the 20 social integration items on the original instrument developed by French and Oakes (2004), the 6 new social integration items based on the work of Maxwell (2000) and Deil-Amen (2011), and a combination of both original and new social integration items. In their original instrument, French and Oakes (2004) further categorized their social integration items into 3 scales: Peer Group Interactions, Faculty Concern for Student Development and Teaching, and Interactions with Faculty. Additionally, Cronbach's Alpha calculations

were performed on the three social integration scales with the six new social integration items added to each scale.

Cronbach's Alpha scores range from 0 to 1, with values between .60 and .70 representing the lower limits of what is deemed reliable (Hair, Anderson, Tatham, & Black, 1998). In the current study, the Cronbach's Alpha for the entire survey instrument was .914. Furthermore, the Cronbach's Alpha score for the original 20 social integration items was .881, for the six new social integration items was .805, and for the combination of both original and new items was .908. Finally, the Cronbach's Alpha scores for the combination of the three social integration scales developed by French and Oakes (2004) and the six new social integration items were .877 (Peer Group Interactions), .848 (Faculty Concern for Student Development and Teaching), and .844 (Interactions with Faculty). Each of the Cronbach's Alpha scores listed above were well above the established cutoff score and, therefore, confirm that the survey instrument was reliable and the new items were interrelated with the original items and scales. Table 1 provides a summary of the Cronbach's Alpha scores obtained in this study.

Participants in the study were students enrolled in classes during the 2013 winter semester at a Midwestern community college. To achieve the intended quantitative goals of the study, as discussed earlier, a stratified random sample of 20 course sections were surveyed. Overall, 390 students were administered the survey. Since the purpose of the study was to explore social integration in community colleges, the researcher felt it imperative that only those who were previously enrolled in the community college be included in the analysis. Therefore, first time freshmen in the winter of 2013, along with

Table 1

Cronbach's Alpha Scores

Portion of the Study	Cronbach's Alpha Score
Complete Survey	.914
Social Integration Items- French & Oakes	.881
Social Integration Items- New Items	.805
Social Integration Items- All	.908
Peer Group Interactions Scale + New Items	.877
Faculty Concern Scale + New Items	.848
Interactions with Faculty + New Items	.844

Guest students (students primarily enrolled in a four-year university but are completing a class at the community college) were eliminated from the sample. Additionally, those that failed to complete the survey in its entirety were also eliminated. After these adjustments, the sample consisted of 308 students or a 79% response rate.

Study Participants

Among the 308 students entered into the analysis, 133 (43%) were male students and 175 (57%) were female students. This closely matched the gender breakdown of the overall student population (59% female and 41% male). Additionally, 283 (92%) identified themselves as white, 1 (<1%) as Pacific Islander, 4 (1%) as Native American, 6 (2%) as African American, 5 (2%) as Asian, and 9 (3%) as Hispanic. The age of the overall sample ranged from 18-60, with the average age of 24. Again, these figures matched the overall student population figures, where the average age is 24 and 90% identify themselves as white, < 1% as Pacific Islander, 2% as Native American, 3% as

African American, 1% as Asian, and 3% as Hispanic. In fact, the racial figures were consistent across both campuses. See Table 1 for a summary of the sample and population breakdowns. Additionally, a total of 78 (25%) reported being enrolled in an occupation program and 149 (48%) in a transfer program. The course sample purposefully selected twice the number of transfer classes vs. occupational classes. As such, the percentage of transfer to occupational students closely matched the intent of the study. Additional programs reported included 33 (10%) in Business programs, 33 (10%) in Health-related programs, and 15 (5%) in General/Undecided programs.

Of the overall sample, 219 (71%) were from one of the extension campus sections. This closely matched the overall population, where 72% of the total enrollment is enrolled at the extension campus. Among this sub-sample of 219 students, 201 (92%) identified themselves as white, 3 (1%) as Native American, 4 (2%) as African-American, 4 (2%) as Asian, and 7 (3%) as Hispanic, which as mentioned earlier, closely resembled the overall population parameters. Ages of extension campus survey completers ranged from 18-50, with an average age of 23. The average age of the total extension campus student population is 24. And finally, 45 (21%) reported being enrolled in an occupational program, while 103 (47%) reported being enrolled in a transfer program. This is somewhat different than the overall population parameter, but given that transfer students are more highly represented on the extension campus, this disparity is not unexpected. Additional programs reported included 32 (15%) in Business programs, 28 (13%) in Health-related programs, and 11(5%) in General/Undecided programs.

Table 2

Sample and Population Gender, Race, and Age Demographics

	Sample	Population
Gender		
Male	43%	41%
Female	57%	59%
Race		
White	92%	90%
Pacific Islander	< 1%	< 1%
Native American	1%	2%
African American	2%	3%
Asian	2%	1%
Hispanic	3%	3%
Age	24	24

Finally, of the overall sample, 89 (29%) were from one of the main campus sections. Among this sub-sample of 89 students, 82 (92%) identified themselves as white, 1 (1%) as Pacific Islander, 1 (1%) as Native American, 2 (2%) as African-American, 1 (1%) as Asian, and 2 (2%) as Hispanic. Again, as mentioned earlier, these figures closely matched the overall population parameters. Ages of main campus survey completes ranged from 18-60, with an average age of 26. The average age of the entire main campus population is also 26. Additionally, 33 (37%) reported being enrolled in an occupational program, while 46 (52%) reported being enrolled in a transfer program. As with the extension sample, these figures are somewhat different than the overall population parameters. But given that occupational students are

represented in greater numbers on the main campus, this difference is not unexpected. Additional programs reported included one (1%) in a Business program, five (6%) in a Health-related program, and four (4%) in General/Undecided programs.

Data Analysis Procedures

Prior to measuring the hypotheses listed previously, internal consistency reliability calculations were performed on the six items that assessed the new construct of social integration suggested by Maxwell (2000) and Deil-Amen (2011). More specifically, Cronbach's Alpha, which measures the extent to which there is cohesiveness among the items and/or subscales, was used to measure internal consistency reliability (Isaac & Michael, 1995).

To answer research question number 1, which asked whether the construct of social integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), was related to the construct of social integration developed by Tinto (1975) in a four-year university setting, discriminant validity tests were utilized. Discriminant validity tests whether concepts and/or measurements are related or unrelated (Campell & Fiske, 1959), and are typically done by computing inter-item correlations (Jensen, 1998). Additionally, a correlation between the summed scores of the Tinto's social integration items and the new social integration was calculated.

To answer research questions 2 and 3, which asked whether there are significant differences in social integration scores, using Tinto's (1975) construct, and the Maxwell (2000) and Deil-Amen (2011) construct, when comparing occupational students to transfer students, two-tail independent sample t-tests, with the probability level set at .05,

were performed. This test is particularly relevant since the transfer and occupational samples consisted of two completely independent sets of students.

To answer research questions 4 and 8, two statistical tests were utilized. The first was a two-tail independent sample t-test, with the probability level set at .05, was performed to measure the impact of gender. Secondly, a one-way analysis of variance (ANOVA) was used to investigate the impact of race. This technique was chosen because of its ability to analyze independent variables with more than two levels (Hill & Lewicki, 2007). Because there were five different racial categories, a one-way ANOVA was particularly relevant.

To answer research questions 5, 7, 9, and 11, a Pearson Product Moment Correlation was used to investigate the influence of age on social integration. This particular statistical technique was chosen because age is a continuous variable.

To answer research questions 6 and 10, univariate analysis of variance was used to ascertain the interaction effect of gender and race on program of study. This technique has the advantage of not only being flexible, but having the capability of performing multiple statistical tests simultaneously, including those ascertaining interaction effects (Hill & Lewicki, 2007). All of the above procedures were calculated using the Statistical Package for the Social Sciences (SPSS) version 20.

Ethical Considerations

Ethical considerations in regards to this study included ensuring the research provided adequate protection. As noted by Stake (2010), the people being researched cannot be counted on to protect themselves. It is the researchers themselves who provide the bulwark of protection. Through empathy, intuition, intelligence, and experience, we

ourselves have to see the dangers emerging (Stake, 2010). The dangers include exposure, humiliation, embarrassment, loss of respect and self-respect, and loss of standing at work or in the group. Furthermore, ethical conduct of interpersonal research depends not so much on letters of informed consent but on deliberated and collaborative caution by the researchers (Stake, 2010). In the current study, risks to the participants were minimal. Identifying material was not included on completed surveys. Furthermore, instructors were absent from the classroom during survey distribution to guard against coercion. Additionally, surveys were distributed in large envelopes to students. The researcher did not know until later if students completed the survey at the time of collection. Finally, access was restricted to the primary and secondary investigators only, and materials were destroyed upon completion of the analysis.

Summary

Survey distribution proceeded very smoothly, and all procedures were followed according to Institutional Review Board regulations. All 20 instructors from the randomly selected sample allowed the survey distribution to occur in their individual classes. All respondents were over the age of 18, and all willingly participated. While 12 students did not complete the survey in its entirety, leading them to be eliminated from the sample, the rest did, leaving the researcher with a robust sample. Additionally, the sample statistics closely matched the overall population parameters. Sample data were entered into an Excel spreadsheet by the researcher, coded, and transferred into SPSS. In addition, Cronbach's Alpha scores were calculated to assess internal consistency. The results obtained are reported in Chapter IV. In Chapter V, discussion and analysis of the findings as well as future research suggestions based on the findings are reported.

Chapter IV

Results

The purpose of this study was to explore the concept of social integration in a community college to determine if the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was related to the construct of social integration discussed in Tinto's (1975) model. Further analyses were conducted to determine if each of these two constructs differed when comparing demographic variable of gender. In addition, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration constructs. Furthermore, this study investigated whether each of these two constructs differed when program of study interacted with the demographic variable of gender. Finally, the influence of age on social integration was studied for both constructs of social integration, as well as its potential interaction with program of study (i.e. occupational vs. transfer students).

