THE UNINTENDED AND UNEXPECTED OUTCOMES OF A MAJOR SELECTION POLICY

A dissertation submitted to the
Kent State University
College of Education, Health, and Human Services
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

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December 2014
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The purpose of this study was to investigate whether a major selection policy, demographic background, and previous academic performance are related to retention and academic performance of degree-seeking students enrolled in non-degree programs.

A comparative study design was used to explore whether implementation of a major selection policy impacts academic outcomes as measured by earned credit hours, college cumulative GPA, and retention. The study examined the differences in academic outcomes and retention for students who enrolled pre-policy (2008 & 2009) and those who enrolled post-policy (2010 & 2011). The study included 3,468 students enrolled in non-degree programs.

Based on the results of this study, major selection policies alone are not sufficient in assisting students in obtaining a college degree. A major selection policy may help students to identify what is expected and the parameters associated with the community, but does not in itself provide the support necessary to move students from non-degree programs to graduation. Based on the results of this study, the policy alone has unintended and unexpected outcomes that in the long-term may have negative consequences for the students and the institution. Requiring students to select a major by way of a policy may be analogous to a doctor treating the symptom rather than the medical cause. The cause of students not selecting a major may be indicative of larger
developmental issues and/or inability to see the connection between completing a degree and reaping any desired benefits.
ACKNOWLEDGMENTS

The completion of my dissertation was only possible because of the God I serve and the support, guidance, and love of many, many people. My dissertation committee: Dr. Stephen B. Thomas, Chair; Dr. Mark B. Kretovics; and Dr. Melody Tankersley with their unwavering commitment to my success, encouraged me to push beyond the ordinary and expected. Each of them served a unique role in helping me to fight off the exhaustion and self-doubt to soar. I am forever thankful to each of them for serving in this capacity and making one of my dreams a reality.

Without the patience, love, support, and guidance of my family I would not have been able to begin or finish this process. My mother started this journey by making it possible for me to attend college after high school and my grandmother made sure I stayed in college by teaching me how to study. My brothers cheered me on and celebrated each success with me. My husband, Perkins, set aside his own dreams to support mine. During this process, he was more patient and flexible than I thought was possible for a human being. His love for me was evident and gave me the courage, strength, and energy to keep going. My daughter, India reminded me how to fight for my dreams even when others couldn’t see the value in the goal. My son, Perkins, III convinced me that I had the strength and intelligence to get the job done. Perkins, India, and Perkins, III thank you for showing me what it means to be a family.

I would be remiss if I did not mention the many friends that helped me through this journey in their own special way. I am blessed to say there are too many to mention.
in the space allowed but know that you are loved and much appreciated. I would also like to thank the many KSU faculty, staff, and students who assisted and cheered me on.
TABLE OF CONTENTS

ACKNOWLEDGMENTS ........................................................................................................ iv

CHAPTER

I. INTRODUCTION ............................................................................................................ 1
  Background of Study ....................................................................................................... 1
  Statement of Problem .................................................................................................... 3
  Purpose of Study and Research Questions ..................................................................... 10
  Significance of Study ..................................................................................................... 11
  Glossary ......................................................................................................................... 12
  Assumptions .................................................................................................................. 13
  Limitations of Study ....................................................................................................... 13
  Delimitations of Study ................................................................................................... 14

II. REVIEW OF LITERATURE .......................................................................................... 17
  Description of Students Enrolled in Non-Degree Programs ......................................... 17
  Research Studies on Undecided Students ..................................................................... 24
  Factors that Impact Retention of all Students ............................................................... 28
  College Student Development and the Undecided Student ............................................ 30
  Perry’s Theory of Intellectual and Ethical Development .............................................. 31
  Chickering’s and Reisser’s Vector: Developing Purpose ............................................... 32
  Career Development ..................................................................................................... 33
    Career Development and Decision-Making Theories ............................................... 33
    Super’s Theory of Career Development ..................................................................... 34
    Tiedeman’s Theory of Career Development ............................................................... 34
  Interventions and Programs for Undecided ................................................................. 36
    Academic Advising for Undecided Students ............................................................. 36
    Major and Decision-Making Tasks ............................................................................. 37
    Major and Career Decision Information .................................................................... 38
    Career Interventions ................................................................................................. 39
    The Role of Coursework in the Support of Undecided Students ............................... 40
  Educational Policy: Student Success Does Not Happen by Chance ............................ 42
  Performing for the Future ............................................................................................ 45
  Goal Commitment Leads to Graduation ........................................................................ 48
  Financial Aid and Socioeconomic Status .................................................................... 49
  Theoretical Framework ................................................................................................. 55
    Student Attrition Model ............................................................................................. 56
    Student Integration Model ......................................................................................... 59

vi
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Figure Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Individual Benefits of Education</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Societal Benefits of Higher Education</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Employment Projections by Educational Attainment</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Tinto’s 1975 Model</td>
<td>64</td>
</tr>
<tr>
<td>5</td>
<td>Tinto's 1993 Model</td>
<td>65</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Postsecondary Enrollment and Graduation Data, 1991-2002</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Non-Degree Programs designated for Degree-Seeking Students</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
<td>Descriptive Statistics of Pre and Post- Policy Cohorts</td>
<td>82</td>
</tr>
<tr>
<td>4</td>
<td>Correlations with Earned Credit Hours</td>
<td>88</td>
</tr>
<tr>
<td>5</td>
<td>Regression Table of Number of Earned Credit Hours</td>
<td>89</td>
</tr>
<tr>
<td>6</td>
<td>Correlations with College GPA</td>
<td>90</td>
</tr>
<tr>
<td>7</td>
<td>Regression Table of College GPA</td>
<td>91</td>
</tr>
<tr>
<td>8</td>
<td>Variable Coefficients</td>
<td>93</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Background of Study

In the literature, degree-seeking students enrolled in non-degree programs have been labeled exploratory, undeclared, and undecided (Cuseo, 2005). Undecided has commonly been used as a general term to cover all of these labels (Lewallen, 1993). Gordon (2007) defines undecided students as those who are “unwilling, unable, or unready, to make an educational or vocational decision” (p. x). For more than 80 years, researchers and writers have examined this population (Gordon, 2007). R.B. Cunliffe conducted the earliest recorded study of undecided students in 1927 (as cited by Crites, 1969). Studies and literature on this population offer mixed impressions of these students and conflicting outcomes.

Some studies have characterized “being undecided” as an unhealthy and problematic condition (Fuqua & Hartman, 1983; Hartman & Fuqua, 1982; Hartman & Hartman, 1982). Other studies consider being undecided as healthy and have shifted the focus to the necessary developmental tasks students need to accomplish to make educational and vocational decisions (Cuseo, 2005; Gordon, 2007). Another area of debate is whether simply being undecided is a risk factor in student attrition models.

Several studies have identified being unclear on major and career goals as a risk factor in student attrition (Astin, 1977; Pascarella & Terenzini, 2005; Tinto, 1993, Wilcoxon & Wynder, 2010). One of the factors identified by researchers that is linked to
the retention/attrition of this population, is increased time-to-degree. Increased time-to-degree decreases the likelihood that students will complete a baccalaureate degree. Timely selection and commitment to a degree path increases the likelihood that students will persist to graduation especially if they are able to link their major to future career opportunities (Astin, 1977; Pascarella & Terenzini, 2005; Tinto, 1993, Wilcoxson & Wynder, 2010).

In 1993, W.B. Lewallen challenged the belief that undecided students were at risk of not completing a degree. Lewallen (1993) asserted that previous studies had not adequately analyzed the issue. He conducted an empirical study using national data on 20,000 students and found that the factors leading to attrition were the same for undecided and decided students. Lewallen (1993) concluded that beginning college as undecided does not put a student at risk of not persisting but being in this state for a long period of time does have implications for attrition. Tinto (1993) echoed Lewallen’s conclusion, indicating that prolonged indecision regarding a major is linked to the failure to complete a baccalaureate degree.

Nationally, it is estimated that as many as 61% of all high school and college students are undecided (Gordon, 2007). Additionally, approximately, 30 to 50% of all students who begin their career at a four-year institution change their major sometime during their academic career (Tinto, 2012). Based on previous studies, if students enrolled in non-degree programs delay the selection of a major, a significant number of them may be at risk of not completing a baccalaureate degree (Foraker, 2012; Lewallen,
The attainment of a baccalaureate degree is the ultimate outcome by which institutions offering these degrees and students seeking them are measured. HEI’s have an opportunity to implement what Bean (1981) refers to as “structural characteristics” to improve graduation rates (p. 30). Bean (1981) defines structural characteristics as policies, programs, and services that support student persistence. To impact graduation rates of this population, HEI’s should have an understanding of this population and what structural characteristics or variables increase the likelihood of them earning a degree.

**Statement of Problem**

Despite the wealth of information available regarding the retention of undecided students there is very little research on the role institutional policy plays in addressing the statement made by Tinto (1993) and repeated by many, “unresolved intentions over an extended period can lead to departure both from the institution and from higher educational enterprise as a whole” (p. 41). Without a clear understanding of the role of structural variables, institutional leaders are left with very little insight in which to guide decision-making. This lack of insight could result in the establishment of programs, services, practices, and policies that fail to address the institutional concern of retention and graduation.

Higher Education is seen as the key to social maintenance or movement. There are individual and societal benefits realized when students attend postsecondary institutions. An individual who completes a bachelor’s degree is expected to earn 66%
more during 40 years of employment than an individual who earned a high school diploma (Baum, Ma, Payea, 2010). The Bureau of Labor Statistics (2012) annually produces employment and earning projections based on educational attainment (see Figure 1). The Bureau projections show that individuals with a bachelor’s degree or higher earn more and are less likely to be unemployed than individuals who only hold a high school diploma. College graduates also experience non-financial benefits of higher education such as increased well-being. College graduates are more likely to live longer and are less likely to smoke and be obese (OECD, 2013).

![Earnings and unemployment rates by educational attainment](image)

**Figure 1.** Individual Benefits of Education

The society benefits because educational attainment is directly related to a positive reduction in reliance on social support programs and increased payment of federal, state, and local taxes (Baum, et al., 2010). The Organization for Economic
Co-operation and Development (OECD) demonstrate the benefit of higher education to society is not limited to the United States and increased tax revenues and reduced reliance on social programs can be seen in 28 additional countries (see Figure 2). In a longitudinal study conducted on the social return of higher education, researchers found that wages of all individuals regardless of education were impacted positively by the supply of college graduates (Moretti, 2004).

**Figure 2. Societal Benefits of Higher Education**

A college degree is a necessary qualification to access many forms of employment and the middle class (Johnstone, 2001). Additionally, federal and state governments have placed more emphasis on increasing the number of individuals who obtain a four-year degree to meet the demand for a higher educated population (Cook & Hartle, 2011).
In the United States there was a shift in the 1980s in the demand for “more-educated and more skilled” workers over those who were “less-educated and less skilled” (Katz & Murphy, 1992, p. 36). Economists postulate this shift in demand was a result of the introduction of the computer and the need for more skilled and knowledgeable individuals who could build, design, and operate technology (Katz & Murphy, 1992). While the Bureau of Labor Statistics (2012) predicts the largest growth in occupations between 2012 and 2020 will require a high school diploma, higher wages are associated with occupations that require an Associate’s degree or higher (see Figure 3).

**Figure 3.** Employment Projections by Educational Attainment
Higher education officials have enjoyed autonomy for a number of years, to run institutions how they deemed necessary with little government oversight. Today, however, governments are under tremendous pressure to balance budgets and reduce taxes. Institutions of Higher Education that consume a large percentage of government dollars are being held accountable for how they utilize the funds provided by tax dollars (Hauptman, 2012). No state has received immunity from the increase in public scrutiny. Politicians across the country are fighting to balance their support of so many public goods with the public demand for accountability for expenditures. Even in the four states (i.e., Alaska, Arkansas, Montana, and North Dakota) that experienced budget surpluses in recent years, politicians are either holding the line or reviewing their funding models (Leonard, 2010). Popular public opinion believes institutions should focus on “trimming the fat.” A 2009 poll conducted by Public Agenda and The National Center for Public Policy and Higher Education reported that 54% of Americans believed that colleges could spend less and still maintain educational quality (Immerwahr, Johnson, Ott, & Rochkind, 2010).

The public focus is on whether public institutions provide access to students and assist them in being successful. Institutions are being pressured to balance access and success by continuing to admit more students and making sure they graduate (NCHEA, 2013). This has shifted much of how institutions function with more focus placed on support services to help students persist (Massy, 2001). This shift in focus has led to many institutions increasing administrative units and staff to support students outside of
the classroom at a significant cost (Massy, 2001). Even with these increases, higher education as a whole has not seen great success in significantly moving the needle. Graduation rates have remained steady for the last twenty years with completion rates slightly above 50% (Carey, 2004). In 1993, Tinto reported that 50% of all students who graduate from high school and enter a college or university never complete a baccalaureate degree. In a report released in the Chronicle of Higher Education, it was found that graduation rates at one-third of four-year postsecondary institutions had instead fallen (Brainard & Fuller, 2010).

Research on college retention began in the 1970s when institutions began expanding access to include students from low socio-economic backgrounds, racial minority groups, first-generation college students, and adult students (Tinto, 1993). The research while focused on increasing retention has more often attempted to answer the question of why students leave. The question of why students leave is an issue of attrition, which is obviously linked to retention. In addition to timely selection of a major, researchers have identified many factors such as pre-college characteristics (i.e., student’s socioeconomic status) and institutional factors (i.e., institutional size) that lead to student attrition resulting in reduced graduation rates (Astin, 1975; Bean, 1980 &1982; Pascarella & Terenzini, 1991; Tinto, 1993). One factor believed to impact college attrition and graduation rates is major and job certainty, which is related to having an identified degree path (Abel, 1966; Astin, 1977, 1983; Bean, 1980 &1982; Elton & Rose, 1971; Janasiewicz, 1987; Pascarella & Terenzini, 1991; Tinto, 1993; Waterman, Geary &
Waterman, 1974). Undergraduate students must select and declare a major in order to realize the goal of completing a bachelor’s degree.

College student attrition is not a new issue in higher education. The finding reported by Tinto in 1993 is repeated often (i.e., 2013 open letter to colleges and universities published by NCHEA). This trend continues to prompt institutions, researchers, and policymakers to investigate the reasons for college student attrition and look for opportunities to address them through programs, services, and policy. Data from the National Center for Higher Education Management Systems (NCHEMS) demonstrate this trend (see Table 1).