Participants in the study were students enrolled in classes during the 2013 winter semester at a Midwestern community college. Overall, 390 students were administered the Academic and Social Integration Survey in a stratified random sample of 20 course sections. Since 30% of the credit hours were generated on the main campus, six of the course sections were located on the main campus. The remaining sections were located on the extension campus. The survey consisted of the Institutional Integration Survey originally developed by Pascarella and Terenzini (1980) and revised by French and Oakes (2004). Six additional questions written by the researcher based on the research of Maxwell (2000) and Deil-Amen (2011) were also included in the survey. After

eliminating first-time freshmen, those that failed to complete the survey in its entirety, and Guest students (student primarily enrolled in a four-year university but were completing a class at the community college), the total sample analyzed consisted of 308 students. Of these students, 133 (43%) were male students and 175 (57%) were female students. Additionally, 283 (92%) identified themselves as white, 1 (<1%) as Pacific Islander, 4 (1%) as Native American, 6 (2%) as African American, 5 (2%) as Asian, and 9 (3%) as Hispanic. The age of the overall sample ranged from 18-60, with the average age of 24. Furthermore, a total of 78 (25%) reported being enrolled in an occupation program and 149 (48%) in a transfer program, with additional programs reported including 33 (10%) in Business programs, 33 (10%) in Health-related programs, and 15 (5%) in General/Undecided programs. Finally, 219 (71%) were from one of the extension campus sections, while 89 (29%) were from one of the main campus sections. As reported in Chapter III, these sample statistics closely matched the overall population parameters.

Prior to measuring the hypotheses listed previously, internal consistency reliability calculations were performed to assess the interrelatedness and cohesiveness among the items. More specifically, Cronbach's Alpha scores were performed on the entire survey instrument, as well on the 20 social integration items on the original instrument developed by French and Oakes (2004), the 6 new social integration items written by the researcher, and a combination of both original and new social integration items. In their original instrument, French and Oakes (2004) further categorized their social integration items into 3 scales: Peer Group Interactions, Faculty Concern for Student Development and Teaching, and Interactions with Faculty. Additionally,

individual reliability calculations were performed on the three social integration scales with the six new social integration items written by the researcher added to each scale.

In the current study, the Cronbach's Alpha for the entire survey instrument was .914. Furthermore, the Cronbach's Alpha score for the original 20 social integration items was .881, for the six new social integration items was .805, and for the combination of both original and new items was .908. Finally, the Cronbach's Alpha scores for the combination of the three social integration scales developed by French and Oakes (2004) and the six new social integration items were .877 (Peer Group Interactions), .848 (Faculty Concern for Student Development and Teaching), and .844 (Interactions with Faculty). Each of the Cronbach's Alpha scores listed above were well above the established cutoff score and, therefore, confirm that the survey instrument was reliable and the new items are interrelated with the original items and scales.

Research Question 1

Research question number 1 asked whether the construct of social integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), was related to the construct of social integration developed by Tinto (1975) in a four-year university setting. To answer this research question, inter-item correlations were computed between the original French and Oakes (2004) social integration items and the new social integration items developed by the current researcher. High inter-item correlations would indicate that the social integration items on the French and Oakes (2004) survey and the new social integration items written by the researcher were highly related to one another. The inter-item correlations can be found in Table 3.

Table 3

Inter-item Correlations for Social Integration Items

Original Instrument—French & Oakes		Inter-item Correlations
1.	My interpersonal relationships with students have positively influenced my intellectual growth and interest in ideas.	.546
2.	I have developed close personal relationships with other students.	.590
3.	The student friendships I have developed have been personally satisfying.	.653
4.	My personal relationships with other students have positively influenced my personal growth, values, and attitudes.	.615
5.	It has been easy for me to meet and make friends with students.	.574
6.	I am satisfied with my dating relationships.	.184
7.	Many students I know would be willing to listen and help me if I had a personal problem.	.495
8.	Most students at Mid Michigan Community College have values and attitudes similar to mine.	.472
9.	I am satisfied with the opportunities to participate in organized extra-curricular activities at Mid Michigan Community College.	.469
10.	I am happy with my living/residence arrangement.	.153
11.	I am satisfied with my opportunities to meet and interact informally with faculty members.	.514
12.	Many faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.	.332
13.	I have developed a close, personal relationship with at least one faculty member.	.540
14.	My non-classroom interactions with faculty members have positively influenced my intellectual growth and interest in ideas.	.630
15.	My non-classroom interactions with faculty members have positively influenced my personal growth, values, and attitudes.	.580
16.	My non-classroom interactions with faculty members have positively influenced my career goals and aspirations.	.593
17.	Many faculty members I have had contact with are genuinely outstanding or superior teachers.	.473
18.	Many faculty members I have had contact with are genuinely interested in students.	.483
19.	Many faculty members I have had contact with are genuinely interested in teaching.	.448
20.	Many faculty members I have had contact with are interested in helping students grow in more than just academic areas.	.574

Table 3 continues

Original Instrument + New Items		Inter-item Correlations
1.	My interpersonal relationships with students have positively influenced my intellectual growth and interest in ideas.	.567
2.	I have developed close personal relationships with other students.	.608
3.	The student friendships I have developed have been personally satisfying.	.666
4.	My personal relationships with other students have positively influenced my personal growth, values, and attitudes;.	.626
5.	It has been easy for me to meet and make friends with students.	.604
6.	I am satisfied with my dating relationships.	.162
7.	Many students I know would be willing to listen and help me if I had a personal problem.	.532
8.	Most students at Mid Michigan Community College have values and attitudes similar to mine.	.494
9.	I am satisfied with the opportunities to participate in organized extra-curricular activities at Mid Michigan Community College.	.503
10.	I am happy with my living/residence arrangement.	.170
11.	I am satisfied with my opportunities to meet and interact informally with faculty members.	.536
12.	Many faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.	.324
13.	I have developed a close, personal relationship with at least one faculty member.	.502
14.	My non-classroom interactions with faculty members have positively influenced my intellectual growth and interest in ideas.	.585
15.	My non-classroom interactions with faculty members have positively influenced my personal growth, values, and attitudes.	.537
16.	My non-classroom interactions with faculty members have positively influenced my career goals and aspirations.	.557
17.	Many faculty members I have had contact with are genuinely outstanding or superior teachers.	.462
18.	Many faculty members I have had contact with are genuinely interested in students.	.505
19.	Many faculty members I have had contact with are genuinely interested in teaching.	.477
20.	Many faculty members I have had contact with are interested in helping students grow in more than just academic areas.	.586
21.	I find value in studying with other students outside of class.	.525
22.	I find value in joining a study group outside of class.	.480
23.	I find the other students in my classes to be supportive in the classroom.	.611

Table 3 continues

Original Instrument + New Items		Inter-item Correlations
24.	I find the other students in my classes to be approachable in the classroom.	.654
25.	I find my instructors to be supportive in the classroom.	.603
26.	I find my instructors to be approachable in the classroom.	.452

Inter-item correlations between the original French and Oakes (2004) social integration items ranged from .153-.653, with an average correlation of .49. After adding the six new social integration items, inter-item correlations ranged from .162-.666, with an average correlation of .512. Inter-item correlations for the new social integration items ranged from .452-.654, with an average correlation of .554. These moderately strong correlations suggest that students responded to both sets of social integration items in a consistent manner.

To further assess research question number 1, discriminant validity tests were utilized. Discriminant validity tests whether concepts and/or measurements are related or unrelated (Campell & Fiske, 1959). In addition to computing inter-item correlations, discriminant validity is established by showing that a measure does not correlate too highly with measures of related constructs (Mitchell & Jolley, 2010). A small correlation of between -.20 and +.20 indicates that the constructs are not highly related (Mitchell & Jolley, 2010). In the current study, the correlation between summed social integration scores on the original and new social integration items was .691, indicating that the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was highly related to the social integration construct suggested by Tinto (1975).

The inter-item correlations and discriminant validity tests contradicted Research Hypothesis 1. As such, it was concluded that in the current study, the construct of social

integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), is highly related to the construct of social integration developed by Tinto (1975).

Research Question 2

Research question number 2 asked whether there were significant differences in social integration scores, using Tinto's (1975) construct, when comparing occupational students to transfer students. To answer research question number 2, a two-tail independent sample t-test, with the probability level set at .05, was performed.

Before performing the t-test analysis, Levene's test for equality of variances was performed. This test is intended to ascertain whether the variances of the populations from which the samples were drawn were equal (Levene, 1960). A resulting score of over .05 demonstrates that the population variances are equal (Levene, 1960). In this instance, Levene's test indicated equal variances ($p = .30$). As such, the t-test was conducted, after which it was found that there was no significant difference in the summed social integration scores between occupational students ($M = 57.33$, $SD = 11.19$) and transfer students ($M = 55.08$, $SD = 11.76$); $t(225) = 1.39$, $p = .17$.

While occupational students had higher overall mean social integration scores than transfer students, t-test analysis showed this difference was not statistically significant. These results contradicted Research Hypothesis 2. As such, there was a failure to reject Null Hypothesis 1, which assumed there will be no significant difference in social integration scores, using Tinto's (1975) construct, when comparing occupational students to transfer students. Therefore, it was concluded that in the current study, social

integration, using Tinto's construct, does not significantly vary by program of study (i.e., occupational vs. transfer students).

Research Question 3

Research question number 3 asked whether there were significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, when comparing occupational students to transfer students. Similar to research question number 2, to ascertain whether there were significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational and transfer students, a two-tail independent sample t-test, with the probability level set at .05, was performed.

As with research question number 2, Levene's test for equality of variances was performed and indicated equal variances ($p = .58$). And like research question number 2, after the t-test analysis, it was found that there was no significant difference in the summed social integration scores between occupational students ($M = 17.74$, $SD = 3.97$) and transfer students ($M = 17.02$, $SD = 3.84$); $t(225) = 1.33$, $p = .18$.