Table 1. Postsecondary Enrollment and Graduation Data, 1991-2002

<table>
<thead>
<tr>
<th>Cohort</th>
<th>% of Responding Institutions</th>
<th>Enrollment</th>
<th>Graduation (6-yr rate based on summer graduation)</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>64.1</td>
<td>958343</td>
<td>500378</td>
<td>52.2</td>
</tr>
<tr>
<td>1992</td>
<td>66.7</td>
<td>975815</td>
<td>507847</td>
<td>52.0</td>
</tr>
<tr>
<td>1993</td>
<td>66.8</td>
<td>988709</td>
<td>514405</td>
<td>53.0</td>
</tr>
<tr>
<td>1994</td>
<td>62.9</td>
<td>985948</td>
<td>522095</td>
<td>54.0</td>
</tr>
<tr>
<td>1995</td>
<td>65.0</td>
<td>1030708</td>
<td>556215</td>
<td>54.3</td>
</tr>
<tr>
<td>1996</td>
<td>77.5</td>
<td>1114025</td>
<td>604627</td>
<td>54.3</td>
</tr>
<tr>
<td>1997</td>
<td>78.7</td>
<td>1181296</td>
<td>641236</td>
<td>55.3</td>
</tr>
<tr>
<td>1998</td>
<td>80.0</td>
<td>1223957</td>
<td>676809</td>
<td>55.8</td>
</tr>
<tr>
<td>1999</td>
<td>80.9</td>
<td>1262197</td>
<td>704684</td>
<td>56.4</td>
</tr>
<tr>
<td>2000</td>
<td>Not available</td>
<td>1316059</td>
<td>741775</td>
<td>56.1</td>
</tr>
<tr>
<td>2002</td>
<td>Not available</td>
<td>1383061</td>
<td>772803</td>
<td>55.5</td>
</tr>
</tbody>
</table>
To answer the calls of accountability, HEIs should understand what impact sustained enrollment as an undecided student plays in retention rates. An understanding of this population of students can aid HEIs in the design of services, policies, interventions, and experiences necessary to help students choose a degree-granting program and persist to graduation.

**Purpose of Study and Research Questions**

The purpose of this study is to investigate whether a major selection policy, demographic background, and previous academic performance are related to retention and academic performance of degree-seeking students enrolled in non-degree programs. The pressure for institutions to graduate students has led to numerous discussions and implementation of new policies to support and encourage student progress. It is best to avoid implementing policy based on best practice without a full understanding of how the policy might impact unique student populations (Kuh, Kinzie, Schuh, Whitt, & Associates, 2010). Although policy can be an important component in increasing student retention and graduation rates, institutions must determine the most effective and appropriate policy based on data and how these data relate to their students.

The following research questions will be examined in this study:

1. Is there a difference between students enrolled in non-degree programs who fall under the major selection policy and those who do not in regard to academic outcomes?
2. Is there a difference between students enrolled in non-degree programs who fall under the major selection policy and those who do not in regard to retention?

3. How well does the combination of ACT/SAT scores, HSGPA, gender, race, family SES, parental educational background, high school rating and type, and presence of major selection policy predict academic outcomes of students enrolled in non-degree programs?

4. How well does the combination of ACT/SAT scores, HSGPA, gender, race, family SES, parental educational background, high school rating and type, and presence of major selection policy predict retention of students enrolled in non-degree programs?

Researchers have identified a relationship between the timely selection of a major and academic performance and persistence (Astin, 1977; Bean, 1980 & 1982; Pascarella & Terenzini, 2005; Tinto, 1993, Wilcoxson & Wynder, 2010). Research questions number one and two will examine any relationship between these variables by comparing students who fall under the major selection policy and those who do not. Research question number three and four will explore how well a combination of independent variables predict the academic performance and retention of undecided students.

**Significance of Study**

It has been noted by researchers that prolonged indecision regarding a major is linked to student attrition (Astin, 1977; Tinto, 1993). The development of appropriate and effective policies and practices to move students from undecided into degree-granting
programs is in the best interest of the student to increase the likelihood of degree completion. This too is in the best interest of institutional leaders, as they are increasingly being held accountable through state and federal funding formulas for graduating students (Hauptman, 2012). Similarly, new federal student financial aid guidelines require institutions to justify the awarding of aid to undecided students enrolled in non-degree granting programs. The new guidelines allow this group of students to receive financial aid if they have 30 or fewer semester hours (Department of Education, 2010). Once undecided students earn 31 or more semester hours, they are required to declare a major or file a request with the institution’s student financial aid office to continue receiving aid. The availability of student financial aid is critical as the cost of a public college education continues to rise and currently 85% of all students attending colleges and universities receive some type of financial assistance during their undergraduate career (Aud, et al., 2013).

Glossary

Undecided students: Gordon (2007) defines undecided students as those who are “unwilling, unable, or unready, to make an educational or vocational decision” (p. x). Undecided students are enrolled in non-degree granting programs at study institution. Major selection policy: These policies are classified as requirements placed on students to select a degree-granting program at the time of admission or after matriculation by the attainment of a certain number of credit hours (Cuseo, 2005).
Retention: This is defined as the continuous enrollment of students at the same institution from one term to the next through to graduation (Tinto, 1993). Retention will be reviewed for each semester the student is enrolled until the sixth semester. Enrollment through to the sixth semester will be examined because the policy implementation time period will only allow an examination through to the sixth semester. Nationally, students who enroll in the sixth semester have an increased likelihood of graduating from their institution.

Academic performance: For this study, academic performance will be demonstrated by cumulative college grade point average. Grades have been found to play a significant role in major and career decisions and thus are important to examine in this study (Pascarella & Terenzini, 1991).

Assumptions

It is assumed that retention, as an institutional measure, is a valid and important measure of student success. While transferring and persisting at another institution is a positive event, transferring is typically fraught with possible pitfalls that may prolong or worse, threaten graduation. It is assumed that students attending the study institution and are enrolled as an undecided student are representative of other college students attending similar institutions in the region.

Limitations of Study

Retention is a complex and multi-dimensional issue that is impossible to link to one factor. Students who are interviewed upon leaving an institution often identify
financial and personal concerns as factors in their decision, but it has been found that
students are unable to identify exactly what led to their action to leave (Educational
Advisory Board, 2009). This study will highlight the role policy plays in retention but
will not provide a full view of the impact of policy because the college environment is
shaped by many factors and policies that interact with each other and have different
impact on different types of students.

**Delimitations of Study**

This study is focused on just one type of institution so it is unlikely to be
generalizable to institutions with different missions that serve different types of students
than the study location. The focus will be on public, non-profit, four-year, doctoral
granting, HEIs, as there are many studies that indicate there is a difference in the
environment, type of student, and mission of private and for-profit institutions.

The population focus of this study will not allow the results to be generalized to
all students attending all types of HEIs. This study will only focus on first-time in college
students who begin college within three years of graduating from high school and are
under the age of 21. This study also does not look at students who change their majors
after initially being decided. It could be argued that students who change their majors
after matriculation face the same or similar challenges as those who begin their
educational career as undecided; however, the current major selection policy does not
apply to this population. While all students who change their major after enrollment may
experience similar outcomes, this study focuses exclusively on students who begin
college with the understanding that they have to select and declare a major by a certain time in order to graduate.

This study focuses on retention, which is considered a measure of institutional performance. As discussed earlier, retention is a measure of an initial cohort of students who enter one institution and thus will not include information on those who persist at another institution and complete a degree. Because retention is an institutional measure, the results of the study will not report on students who left the study institution and earned a baccalaureate degree at a different institution by transferring. Additionally, based on the definition of retention, students who stop out and return after a brief or a long absence in their enrollment will not be studied. This population will not be included because it is difficult to know when a student is likely to return and depending on the length of their absence there may be many factors that further confound the measure of retention such as changes in degree requirements. Students who are dismissed from college due to academic performance will not be included in this study because these students are typically required by the institutional policy to apply for reinstatement and are unable to submit an application prior to 12 consecutive months. These students are also excluded because this study is focused on the relationship between a major selection policy and those who voluntarily withdraw from the institution.

This study is not a comparison of undecided versus decided but instead an investigation of whether selection and declaration of a major as defined by the institution’s policy makes a difference in academic outcome and retention. A focus on
how policy impacts outcomes for students enrolled in non-degree programs adds to the conversation on retention of this population, a dialogue that does not currently exist and could help institutions determine how best to support this population of students.

The remaining chapters in the study will provide a comprehensive review of the literature (chapter two), method associated with conducting the study (chapter three), study results (chapter four), and a discussion of the results with recommendations for future study (chapter 5).
CHAPTER II

Review of the Literature

This study attempts to address a gap in literature regarding the impact educational policy has on the retention and academic outcome of students enrolled in non-degree programs. A review of literature will provide an understanding of educational policy. The review of literature will also provide insight into the population of students this type of policy is geared toward, degree-seeking students enrolled in non-degree programs. In an effort to further understand the intersection between policy and behavior, the literature review will examine the characteristics associated with this population and factors that impact retention.

Description of Students Enrolled in Non-Degree Programs

Researchers estimate as many as 61% of high school and college students are undecided on an educational and/or vocational goal (Gordon, 2007). Undecided students are defined as those who are “unwilling, unable, or unready to make educational and/or vocational decisions” (Gordon, 2007, p. x). These students are degree seeking but are enrolled in non-degree programs.

Some literature characterizes degree-seeking students enrolled in non-degree programs using terms such as immature, unmotivated, bored, and underprepared (Fuqua, Seaworth, & Newman, 1987; LoCascio, 1964; Levitz & Noel, 1989). Other literature characterizes this state as developmentally normal (Cuseo, 2005; Gordon & Steele, 1992; Lewallen, 1993; Strommer, 1997; Titley & Titley, 1985). Contemporary researchers recognize the population as heterogeneous and have identified several types of students...
who fit into this category (Cuseo, 2005). Researchers view students enrolled in non-degree programs as a subpopulation of the larger student body fitting into different common categories such as first-year, upperclass, transfer, adult, traditional-age, first-generation, high-ability, and underprepared (Gordon, 1984).

Several researchers identified different types of students based on developmental stage, career decision status, and personality types such as locus of control and self-esteem (Holland & Holland, 1977; Fuqua, et al., 1987; Jones & Chenery, 1980; Rojewski, 1994; Savickas & Jarjoura, 1991; Vondracek, Hostetler, Schulenberg, & Shimizu, 1990). The different types of undecided students centered on four central themes: choice anxiety, career identity, career self-efficacy, and career maturity. The first theme focuses on the interrelationship between anxiety and indecision. Goodstein (1965) proposed two types of undecided students. The students are grouped based on their level of anxiety associated with choosing an educational and/or vocational path. The first group of undecided students experience anxiety associated with making decisions intensified by societal and educational demands related to their choice (Goodstein, 1965). Anxiety for these students can be alleviated through the provision of information and experiences to aid the decision-making process. The second group of students identified by Goodstein (1965) experiences high level of anxiety about making a decision. The anxiety is debilitating and not limited to educational or vocational choices. Students experiencing this level of anxiety regarding making an educational and vocational decision can only reduce it by solving the interpersonal conflict (Gordon, 2007).
The second theme characterizing undecided students is career identity. Holland and Holland (1977) compared undecided and decided students using a sample of 1,005 juniors in high school and 692 college juniors. The Life Plans Inventory was used to determine if there were any differences between the two populations. Holland and Holland (1977) found that decided and undecided students were very similar on many measures with the exception of three measures with one being identity. Undecided students in this study lacked a stable and clear sense of identity. Holland and Holland (1977) found that when students answered the questions on the Identity Scale of the Life Plans Inventory they tended to indicate being unclear on areas of interest, abilities, and what they wanted for their future.

Using Erik Erikson’s (1968) theory as the framework, studies found a relationship between ego-identity status and the ability to make vocational decisions (Cohen, Chartrand, & Jowdy, 1995; Gordon & Kline, 1989; Munley, 1975; Vondracek, Schulenberg, Vladimir, Gillespie, & Wahlheim, 1995). Erikson identified eight developmental stages that individuals go through by facing and resolving a crisis (Atalay, 2007). The stages Erikson (1968) identified are: basic trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, identity versus identity confusion, intimacy versus isolation, generativity versus stagnation, and ego integrity versus despair.

Cohen, Chartrand, and Jowdy (1995) compared 423 undecided college students using the Career Factors Inventory and Erikson’s ego-identity development model. From this comparison the researchers developed four distinct groups of undecided students:
ready to decide, developmentally undecided, choice anxious, and chronically indecisive. The ready to decide group had resolved most of the crises associated with the first five stages of Erikson’s model whereas the chronically indecisive group had resolved fewer crises.

Gordon and Kline (1989) studied career decidedness in relation to the categories James Marcia developed based on Erikson’s ego-identity theory. Marcia (1966) identified four vocational identity statuses based on interviews with 86 college males:

1. Diffusion: undecided individuals who have experienced a period of exploration or crisis.
2. Foreclosure: decided individuals who have committed without a period of exploration or crisis.
4. Identity Achievement: Committed individuals who have experienced exploration and crisis.

Gordon and Kline (1989) found that students who were more decided were less diffused and had a lower score for moratorium.

Career maturity is the third theme associated with undecided students. As written previously, Crites (1961) defines career maturity as the development of independent and more specific vocational preferences as a reflection of maturity and assesses an individual’s readiness to make an informed vocational decision. Career maturity plays a significant role in students’ ability to make a decision and respond to career interventions.
The Career Maturity Inventory (CMI) was developed in 1961 by Crites to help individuals working with undecided students to determine their readiness to engage in the necessary processes to select an educational and/or vocational path (Crites & Savickas, 1996). The CMI has been revised since its introduction and currently assesses four areas of student readiness, career concern, career control, career curiosity, and career confidence (Savickas & Porfeli, 2011). The strength of each area is also assessed using the CMI. Career concern assesses whether the student is focused on planning for the future and interested in engaging in planning and making vocational decisions (Crites, 1961). Career control means that a student feels responsible for making intentional and informed decisions about their future (Crites, 1961). Career curiosity evaluates student initiative to seek out information and engage in activities that will introduce them to the world of work (Savickas & Porfeli, 2011). Career confidence assesses the sense of self-efficacy (Crites & Savickas, 1996). A positive sense of self-efficacy leads to the confidence students must have to navigate any challenges faced during the decision-making process and implementation of those choices.

Career self-efficacy is the fourth theme used to describe undecided students. Self-efficacy is the confidence an individual possesses regarding their ability to achieve certain tasks which influences future behavior (Bandura, 1977). Career self-efficacy is strongly correlated with vocational decision-making (Uffelman, Subich, Diegelman, Wagner, Bardash, 2004). Students with high levels of self-efficacy have higher confidence in their ability to complete decision-making tasks (Wang, Zhang, & Shao,
Those with lower confidence experience high levels of anxiety and tend to be depressed about making career-related decisions (Wang et al., 2010).

Taylor and Betz (1983) developed the Career Decision-Making Self-Efficacy Scale (CDMSE) based on Bandura’s (1977) theory of self-efficacy and Crites (1961) model of career maturity. Bandura’s (1997) theory asserts that an individual’s use of coping behaviors when faced with a threatening situation and their ability to persist is dependent upon their level and strength of self-efficacy. Crites (1961) defines career maturity as the development of independent and more specific vocational preference as a reflection of maturity.

Taylor and Betz (1983) hypothesized that interventions focused on increasing self-efficacy through the provision of information would increase the likelihood of participation in career decision-making. They suggest that this process begin with an assessment of career self-efficacy. The CDMSE was developed for these purposes and can be used to determine what information and behaviors are necessary for the individual to make career-related decisions (Taylor & Betz, 1983).

Gordon (1998) conducted a review of the literature on undecided types for overlapping concepts and collapsed them into seven types of undecided students: very decided, somewhat undecided, unstable undecided, tentatively undecided, developmentally undecided, seriously undecided, and chronically undecided.

Very decided students feel good about their choice and consider themselves planning or making a choice (Steele, 2003). Students who are somewhat undecided are in need of corrected self and vocational information. Somewhat decided students may
experience barriers created by the institution such as selective admission criteria and are generally unsure if their choice is “correct” (Gordon, 2007). Unstable undecided students are described as those who are unsure of their ability to perform in the chosen career (Gordon, 1998). Overall these students lack confidence and may need assistance in building self-efficacy. Tentatively undecided students are close to making a decision because they are clear on their skills and interest and are comfortable being undecided for this time period (Steele, 2003). This group of students may need help organizing information to help make a decision. Developmentally undecided are students who with maturation will find it less difficult to make an educational and/or vocational decision (Steele & McDonald, 2008). This group of students is considered developmentally normal and as they mature will gain the necessary decision-making skills to sort through the information they will gain about themselves and the world of work. Seriously undecided students are those who are unsure about whom they are and have a moderate to high level of anxiety about making a decision (Steele, 2003). Students who are seriously undecided depend on others to make decisions and view the barriers to making a decision as external. Chronically undecided students are unable to identify career interests due to lack of information and a general inability to make decisions (Gordon, 1998). These students have high levels of anxiety and may need counseling to help address indecision and anxiety issues before they can turn their attention to educational and/or vocational decisions.

Undecided students represent a heterogeneous population who are best described using career, identity, and decision-making theories. These theories help better describe
what challenges they face and what tasks they must accomplish. While undecided students is used widely to describe this population, some writers have suggested the use of different and more positive terminology, such as open or exploratory majors, to describe what many consider to be a normal developmental phase (Cuseo, 2005; Lewellan, 1993; Spight, 2013).

**Research Studies on Undecided Students**

Research on undecided students has been conducted for over eight decades (Gordon, 2007). The research has centered around four central themes: characteristics that describe this population, retention, attrition, persistence, graduation, time-to-degree, and comparisons between undecided and declared students (Gordon & Steele, 2003; Graunke, Woosley, & Helms, 2006; Lewellan, 1993). The research has led to many different conclusions regarding this population of students (Gordon & Steele, 2003). The findings represent the complexities involved in understanding undecided students and varied research approaches used to understand this population. Studies regarding the characteristics of this population have been covered extensively earlier in this discussion so the following paragraphs will explore the themes of retention, attrition, persistence, graduation, time-to-degree, and comparisons made between undecided and decided.

Students who begin college as undecided do so with the stigma of being unfocused, which is quickly linked to the belief that they will prolong graduation or not graduate at all (Lewellen, 1993). However research studies on the retention, attrition, and graduation of undecided students have presented conflicting findings. Generally,
Lewellen (1994) argues that studies on undecided students provide confusing results because there is inconsistency in the population under study, a mix of national and single-institution studies, a lack of a theoretical framework, and very few empirical studies that focus on isolating factors that lead to attrition or persistence of this population.

Some studies regarding retention and attrition of undecided students use survey data or review characteristics of non-returning students to draw conclusions. Survey studies that ask students, alumni, administrators, and faculty to identify factors that lead to attrition have concluded that students who are undecided regarding a vocation or a major are attrition-prone (Kelly, 1925; Beal & Noel, 1980). Unfortunately, these groups provide answers based on opinions rather than research. Frederick James Kelly, dean of administration at the University of Minnesota, published one of the earlier survey studies in 1925. Kelly (1925) sent questionnaires to alumni and seniors, and also interviewed students and faculty to determine how institutions were achieving their goals. He concluded from the interviews and questionnaire responses that students who are certain of their vocation are more likely to be motivated to produce good work.

Studies conducted on students who leave college before completing a degree have identified the variable “undecided” as a factor in attrition (Abel, 1966; Foote, 1980; Titley & Titley, 1980). Abel (1966) for example studied the persistence of 89 male students at a small liberal arts college in relation to career interests identified in admission essays. He found that 75% of the students who were less certain of their future career as reflected in the admissions essay did not return the year following initial
enrollment as compared to 37% of those who were certain upon admissions. Additional studies on attrition have concluded that students enrolled in an undecided program instead of one that leads to a degree, experience higher rates of attrition from college (Astin, 1993; Bean, 1980 & 1982; Pascarella & Terenzini, 1991; Tinto, 1993).

Undecided students are considered at-risk but not all researchers have identified being undecided as a factor in attrition or persistence. Lewellen (1993) conducted an empirical study of students who began their college career as undecided and looked at whether they persisted to the second year. Lewellen used as the framework for his study, Astin’s (1991) theoretical model on retention, input-environment-outcome (I-E-O). Astin’s (1991) model provides a framework for examining inputs described as characteristics the students possess upon initial entry to the institution such as high school grades. The model also outlines the role environmental factors such as programs, policies, and institutional type; play in student outcomes (Astin, 1993). Lewellen (1993) completed a study on persistence of undecided students using a national dataset looking at the variables identified by Astin (1991) in his I-E-O model. After conducting a multiple regression of the variables identified by Astin (1991), Lewellen (1993) concluded that “being undecided” was not significantly associated with persistence. Lewellen (1993) further asserts that previous studies are likely confusing commitment to a major with commitment to earning a college degree. Commitment to earning a college degree was identified as a significant factor in college persistence (Tinto, 1993).

Graunke (2006) looked at the factor of commitment to earning a college degree to draw conclusions regarding the likelihood of graduation for students uncertain about their
college major. Graunke, et al. (2006) concluded that students with high institutional commitment and commitment to an educational goal were likely to graduate regardless if they were committed to an academic major. This study does not however provide a full description of the sample under study so it is unclear whether these students began college as undecided or were in a major and later changed. It is important to know the status of the sample under study to determine if there are differences in outcome. For example a study conducted at the University of South Florida on the relationship between changing majors, graduation, and time-to-degree found that the likelihood of graduation doubles for students who change their major at least once during their college career (Micceri, 2001). Micceri (2001) however does not count in his study a change from undecided to declared as a change in major.

Studies comparing declared and undecided students present an array of conflicting findings as well. Many find there are no significant differences between the two populations and conclude they are much more alike than different. Some have found there is a difference in their academic performance and persistence.

Holland and Holland (1977) found that undecided and decided students were similar on many measures with the exception of vocational identity and attitudes. Baird (1967) found in his studies of over 12,000 students attending 31 institutions completing their first year and 59,000 high school seniors that the only difference between undecided and decided students was their purpose for attending college. He found that undecided students stressed the purpose for attending college was for intellectual enrichment as compared to decided students’ goal of obtaining a position (Baird, 1967).
Chase and Keene (1981) found there were differences between undecided and decided students found in grade point averages and credit accumulation. The researchers found that students who declare a major upon admission achieve higher cumulative grade point averages and earn more credit hours than those who select undecided. Anderson, Creamer, and Cross (1989) found similar results that decided students earned higher grade point averages and earn more credit hours when compared to undecided students. Foote (1980) discovered the same results but further found that students who did not change their major within the first two years were also more likely to still be enrolled after two years. Taylor (1982) found that when she compared undecided and decided students those who were undecided achieved lower ACT scores and exhibited a number of psychological differences such as fear of success and external locus of control.

**Factors that Impact Retention of All Students**

Retention is an institutional outcome that measures whether students remain continuously enrolled at one institution until they earn a degree (Tinto, 1993). Studies on student retention began in the 1970s when HEIs began enrolling students that traditionally had not attended. Across all studies, researchers have identified a variety of variables such as student demographics and background, institutional characteristics, and aspirations and motivations that influence whether students persist.

Demographic characteristics such as gender, age, race, parental educational background, and socioeconomic status have been identified as significant factors in student retention (Astin, 1975, 1991, 1993; Bean, 1980 & 1982; Braxton, Sullivan, & Johnson, 1997; Tinto, 1975; Pascarella & Terezini, 1978 & 1991). Astin (1991)
described these as “inputs” or characteristics that students possess upon initial entry to the institution. Astin (1975) concluded that the most significant factor in predicting attrition is students’ high school performance followed by aspirations to complete a degree beyond the baccalaureate. Tinto (1975) asserts that these entry characteristics influence the student’s initial commitment to attending the institution and impact whether the student becomes and remains a member of the institution’s academic and social community. Bean (1980) reviewed entry characteristics such as high school performance, socioeconomic status, distance from home, and hometown size. He found that high school performance and socioeconomic status have the greatest predictive value (Bean, 1980).

Institutional characteristics such as control type, size, location, and available educational experiences have been documented as impacting student persistence and institutional retention. Tinto’s (1975) Student Interaction Model on retention asserts the level and quality of interaction between students and others within the community determine whether a student understands and acclimates to institutional expectations. The student’s ability to understand and adapt to the institutional community influences a student’s decision to stay or leave. Tinto (1993) identified differences in retention between two and four-year institutions as well as campuses that have high levels of commuters and non-commuters, and those of different size when controlling demographic and background characteristics. Astin (1975) found that students who attend moderately sized, private, moderately selective institutions are more likely to persist.
Student aspirations for attending college influence whether a student persists. Tinto (1993) used the term “goal commitment” to describe student aspirations. Goal commitment according to Tinto (1993) measures students’ level of commitment to “personal and occupational goals” (p. 43). Astin (1975) identified a relationship between students’ initial degree aspirations and attainment. He found that 45% of students who aspired to attain a bachelor’s degree earned one after four years of enrollment or were enrolled in graduate school compared to 62% of students who aspired to attain a doctorate or professional degree (Astin, 1975).

Factors that impact retention of all students also impact undecided students. As described earlier, undecided students represent a heterogeneous population and may just need some assistance in deciding on career and major related goals in a timely manner.

**College Student Development and the Undecided Student**

Theory provides a philosophy that can guide decisions and actions (Strange & King, 2011). Chickering and Reisser (1993) stated that without the existence and use of theory, colleges become a collection of irrelevant, low-impact, and limited services and training. Student development theory is useful for all students but can also speak to subgroups such as undecided students (Gordon, 1981). Several college student development theories offer a framework for understanding undecided students; however, this paper will focus on two theories that are most germane to this population. Perry’s Theory of Intellectual and Ethical Development and Chickering’s and Reisser’s Vector, Developing Purpose, offer useful frameworks for this purpose (Gordon, 1981; Chickering & Reisser, 1993).
Perry’s Theory of Intellectual and Ethical Development

Perry’s Theory of Intellectual and Ethical Development present individual development as positions along a non-linear continuum instead of stages (Love & Guthrie, 1999). Perry’s theory postulates that development actually occurs in the transition between the positions and each position impacts how individuals view their experience (Evans, N.J., Forney, D.S., Guido, F.M., Patton, L.D., & Renn, K.A., 2010). In Perry’s theory there are nine positions that provide an understanding of how individuals makes meaning of their experience (Erickson, Peters, & Strommer, 2006). Four of those positions are most applicable to this discussion, dualism, multiplicity, relativism, and commitment to relativism. These four positions are used because they are likely to be positions experienced by college students in relation to major and career decision-making (Evans, et al., 2010).

Dualism, the first position in Perry’s theory, is evident when a student’s understanding of the world is based on what authorities view as right or wrong (Love & Guthrie, 1999). Students in this position rely on persons in authority such as parents, faculty, and supervisors, to communicate the meaning of an experience. While in this position, students do not challenge what authorities present instead they accept what is presented as fact (Gordon, 1981).

When students are in the multiplistic position they are able to make meaning from diverse perspectives when there is no one correct answer provided by authorities (Erickson, et al., 2006). An increase in the ability to think analytically occurs while
students are in this position (Evans, et al., 2010). There is also an expansion of who is considered knowledgeable during this position, which can include peers.

The position of relativism is evident when students understand that not all opinions and facts are equal (Gordon, 1981). Students in the relativist position recognize the need to support a position. Knowledge is also understood to be contextual and based on proof.

Commitment to relativism is evident when students are able to make decisions based on what they understand to be truth (Love & Guthrie, 1999). The truth used in this position is based on the relativistic position in which the student has the ability to understand and value context and evidence.

**Chickering’s Vector: Developing Purpose**

Arthur Chickering (1993) developed the Theory of Identity Development to understand the development of individual identity. Chickering’s theory was first introduced in 1969 and was later revised in 1993 (Chickering & Reisser, 1993). The theory is built on the concept of seven vectors indicating directionality and complexity (Gordon, 1995). The seven vectors are developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity (Evans, et al., 2010).

The vectors are not linear but instead build off of each other and could be repeated (Gardner, 2009). Students do not progress at the same time through each vector
but are expected within the first year to move through the first three vectors (Chickering & Reisser, 1993). Development of the fourth vector is dependent upon the development of the first three vectors. Students are expected to move through the last three vectors during the junior and senior year.

Developing Purpose, the sixth vector in Chickering’s theory, includes the ability to be intentional in decision-making and persist despite obstacles (Chickering & Reisser, 1993). The major characteristic of this vector is the students’ ability to integrate unpaid or paid vocational plans and ambitions with personal interests and interpersonal and family obligations (Chickering & Reisser, 1993).