Again, as with research question number 2, while occupational students had higher overall mean social integration scores than transfer students, t-test analysis showed this difference was not statistically significant. These results did not support Research Hypothesis 3, and led to a failure to reject Null Hypothesis 2, which assumed there would be no significant difference in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, when comparing occupational students to transfer students. Therefore, it was concluded that, in the current study, social integration, using the

Maxwell (2000) and Deil-Amen (2011) construct, does not significantly vary by program of study (i.e., occupational vs. transfer).

Research Question 4

Research question number 4 asked whether social integration scores, using Tinto's (1975) construct, differed when comparing demographic variables including gender and race. To answer this question, two statistical techniques were utilized. The first, a two-tail independent sample t-test, with the probability level set at .05, was performed to ascertain differences in social integration scores by gender. The second statistical technique used was a one-way analysis of variance (ANOVA), to investigate differences in social integration scores by race. This technique was chosen because of its ability to analyze independent variables with more than two levels (Hill & Lewicki, 2007).

In regards to gender, prior to performing the t-test analysis, Levene's test was performed and indicated equal variances ($p = .627$). After completing the t-test, the analysis found that there was a significant difference in the summed social integration scores between male students ($M = 53.89$, $SD = 11.35$) and female students ($M = 56.77$, $SD = 11.98$); $t(306) = -2.14$, $p = .034$. Based on these results, it was concluded that, in the current study, social integration, using Tinto's construct, does significantly vary by gender. Social integration scores were significantly higher for female students than their male student counterparts. These results provided support for Research Hypothesis 4 and led to the rejection of Null Hypothesis 3.

With race, however, the vast majority of the sample consisted of white students. In fact, there were only 25 underrepresented students included in the entire sample, with

over 1/3 of those (n=9) coming from one racial group (Hispanic). Given how few underrepresented students were included in the sample, there wasn't sufficient statistical power to make any conclusions concerning race. Therefore, no determinations could be made concerning Research Hypothesis 5 and Null Hypothesis 4.

Research Question 5

Research question number 5 asked whether age influenced overall social integration scores, using Tinto's (1975) construct. As discussed earlier, since age is a continuous variable, analyses used with the previous variables were difficult to use. As such, a Pearson Product Moment Correlation was computed. A small yet significant positive correlation was found between age and summed total social integration scores, $r(306) = .12$, $p<.05$. More specifically, social integration scores increased as age increased. This provided support for Research Hypothesis 6. However, even though the correlation was significant, it was small and explained very little of the overall variance ($r^2 = .01$). In other words, age explained a very small percentage of a student's overall social integration score. Despite the significant correlation found, because the correlation was small and explained very little of the overall variance, the influence of age on social integration was minimal in the current study.

Research Question 6

Research question number 6 asked whether social integration scores differ, using Tinto's (1975) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race. To answer this research question, univariate analysis of variance was used. This technique has the advantage of not only being flexible, but having the capability of performing multiple

statistical tests simultaneously, including those ascertaining interaction effects (Hill & Lewicki, 2007). Included in those tests are factorial ANOVAs, which allows for the analysis of multiple independent variables on the dependent variable (Boatright, 2008).

As with previous t-test and ANOVA analyses, homogeneity of variances is assumed. So again, Levene's test was run, and again, it indicated equal variances ($p = .22$). However, the factorial analysis did not find a significant interaction effect between gender and program of study, $F(1, 212) = .062$, $p = .80$. As such, these results did not support Research Hypothesis 7 and led to a failure to reject Null Hypothesis 5. In the current study, it was concluded that social integration, using Tinto's construct, does not significantly vary when gender interacts with program of study (i.e., occupational vs. transfer students). Additionally, as with Research Question number 4, the comparatively small number of underrepresented students in the sample led to a lack of sufficient statistical power to make inferences about differences involving race. As such, no determinations could be made concerning Research Hypothesis 8 and Null Hypothesis 6.

Research Question 7

Research question number 7 asked whether age significantly influenced social integration scores, when interacting with program of study (i.e. occupational vs. transfer students), using Tinto's (1975) construct. To determine the influence of age, separate Pearson Product Moment correlations were calculated between the original social integration items and occupational and transfer students respectively. As mentioned earlier, since age is a continuous variable, a Pearson Product Moment Correlation was performed to ascertain the influence of age. The correlation between occupation students and Tinto's construct of social integration was not significant, $r(76) = .036$, $p>.05$. As

such, it was concluded that, for occupational students, age did not significantly influence social integration, using Tinto's construct. These results did not provide support for Research Hypothesis 9. However, a small yet significant positive correlation was found between transfer students and the French and Oakes (2004) social integration items, $r(147) = .179$, $p<.05$, providing support for Research Hypothesis 10. As age increased, so did the social integration scores for transfer students. This also indicates that age plays a larger role for transfer students than it does for occupation students in social integration as defined by Tinto (1975). But while the social integration level of transfer students did increase as age increased, the variance explained by age was small ($r^2 = .03$), meaning age accounted for a very small percentage of a student's social integration score. As with the previous results concerning age, despite the fact that a significant correlation was found, the correlation was small and explained very little of the overall variance, and thus had minimal influence on social integration.

Research Question 8

Research question number 8 asked whether social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, differ when comparing demographic variables including gender and race. As with research question number 4, to answer this question, two statistical techniques were utilized. The first, a two-tail independent sample t-test, with the probability level set at .05, was performed to ascertain gender differences. The second statistical technique used was a one-way analysis of variance (ANOVA), to investigate race differences. As mentioned earlier, this technique was chosen because of its ability to analyze independent variables with more than two levels (Hill & Lewicki, 2007).

Prior to performing the two-tail independent sample t-test, Levene's test was performed and indicated equal variances ($p = .262$). Unlike the analysis concerning gender and Tinto's (1975) construct of social integration, in this case, the analysis found that there was no significant difference in the summed social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, between male students ($M = 17.08$, $SD = 3.85$) and female students ($M = 17.58$, $SD = 4.11$); $t(306) = -1.09$, $p = .277$. As such, no support was found for Research Hypothesis 11, therefore there was a failure to reject Null Hypothesis 6. Therefore, it was concluded that in the current study, social integration, using the Maxwell (2000) and Deil-Amen (2011) construct, does not significantly vary by gender.

As with prior research questions discussing race, given the low overall representation of underrepresented students in the sample, there was not sufficient statistical power to make inferences concerning race. Therefore, no determinations could be made concerning Research Hypothesis 12 and Null Hypothesis 7.

Research Question 9

Research question number 9 asked whether age significantly influenced social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct. A Pearson Product Moment Correlation was used to investigate the influence of age. As discussed earlier, unlike both gender and race, which are both categorical variables, age is a continuous variable, which makes many of the previous techniques difficult to use. As with Research Question 5, a small yet significant positive correlation was found between age and summed total social integration scores, $r(306) = .12$, $p<.05$. As with the previous age-related results, social integration scores increased as age increased. This provided

support for Research Hypothesis 13. Similar to the previous results concerning age however, the correlation explained very little of the overall variance ($r^2 = .01$), meaning that age accounted for a very small percentage of a student's social integration score. Once again, because the correlation was small and explained very little of the overall variance, the influence of age on social integration was minimal in the current study.

Research Question 10

Research question number 10 asked whether social integration scores differ, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race. As with research question number 6, univariate analysis of variance was used to determine if social integration levels differed in regards to gender and race when comparing occupational students to transfer students.

After confirming equal variances through Levene's test for equality of variances ($p = .07$), univariate analysis was conducted. Unlike research question number 6, the factorial analysis found a significant interaction effect between gender and program of study, $F(1, 212) = .5.35$, $p = .015$. This provides support for Research Hypothesis 14 and led to a rejection of Null Hypothesis 8. Based on these results, in the current study, social integration, using the Maxwell (2000) and Deil-Amen (2011) construct, does significantly vary when gender interacts with program of study (i.e., occupational vs. transfer students). More specifically, male occupational students ($M = 20.24$) had higher mean scores than male transfer students ($M = 17.62$). However the trend was just the opposite for female students. Here, female occupation students ($M = 16.26$) had lower mean scores than female transfer students ($M = 17.46$). As with

previous race-related questions, given the low number of underrepresented students in the sample, there was insufficient statistical power to make determinations on Research Hypothesis 15 and Null Hypothesis 9.

Research Question 11

Research question number 11 asked whether age significantly influenced social integration scores when interacting with program of study (i.e. occupational vs. transfer students), using the Maxwell (2000) and Deil-Amen (2011) construct. To determine the influence of age, separate Pearson Product Moment correlations were calculated between the social integration items written by the researchers and occupational and transfer students respectively. Neither the correlation between occupation students and social integration scores ($r(76) = .188$, $p>.05$) nor the correlation between transfer students and social integration scores ($r(147) = .141$, $p>.05$) was significant. These results did not provide support for Research Hypotheses 16 and 17. Therefore, it was concluded that, using the Maxwell (2000) and Deil-Amen (2011) construct, age does not significantly influence social integration when interacting with program of study.

Summary

Initial analysis found that the complete survey, along with the Institutional Integration Scale social integration items, the new social integration items, both sets of social integrations items taken together, and the combination of each individual French and Oakes (2004) social integration scales and the new social integration items written by the current researcher were all highly reliable and inter-connected. Furthermore, analysis found that construct of social integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), was highly related to the construct

of social integration developed by Tinto (1975) in a four-year university setting. Additionally, two other significant results were found: Social integration, using Tinto's construct, did significantly vary by gender (Question 4), and using the Maxwell (2000) and Deil-Amen (2011) construct, social integration does significantly vary when gender interacts with program of study (Question 10). While significant results were found concerning the influence of age on social integration (Questions 5, 7, and 9), all of the correlations were small and explained very little of the overall variance. As such, the influence of age on social integration was minimal. Analysis of the results can be found in Chapter V.

Chapter V

Discussion

The purpose of this study was to explore the concept of social integration in a community college to determine if the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) was related to the construct of social integration discussed in Tinto's (1975) model. Further analyses were conducted to determine if each of these two constructs differed when comparing demographic variable of gender. In addition, since many community colleges serve the dual purpose of educating both occupational and transfer students, this study investigated whether differences existed between these two sub-populations in both the social integration constructs. Furthermore, this study investigated whether each of these two constructs differed when program of study interacted with the demographic variable of gender. Finally, the influence of age on social integration was studied for both constructs of social integration, as well as its potential interaction with program of study (i.e. occupational vs. transfer students).