Student development theory is a useful framework for assisting students in optimizing their college experience and reaching their academic and professional goals. When assisting students in optimizing their college experience and obtaining a college degree there are many elements of the environment that can be designed to provide the necessary support using student development theory as the framework. Career and decision-making theories can further provide guidance for what information and experiences an undecided student may need to make decisions regarding a major or career.

**Career Development**

**Career Development and Decision-Making Theories**

Understanding student development theory and how it intersects with career development and decision-making theory is useful in determining what undecided students need to do and know to accomplish career and student developmental tasks.
Super’s Theory of Career Development and Tiedeman’s Career Decision-Making Theory are applicable theories for this discussion. An overview of each of these theories is provided below.

**Super’s Theory of Career Development**

Super’s Theory of Career Development was developed by Donald Super and first published in 1957 (Gordon, 1981). Super defined career development as a negotiation “between personal and social factors, self-concept and reality, and newly learned and existing patterns of responses” (Gies, 1990, p. 55). Super describes five stages of the career development process, growth, exploration, establishment, maintenance, and decline. In the growth stage, individuals through experience are beginning to develop ideas about themselves, different fields and their relationship to what they are learning (Gordon, 1981). Individuals in the exploration stage develop unrealistic thoughts about occupations they desire (Nevill, 1997). During the establishment stage individuals began to determine if the identified occupational choices are realistic (Gies, 1990). The decline stage begins generally around preretirement and is focused on retaining a job instead of growth. Super’s theory considered career development to be a life-long process and as self-concept changed the need to recycle through these stages became likely.

**Tiedeman’s Theory of Career Development**

David Tiedeman introduced an early form of his theory of career development in 1961 (Gordon, 1981). Tiedeman defined career development as a process of matching ones identity with society (Savickas, 2008). Tiedeman believed like Super that career development was a life-long process and individuals could recycle through the stages.
Tiedeman in contrast to Super believed that individuals could go backwards through his stages depending on their particular situation. Like Chickering and Perry, Tiedeman believed periods of challenge or disequilibrium provided the necessary impetus for movement from one stage/position to the next and in the end individuals are responsible for the actions they take in response to these periods (Savickas, 2008).

Tiedeman’s theory is presented in two periods, a period of anticipation and period of implementation and adjustment (Gies, 1990). The first period, anticipation, includes the substages, exploration, crystallization, choice, and specification (Duys, Ward, Maxwell, & Eaton-Comerford, 2008). The anticipation substages constitute Super’s stages of growth and exploration. In Tiedeman’s exploration substage an individual recognizes the existence of different goals but does not have enough information about themselves or careers to realistically make sense out of the various alternatives (Gordon, 1981). Individuals at this stage lack decision-making skills and do not feel motivated or pressured to take action to better understand the information. During the crystallization substage, individuals begin to explore and organize the different alternatives based on what they value but they are not quite ready to commit to what they now understand (Duys, et al., 2008). Individuals move from crystallization to the substage, choice, and it is at this point they begin to make decisions and devise plans based on realistic information. The last substage in the anticipation period is clarification, which is when individuals are certain of their decision and they have a well-conceived plan for implementing their choice (Gies, 1990). Individuals in the second period of Tiedeman’s career decision-making model, implementation and adjustment, move through three
substages, induction, reformation, and integration. This period is commonly experienced when individuals move into their career and include the desire to be accepted in the new environment, attempt to match group values with their own, and are able to synthesize individual and group purpose (Gordon, 1991). Students will likely move into the first substage, induction, upon graduation and as they begin their new career.

**Interventions and Programs for Undecided**

**Academic Advising for Undecided Students**

Undecided students are typically labeled at-risk and there is much debate regarding how best to support and graduate this population of students (Gordon, 1995). Undecided students present a unique challenge to academic advising. While not completely valid, students in academic majors have a clear degree path that allows the advisor to frame the relationship and conversation (Lewallen, 1993). Not all students who select a degree path are certain the selected degree program is the best match for their interests, values, and skills so there is shifting that occurs within the population of students who have selected a degree program. There are challenges and benefits associated with each structure, model, and practice when working with undecided students.

One major challenge is the institution’s position on undecided students. In a recent Cleveland Plain Dealer article, a University of Akron senior vice president made the following statement, "We are no longer allowing students to declare(d) an undecided major". "We get them started toward a destination, even if they change trajectory” (Farkas, 2013). If institutions view the selection of undecided as problematic, endorsement of specialized services, support, and policies may be non-existent. The
decision to not provide services may negatively impact student persistence and graduation (Cuseo, 2005). Pascarella and Terenzini (1991) found that students who are unable to make realistic decisions regarding a major and related career might be more likely to withdraw from college because they fail to see the connection between their current efforts and future goals. If the student’s choice of undecided as a starting point is considered a natural part of the student’s development, institutions are more apt to see the importance of providing services specific to this population of students.

**Major and Career Decision-Making Tasks**

Gordon (1995) suggests six tasks that individuals working with undecided students can help them complete in their effort to gather and process information necessary to make decisions regarding a major and career. The first task is to help the student determine why he or she is undecided. There are a number of possible reasons and some may overlap. Common reasons include lack of information about majors and careers, inexperience in making decisions and lack or overabundance of interests (Cuseo, 2005). Helping the student determine the reason he or she is undecided can provide a starting point for what tasks and experiences will be beneficial to their decision-making process. Once students understand the reason they are undecided the second task is to devise a plan for exploring, which involves gathering information (Gordon, 1995). The plan is dependent upon the reason the student is undecided and may include developing an understanding of interests or counseling for individuals who are experiencing high levels of anxiety around career decision-making (Fouad, Guillen, Harris-Hodge, Henry, Novakovic, Terry, Kantamneni, 2006). Once students have begun to gather information,
the third task is to help students’ process and integrate what they have gathered (Gordon, 1995). This is a critical task based on where students may be developmentally. Dualistic students may find this task overwhelming because they are searching the information for the one right answer when there may not be one available (Erickson, et al., 2006). The fourth task is to provide support for the student during the decision-making process. This task involves helping the student navigate any challenges he or she may face in making a decision. Challenges may include lack of academic skill for desired major, pressure from family to choose a major and career that may not match the student’s interest, or anxiety associated with making a decision (Gordon, 1995). Support may include helping the student sort through the issues or referring the student for counseling. Once a decision is made about a major and/or career, the student may need help with the fifth task, initiating an action plan (Gordon, 1995). An action plan should focus on implementing the decision that was made and may include the steps a student would need to take to declare a major. The final task is to encourage the student to request additional assistance with completing tasks (Gordon, 1995). It is important to understand that students may repeat tasks if at any point they are unsure about the decision. As they repeat tasks they can benefit from continued support.

**Major and Career Decision Information**

Bogenschutz (1994) suggests students need to have four forms of knowledge to be able to make major and/or career decisions. The four forms she suggests are self-knowledge, educational knowledge, occupational knowledge, and decision-making knowledge. Self-knowledge involves goal setting based on an assessment of personal
interests, abilities, and values. Educational knowledge is an understanding of academic strengths and how these relate to academic majors. Students, who possess occupational knowledge, are aware of the necessary job-seeking activities and have spent time examining occupational information. To be able to act upon the other forms of knowledge, Gordon (1992) asserts that students need to have a knowledge of the decision-making processes that provides an avenue for integrating all other forms of knowledge. Students can be aided in acquiring and integrating this information and knowledge through intentional and directed experiences provided by the college or university.

**Career Interventions**

Spokane and Oliver (1983) defined career interventions as “any treatment or effort intended to enhance an individual’s career development or to enable the person to make better career-related decisions” (p. 100). College coursework, falls into this definition of career interventions that can be used to assist undecided students in exploring majors and careers while persisting toward graduation. Other interventions include “self-help books, structured and unstructured groups and workshops, individual counseling, computer-assisted career guidance” (Gore, 2011). A meta-analysis conducted by Brown, Ryan Kane, Brecheisen, Castelino, Budsin, Miller, and Edens (2003) identified five career interventions that were most effective in helping students make career decision choices: (a) written exercises, (b) individualized interpretation and feedback of career assessment results, (c) current and reliable career information, (d) career role models, and (e) help identifying and developing a support network.
The Role of Coursework in the Support of Undecided Students

Development is a life-long process that does not end once a major or career has been selected (Gies, 1990). It is likely as we consider student and career development theories, the information needed, tasks that need to be completed, and effective career interventions that it is evident that all students, but especially those who are undecided, would benefit from the integration of career and life planning into a college course plan.

Integrating career and life planning into coursework at all stages of a students’ academic career addresses the need to explore this concept at developmentally appropriate times (Cuseo, 2005). Those responsible for designing career interventions would be best served by viewing each component of a career and life planning process through student and career development theory. Each of these theories can answer the questions of how, what, when, and who (Gordon, 1981).

When considering the “what” and “when” in the design of a career and life planning process, Chickering’s theory can be used to justify the need for introductory coursework as a part of the student’s course plan. Through introductory coursework, undecided students can begin to understand their academic strengths and interests, aiding the student in developing intellectual competence, a component of Chickering’s first vector (Chickering & Reisser, 1993). Introductory courses are also useful in providing occupational and educational information Bogenschutz (1994) deemed important which can lead to students accomplishing tasks, Gordon (1995) suggests are important in making career and major decisions. As discussed previously in this paper, Chickering’s vectors build off of each other so it is critical that we provide experiences for students
early in their academic career that provide opportunities to accomplish the tasks
associated with the earlier vectors.

Viewing the career and life planning process through the lens provided by Perry’s Theory of Intellectual and Ethical Development and Super’s and Tiedeman’s Career Development Theory can address the questions of “how,” “what,” and “when” in the career and student development process. For example, when students begin their college career, Perry asserts they are typically in the dualistic position, so providing an opportunity for students to explore majors and careers in a First-Year Experience (FYE) course through authorities and authoritative sources such as books like the Occupational Outlook Handbook and career assessments meets the student where he or she is developmentally. To challenge the student to move to Perry’s next position of multiplicity, instructors for FYE or career courses, can introduce multiple perspectives provided by faculty and professionals working in the field and ask students to process what they have learned through a writing assignment. This approach incorporates student and career development and considers effective career interventions simultaneously. Providing opportunities for students to clarify major and career preferences through an FYE or career course is also supportive of Super’s Career Development Theory.

Tiedeman’s theory asserts that students in the early stages of his model are not motivated to explore career options but are aware that they are in need of additional information. Integrating career and life planning into coursework will help provide the structure to encourage students to explore the information needed to help bring clarity to their ideas.
Integration into coursework however does not mean that all students will be ready to explore careers. A student’s “readiness” to engage in the career development process should be assessed to determine what they are ready to explore (Savickas & Porfelli, 2011). The Career Maturity Inventory, discussed earlier, is a tool that assesses a student’s readiness to engage in this process.

**Educational Policy: Student Success Does Not Happen by Chance**

Policy is for the purpose of influencing behavior (Carey, 2005). HEIs establish policy to help students understand what is expected (Adelman, 2006). Policies such as the major selection policy that will be explored in this study are developed to assist students in reaching their goal of obtaining a baccalaureate degree in a timely manner. This goal has mutual benefit to the student and institutions that receive funding based on completion. As Tinto (1993) and others have recognized, prolonged indecision regarding a major can result in increased time-to-degree or worse, attrition. The beginning of such policies geared toward assisting undecided students can be found in the Matriculation Act of 1986 that mandated that community colleges in California identify and assist three populations considered at risk: undecided students, students at-risk of being placed on probation or being dismissed, and those enrolled in remedial coursework (Lewellen, 1993). The Matriculation Act of 1986 provided 90 billion dollars and over 750 new positions to develop programs and services for students who fit these categories.

HEIs should make decisions based on data that support student persistence. Understanding the factors that lead to attrition can help guide the development and implementation of policy to reduce barriers to persisting (Schuh, 2005a). Institutions that
have seen improvements in student persistence take intentional, proactive, and structured actions that communicate clear and consistent expectations and have created a well-defined path to completion (Kuh, Kinzie, Schuh, Whitt, & Associates, 2010).

Organizational behavioral theory helps us to better understand what impact policy may have on behavior as it relates to persistence, retention, and attrition (Berger, 2001-02). Organizational theory provides several frameworks in which to view student behavior in response to policy. One such framework is the bureaucratic model of organizational theory. Bureaucratic organizations focus on hierarchy, rules, and regulations (Mintzberg, 1991). Communication occurs between all members of the community by the way of a hierarchy and through the established rules and regulations (Burns, 1978). Bureaucratic organizations tend to more highly correlate with student dissatisfaction (Hossler, Kuh, & Olsen, 2001). Collegial organizations tend to communicate based on the desire to build and maintain relationships (Birnbaum, 1988). Collegial organizations are associated with high levels of student satisfaction (Bean, 1980). Political organizations are centered on strategic engagements between the various members of the college community for the purpose of gaining resources (Birnbaum, 1988). Political organizations have been found to decrease student satisfaction (Astin, 1985). Student satisfaction is a factor in institutional commitment and retention (Schertzer & Schertzer, 2004). Symbolic organizations are associated with community traditions, rituals, ceremonies, artifacts, and stories (Berger, 2001-02). Symbolic organizations provide a clear understanding of the campus culture. Systematic organizations highlight the interplay between internal and external systems and how each
impacts each other (Berger, 2000). The role an institution’s status plays in students’
ability to find positions upon graduation is an example of the impact of systematic
organizations (Bean, 2001-02).

Berger (2001-02) recommends that colleges and universities provide clear lines of
communication regarding policies, rules, regulations, goals, and values to encourage
student persistence. Kuh (2001) echoes this sentiment by further stating that the
institution’s philosophy is enacted through its policies and standard operating procedures
(p. 27). Kuh goes on to state that the enactment of the institutional philosophy in this
manner can be a powerful influence on student persistence. Researchers, Bean and Eaton
(2001-02) indicated that retention rates are the “collective result of individual decisions”
reflected in institutional policies and practices (p. 73).

Institutional policy should be designed to support a successful integration. HEIs
set policies to communicate what is expected. Policy can serve as a guide to what is
acceptable behavior and shape decisions for all members of the institutional community
(Tinto, 2012).

Advocates of undecided and major changers believe that institutional policies that
require students to make early decisions regarding a major, fail to recognize the need for
a process and time for self-discovery (Cuseo, 2005; Gordon, 2007). Advocates do
however support the need to help students identify a major, in a reasonable amount of
time (Cuseo, 2005; Gordon, 2007; Lewallen, 1993; Tinto, 1993).
The question this study answers is what role does policy play in the retention and academic performance of students enrolled in non-degree programs, both indicators of successful academic and social integration into the institution.