Summary of Findings

As mentioned in Chapter IV, prior to the data analysis, Cronbach's Alpha scores were calculated to determine the interrelatedness and cohesiveness of the instrument. Each of the Cronbach's Alpha scores were well above the established cutoff score and, therefore, confirmed that the survey instrument is reliable and the new items are interrelated with the original items and scales. While findings from the data analysis were detailed in Chapter IV, a quick summary of the research questions along with the findings for each question are listed below.

1. Is the construct of social integration in a community college setting, as suggested by Maxwell (2000) and Deil-Amen (2011), related to the construct of social integration developed by Tinto (1975) in a four-year university setting?
    - Inter-item correlations between the original French and Oakes (2004) social integration items ranged from .153-.653, and after adding the six new social integration items, inter-item correlations ranged from .162-.666. These moderately strong correlations suggested that the original social integration items and the six new social integration items were highly related to one another.
    - Discriminant validity tests found that the correlation between summed social integration scores on the original and new social integration items was .691, indicating that the social integration construct measured by the original and new items was highly related.
    - Taken together, the inter-item correlations and the discriminant validity calculations suggested that the construct of social integration in a community college setting, as discussed by Maxwell (2000) and Deil-Amen (2011), is highly related to the construct of social integration developed by Tinto (1975) in a four-year university setting.
2. Are there significant differences in social integration scores, using Tinto's (1975) construct, when comparing occupational students to transfer students?

- Independent sample t-test analysis found that there was no significant difference in the summed social integration scores between occupational students and transfer students.

3. Are there significant differences in social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, when comparing occupational students to transfer students?
    - Independent sample t-test analysis found that there was no significant difference in the summed social integration scores between occupational students and transfer students.
4. Do social integration scores, using Tinto's (1975) construct, differ when comparing demographic variables including gender and race?
    - Independent t-test analysis found that there was a significant difference in the summed social integration scores between male students and female students. The social integration scores were higher for female students than their male student counterparts.
    - Given the small number of underrepresented students in the sample, there was insufficient statistical power to make inferences concerning race.
5. Using Tinto's (1975) construct, does age significantly influence overall social integration scores?
    - A small yet significant positive Pearson Product Moment Correlation was found between age and summed total social integration scores. Social integration scores increased with age. Despite the significant correlation,

given how small the correlation was, and how little of the variance was explained, the influence of age on social integration was minimal.

6. Do social integration scores differ, using Tinto's (1975) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race?
    - Factorial analysis did not find a significant interaction effect between gender and program of study.
    - Given the small number of underrepresented students in the sample, there was insufficient statistical power to make inferences concerning race.
7. Using Tinto's (1975) construct, does age significantly influence social integration scores when interacting with program of study?
    - The Pearson Product Moment Correlation between occupation students and Tinto's social integration items was not significant.
    - A small yet significant correlation was found between transfer students and Tinto's social integration items. Social integration scores increased with age. Despite the significant correlation, given how small the correlations were, and how little of the variance was explained, the influence of age on social integration was minimal.
8. Do social integration scores, using the Maxwell (2000) and Deil-Amen (2011) construct, differ when comparing demographic variables including gender and race?

- Independent samples t-test analysis found that there was no significant difference in the summed social integration scores between male students and female students.
- Given the small number of underrepresented students in the sample, there was insufficient statistical power to make inferences concerning race.

9. Using the Maxwell (2000) and Deil-Amen (2011) construct, does age significantly influence overall social integration scores?
    - A Pearson Produce Moment Correlation found a small yet significant correlation between age and summed total social integration scores. Social integration scores increased with age. Despite the significant correlation, given how small the correlations were, and how little of the variance was explained, the influence of age on social integration was minimal.
10. Do social integration scores differ, using the Maxwell (2000) and Deil-Amen (2011) construct, between occupational students and transfer students, when interacting with demographic variables including gender and race?
    - Factorial analysis found a significant interaction effect between gender and program of study with male occupational students having higher social integration scores than male transfer students.
    - The trend was just the opposite for female students where female occupation students had lower social integration scores than male transfer students.

- Given the small number of underrepresented students in the sample, there was insufficient statistical power to make inferences concerning race.

11. Using the Maxwell (2000) and Deil-Amen (2011) construct, does age significantly influence social integration scores when interacting with program of study?
    - Neither the Pearson Product Moment Correlation between occupation students or transfer students and the social integration items were found to be significant.

Discussion

As discussed in Chapter II, the impact of social integration in a community college has been particularly elusive. This has led some researchers to suggest that the traditional construct of social integration may be unrelated to the construct of social integration in community college populations (Hagedorn et al., 2000). In the current study, analysis of the responses of a sample of community college students found that alternative constructs of community college social integration, as suggested by researchers such as Maxwell (2000) and Deil-Amen (2011), appear to be highly related to the traditional construct of social integration defined by Tinto (1975). Furthermore, overall, social integration did not differ between occupational and transfer students using either construct. While these results did not support their respective research hypotheses, the current study did produce several interesting results.

The most interesting results involve gender. As reported earlier, a significant gender difference was found on the original social integration items, but not on the new items. On the original items, social integration scores were higher for female students

than their male student counterparts. Probing a bit deeper into the French and Oakes (2004) individual social integration scales, the only significant gender difference found was on the Faculty Concern for Student Development and Teaching scale. Female students (M = 16.33, SD = 3.01) had significantly higher scores on the Faculty Concern for Student Development and Teaching scale their male student counterparts (M = 15.49, SD = 3.18); t(306)= -2.37, p = .018. Interestingly enough, of the six new social integration items written by the current researcher, two specifically asked about faculty in the classroom. These two items correlated more highly with French and Oakes's (2004) Faculty Concern for Student Development and Teaching scale (r = .664) than with their Interactions with Faculty scale (r = .405). So combining the items on French and Oakes (2004) Faculty Concern for Student Development and Teaching scale with the two faculty-related items developed by the researcher, a pattern starts to develop. Of those seven combined items, male students and female students differed significantly on three items (see Table 4). None of those three items indicated where faculty demonstrated concern (i.e., outside the classroom or inside the classroom). Instead they focused more on teaching and on their general interest in students and their overall development. Revisiting the construct of academic integration, which has been defined as a range of individual academic experiences that occur in the formal and informal domains of the academic systems of the college which typically reflects satisfaction with academic progress and choice of major (Tinto, 1993; Kuh, Douglas, Lund, & Ramin-Gyurnek, 1994), these results seem to suggest at least a partial overlap with academic integration. This finding is consistent with results found by French and Oakes (2004) and Deil-Amen

Table 4

Faculty Concerns for Student Development and Teaching Scale and New Social Integration Items

French and Oakes Survey Questions	Means by Gender		Significance
1. Many faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.	Male Female	3.21 3.24	.764
2. Many faculty members I have had contact with are genuinely outstanding or superior teachers.	Male Female	2.84 3.17	.001**
3. Many faculty members I have had contact with are genuinely interested in students.	Male Female	3.10 3.30	.023**
4. Many faculty members I have had contact with are genuinely interested in teaching.	Male Female	3.32 3.39	.407
5. Many faculty members I have had contact with are interested in helping students grow in more than just academic area.	Male Female	3.02 3.22	.049**
New Social Integration Survey Questions			
1. I find my instructors to be supportive in the classroom.	Male Female	3.34 3.39	.501
2. I find my instructors to be approachable in the classroom.	Male Female	3.49 3.49	.966

** Statistically Significant

(2011), who as previously discussed, suggested that social and academic integration may in fact overlap.

In addition to the above results, there were also significant gender differences when interacting with program of study on the new social integration items. Since many of the occupational programs require students to complete classes in a very specific sequence, they end up enrolling in many of the same courses each semester and are typically taught by the same instructors. This is not true of transfer students. These

students come from a variety of different programs, and as such, do not follow as regimented a program of study as occupational students. They also are more likely to have different instructors each semester, and are more likely to be taught by part-time instructors. It is entirely possible that these multiple interactions occupational students have with faculty and with each other allowed them to form bonds in a way that transfer students do not.

But if these multiple interactions with students and faculty are the reason why male occupational students had higher social integration scores than their transfer counterparts, why then did female occupational students not only have lower social integration scores than their transfer counterparts, but in fact, had the lowest social integration scores of all groups? The answer could be routed in campus ecology theory. As Strange and Banning (2001) stated, "environments are transmitted through people, and the dominant features of a particular environment are partially a function of the collective characteristics of the individuals who inhabit it" (p. 35). It could be that since female occupational students are enrolled in programs that are dominated by male students, they may feel more like outsiders to the dominant subculture, and as such, were not able to develop bonds with their fellow students and instructors to the extent that their male student counterparts have. However, this is only one possible explanation. Additional research is needed to investigate and truly understand the results concerning female occupational students.

In addition to providing a possible framework for understanding the results concerning female occupational students, campus ecology theory may be useful in understanding other results. Of particular relevance is the principle of social climate, first

discussed by Moos (1979), and later incorporated into Strange and Banning's (2001) campus ecology model. According to Moos (1979) social climate is comprised of three domains:

1) Relationship dimensions: the extent to which people are involved in the setting, support and help one another, and express themselves openly (p. 14);
2) Personal growth and development dimensions: measuring the basic goals of the setting, areas in which personal development and self-enhancement tend to occur (p. 16);
3) System maintenance and system change dimensions: the extent to which the environment is orderly and clear in its expectations, maintains control, and responds to change (p. 16).

The results of the current study seem to connect to the first two of Moos' domains in that they demonstrate the importance of relationships with faculty and in particular, the value some students put on faculty concern for their development. The key then is how do colleges create and maintain systems that build on these relationships and promote and showcase faculty concern for student development? While campus ecology research has been largely absent in regards to student retention, the current study points to the need for further research to examine not only the role of social climate, but how campus ecology theory may be used to develop systems that facilitate the development of climates that promote student retention.