**Performing for the Future**

Academic performance in college has traditionally been measured by a student’s college cumulative grade point average (GPA). It is well documented that students who earn higher grades are more likely to persist to graduation (Astin, 1975; Bean, 1980 & 1982; Johnson, 2006; Tinto, 1993). Grades act as a proxy for measuring institutional satisfaction, integration, commitment, and effort (Astin, 1975; Bean, 1980; Tinto, 1993).

In order for students to earn a degree, there must be a level of commitment to their academic goals, career, and institution (Sparkman, Maulding, & Roberts, 2012). Academic success depends on students’ ability to integrate socially and academically to the institution (Bean, 1980; Tinto, 1993). Researchers studying persistence and academic performance for undecided students have found this group, when compared to declared students, had lower academic performance and persistence rates (Leppel, 2001; Chase & Keene, 1981). It is important to understand the relationship between GPA, being undecided, and retention in order to determine appropriate services, programs, and policies that support and assist students in this population to achieve their academic goals.

Researchers have identified factors that impact academic performance as academic major, demographic background, self-efficacy, and degree aspirations (Allbritten, 1983; Allen & Robbins, 2008; Betts & Morell, 1999; Leppel, 2001; Wood,
Researchers have studied the relationship between skills and interest and a student’s academic major in addition to persistence and academic success (Allen & Robbins, 2008; Tracey & Robbins, 2006). The researchers found that students who enter majors that are congruent with their skills and interests are more satisfied with their college experience resulting in higher GPAs and increased chance of persisting (Allen & Robbins, 2008; Tracey & Robbins, 2006). Pascarella and Terenzini (2005) identified greater academic performance for students majoring in social sciences and humanities that they attributed to greater interaction with faculty. African-American students who choose high-demand fields are more likely to persist and experience higher academic performance when compared to African-Americans in other majors (John, Hu, Simmons, Carter, & Weber, 2004). Studies have revealed that students who are undecided when they begin their college career tend to have a lower college grade point average (Leppel, 2001; Chase & Keene, 1981). These students also bring to college lower high school grade point averages and American College Testing (ACT) scores, which speaks to the importance of student demographic and background information (Wood, 1990).

Demographic and background factors that impact academic achievement are: gender, race, age, parental educational level, socioeconomic status, high school grade point average, and college admission test scores (Betts & Morell, 1999; Wapole, 2003, 2008). Gender demonstrates a difference in academic performance. Men earn lower college grade point averages than women (Betts & Morell, 1999). Older students achieve higher grade point averages than students who attend college within two years of high school graduation (Owen, 2003). Students from lower socioeconomic backgrounds and
who have parents without a college degree tend to have lower academic performance
than those from middle to higher income levels and a parent who has earned at least one
college degree (Wapole, 2003 & 2008). High school grades and standardized test scores
(e.g., ACT and SAT) are the best predictors of first semester GPA, but do not seem to
have a relationship to graduation (Sparkman, Maulding, & Roberts, 2012). Demographic
and background factors do not fully explain academic performance. Psychological factors
provide more information to help understand academic performance.

Self-efficacy is a factor in academic achievement. As defined earlier, self-efficacy
is the confidence individuals possess regarding their ability to achieve certain tasks which
influences future behavior (Bandura, 1997). Students who believe they will perform well
academically tend to have higher grade point averages in college (Reid, 2013).
Self-efficacy is formed based on judgments made regarding prior experiences,
observations of others performing similar tasks, the emotional response to difficulties
faced during the task, and opinions received from others regarding the individual’s ability
to complete the task (Bandura, 1997). Students with higher levels of self-efficacy are
more likely to engage in activities associated with higher levels of academic performance
(Hsieh, Sullivan, & Guerra, 2007).

Grades have been found to play a significant role in major and career decisions
(Pascarella & Terenzini, 1991). The significance of grades to major and career decisions
lies in the fact they communicate to students if they have the ability to meet the academic
demands of certain majors. According to Gordon (2007) some students may delay
deciding on a major or career because they fear they will fail to meet the required
academic or occupational demands. Students are more highly motivated to engage in the major and career decision-making process when they believe they will be able to meet the demands of each (Gordon, 2007). Because of what grades communicate to students regarding their ability in relation to major and career decisions, it is important to understand the relationship between grades and selection of a major.

**Goal Commitment Leads to Graduation**

Goal commitment is defined as the degree to which obtaining a baccalaureate degree is important to the student and the effort he or she is willing to expend toward attaining the goal (Bean, 1980). Commitment to an academic or occupational goal is the most important factor in whether students persist to graduation (Astin, 1975; Bean, 1980; Tinto, 1993). Goal commitment was still found to be a stronger predictor of student persistence even once academic performance was considered. Students with high academic performance and moderate to high goal commitment are more likely to persist to graduation. Students with low academic performance but moderate to high goal commitment are likely to persist unless they are required to leave due to low grades (Tinto, 1993).

Goal commitment has been linked to major certainty which is defined as the degree to which students are certain of their major (Bean, 1980 & 1982). Students who are committed to a specific goal are twice as likely to graduate than those who are not (Tinto, 1993). Student satisfaction with college is also linked to their ability to identify a goal and link their pursuits to the achievement of that goal (Astin, 1993; Bean, 1980 & 1982). Commitment to a goal as it relates to major certainty does not impact persistence
initially; it is only with delayed decision-making that this becomes a factor in retention and graduation (Astin, 1975; Pascarella & Terenzini, 1991, Tinto, 1993). Delayed decision-making can lead to the accumulation of credits the student may be able to apply to the chosen degree path. The accumulation of college credit that does not equate to a degree may also cause the student to jeopardize the continued awarding of financial aid (Department of Education, 2013). Students may also lose interest and see little value in putting in the time and effort it takes to complete coursework successfully if they do not believe it will lead to eventual completion of a degree and subsequent employment (Bean, 1980 & 1982). An examination of the impact of a major change policy can help answer the questions of when is it too early to decide and what constitutes delay.

**Financial Aid and Socioeconomic Status**

Financial aid was introduced to increase enrollment in and access to higher education (Schuh, 1993). Student financial aid is traditionally separated into two categories, need and merit-based. Need-based aid is based on the difference between what students are able to pay and the costs to attend a particular institution (Hansen, 1991). Repayment of need-based aid varies and is dependent on the specific program (Wilkinson, 2005). Aid awarded on the basis of talent or achievement is referred to a merit aid (Green, 2005). Most forms of merit aid are in the form of scholarships that do not require repayment (Wilkinson, 2005).

The earliest financial aid effort can be traced back to a gift of $100 that was given to Harvard College in 1643 to provide funding to poor students (Coomes, 1988). Another early financial aid effort came in the form of tuition discounting. Colleges and
universities discovered that if they charged more than the actual cost to deliver an education that they could use the additional funding to subsidize the attendance of poor students (Fenske, 1983). Early forms of work-study programs were also used to offset the cost of attending college. Students were able work at the college or university to pay for tuition (Coomes, 1988). College costs continue to be supplemented by institutional funds but are now combined with federal and state monies.

Federal programs began in 1935 through the National Youth Administration program that provided work and education opportunities to students during the Depression (Baum, 1987). This program was followed by the introduction of the Serviceman’s Adjustment Act commonly known as the G.I. Bill in 1944 that greatly expanded access to higher education to veterans returning from World War II (Green, 2005). The former Soviet Union’s launch of Sputnik in 1957 spawned another expansion of federal financial aid programs. To increase the number of individuals prepared to make scientific and technological contributions to America, the federal government passed the National Defense Act in 1958 which, along with funding for graduate programs and research, introduced loan programs for students planning to teach science, mathematics, or foreign language (Huff, 2004).

The mid-1960s saw an explosion of federal involvement in funding college education with the introduction of grant, loan, work, and tax credit programs. The Higher Education Act of 1965 shifted the funding philosophy by providing portable funds directly to students (Cunningham & Parker, 1999). The College Work-Study program, Educational Opportunity Grant Program, Guaranteed Student Loan Program, and
tuition-tax-credits, were all introduced between 1964 and 1965 (Hansen, 1991). The growth of federal involvement continued in the 1970s with the introduction in 1972 of the Basic Opportunity Grant now known as the Pell Grant (Toby, 2010). The introduction of these programs resulted in $8.6 billion provided to college students from the federal government between 1975 and 1976 (Hansen, 1991). The Pell Grant alone between 1973 and 1974 expended $236 million to 176,000 students, which grew to $15.5 billion given to 5.5 million students between 2007-2008 (Toby, 2010). The Pell Grant program continues to grow and in 2013 provided over $35 billion to students. In 2013, federal spending on all student aid exceeded $236 billion (College Board, 2013).

States bear some of the fiscal responsibility for student financial aid. Early state efforts focused on providing assistance to high ability students (Wilkinson, 2005). In 1979, as a result of the reauthorization of the HEA, the State Student Incentive Grants (SSIG) program was implemented to encourage states to create or expand need-based grant programs. Prior to 1969, 19 states had student financial aid programs, which grew to include all of the states by the 1990s (Marmaduke, 1983). State aid is provided mostly in the form of grants to students. States provide a mixture between need and merit-based grants. States provided between 2011 and 2012, $1.7 billion in non-grant student aid consisting of loans, work-study, and tuition waivers (National Association of State Student Grant and Aid Programs, 2011-2012). In 2012, despite shrinking state budgets, states increased student aid 2.5% (Young, 2012).

In the 1980s, federal student aid policies shifted from an equity philosophy to an emphasis on student and family responsibility (Chen & St. John, 2011). A decrease in
grants and an increase in student loans signaled the shift in federal student aid policy (St. John, 2001). The shift in emphasis also signaled a philosophical shift from the belief that college attendance was a public good to it being viewed as a private good (Noftsinger & Newbold, 2007). From 2003 to 2013, the number of students receiving loans increased by 69% to $10 million between 2012 and 2013 (College Board, 2013). There was also a 6% increase in the amount of money borrowed, from $7,900 to 8,350 (College Board, 2013). The decrease in grants and increase in loan programs has resulted in increased educational debt for students (Gross, Cekic, Hossler, & Hillman, 2009).

To obtain federal and most state financial aid, the government requires students to complete the Free Application for Federal Student Aid (FAFSA). The FAFSA is a federal application that collects both student and parent income and asset information for those who are considered dependent to determine how much students and their parents can contribute to the cost of their education (Coomes, 1988). Timely submission of the FAFSA provides access to some federal and state resources that are limited and may not be available to later applicants (Feeney & Heroff, 2013). Students and parents provide tax information when they complete the FAFSA, which can be directly accessed from their tax filing or entered by the student and parents (Dynarski & Wiederspan, 2012). The tax information is used to determine income and assets (Executive Office of the President, 2009). The FAFSA includes questions regarding attendance plans such as whether the student plans to attend full-time or part-time and which terms. The completion of the application provides the data for generation of an Expected Family Contribution (EFC). The EFC is used by HEIs to determine what resources they should provide to students so
they are able to afford the costs of attending that institution (Daun-Barnett & Mabry, 2012). The cost of attendance encompasses direct costs such as tuition, fees, housing, and board and indirect costs such as books, supplies, transportation, and miscellaneous expenses associated with attending college (Executive Office of the President, 2009). The FAFSA is not required for merit-based awards provided based on academic achievement or talent (Daun-Barnett & Mabry, 2012). The FAFSA is however required to determine need-based awards (Feeney & Heroff, 2013).

The relationship between financial aid and student retention has been explored in numerous studies but has produced conflicting results (Chen & Zerquera, 2011). The relationship between these two variables is confounded by student socioeconomic background, type of financial aid, student behavior and outlook, and time (Chen & DesJardins, 2007).

Not surprisingly, larger amounts of financial aid are associated with increased rates of retention, especially for students from lower socioeconomic backgrounds (Tinto, 2012). Bettinger (2012) found a gap of 30% in persistence rates between 40% of the poorest population and 20% of the richest population. Not all types of financial aid however have the same outcomes. Astin (1993) in describing the effects of the college environment indicated a positive correlation between the receipt of need-based aid and the completion of a bachelor’s degree. Need-based aid however was associated with lower college GPAs and a decrease in the likelihood that students would graduate with honors (Astin, 1993). Tinto (1993) in his review of studies on financial aid asserted that grants and work-study were more effective in promoting student success than loans and
other types of financial aid. King (2005) asserts that across all income levels, borrowing a loan and working part-time is associated with success for students, this was especially the case for low-income students. King (2005) studied first-year students and discovered that the largest group of freshman (45%) chose not to borrow and instead chose to work 15 or more hours per week. King (2005) found that students chose this option believing it was better to avoid future debt but the outcome was attrition and the loss of future income.

Adequate financial aid may play a role in whether a student is able to fully engage in the college experience (Astin, 1993; Bean, 1980). King (2005) suggests the students who are more likely to persist are those who dedicate a significant amount of their time to academic activities and develop relationships with members of their campus community. Schuh, (2005b) found that students were less satisfied with the college experience and tended not to persist when there were financial concerns that resulted in the student having to work more than part-time.

Student outlook plays an additional role in the relationship between financial aid and persistence and attrition. Tinto (2012) in his review of financial aid studies suggests that students may choose to leave without the presence of financial pressure if they perceive there is little value in continued attendance. Caberera, Burkum, La Nasa, and Bibo (2012) concurred with this statement stating that if the costs outweighed the perceived benefits the likely result is attrition.

St. John (2001) studied entering new first-year and continuing students and concluded that financial aid plays an important but different role in persistence when compared to initial enrollment. The financial aid package that student accepts upon
enrollment may not be viewed as favorably to the student deciding whether to continue (St. John, 2001). Nora and Crisp (2012) support this finding and assert that students are more likely to persist between second and third years if the cost of attending college does not outweigh the perceived benefits. Goldrick-Rab, Harris, and Trostel (2009) conducted a randomized experiment on the impact increased financial aid had on persistence. They found that the increased aid had no effect during the first two years of enrollment but was a factor in persistence after the first two years. Studies present conflicting information regarding the impact of financial aid on persistence however when taken into consideration with socioeconomic status and other factors impacting persistence, a greater understanding of its role is possible.

**Theoretical Framework**

The conceptual frameworks that will be used for this study are Bean’s Student Attrition Model (SAM) and Tinto’s Student Integration Model (SIM). The nexus of this study on the impact of a major selection policy on retention and academic outcomes, lies between Bean’s (1980) and Tinto’s (1975 & 1993) theories. Tinto’s (1975 & 1993) SIM theory asserts that student persistence and attrition depend on the interaction between students’ entry characteristics and their experiences in the college environment. When viewing the impact of a major selection policy on student outcomes through the lens of Tinto’s theory, it provides an opportunity to test how such a policy influences the academic and social integration of undecided students. Bean’s (1980) model offers a lens to understand how the major selection policy may influence the behavior of undecided
students. The next several paragraphs will provide an in-depth overview of each theory and further highlight how each theory relates to this study.

**Student Attrition Model**

Bean’s (1980) SAM Model is built on the belief that the elements of an organization play a role in student satisfaction, which can play a role in incidences of student attrition. Bean (1980) built a causal model on student attrition based on a synthesis of workplace turnover research. Bean’s (1980) model uses the work of James Price’s (1977) model of workplace turnover and Fishbein and Ajzen’s (1975) theory of Attitude-Behavior Relationships as a basis for his theory. Price (1977) developed a casual model by reviewing other literature and empirical studies on workplace turnover. The model however has not been tested. Price (1977) positioned turnover as an independent rather than a dependent variable and viewed the organization as the unit under study rather than the individual or society. Price (1977) identified six propositions through his summary of the literature.

The first proposition is that turnover leads to an increase in administrative staff when compared to productive staff. Price (1977) defines productive staff as those who actually produce the work while administrative staff indirectly contributes to organizational output. The second outcome of workplace turnover and specifically managerial turnover is increased formalization of organizational norms. Price (1977) concluded this occurs because turnover results in decreased interaction and consensus which weakens organizational control. Decreased integration is the third outcome of turnover.
Integration according to Price (1977) occurs in organizations because of on-going interaction. When turnover occurs the interaction is decreased because there is always someone new to get to know thus integration is reduced. Turnover is also likely to lead to lower employee satisfaction which is the extent to which individuals enjoy working with the organization. Satisfaction is reduced because turnover impacts the level of “normative consensus” and instead increases employee conflict (Price, 1977, p. 103). Turnover can have two other possible impacts on employee satisfaction. Turnover may have a positive impact on satisfaction or lead to additional turnover. Price (1977) identified increased innovation at a decreased rate as the fifth proposition. Increased innovation may occur because there is not likely to be an established relationship between the new decision-maker and the current staff. This ideal was only supported by one empirical study and Price (1977) added the language of “at a decreasing rate” to acknowledge when innovation does not occur as a result of turnover (p. 104). Concentration of power, what Price (1977) termed centralization, is lowered with increased managerial turnover. Lower centralization is the sixth proposition in Price’s (1977) model and occurs because the new manager lacks organizational knowledge and is unable to fully exercise power. Price (1977) suggests that this decrease in power is passed from the new manager to the non-managers.

Fishbein and Ajzen’s (1975) model of Attitude-Behavior Relationships is the result of an analysis of turnover in the workplace. Fishbein and Ajzen (1975) determined that attitudes led to intent, which further led to overt behavior. The Fishbein and Ajzen (1975) model asserts that a person’s attitude and past behaviors form intent and
determine future behavior. Attitude, defined as an individual’s evaluation of an object, event, or action is according to Fishbein and Ajzen (1975) formed by beliefs and attitudes about related concepts or objects produced by direct experience or observation. Attitudes can also be formed based on the pleasure pain principle. For example an individual who is rescued by a police officer from a bad situation is likely to have a favorable attitude towards police because of the role played in the removal of pain.

Bean tested his model in 1982 and found that several factors played a role in student’s decisions to leave an institution but results only account for 21% of the variance in dropout for females and 12% in males. He also found that these factors were different for females and males. The two factors that were consistent for both males and females were institutional commitment and academic performance. The factors leading to institutional commitment and the measure of academic performance were however different for males and females. Bean (1982) found that academic performance in high school played a role in the attrition of females and academic performance in college for males. For females, institutional commitment was a result of institutional satisfaction. Male students however who were satisfied tended to still leave the institution. Major and job certainty was another factor identified by Bean as playing a role in student decisions to leave. Bean (1982) defined major and job certainty as the degree to which students were certain about their major and occupational choice. There was a gender difference found for the factor of major and job certainty. For women occupational certainty was a major factor that led to institutional commitment and the decision to remain enrolled
(Bean, 1982). For males, major certainty was the most significant factor in the students’ decision to leave (Bean, 1994).

Bean’s (1981) Student Attrition Model and related research offers a lens to understand how the major selection policy may influence the behavior of undecided students. Institutional policy as an organizational element allows for the examination of the relationship between a major selection policy and occupational or major certainty as a factor in student decisions to remain or leave an institution.

**Student Integration Model**

Tinto first introduced his theory of retention titled the Student Integration Model in 1975. Tinto’s model has served as the basis for national and international program and service planning and policy implementation in an effort to retain students. The theory is built on the sociologist Emilie Durkheim’s (1951) model of suicidal individuals, social anthropologist Arnold Van Gennep’s (1960) study of rites of passage and Spady’s (1970) earlier application of Durkheim’s (1951) model of student persistence.

Durkheim’s (1951) theory of the phenomenon of suicide was designed to explain why there are higher incidents of it in some communities than in others. Durkheim (1951) studied incidences of suicide between and within countries over time. Through his study he looked at the character of the social environment of communities specifically focused on the common social and intellectual attributes that bond the persons together.

Durkheim (1951) identified four types of suicide: altruistic, anomic, fatalistic, and egotistical. Altruistic suicide occurs in societies where it is considered a moral alternative in response to certain situations. Anomic suicide is a reflection of transitory disturbances
and breakdown in the social and intellectual bond between persons in the community. Persons who commit fatalistic suicide do so under extreme and excessive regulations that lead the individual to believe this is the only relief. Each of the three types of suicide explained previously, account for very few incidences. Egotistical suicide explains the majority of occurrences. This type of suicide occurs when the individual who commits suicide fails to establish membership and integrate into the social and intellectual aspect of the community. Social and intellectual integration creates the conditions necessary for individuals to interact on a day-to-day basis and share common values. When individuals fail to achieve social and intellectual integration they are likely to experience isolation and develop deviant values and behavior. Social and intellectual malintegration are both necessary conditions for egotistical suicide to occur. Individuals who do not integrate in one of the domains are typically able to identify a deviant subculture in which to form common bonds, which will reduce the chance of suicide. In his study, Durkheim (1951) found that communities with high rates of suicide had a common feature, social environments that restrict membership. Durkheim (1951) believed it was possible to reform such communities by providing more effective processes that would allow for the full integration of community members. He believed in the power, value, and ability of communities to reduce the incidence of suicide through educational structures rather than the church and family, which had served this purpose in past years.

Spady (1970) was the first college student researcher to use Durkheim’s (1951) model on suicide to produce the first widely recognized study on attrition (Demetriou & Schmitz-Sciborski, 2011). Spady (1970) reviewed earlier literature and determined that
related studies lacked a theoretical model supported by a multivariate analysis in which to frame the phenomenon of attrition. He suggested a need for a model that explored the relationship between student demographic background and the institutional environment in relation to the academic and social systems. Spady (1971) using data from 683 students conducted a longitudinal study on attrition using the theoretical model built through a synthesis of earlier studies and Durkheim’s (1951) model of suicide occurrence. Spady’s (1970) study was a precursor to Tinto’s (1975) and many of the same propositions are present. Spady (1971) identified attrition as a complex issue that involves several factors including the student’s background, academic potential and growth, social integration, satisfaction, institutional commitment, and what he termed “normative congruence.” Spady (1970) defined normative congruence as the successful matching of attitudes, interests, and personality dispositions between the new student and other members of the community and established social and academic guidelines and expectations.

Van Gennep (1960) studied traditions, rituals, and ceremonies that help individuals make the transition through times of change and disturbance while maintaining a sense of stability. Van Gennep (1960) also saw these rituals, ceremonies, and traditions as an organized transmission of social relationships. This orderly transmission of relationships according to Van Gennep (1960) leads to the maintenance of societies across generations. In relation to student attrition, this transmission assists students in transferring membership from one community to the new one presented when they attend college.
The rites of passage model presented by Van Gennep (1960) included three distinct periods of separation from one community, transition into another community, and incorporation of new community values, beliefs, and norms. Separation from one community involves the relinquishing of past associations in the form of decreased interactions with members of former communities. During the transition phase, individuals become familiar with the expectations of the new community and the knowledge and skills necessary to be a member. Once fully incorporated into the new community, individuals may still interact with members of previous communities but they do so as full members of the new community.

Tinto (1987) argues that Van Gennep’s (1960) concept of rites of passage can be paralleled to the experience of new college students. While not all institutions include as a part of the transition, ceremonies and rituals, students who begin college, join a new community and must navigate new and unfamiliar rules of engagement. The element of separation in Tinto’s model has been challenged in recent literature on retention. Tinto (1987) does acknowledge the complexity involved in student decisions to leave an institution and does not believe Van Gennep’s (1960) model provides a complete description of the factors. Additionally, Tinto acknowledges that the stages named by Van Gennep (1960) are not as distinct for college students. For example, college students may experience partial separation initially and continue this phase at later points in their experience. Students also may not experience the passage in the sequence outlined by Van Gennep (1960) or in the same way. Van Gennep (1960) serves as a partial
foundation of Tinto’s Student Integration Model, Emile Durkheim’s (1951) theory of suicide offers additional perspective on the phenomenon of student attrition.

The Student Integration Model and Durkheim’s (1951) theory are based on the concept of voluntary withdrawal from the community due to the failure to fully integrate into a community or society. Durkheim’s (1951) theory on suicide is believed to be a statement on the individual who withdraws as well as the community (Tinto, 1987).

Tinto’s (1975) Student Integration Model (see Figure 4) asserts that the degree students integrate with the social and academic environment determines whether they choose to voluntarily stay or leave. Academic and social integration speaks to the degree to which students believe their values align with other members of the institution and the ability to accept community norms and expectations. Academic and social integration shape whether students commit to an educational goal and the institution they are attending. The goal to complete college with a high level of commitment to the institution increases the probability that the student will persist at one institution. The model speaks to the longitudinal and interactive nature of student attrition. The model asserts that attrition is a reflection of interactions that occur between individual students and other members of the community across time.

Tinto revised his theory in 1993 to reflect the role of external factors such as family events and internal factors related to institutional resources and events such as facilities. This revision addressed the gap identified in a study of Tinto’s theory published in 1992 (Cabrera, Castaneda, Nora, & Hengsteler, 1992). Cabrera, Castaneda,
Nora, and Hengsteler (1992) asserted that external factors such as the ability to pay and parental support, play in a student’s decision to stay or leave. (Figure 5).

**Figure 4. Tinto’s 1975 Model**

Tinto’s Student Integration Model (1975) outlines the importance of student integration into the institution as a determining factor in persistence. Tinto (1975) suggests that academic and social integration is necessary for students to make an initial commitment to the institution. Academic and social integration occurs in a formal and informal manner (Tinto, 1993). Formally, academic integration occurs when a student understands the academic expectations of the college or university and is able to meet them through successful academic performance (Tinto, 2010). Informally, academic integration occurs when students are comfortable interacting with faculty in and outside
Figure 5. Tinto’s 1993 Model

of the classroom and spend time working with peers on academic endeavors (Tinto, 2012). Social integration occurs formally when a student understands the cultural and social norms associated with being a member of the college or university community and judges those of the community to be in line with their own values and beliefs (Braxton & Lein, 2000). Informally, social integration occurs when students engage with the community through involvement in organizations and activities offered to members of the community. While Tinto’s theoretical model introduced in 1975 has been used as a guide for many institutions in their planning and delivery of services, activities, and
policies some recent researchers have challenged the role academic integration plays in retention.

In 1997, Braxton, Sullivan, and Johnson conducted a study of Tinto’s model and were unable to verify that academic integration was a necessary factor for student’s initial commitment to the institution. Braxton and Lein (2000) published a criticism of Tinto’s theory, following up on the 1997 study.

Braxton and Lein (2000) found the academic integration component of Tinto’s theory did not test well empirically when examining it through the lens of single-institutional tests. While Tinto (1993) proposed his theory as a single-institutional model rather than multi-institutional, these researchers only found modest support for the role the construct of academic integration plays in subsequent institutional commitment and commitment to the goal of completing a college degree (Braxton & Lein, 2000). Braxton and Lein (2000) offered explanations and options based on these findings. Braxton and Lein (2000) suggest that academic integration could be discarded completely or a reconsideration of how academic integration is measured. Academic integration as defined by this study as the selection and declaration of a major. This definition of academic integration is based on the numerous studies regarding the importance of identifying educational and occupational goals to retention (Astin, 1993; Bean, 1980 & 1982; Bean & Eaton, 2001-02; Pascarella & Terenzini, 1991; Tinto, 1993).

Tinto’s (1993) theory of student integration provides a guide for examining the long-term impact of being undecided. The SIM provides a framework for assessing how a
policy to increase the likelihood that students select and declare a major early in their academic career impacts retention beyond the first year.
CHAPTER III
Research Methodology

Introduction

The current study examined to what degree, if any, there is a relationship between a major selection policy, demographic background, previous academic performance and the retention and college academic performance of degree-seeking students enrolled in non-degree programs. The independent variables that were used were the absence or existence of a major selection policy, receipt on non-receipt of a Pell grant as a measure of socioeconomic status, parent’s highest educational attainment, gender, race, high school grade point average (HSGPA), high school type (i.e. rural, suburban, urban), high school rating as determine by federal accountability objectives highlighted on school report cards, and college entrance exam scores (ACT and SAT). The dependent variables of college academic outcomes as demonstrated by college cumulative grade point average, earned credit hours and retention to the sixth semester. These variables were chosen based on the studies discussed earlier that identified a relationship between these variables.

The study site is a large, multi-campus, public, four-year university in the Midwest that enrolls over 40,000 students. This institution will be referred to as Midwest State University (MWSU). In fall 2010, MWSU implemented a policy requiring students who initially began a college career in one of six non-degree granting programs offered at any of its eight campuses to declare a degree-granting major the semester they earn 45
semester credit hours (MWSU, 2009). The major selection policy was designed for undergraduate students who select undecided upon admission or were placed into an Exploratory or Generalist program due to their inability to meet the academic requirements to enter selective programs.