While the current study failed to find support for many of the research hypotheses, the notion of faculty concern for student development, and the potential influence of peer networks were supported with some groups of students. Certainly the potential overlap of social and academic integration, and the influence of peer groups in certain academic programs warrants further investigation.

Of course, with single-institution studies like the current one, there are always concerns with the generalizability of the results. As discussed in Chapter I, because

community colleges represent such a diverse student population, the results of the current study might not necessarily be replicated in other community colleges. Additionally, the information collected relied on student self-report. This may have led to some inconsistencies in some areas, particularly involving race and program of study. It is possible some students listed programs of study that were interpreted by the researcher as being occupational, yet the students actually intend to transfer at some point (or vice versa). This may also have a delimiting impact on generalizing the occupational vs. transfer results. It's also possible some students came from diverse racial backgrounds, and only selected one specific race. This could potentially have led to some discrepancies in the results pertaining to race. In addition, some of the social integration results may have been influenced by certain characteristics of the student body. For example, approximately 62% received some type of financial aid, and nearly half enrolled part-time. Presumably, many of the student body have significant financial needs that may prevent them from engaging in social integration activities. And finally, given that the survey was distributed early in the winter semester, students that dropped out in the fall semester were obviously not included in the sample. It is possible that these non-persisting students could have provided different answers on the survey instrument than the students sampled in the current study.

Implications

The purpose of the current study was to investigate the relatedness of the Maxwell (2000)/Deil-Amen (2011) social integration construct to Tinto's construct of social integration. While the analysis did find a high degree of relatedness (r=.691), the correlation was not a perfect one, indicating that there is some variability between the

two constructs. As such, it is impossible to garner from the current results which social integration construct is more appropriate in a two-year college environment. This certainly would impact both researchers and practitioners who are seeking better alternatives to the current social integration measures. Clearly more research is needed to assess the usefulness of the social integration construct suggested by Maxwell (2000) and Deil-Amen (2011) and to determine which aspects of Tinto's model may be more relevant.

Several of the additional findings do have important practical implications. First, when designing interventions aimed at improving retention, practitioners should look closely at the influence of in-class vs. out-of-class interactions. Typically social integration includes activities such as: meeting other students, making friends in extra-curricular activities, and attending social and cultural events on campus, but it also includes more academic activities including attending out-of-class academic activities (Gatz, 1998). Deil-Amen (2011), on the other hand, found that in-class interactions with both students and faculty were key to social integration in community college settings. It is clear from the results of the current study that students did not put an emphasis on in-class vs. out- of-class interactions when it came to social integration. Instead, the only variable that significantly differentiated between the original and new social integration items was gender, and only the more generally worded questions involving general faculty concern (not specifying whether it was in or out-of-class) differentiated male students from female students. So perhaps the important aspect is the actual interaction that occurred between faculty and students, not where it takes place.

As retention practitioners implement various retention strategies, consideration should be given to activities and systems that encourage faculty participation. This implication ties directly back to much of the literature discussed in Chapter II. For example, intrusive advising strategies have been successful in department-specific settings (McArthur, 2005). Given the results of the current study, it seems plausible that encouraging faculty participation in career and advising processes might also be successful in two-year college environments. This is also true of bridge programs. The main purpose of bridge programs is to provide incoming students with the skills they will need to be successful in college prior to their first year (College Parent Central, 2011). Based on the results of the current study, encouraging faculty participation in these programs may provide opportunities for faculty to demonstrate the caring attitude that appears connected to social integration. And finally, the importance of faculty concern for student development demonstrated in the current study supports the social climate principle discussed by Moos (1979) and incorporated into campus ecology by Strange and Banning (2001). It would behoove retention practitioners to utilize campus ecology research to cultivate environments that create systems to facilitate positive social climates.

Additionally, better technological systems that allow faculty to share information with each other concerning students that are falling behind could be a very powerful tool. As the current study suggests, general faculty concern is important for many students. However, faculty resources are undoubtedly stretched. The ability to share information with other faculty could allow all faculty to identify those that are most in need and design outreach activities cooperatively and efficiently.

Furthermore, since the impact of gender and program of study produced significant results for the new social integration items, it seems plausible that the results could be a result of the increased interaction these students have with each other caused by the more prescribed course scheduling processes typical of many occupation programs. The more stringent course scheduling may also have led to an increase in faculty interactions inside the classroom, given the fact that many of the same instructors teach a majority of courses, which may help explain why the significant interaction finding occurred with the new social integration items, since the focus of these new items was mainly on interactions within the classroom. The concept bears some resemblance to the goals of the first-year experience programs discussed earlier. One of the goals of many of these first-year experience programs is to create learning communities, which may or may not be tied to particular academic programs (Jamelske, 2009). Perhaps an extended cohort arrangement may lead to an increase in the social integration construct as suggested by Maxwell (2000) and Deil-Amen (2011).

Tinto (1997) himself suggested that enhanced learning opportunities could be created by mandating that student register for more themed classes together and forming a study community. But while the idea of cohort groups may be intriguing, the concept has not always been effective. Potts, Schultz, and Foust (2004) found that separating business and accounting students into cohorts and having them progress through English, math and economics courses with their cohort did not improve retention rates. So practitioners should be cautious and guard against sacrificing the benefits of interacting with other students. But as the current study suggests, there may be some benefits of cohorts within occupational programs.

Suggestions for Future Research

While the aforementioned practical implications will be valuable to retention practitioners, there are several important issues for researchers to consider. For example, significant thought should be given to the timing of the survey distribution. As mentioned earlier, the survey for the current study was distributed early in the winter semester. While the institution under study retains between 75%-80% of students from fall to winter semesters (vs. between 45%-50% of students from fall to fall semesters), obviously students that dropped out prior to the winter semester were not included in the sample. As cited previously, the inclusion of these students' responses could very well have impacted the results. To maximize the possibility of the inclusion of these students, survey distribution in mid to late fall semester may be more advantageous. This would not only provide a fuller picture of the impact of social integration on those that do not persist, but it would also strengthen the generalizability of the results by including a more accurate representation of the entire student population (i.e., persisters and non-persisters).

In addition to the timing of data collection, researchers should also endeavor to study the impact of social integration variables longitudinally. As French and Oakes (2004) stated, "it is not know how consistent integration scores are over time" (p. 97). This is particularly critical for two-year colleges given that, by their very nature, they experience greater student turnover than four-year institutions. It is certainly possible that the influence of social integration on retention in two-year colleges changes over time. And as such, knowledge of the changing nature of the influence of social

integration may prove useful for practitioners, so they may adjust their interventions to fit the changing needs of students.

Additionally, greater effort in designing questions that will acquire more specificity in transfer vs. occupational delineations should be undertaken. While relying on self-report data concerning program of study may have provided students with more flexibility in listing their true program of study intent, it did not provide students with the opportunity to specifically identify whether their intent was to transfer to a four-year institution, or transition into the workplace. It might behoove future researchers to include additional questions that would allow students to identify their intent upon leaving the institution. This would allow future researchers to more precisely identify transfer students and occupational students, and would also allow them to include other programs of study in the analysis (i.e., Health-related programs), which were not included in the current study due to the multiple avenues (either transfer or occupational) these students have available to them.

Another potential avenue of future research involves the investigation of the overlap between the social and academic integration constructs. As Deil-Amen (2011) indicated, "quantitative measures of social integration emphasize purely social relationships with other students, but the two-year students highlighted the academic dimensions" (p. 68). And even French and Oakes (2004) suggested that social and academic integration might not necessarily be mutually exclusive constructs. As stated above, items that focused on where the interaction took place (i.e., in-class vs. out-class) did not differentiate students from one another. Only those social integration items that focused on general faculty concern for student development or on teaching quality

showed any ability to differentiate students. At least from a faculty standpoint, it appears much more important that the interaction takes place than where it actually takes place.

Also as discussed previously, campus ecology theory may help explain the pattern of results concerning the impact of gender and program of study. But it was unclear what role the gender of the faculty played. Much like the students, the occupational areas tend to be dominated by male faculty members. If Strange and Banning (2001) are right, and environments are transmitted through people, with the dominant features of a particular environment are partially a function of the collective characteristics of the individuals who inhabit it, then it seems plausible that the fact that the occupational fields are dominated by male faculty members may have played a role in the social integration scores concerning the Maxwell (2000) and Deil-Amen (2011) construct. Further research is needed though to determine the true role of faculty gender.

Furthermore, additional exploration into the utility of the Maxwell (2000) and Deil-Amen (2011) construct vs. the Tinto construct needs to occur. Regression analysis may be a particularly useful technique in this endeavor. By identifying the six questions added to the current study based on the work of Maxwell (2000) and Deil-Amen (2011) as a fourth social integration scale (remembering that the IIS contains three social integration scales), future researchers could distribute the survey in a way that would allow them to identify persisters from non-persisters, and see which social integration scales are significant in the regression analysis. This technique would also allow future researchers to focus on academic integration to verify its utility both individually and in combination with social integration. And additionally, breaking down social integration

into smaller elements and testing each for relevance might lead to a whole new array of social integration scales.

Moreover, given the heterogeneous nature of community colleges nationwide, it would behoove institutions to engage in more systemic institutional-specific research in an effort to better understand the unique needs of their student body. Developing better intake mechanisms to more accurately identify at risk students, determining what variables are critical towards retention in their own institution, creating standing committees charged with gathering and analyzing data, and partnering with faculty and other interested parties in determining appropriate interventions based on the data all seem like very worthwhile goals. Given that decreased retention rates impact budgetary decisions, the goal of increasing retention rates should be a goal all college employees should be working toward.