Students who are unable to meet the academic requirements of respective degree-granting programs are labeled Exploratory or Generalist and are placed in a designated administrative or academic unit (See Table 2). Students receive these labels because of low high school academic performance and/or ACT and/or SAT scores, unacceptable music, theater, or dance auditions or portfolio results, and/or the absence of required high school courses. Programs offered at MWSU with selective admissions that are above and beyond general admissions requirements include Architecture, an accelerated medical program, Dance, Fashion Design, Fashion Merchandising, Honors, Interior Design, Music, Nursing, Sports Administration, Teacher Education, Theatre, and Graphic Design. Coordinators for each of the selective programs have instructed the Office of Admissions to label students as Exploratory if they do not meet admission criteria for the Nursing program or as a Generalist for applicants to Architecture, Dance, Fashion Design, Fashion Merchandising, Interior Design, Music, Sports Administration, Teacher Education, Theatre, and Graphic Design. Some of the high demand programs at MWSU, such as Fashion Design and Nursing, start all new students in a non-degree program labeled as a pre-major. Students placed in pre-major programs have met initial admission criteria and are granted access to upper division coursework once they successfully complete requirements such as specific grades in lower division courses or a
particular threshold score on a test required for practice in professional fields such as teacher education. There are some students who begin in a pre-major and do not successfully complete the necessary requirements to enroll in upper-division coursework; currently, the major selection policy in place at MWSU does not apply to this population of students.

Table 2. *Non-Degree Programs designated for Degree-Seeking Students*

<table>
<thead>
<tr>
<th>Non-Degree Program</th>
<th>Program Selected by Student at Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generalist:</strong> houses students within an academic college who do not qualify for their desired program</td>
<td>Architecture, Dance, Fashion Design, Fashion Merchandising, Interior Design, Music, Sports Administration, Teacher Education, Theatre, and Visual Communication Design</td>
</tr>
<tr>
<td><strong>Exploratory:</strong> houses students who select undecided and Nursing students who do not qualify to enroll in the Nursing program</td>
<td>Nursing Undecided</td>
</tr>
</tbody>
</table>

The major selection policy at MWSU was established to reduce the likelihood that students would remain in a non-degree program for a length of time that could be detrimental to their degree progress and ability to receive student financial aid. A discussion regarding the policy took place with two governing bodies consisting of academic administrators and faculty who were responsible for curricula decisions. The discussion resulted in the students enrolled in non-degree programs being labeled as “at-risk.” This label was based on the retention rates of this population as compared to the retention rates of students enrolled in degree-granting majors. The retention rate for all students enrolled in degree-granting programs at the time the policy was discussed was
63% versus 52% for students enrolled in a non-degree program and 58% for students enrolled in generalist programs across all eight campuses (MWSU, 2009).

The discussions were supportive regarding students being able to select Exploratory or begin in a generalist program. Faculty and administrators expressed the belief that students should be given time to fully explore and determine an appropriate degree path but that prolonged decision-making could result in attrition. Following a brief presentation of the policy and an overview of enrollment in the qualifying programs, the policy was passed unanimously.

This study was an attempt to determine the relationship between the major selection policy in place at MWSU since the fall 2010 semester, students’ previous academic performance and demographic background and the dependent variables of student college academic performance and retention to the sixth semester after continuous enrollment from the point of admission.

**Population**

Data collected for this study included 7,053 degree-seeking students who began their college career in a non-degree granting program at a large, multi-campus, public, four-year university in the Midwest that enrolls over 40,000 students. The study was conducted using data from students enrolled at MWSU during the fall semester of four academic year periods, 2008-2009, 2009-2010, 2010-2011, and 2011-2012. The participants were divided based on the presence or absence of a major selection policy at the time of initial enrollment. Participants who matriculated at a time when there was no major selection policy will be separated from those who matriculated at the time when
the policy was in effect. Using these criteria, participants who matriculated during the 2008-2009 and 2009-2010 academic year began their academic career at a time when there was no major selection policy in effect so they were separated from students who matriculated during the academic periods of 2010-2011 and 2011-2012, when the policy was in effect. The separation of the participants using these criteria will result in two groups. The first group was not subject to the major change policy and consisted of 3,430 students who matriculated during the fall semester of the 2008-2009 and 2009-2010 academic years. The second group consisted of 3,623 students who began their college career in the fall of 2010-2011 and 2011-2012 academic years under the major change policy.

Data for this study was further limited to records for new students who are attending college on a full-time basis and are not designated as adult students upon admission. Full-time will be defined as enrollment in a minimum of 12 semester hours each term. This criteria excludes students who have transferred from other institutions and other degree-granting programs offered at the university. Students who transferred from other institutions are intentionally excluded due to the fact that this population has prior college experience and it is unknown what role that may play in their decision-making regarding a major.

The criteria used to exclude adult students was based on the rule used by the Office of Admissions at MWSU that considers adult students to be anyone who is 21 years of age or older or who graduated from high school more than three years prior to the time of application for admission (Center for Adult and Veteran Services, 2013). The
exclusion of adult students is purposeful because this population of students presents a number of other challenges that are associated with life demands that may confound the findings (Luzzo, 1999). Examples of these challenges may include care of dependents that might conflict with continuous enrollment and employment restrictions that limit choice of majors.

Students who leave and return to the university after being absent for one or more semesters will be excluded from the study. The removal of these students from the selection pool is important, as it will help control extraneous variables that may exist once a student fails to maintain continuous enrollment such as timing of when they return to the university which could occur beyond the sixth semester. The additional limitations on participation reduced the two group sizes to a total of 3,468 with 1,807 enrolled in the pre-policy cohort (2008-2010) and 1,661 enrolled in the post-policy cohort (2010-2012).

**Research Design**

To determine what relationship, if any, exists between the independent and dependent variables, students under the major selection policy and those not under the policy were compared using descriptive and inferential statistics.

Data was obtained from the Institutional Research Office at MWSU after receipt of approval from the Institutional Review Board. To determine if there is a relationship between the independent and dependent variables, student data included college cumulative grade point average earned at the end of the sixth semester of continuous enrollment or the last term attended, enrollment information for each semester for each student (including whether the student was enrolled and the number of earned credit
hours. Additionally, information such as gender, cumulative high school grade point average, ACT and/or SAT scores, and race was obtained from the Institutional Research Office. Socioeconomic status and parent’s level of education was obtained from the Student Financial Aid Office.

A listing of data needed was provided to the Institutional Research and Student Financial Aid Office along with the criteria for data inclusion. It was requested that the Institutional Research and Student Financial Aid Office mask the identity of each student record by assigning unique identifiers to each.

A comparative study design was used to explore this topic. Although this design has limitations for answering research questions, it is ideal for this study because it will allow for an examination of whether there is a relationship without having the ability to randomly assign individuals to groups or utilize a pretest to determine if the groups are equal (Gliner, Morgan, & Leech, 2009).

**Data Analysis**

The data analysis for this study began with coding the data for each variable. Codes were assigned to allow for the determination of what relationship exists between the independent and dependent variables in an effort to answer the research questions and for the purpose of establishing what similarities and differences exist between the two groups. Establishing the similarities and differences between each group is for the purpose of reducing the threat to internal validity. Demographic data such as gender, race, high school performance, and ACT or SAT scores will be used to establish similarities and differences between the two groups.
In order to determine the relationship between the variables, a Multivariate Analysis of Variance (MANOVA) was conducted to answer research question number one. A MANOVA is an appropriate statistic to determine difference between students enrolled in non-degree programs who fall under the major selection policy and those who do not in regard to academic outcomes because the procedure allows an analysis of two correlated dependent variables at one time (Pedhazur, 1982). MANOVA is also an appropriate statistical procedure to answer this question because use of a MANOVA reduces the likelihood of a Type I error occurring (Tabachnick & Fidell, 1989).

A chi-square analysis was used to answer research question number two. The chi-square procedure was selected because it compares observed frequencies to expected frequencies, which distinguishes the results from something that is occurring due to chance (Hinkle, Wiersma, & Jurs, 2003). This test is also appropriate for examining nominal data (Brace, Kemp, & Snelgar, 2003).

Research question number three asks, how well does the combination of ACT/SAT scores, HSGPA, high school type and rating, gender, race, family SES, parental educational background and presence of major selection policy predict academic outcomes? A multiple linear regression was conducted to answer question number three because this test can be used to explore the relationships between several different types of independent variables and a continuous dependent variable and identify the best predictors (Pedhazur, 1982).

A logistic regression was used to answer question number four which asks if the combination of ACT/SAT scores, HSGPA, high school type and rating, gender, race,
family SES, parental educational background and presence of major selection policy predict retention to the sixth semester. Logistic regression is used to determine the probability of a dichotomous dependent variable occurring as the value of the independent variables change (Tabachnick & Fidell, 1989). The use of this statistical procedure will produce an odds ratio of a student remaining enrolled through to the sixth semester.

**Threats to Validity**

Comparative studies generally have limitations and present threats to internal and external validity because of the study design and quality of sample (Creswell, 2009). Internal validity is dependent on the equivalence of the groups being compared and the ability of the researcher to control extraneous variables that may impact the outcome. The equivalence of the groups can never be completely assured unless groups were randomly assigned which was not be done in this study (Gliner et al., 2009). To reduce the threat to internal validity regarding group equivalence, demographic data and prior academic performance presented through the variables of gender, race, high school grade point average, and ACT or SAT scores was used to compare groups to establish whether statistically significant differences exist between the groups.

This chapter outlined the methods used to conduct a comparative study for the purpose of examining if there is a relationship between a major selection policy, demographic background, previous academic performance and the retention and college academic performance of degree-seeking students enrolled in non-degree programs. A comparative study was conducted to answer the research questions through the use of a
MANOVA, chi-square analysis, multiple linear regression, and a logistic regression. The two final chapters of this study will outline and discuss the results.
CHAPTER IV

RESULTS

In 1993, Tinto stated “unresolved intentions over an extended period can lead to departure both from the institution and from higher educational enterprise as a whole” (p. 41). Tinto’s statement refers to students who are unable or unwilling to commit to a degree program before the long-term result is failure to earn a degree. Tinto’s (1993) statement also refers to one aspect of academic integration, goal commitment. There is a wealth of research regarding the retention of degree-seeking students enrolled in non-degree programs, typically referred to as undecided students (Foraker, 2012; Lewallen, 1993; Office of Institutional Research, 2010; Wilcoxson & Wynder, 2010). While this population has received a lot of attention in the literature, there is very little research on the role institutional policy plays in addressing the statement made by Tinto (1993) and repeated by many (Astin, 1977; Lewallen, 1993; Pascarella & Terenzini, 2005; Wilcoxson & Wynder, 2010). Tinto (2010) and Bean (1981) suggest there are structural variables that are under the institution’s control that if manipulated could increase student retention. A clear understanding of the role structural variables play in the retention of this population can help guide institutional decision-making.

The focus of this study is on policy, one type of structural variable to encourage and support the academic integration of students enrolled in non-degree programs. This study investigates whether the presence of a major selection policy, background characteristics, and pre-college academic performance are related to the retention and academic outcomes of degree-seeking students enrolled in a non-degree program.
A comparative study design was used to explore this topic. The population under study are degree-seeking students enrolled in non-degree programs and totaled 3,468 (however for some of the analyses, the population total was reduced due to missing values). Students included in the study would have enrolled in one of four cohorts between 2008 and 2011. Data for the population were obtained from the Institutional Research and Student Financial Aid Office and matched with high school type and report card information acquired online from the United States Department of Education (DOE) and individual State Departments of Education.

Data were entered into SPSS and some were transformed to create the conditions needed to conduct the various statistical analyses. Data that were transformed include ACT/SAT scores, socioeconomic status, race, and high school ratings. For example, to be eligible for admission to the study institution, students must submit a college entrance exam score. Students can choose to submit either an ACT or SAT score but are not required to submit both. In order to maximize the number of students who could be included in the analysis ACT and SAT scores had to be transformed into a single type of college entrance score. Using an ACT and SAT concordance chart, SAT scores were converted to ACT scores (College Board, 2009). This new score is referred to as a college entrance exam score (CEES).

Receipt or non-receipt of a Pell Grant was used to represent socioeconomic status. Pell Grants are awarded to low-income students from the DOE (Department of Education, 2014). Students receive differing grant amounts based on need as determined by information gathered through the FAFSA. While not all students submit a FAFSA, the
application is submitted by over 80% of the study population. In a review of these data received from the Institutional Research Office, it was determined that the receipt or non-receipt of the Pell Grant would allow for maximum inclusion of cases for analysis because students who had not submitted a FAFSA could still be included and would be marked as not receiving a Pell Grant. While failure to submit a FAFSA does not mean the student would not have been eligible, use of this measure allowed for a simpler way to analyze the data.

The study institution is considered a predominately White institution, with 78.4% Caucasian students enrolled in the fall 2013 semester. The institution annually tracks African-American, Caucasian, Hawaiian/Pacific-Islander, Hispanic/Latino, Native American, Asian American, multi-racial, and international enrollment. Annually, there is also a population of students who do not provide racial background information, which was 3.1% in the fall 2013 report. The institution reports a collective minority population that includes African-American, Latino American, and Native American and is represented by the initials, AALANA. The AALANA population represented 12.5% of the total population in fall 2013. Due to the relative small size of the individual minority populations in relation to the Caucasian population, the collective AALANA population will be used in the analysis. The presence or absence of an AALANA indicator was used in order to perform the statistical analyses necessary to address the research questions.

In 2001, the No Child Left Behind Act (NCLB), which is the current version of the Elementary and Secondary Act (ESEA), required schools receiving Title I funds to report adequate yearly progress, most commonly referred to as AYP (Editorial Projects in
Education Research Center, 2011). Schools were required under NCLB to meet 100% of all AYP objectives by 2014 to avoid a variety of consequences ranging from providing alternative enrollment options for students to extending the school year (Wiener, 2004). AYP objectives include closing the achievement gap that exists for disadvantaged students by requiring schools to assist students in making yearly progress in the areas of math, English, and graduation (Sunderman, Kim, & Orfield, 2004). As schools began to implement the NCLB Act it became very apparent that many would not be able to meet the high standards established by the legislation. In 2011, 48% of schools across the United States failed to meet AYP (Usher, 2012). In 2011, under the Safe Harbor provision, the DOE offered relief from NCLB by offering waivers to states (McNeil, 2012). Waivers allowed some flexibility but still required schools to develop and report adequate yearly progress objectives and take steps to improve proficiency but without consequences outlined in NCLB (Riddle, 2012). States must apply for the waiver and were initially granted a one-year waiver, which has more recently been increased to a two-year waiver (McMurrer & Yoshioka, 2013). The established AYP objectives are reported at the district and school level through report cards. Each school has a different number of objectives that must be met based on the student population and the presence or absence of disadvantaged students (Riddle & Kober, 2012). Students’ high school AYP rating was obtained from school report cards. To develop the rating, a percentage was calculated using the number of possible objectives the school was expected to meet and the number that were actually met during one academic year.
Descriptive Statistics

The population under study is degree-seeking students enrolled in non-degree programs. The study focuses on two cohorts within this population, those who enrolled prior to the implementation of the major selection policy and those who enrolled after implementation. This section will provide an overview of each variable, highlighting significant statistics.