The final suggestion has more to do with a methodology. With most of the research discussed in the current study, what is missing is the voice of the student. This speaks to the necessity of more qualitative approaches in retention research. As Schuetz (2005) stated, both quantitative and qualitative approaches are needed in the study of community college retention. To achieve this goal, a qualitative approach should also be implemented. According to Bogdan and Biklen (2003), terms such as documentary, narrative, interpretive, and participant observation are common when describing qualitative research. They describe the goal as one of developing "understanding" and the design as "evolving, flexible and general." Creswell (2007) expanded on these characteristics by describing qualitative research as an exploration of a central phenomenon. To truly gain an in-depth understanding of retention from a student's point

of view, it seems evident that a qualitative approach would provide a greater understanding of the variables that may impact retention, and provide greater insight into the impact faculty concern for students has on retention. It may also lead to the discovery of additional variables not yet considered, which would in turn, could strengthen future quantitative research.

When considering the numerous qualitative techniques available, focus groups may be particularly useful. As Krueger (1994) discussed, focus groups are advantageous when the interaction among those being interviewed may yield the best information, when those being interviewed are similar, and when individuals interviewed one-on-one may be hesitant to provide detailed information. They are intended to meet two overall goals: to facilitate interaction among participants, and to maximize the collection of high quality information (Acocella, 2012, p. 1127). Additionally, Morgan and Spanish (1984) stated that since focus groups center on the frame of reference of the group itself, they are particularly suited for pointing out unexpected aspects of social phenomena. Key to the focus group process is to find an appropriate balance of homogeneity and heterogeneity of the group (Acocella, 2012). Homogeneity of the group is important in that similarity of certain characteristics will prevent inhibition (Acocella, 2012). Heterogeneity is critical in ensuring a more dynamic and interactive environment (Acocella, 2012). Acocella (2012) also stated that it is important that the group has an interest in the topic and can discuss it thoroughly in a short timeframe. Given the similarity of the population and the value of the interaction between the students during the interviews, focus groups seem particularly appropriate, and may be especially useful in exploring topics such as social integration dynamics both in class and out-of-class, importance of interactions with

faculty, and perhaps even the influence of campus ecology that was discussed by Strange and Banning (2001).

While focus groups may be particularly useful, other qualitative techniques may also generate valuable data. For example, phenomenological research could also be of great use. The goal of this qualitative technique is to study the common meaning of the lived experiences of several individuals (Creswell, 2013). Using this technique to study the central phenomenon of social integration among groups including non-traditional students or first-generation college students could generate detailed data on the experiences of these and other groups of students. Additionally, since instrumental case studies are useful in studying specific problems or issues (Stake, 2010), this technique may be particularly useful in gaining a better understanding of why students drop out. Finally, since the question of applicability of either Tinto's construct or the construct of Maxwell (2000) and Deil-Amen (2011) continues to be unanswered, a grounded theory approach to determine what constitutes social integration in a community college may be appropriate. According to Creswell (1998), ground theory research is intended to generate or discover a theory. Specifically in this case, future researchers could collect interview data on what constitutes social integration in a community college from the students themselves. Furthermore, based on these interviews, new elements of social integration may be discovered, which could then be quantitatively tested to ascertain what are the significant elements of social integration in a community college. Subsequently, researchers could then ascertain the impact of social integration on student persistence or retention.

Qualitative research techniques may be particularly appropriate in assessing the role of campus ecology in retention. In fact, some of the results of the current study may actually connect to Strange and Banning's campus ecology model discussed in Chapter II. As Strange and Banning (2001) stated, "human characteristics influence the degree to which people are attracted to, satisfied within, and retained by those environments" (p. 35). Since it appears that human characteristics like faculty concern had an impact on female students (on Tinto's social integration items), and may have played a role in the differing social integration levels for both male and female occupational students, practitioners may be well served by identifying key human characteristics that are critical on their respective campuses. Focus groups, with their advantage of increasing interaction among those being interviewed may be extremely useful in gaining a more in depth understanding of how campus ecology variables may impact retention, and what other physical, human, organizational and/or constructed variables, as discussed by Strange and Banning (2001) may play a role in student retention.

Conclusion

Retention is a critical issue that will continue to garner the interest of research and practitioners alike. This has led to a proliferation of research and retention models. Models like those of Vincent Tinto (1975) have reached near paradigmatic status. While research has provided general support for the Tinto's constructs of social and academic integration (Pascarella & Terenzini, 2005), some have suggested that Tinto's construct of social integration may not necessarily fit community college environments (Wild & Ebbers, 2002; Mohammadi, 1996). Others have suggested that in two-year environments social integration occurs through other mechanisms not necessarily related to purely

social activities (Deil-Amen, 2011; Maxwell, 2000). These activities may include participation in informal study groups, and engaging with faculty inside the classroom (Deil-Amen, 2011; Maxwell, 2000). The current study investigated whether the construct of social integration as suggested by Maxwell (2000) and Deil-Amen (2011) was related to the social integration construct discussed by Tinto (1975). Additionally, the current study also investigated whether occupational students and transfer students differed from one another on both original and new social integration constructs. Overall the current study found substantial evidence that the two constructs of social integration are in fact highly related to one another. And while the current study did not find that significant social integration difference between occupational students and transfer student, significant individual differences were found in regards to gender on the original construct of social integration, age on both the original and new constructs of social integration, and the interaction of gender and program of study on the new construct of social integration. These findings suggest that future research in the areas of the nature of the interactions with faculty, the potential for overlap between the constructs of academic and social integration, and the potential role of cohorts and their impact on peer group socialization. By expanding research into these areas, a clearer picture of the true role of social integration will hopefully emerge, allowing researchers and practitioners to design interventions that have the best possible chance for success.

References

Acocella, I. (2012). The focus groups in social research: Advantages and disadvantages. *Quality and Quantity*, *46*(4), 1125-1136. DOI 10.1007/s11135-011-9600-4

Adams, C. (2011). Colleges try to unlock secrets to student retention. *Education Digest*, *77*(4), 19-23.

Anderson, M.L. & Taylor, H.F. (2007). *Sociology: The essentials* (4th Ed.). Belmont, CA: Thomson Wadsworth.

Astin, A. W. (1975). *Preventing students from dropping out.* San Francisco: Jossey-Bass.

Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, *40*(5), 518-529.

Bandura, A. (1996). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Banning, J. J. (1978). *Campus ecology: A perspective for student affairs*. Washington, DC: National Association of Student Personnel Administrators.

Bean, J. P. (1985). Interaction effects based on class level in an explanatory model on college student dropout syndrome. *American Educational Research Journal*, *22*, 35-64.

Bean, J. P. (1990). Why student leave: Insights from research. In D. Hossler & J. P. Bean (Eds.), *The strategic management of college enrollments* (pp. 147-169). San Francisco, CA: Jossey-Bass.

Bean, J. P., & Eaton, S. B. (2000). A psychological model of college student retention. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 48-61). Nashville: Vanderbilt University Press.

Bensimon, E. M. (2007). The underestimated significant of practitioner knowledge in the scholarship on student success. *The Review of Higher Education, 30*(4), 441-469.

Berger, J., & Braxton, J. (1998). Revising Tinto's interactionalist theory of student departure through theory elaboration: Examining the role of organizational attributes in the persistence process. *Research in Higher Education, 39*(2), 103-119.

Bers, T. H., & Smith, K. E. (1991). Persistence of community college students: The influence of student intent and academic and social integration. *Research in Higher Education, 32*(5), 539-556.

Boatright, J. E. (2008). *The influence of instructional tactic selection and moderation style on participant interaction and exchange in asynchronous threaded online discussion* (Doctoral dissertation). Retrieved from http://books.google.com.

Bogdan, R. C., & Biklen, S. K. (2003). *Qualitative research for education: An introduction to theories and methods* (4th ed., pp. 39-41). Boston, MA: Pearson Education Group.

Boudreau, C., & Kromrey, J. (1994). A longitudinal study of the retention and academic performance of participants in freshman orientation course. *Journal of College Student Development, 35*, 444-449.

Braunstein, A., & McGrath, M. (1997). The retention of freshman students: An examination of assumptions, beliefs and perceptions held by college administrators and faculty. *College Student Journal, 31*(2), 188.

Braxton, J. M., & Hirschy, A. S. (2005). Theoretical developments in the study of college student departure. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 61-87). Westport, CT: Praeger.

Braxton, J. M., Sullivan, A. V., & Johnson, R. M. (1997). Appraising Tinto's theory of college student departure. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (pp. 107-164). New York: Agathon.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R. H. Wozniak & K. W. Fischer (Eds.), *Development in context: Acting and thinking in specific environments* (pp. 3-44). Hillsdale, NJ: Erlbaum.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology* (6th ed., pp. 793-828). Hoboken, NJ: Wiley.

Brooks-Leonard, C. (1991). Demographic and academic factors associated with first-to-second-term retention in a two-year college. *Community/Junior College Quarterly*, 15(1), 57-69.

Bryant, M. T. (2004). *The portable dissertation advisor*. Thousand Oaks, CA; Corwin.

Buenavista, T. (2010). Issues affecting U.S. Filipino student access to postsecondary education: A critical race theory perspective. *Journal of Education for Students Placed at Risk, 15*(1/2), 114-126. DOI:10.1080/10824661003635093.

Campell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81-105.

Canales, L., Gardner, D. W., Hughes, K., & Weissman, E. (2010). *Examining the role of summer bridge programs in promoting college readiness and completion: Lessons learned from Texas' developmental bridges*. Retrieved from American Youth Policy Form website: http://www.aypf.org/forumbriefs/2010/fb120310.htm

Carnegie Foundation for the Advancement of Teaching. (2012). *Classification descriptions*. Retrieved from www.classifications.carnegiefoundation.org/descriptions/ugrad_program.php

Clark, B., & Trow, M. (1966). The organizational context. In T. Newcomb & E. Wilson (Eds.), *College peer groups: Problems and prospects for research* (pp. 17-70). Chicago: Aldine.

Cohen, A. M., & Brawer, F. B. (2008). *The American community college* (5th ed.). San Francisco, CA: Jossey Bass.

College Parent Central. (2011). *What is a college summer bridge program*. Retrieved from http://www.collegeparentcentral.com/2011/05/what-is-a-college-summer-bridge-program/

Crawford, L. (1999, March). *Extended opportunity programs and services for community college retention*. Paper presented at the Annual California Community Colleges Chancellor's Office Statewide Conference, Monterey, CA. (ERIC Document Reproduction Service No. ED 429 642).

Creswell, J. W. (1998). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Deil-Amen, R. (2011). Socio-academic integrative moments: Rethinking academic and social integration among two-year college students in career-related programs. *The Journal of Higher Education*, *82*(1), 54-91.

Dew, D. (2008). Construct. In P. Lavrakas (Ed.), *Encyclopedia of survey research methods* (pp. 134-135). Thousand Oaks, CA: Sage Publications.

Eaton, S. B., & Bean, J. P. (1995). An approach/avoidance behavioral model of college student attrition. *Research in Higher Education, 36*(6), 617-645.

Elkins, S., Braxton, J., & James, G. (2000). Tinto's separation stage and its influence on first-semester college student persistence. *Research in Higher Education*, *41*(2), 251-268.

Ethington, C. A., & Polizzi, T. B. (1996). An assessment of the construct validity of the CCSEQ quality of effort scales. *Research in Higher Education, 37*(6), 711-730.

Etzioni, A. (1964). *Modern organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Evans, N. J., Forney, D. S., Guido, F. M., Patton, L. D., & Renn, K. A. (2010). *Student development in college* (2nd ed.). San Francisco, CA: Jossey-Bass.

Feldman, M.J. (1993). Factors associated with one-year retention in a community college. *Research in Higher Education*, 34(4), 503-512.

Fike, D., & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review*, *36*(2), 68-88.

Fox, R. (1986). Application of a conceptual model of college withdrawal to disadvantaged students. *American Educational Research Journal, 23*, 415-424.

French, B. F., & Oakes, W. (2004). Reliability and validity evidence for the institutional integration scale. *Educational and Psychological Measurements*, *64*(1), 88-98.

Gandara, P., & Contreras, F. (2009). *The Latino education crisis: The consequences of failed social practices*. Cambridge, MA: Harvard University Press.

Garcia, L. D., & Paz, C. C. (2009). Bottom line: Evaluation of summer bridge programs. *About Campus*, *14*(4), 30-32.

Garcia, M. (2010). When Hispanic students attempt to succeed in college, but do not. *Community College Journal of Research & Practice*, *34*(10), 839-847. Doi:10.1080/10668926.2010.485003.

Gatz, L. B. (1998). *Academic and social integration in cyberspace: A qualitative study* (Master's thesis). Retrieved from http://scholar.lib.vt.edu

Glennen, R. E. (1995). Obtaining presidential support for advising. In R. E. Glennen & F. N. Vowell (Eds.), *Academic advising as a comprehensive campus process* (Monograph No. 2, pp. 11-14). Manhattan, KS: National Academic Advising Association.

Gravetter, F. J., & Wallnau, L. B. (2009). *Statistics for the behavioral sciences* (8th ed.). Belmont, CA: Wadsworth.

Guillory, R. M., & Wolverton, M. (2008). It's about family: Native American student persistence in higher education. *Journal of Higher Education*, *79*(1), 58-87. Retrieved from EBSCO*host*.

Hage, J., & Aiken, M. (1970). *Social change in complex organizations*. New York: Random House.

Hagedorn, L. S., Maxwell, W., Rodriguez, P., Hocevar, D., & Fillpot, J. (2000). Peer and student-faculty relations in community colleges. *Community College Journal of Research and Practice, 24*, 587-598.

Hair, J., Anderson, R., Tatham, R., & Black, W. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Halpin, R. (1990). An application of the Tinto model to the analysis of freshman persistence in a community college. *Community College Review, 17*(4), 22.

Herndon, M. K., & Hirt, J. B. (2004). Black students and their families: What leads to success in college. *Journal of Black Studies*, *34*(4), 489-513.

Higher Education Research and Development Institute (2011). *Interesting facts about community colleges.* Retrieved from http://herdi.org/community-college-market-2/interesting-facts-about-community-colleges

Hill, T., & Lewicki, P. (2007). *Statistics: Methods and applications*. Tulsa, OK: StatSoft.

Holland, J. L. (1966). *The psychology of vocational choice: A theory of personality types and model environments*. Waltham, MA: Blaisdell.

Isaac, S., & Michael, W. (1995). *Handbook in research and evaluation* (3rd ed.). San Diego: Educational and Industrial Testing Services.

Jamelske, E. (2009). Measuring the impact of a university first-year experience program on student GPA and retention. *Higher Education: The International Journal of Higher Education and Educational Planning, 57*, 373-391.

Jensen, A. R. (1998). *The G factor: The science of mental ability*. Westport, CT: Praeger.

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research* (2nd ed.). Thousand Oaks, CA: Sage.

Kuh, G. D., Douglas, K. B., Lund, J. P., & Ramin-Gyurnek, J. (1994). *Student learning outside the classroom: Transcending artificial boundaries.* ASHE-ERIC Higher Education Report No. 8. Washington, DC: The George Washington University, Graduate School of Education and Human Development.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006, June). *What matters to student success: A review of the literature.* National Postsecondary Education Cooperative (NPEC) Commissioned Paper.

Lau, L. K. (2003). Institutional factors affecting student retention. *Education*, *124*(1), 126-136.

Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York, NY: McGraw-Hill.

Levene, H. (1960). Robust tests for equality of variances. In I. Olkin, H. Hotelling, et al. (Eds.), *Contributions to probability and statistics: Essays in honor of Harold Hotelling* (pp. 278-292). Palo Alto, CA: Stanford University Press.

Lords, E. (2000, June). New efforts at community colleges focus on underachieving teens. *The Chronicle of Higher Education*, *30*, A45.

Maxwell, W. E. (2000). Student peer relations at a community college. *Community College Journal of Research and Practice*, *24*, 207-217.

McArthur, R. C. (2005). Faculty-based advising: An important factor in community college retention. *Community College Review*, *32*(4), 1-18.

Mertes, S. J., & Hoover, R. E. (in press). Predictors of first-year retention in a community college. *Journal of Community College Research and Practice*.

Mitchell, M. L., & Jolley, J. M. (2010). *Research design explained*. Belmont, CA: Wadsworth.

Mohammadi, J. (1996). Exploring retention and attrition in a two-year public community college. *Journal of the Virginia Community College Association*, *10*(1), 39-50.

Moos, R. H. (1979). *Evaluating educational environments: Procedures, measures, findings, and policy implications*. San Francisco, CA: Jossey-Bass.

Morgan, D. L., & Spanish, M. T. (1984). Focus group: A new tool for qualitative research. *Qualitative Sociology*, *7*(3), 253–270.

Mulligan, S. C., & Hennessy, J. J. (1990). *Persistence in a community college: Testing attrition models*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

Napoli, A. R., & Wortman, P. M. (1996). A meta-analytic examination of the relative importance of academic and social integration among community college students. *Journal of Applied Research in the Community College, 4*(1), 5-21.

Napoli, A. R., & Wortman, P. M. (1998). Psychosocial factors related to retention and early departure of two-year community college students. *Research in Higher Education*, *39*(4), 419-455.

National Center for Education Statistics. (2012). *IPEDS glossary*. Retrieved August 26, 2012, from www.nces.ed.gov/ipeds/glossary

Nora, A., Attinasi, L. C., & Matonak, A. (1990). Testing qualitative indicators of pre-college factors in Tinto's attrition model: A community college student population. *Review of Higher Education*, *13*(3), 337-356.

O'Leary, K., Boatwright, K., & Sauer, E. (1996). Social support networks of successful university students: A study of race, ethnicity, and sex. *Journal of College Student Development, 37,* 97-98.

Pascarella, E. T., & Chapman, D. (1983). A multi-institutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal, 20*(1), 87-102.

Pascarella, E. T., Smart, J. C., & Ethington, C. A. (1986). Long-term persistence of two-year college students. *Research in Higher Education, 24*(1), 47-71.

Pascarella, E. T., & Terenzini, P. T. (1980). Predicting persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education, 51,* 60-75.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. San Francisco, CA: Jossey-Bass.

Pervin, L. A. (1968). The college as a social system: Student perception of students, faculty, and administration. *Journal of Educational Research, 61,* 281-284.

Porter, S. R., & Swing, R. L. (2006). Understanding how first-year seminars affect persistence. *Research in Higher Education, 47*(1), 89-109.

Potts, G., Schultz, B., & Foust, J. (2004). The effect of freshmen cohort groups on academic performance and retention. *Journal of College Student Retention: Research, Theory & Practice, 5*(4), 385-395.

Renn, K. A. (2003). Understanding the identities of mixed-race college students through a developmental ecology lens. *Journal of College Student Development, 44*(3), 383-403. DOI: 10.1353/csd.2003.0032.

Renn, K. A., & Arnold, K. D. (2003). Reconceptualizing research on college student peer culture. *Journal of Higher Education, 74*(3), 261. Retrieved from EBSCO*host*.

Schuetz, P. (2005). UCLA community college review: Campus environment: A missing link in studies of community college attrition. *Community College Review, 32*(4), 60-80.

Schuetz, P. (2008). Developing a theory-driven model of community college student engagement. *New Directions for Community Colleges, 144*, 17-28.

Seymour, E., & Hewitt, N. (1997). *Talking about leaving: Why undergraduates leave the sciences*. Boulder, CO: Westview Press.

Sidle, M., & McReynolds, J. (1999). The freshman year experience: Student retention and student success. *NASPA Journal, 36*, 288-300.

Snyder, T. D., Tan, A. G., & Hoffman, C. M. (2004). *Digest of Education Statistics 2003*. (NCES Report No. 2005-025). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Solorzano, D. G., & Yosso, T. J. (2009). Critical race methodology: counter-storytelling as an analytical framework for educational research. In E. Taylor, D. Gillborn, & G. Ladson-Billings (Eds.), *Foundations of critical race theory in education* (pp. 131-147). New York; NY: Routledge.

Sorey, K., & Duggan, M. (2008). Differential predictors of persistence between community college adult and traditional-aged students. *Community College Journal of Research & Practice, 32*(2), 75-100. Doi:10.1080/10668920701380967.

Stake, R. E. (2010). *Qualitative research studying how things work.* New York: Guilford.

Stern, G. G. (1970). *People in context: Measuring person-environment congruence in education and industry*. New York, NY: Wiley.

Strange, C. C., & Banning, J. H. (2001). *Educating by design: Creating campus learning environments that work.* San Francisco: Jossey-Bass.

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *Journal of Higher Education*, *63*(6), 603-618.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, *45*, 89-128.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.

Voorhees, R. A. (1987). Toward building models of community college persistence: A logit analysis. *Research in Higher Education*, *26*(2), 115-129.

Wall, M. (1996). *From theory to practice: using retention research to guide assessment efforts at a community college level*. Atlantic Community College, Mays Landing, New Jersey.

Walsh, W. B. (1978). Person/environment interaction. In J. H. Banning (Ed.), *Campus ecology: A perspective for student affairs* (pp. 7-18). Washington, DC: National Association of Student Personnel Administrators.

Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag.

Western Interstate Commission for Higher Education (2012). *Knocking at the college door: Projections of high school graduates*. Retrieved from http://www.wiche.edu/knocking-8th.

Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges. *Community College Journal of Research & Practice*, *26*(6), 503-519. Doi:10.1080/2776770290041864.

Williamson, D. R., & Creamer, D. G. (1988, May). Student attrition in 2- and 4-year college: Application of a theoretical model. *Journal of College Student Development*, *29*, 210-217.

Wyman, F. (1997). A predictive model of retention rate at regional two-year colleges. *Community College Review*, *25*(1), 29-58.

Zwerling, S. (1980). Reducing attrition at two year colleges. *Community College Review*, *8*(2), 55-58.

Appendix A

Informed Consent Letter

University of Nebraska Lincoln

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

Participant Informed Consent Form

Title: Defining Social Integration in a Community College Environment.

Purpose:
The purpose of this study is to explore the concept of social integration and determine if using a re-defined concept of social integration is more appropriate in assessing social integration in community colleges. Furthermore, since many community colleges serve the dual purpose of educating both occupational/career and transfer students, this study will investigate whether social integration occurs differently in these two populations. You must be 18 years of age or older to participate. You are invited to participate in this study because you are student enrolled for the 2013 winter semester at Mid Michigan Community College.

Procedures:
You will be asked to complete a written survey. The procedures will last for approximately 10-15 minutes, and will be conducted at Mid Michigan Community College.

Benefits:
There are no direct benefits to you as a research participant. However your answers will provide a better understanding of the role of social and academic integration in community college persistence, which in turn, may help Mid Michigan Community College create future programs and services that may help in persistence and/or retention efforts.

Risks and/or Discomforts:
There are no known risks or discomforts associated with this research.

Confidentiality:
There will be no information obtained during this study which could identify you. The data will be stored in a locked cabinet in the investigator's office and will only be seen by the investigators during the study. The information obtained in this study may be published in scientific journals or presented at scientific meetings but the data will be reported as aggregated data, and will not in any way identify individual students.

Opportunity to Ask Questions:
You may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. Or you may contact the investigator(s) at the phone numbers below. Please contact the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965 to voice concerns about the research or if you have any questions about your rights as a research participant.

Freedom to Withdraw:
Participation in this study is voluntary. You can refuse to participate or withdraw at any time without harming your relationship with the researchers, Mid Michigan Community College, or the University of Nebraska-Lincoln, or in any other way receive a penalty or loss of benefits to which you are otherwise entitled.

Consent, Right to Receive a Copy:
You are voluntarily making a decision whether or not to participate in this research study. By completing and the returning the survey, you are consenting to participate. You will be given a copy of the informed consent form Please keep a document for your records.

Name and Phone number of investigator(s)

Scott Mertes, Principal Investigator	Office: (989) 773-6622 ext. 230
Richard Hoover, Ph.D., Secondary Investigator	Office (402) 472-3058

Appendix B

University of Nebraska-Lincoln Institutional Review Board Approval Letter

University of Nebraska Lincoln

December 10, 2012

IRB Number: 20121212980 EX
Project ID: 12980
Project Title: DEFINING SOCIAL INTEGRATION IN A COMMUNITY COLLEGE ENVIRONMENT

Dear Scott:

This letter is to officially notify you of the certification of exemption of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study based on the information provided. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as Exempt Category 2.

You are authorized to implement this study as of the Date of Exemption Determination: 12/10/2012.

1. The approved informed consent form has been uploaded to NUgrant (file with -Approved.pdf in the file name). Please use this form to distribute to participants. If you need to make changes to the informed consent form, please submit the revised form to the IRB for review and approval prior to using it.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
* Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
* Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
* Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
* Any breach in confidentiality or compromise in data privacy related to the subject or others; or
* Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,

Becky R. Freeman, CIP
for the IRB

Appendix C

Mid Michigan Community College Approval Letter

Mid Michigan Community College

Great careers start here.

November 30, 2012

Becky Freeman
IRB/Research Compliance Coordinator
University of Nebraska-Lincoln
312 N. 14th St., Ste 209
Lincoln, NE 68588-0408

Dear Ms. Freeman:

My name is Kim Barnes, and I am the Executive Dean of Student and Academic Support Services at Mid Michigan Community College. My Associate Dean, Scott Mertes, is currently a Ph.D. candidate at the University of Nebraska-Lincoln. He hopes to begin his data collection for his dissertation this coming January. He has reviewed with me his dissertation proposal, including the research questions he is hoping to answer, along with his research methods. After discussing the project with him, I give my approval for him to conduct his research. If you require any additional information, or have further questions, please feel free to contact me at 989-773-6622 ext. 236 or at kbarnes@midmich.edu.

Sincerely,

Kim Barnes, Executive Dean
Student and Academic Support Services
Mid Michigan Community College

Appendix D

Survey Distribution Script

Survey Distribution Script

Hello, my name is Scott Mertes. I am the Associate Dean of Student and Academic Support Services here at MMCC. I am also a doctoral candidate in the Educational Leadership in Higher Education program at the University of Nebraska-Lincoln. As part of my dissertation research, I am conducting a research study about social integration in a community college setting

I have a brief survey that would take about 10-15 minutes to complete. You must be 18 years or older to participate, and your participating is entirely voluntary. No personally identifying information is being collected. The results of the study will be reported in my dissertation, and potentially in the form of presentation(s) at professional conferences, and/or in a refereed professional journal. However, I will only use aggregated data in my research study report. Do you have any questions about the research study?

Each participant will be given an envelope. Inside the envelope are a copy of my survey and two copies of the informed consent letter. Prior to completing the survey, please read the informed consent letter. Please keep a copy of this letter for your records. Once you have completed the survey, please put it back into the envelope and return it to me.

Thank you for your participation in this research study. If you have any questions later on you may reach me by email or by phone. My e-mail address and phone number are listed at the bottom of the informed consent letter.

Appendix E

Academic and Social Integration Survey

1. Gender

- Male
- Female

2. Race/Ethnicity

- Hispanic
- Asian
- African American
- Native American
- Pacific Islander
- White

3. Student Status

- First-Time Freshman
- Returning Student (enrolled at MMCC previously)
- Transfer Student
- Guest Student (primarily enrolled at another institution but taking a course at MMCC)

4. Age

5. Program of Study/Major

6. Most of my courses have been intellectually stimulating.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

7. I am satisfied with my academic experience at Mid Michigan Community College.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

8. I am more likely to attend a cultural event (e.g., a concert, lecture, or art show) now compared to a few months ago.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

9. I am satisfied with the extent of my intellectual development.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

10. In addition to the required reading assignments, I read many of the recommended books in my courses.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

11. My interest in ideas and intellectual matters has increased since starting classes.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

12. I have an idea about what I want to major in.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

13. This year my academic experience has positively influenced my intellectual growth and interest in ideas.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

14. Getting good grades is important to me.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

15. I have performed academically as well as I anticipated.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

16. My interpersonal relationships with students have positively influenced my intellectual growth and interest in ideas.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

17. I have developed close personal relationships with other students.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

18. The student friendships I have developed have been personally satisfying.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

19. My personal relationships with other students have positively influenced my personal growth, values, and attitudes.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

20. It has been easy for me to meet and make friends with students.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

21. I am satisfied with my dating relationships.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

22. Many students I know would be willing to listen and help me if I had a personal problem.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

23. Most students at Mid Michigan Community College have values and attitudes similar to mine.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

24. I am satisfied with the opportunities to participate in organized extra-curricular activities at Mid Michigan Community College.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

25. I am happy with my living/residence arrangement.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

26. I am satisfied with my opportunities to meet and interact informally with faculty members.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

27. Many faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

28. I have developed a close, personal relationship with at least one faculty member.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

29. My non-classroom interactions with faculty members have positively influenced my intellectual growth and interest in ideas.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

30. My non-classroom interactions with faculty members have positively influenced my personal growth, values, and attitudes.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

31. My non-classroom interactions with faculty members have positively influenced my career goals and aspirations.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

32. Many faculty members I have had contact with are genuinely outstanding or superior teachers.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

33. Many faculty members I have had contact with are genuinely interested in students.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

34. Many faculty members I have had contact with are genuinely interested in teaching.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

35. Many faculty members I have had contact with are interested in helping students grow in more than just academic areas.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

36. It is important to me to graduate from college.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

37. It is important for me to graduate from Mid Michigan Community College.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

38. I am confident that I made the right decision in choosing to attend Mid Michigan Community College.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

39. I find value in studying with other students outside of class.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

40. I find value in joining a study group outside of class.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

41. I find the other students in my classes to be supportive in the classroom.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

42. I find the other students in my classes to be approachable in the classroom.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

43. I find my instructors to be supportive in the classroom.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

44. I find my instructors to be approachable in the classroom.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree

45. I will mostly likely register at Mid Michigan Community College next semester.

- Strongly Disagree
- Somewhat Disagree
- Not Sure
- Somewhat Agree
- Strongly Agree