Pre and Post-Policy Cohorts

The two cohorts totaled 3,468 with 1,807 students in the pre-policy cohort (cohorts 2008 and 2009 respectively) and those enrolled after implementation of the policy totaling 1,661 (cohorts 2010 and 2011 respectively). Table 3 contains means and standard deviations for both cohorts. The frequencies outlined in Table 3 demonstrate that the two cohorts have similar characteristics.

Table 3. Descriptive Statistics of Pre and Post- Policy Cohorts

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Cumulative GPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Policy</td>
<td>2.5509</td>
<td>.88355</td>
<td>1795</td>
</tr>
<tr>
<td>Post-Policy</td>
<td>2.5165</td>
<td>.88816</td>
<td>1648</td>
</tr>
<tr>
<td>Total</td>
<td>2.5344</td>
<td>.88580</td>
<td>3443</td>
</tr>
<tr>
<td>Ttl # of earned credit hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Policy</td>
<td>54.07</td>
<td>30.046</td>
<td>1795</td>
</tr>
<tr>
<td>Post-Policy</td>
<td>51.39</td>
<td>29.673</td>
<td>1648</td>
</tr>
<tr>
<td>Total</td>
<td>52.79</td>
<td>29.894</td>
<td>3443</td>
</tr>
<tr>
<td>CEES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-policy</td>
<td>20.68</td>
<td>3.19</td>
<td>1796</td>
</tr>
<tr>
<td>Post-policy</td>
<td>20.66</td>
<td>3.24</td>
<td>1655</td>
</tr>
<tr>
<td>Total</td>
<td>20.67</td>
<td>3.21</td>
<td>2752</td>
</tr>
<tr>
<td>HSGPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-policy</td>
<td>2.99</td>
<td>.422</td>
<td>1803</td>
</tr>
<tr>
<td>Post-policy</td>
<td>3.01</td>
<td>.426</td>
<td>1655</td>
</tr>
<tr>
<td>Total</td>
<td>3.00</td>
<td>.426</td>
<td>2752</td>
</tr>
<tr>
<td>Retention to 6th semester</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-policy</td>
<td>4.15</td>
<td>1.87</td>
<td>1807</td>
</tr>
<tr>
<td>Post-policy</td>
<td>3.97</td>
<td>1.87</td>
<td>1661</td>
</tr>
<tr>
<td>Total</td>
<td>4.06</td>
<td>1.87</td>
<td>3468</td>
</tr>
</tbody>
</table>
Gender and Race

There were 2,105 (60.7%) females and 1,361 (39.3%) males in the sample. The percentage represented in each group is consistent with the frequency for all students attending the study institution. There were 1,084 (31.3%) females in the pre-policy cohort and 1,021 (29.5%) in post-policy cohort. Males totaled 721 (20.8%) in the pre-policy and 640 (18.5) in the post-policy group.

The study institution divides students into five race categories, which for this study were collapsed into two. This was necessary because the minority population was too small to conduct a meaningful analysis. As reported earlier, the two categories used were AALANA and non-AALANA. AALANA represents African-American, Latino-American, and Native American students attending the institution. All other students not meeting this description were placed in the non-AALANA category. The AALANA population represented 17% of the study population and non-AALANA represented 83%. The distribution of AALANA and non-AALANA students in the study population is slightly higher than the population of students attending the study institution. AALANA students attending the study institution overall represent 12% of the total population. AALANA students in the pre-policy cohort represented 7.8% of the population and 9.3% in the post-policy cohort.

High School Performance

The overall population had a mean HSGPA of 3.00 and CEES score of 20.7. Students enrolled in non-degree programs prior to the implementation of the major selection policy had a mean HSGPA of 2.99 and CEES score of 20.6. Students enrolled
in the post-policy cohort had a 3.01 HSGPA and 20.66 CEES. Students enrolled in the pre and post-policy cohorts began college with similar academic backgrounds as demonstrated by HSGPA and CEES.

**College Academic Outcomes**

The mean college GPA for students in the pre-policy cohorts was 2.55 and a 2.51 for the post-policy cohort. Studies regarding academic performance of degree-seeking students enrolled in non-degree programs have produced mixed results with some indicating no difference between this population and students enrolled in degree-granting programs and others identified lower GPAs. This study looked at the relationship between academic outcomes and the students being required to select a degree program and found no significant relationship between these two variables. It is feasible to conclude based on these results that students’ who declare a major and those who do not have similar academic outcomes. The mean number of college credits earned by students in the pre-policy cohort was 54.07. Those enrolled post-policy earned a mean of 51.39 credit hours. The percentage of students enrolled prior to the policy who were retained to the sixth semester was 43.2%, while 37.9% of students enrolled after the policy were retained until the sixth semester or earned a degree. Pre-policy students attended an average of 4.1 semesters while those enrolled in the post-policy cohort attended an average 3.97 semesters.

**Parental Education Level and Family SES**

Students who indicated on the FAFSA that neither parent had earned a college degree are considered first-generation students. Across both cohorts, 38.8% (19.9% pre-
policy and 18.9% post-policy) were considered first-generation. In the literature, first-generation students do not persist and earn baccalaureate degrees at the same rate as students who have at least one parent who earned a college degree (Choy, Horn, Nunez, & Chen, 2000; Engle & Tinto, 2008; Johnson, 2006).

A total of 44.6% (23% pre-policy and 21.6% post-policy) of the students received a Pell Grant at least once during their academic career while 55.4% (29.1% pre-policy and 26.3% post-policy) did not. In order to receive a Pell Grant, students must submit a FAFSA and meet income guidelines set by the DOE. Receipt of Pell Grant indicates low-income status. The percentages of students receiving or not receiving a Pell grant in the pre-policy and post-policy groups were similar.

**High School Rating and Type**

The largest percentage of students in the total population attended rural and suburban schools, representing 70.1% of the total population and 76.3% attended schools that had a rating between 81-100. This pattern of attendance at schools with a rating between 81-100 was similar for both the pre and post-policy cohort with 75.8 % of pre-policy students attending schools and 76.8% of post-policy students within this rating range. This trend was consistent with the type of school attended by pre and post-policy students with 69.8% of the pre-policy attending either a rural or suburban school, and 70.3% of the post-policy students attending the same types.

**Inferential Statistics**

Research question number one examined the difference between degree seeking students enrolled pre-policy and those enrolled post-policy in regard to academic
outcomes as measured by college cumulative GPA and total number of earned credit hours. To answer research question number one, a Hotelling T-Squared, a type of MANOVA was performed. As suggested by Brace, Kemp, and Snelgar (2003), a Bonferroni correction should be made to the significance level because of the number of variables. A Bonferroni Correction was made to the p-value to account for the two variables used in the analysis. There was a statistically significant difference in the total number of credit hours earned by the pre-policy cohort when compared to the post-policy cohort (F = 6.906, p < 0.025; Wilks Lambda = .998). Students enrolled in the pre-policy cohort had a higher mean of earned hours (M= 54.07, SD = 30.046). There was no statistically significant difference in college cumulative GPA (F = 1.299, p > 0.025; Wilks Lambda = .998). These results indicate that students enrolled pre-policy were more likely to persist because they had a higher mean of earned credit hours than the post-policy cohort. While the pre-policy cohort had a higher mean of earned more hours there was no difference in college cumulative GPA which, indicates that academic performance, was not a barrier to the post-policy students persisting. It is much more likely, based on these results that the post-policy students voluntarily withdrew.

Research question number two asked if there was a difference between students enrolled in the pre-policy cohort and those enrolled in the post-policy cohort in regard to retention. Retention is defined as continuous enrollment from the first until the sixth semester. A chi-square was conducted to determine the difference between the two groups. Seven hundred and thirty-five students or 55.3% were retained to the sixth semester in the pre-policy group while 631 or 44.7% in the post-policy group were
retained to the fifth semester. The results of the Pearson Chi-Square demonstrate there is a relationship between the major selection policy and retention to the sixth semester. The results demonstrate that following the implementation of the major selection policy; fewer students than expected were retained to the sixth semester ($x^2 = 9.814,$ df= 1, $p < 0.05$).

A multiple linear regression was performed to answer research question number three. Research question number three investigated how well the combination of CEES scores, HSGPA, high school type and rating, gender, race, family SES, parental educational background, and the presence of the major selection policy predicted college academic outcomes as represented by college cumulative GPA and earned credit hours.

Table 4 highlights that CEES, HSGPA, parent educational attainment, and the major selection policy are all correlated with the number of credit hours students earn in college. There is however a negative correlation between the major selection policy, HSGPA and the number of earned credit hours. The hierarchical method of variable entry was employed and there was an increase in the amount of variance that was accounted for in the model when CEES was added, $F (1, 2398) = 82.609,$ $p < .05$ which accounted for 3.3% of the variation in number of earned credits. Introducing HSGPA accounted for an additional 3.5% of the variance in earned credit hours and a significant change in $R^2$ was detected, $F (1, 2397) = 5.285,$ $p < .05$. Adding Parental College Education explained an additional 3.9% of the variance in the number of credit hours and a significant change in $R^2$ was detected, $F (1, 2393) = 10.826,$ $p < .05$. When the variable Major Selection Policy was added to the model it explained an additional 4.1% of the variance in earned
credit hours and a significant change in $R^2$ was detected, $F (1, 2392) = 4.947, p < .05$.

Although the regression results (see Table 5) identified these variables as predictors, all of the variables accounted for only 4.1% of the variance in earned college credits ($r^2 = .041$).

Table 4. Correlations with Earned Credit Hours

<table>
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The correlations between each variable included in the analysis with the exception of high school type are found in Table 6 and demonstrates a negative correlation between HSGPA and college cumulative GPA. Using a hierarchical entry method the analysis outlined in Table 7, revealed that when CEES was added to the model, a significant change in $R^2$ was detected, $F (1, 2398) = 184.745, p < .05$ accounting for 7.2% in variance in college GPA. Adding HSGPA to the model explained an additional variance of .2% and a significant change in $R^2$, $F (1, 2397) = 6.064, p < .05$. The addition of the
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** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Table 7. Regression Table of College GPA

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<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
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<td>.005</td>
<td>-0.27</td>
<td>0.78</td>
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a. Dependent Variable: LATEST CUMULATIVE GPA
variable of at least one parent having a college education to the model significantly contributed to the change in $R^2$, $F(1, 2393) = 14.62, p < .05$) accounting for .6% of additional variance in college GPA. Introducing the variable high school type of rural accounted for an additional variance in college GPA of .4% and a significant change in $R^2$, $F(1, 2387) = 2.393, p < .05$). This result is consistent with studies presented previously regarding the predictors of college GPA and demonstrate that the major selection policy plays no role in college cumulative GPA.

Research question number four asks how well the combination of CEES scores, HSGPA, high school type and rating, gender, race, family SES, parental educational background, and the presence of the major selection policy predicted retention to the sixth semester. A logistic regression was performed with retention to the sixth semester as the dependent variable and CEES, HSGPA, high school type and rating, gender, race, family SES, parental educational background, and the presence of the major selection policy as independent variables. The hierarchical method of variable entry was employed however the results were the same as when the variables were entered simultaneously. A total of 2,770 cases were analyzed and the Hosmer and Lemeshow Test demonstrate that the full model was significantly different from the model without any predictors (chi-square = 4.938, df = 8, $p > .05$). The Nagelkerke $r^2$ of .02 demonstrates that the model is not strong and only accounts for between 1.4% and 2% of the variance in retention status. Overall 59.9% of the predictions were accurate with the model predicting many more are not retained when in reality many do attend six consecutive semesters or graduate.
Coefficients and the Wald statistic and associated degrees of freedom and probability values for each of the independent variables are provided in Table 8. A Bonferroni correction was made to the significance level because of the number of variables. This question includes twelve variables so the significance level is adjusted to \( p < 0.004 \). These statistics illustrate that CEES and major selection policy are significant predictors of retention to the sixth semester. As the CEES increases by a point the odds of retention increases by a factor of 1.065. Moreover, being a part of the pre-policy group increased the likelihood of being retained by a factor of 1.310.

Table 8. Variable Coefficients

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<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
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<td>.000</td>
<td>1</td>
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</table>

a. Variable(s) entered on step 1: HS_City, HS_Other, HS_Rural, HS_Suburb.

The results of four statistical tests used to answer four research questions were outlined in this chapter. The results revealed that students’ enrolled pre-policy were more likely to persist to graduation and had a higher mean of earned credit hours. There was no difference in college cumulative GPA between the pre and post-policy group. The
results of a Pearson Chi-Square demonstrated that following the implementation of the major selection policy; fewer students than expected were retained to the sixth semester. A multiple linear regression identified a correlation between CEES, HSGPA, parent educational attainment, and the major selection policy and the number of credit hours students earn in college. There is however a negative correlation between the major selection policy, HSGPA and the number of earned credit hours. The analysis identified the most significant factors that predict college GPA as CEES, HSGPA, at least one parent having a college education, and high school rating. A logistic regression used to answer research question number four revealed that CEES and major selection policy are significant predictors of retention to the sixth semester. The next and final chapter will discuss the results of these statistical tests in relation to the theoretical framework, practical implications, suggestions for future research and limitations of study.
CHAPTER V
DISCUSSION

Summary

The primary goal of this study was to determine the impact of a major selection policy on degree-seeking students enrolled in non-degree programs. It is estimated that a significant number of high school and college students are undecided about a major (Gordon, 2007). Researchers have determined that degree-seeking students enrolled in non-degree programs who delay selecting a major may be at risk of not completing a baccalaureate degree (Foraker, 2012; Lewallen, 1993; Office of Institutional Research, 2010; Wilcoxson & Wynder, 2010). Based on these studies, commentators have argued that the development of appropriate and effective policies and practices to move students from non-degree into degree-granting programs will increase the likelihood of degree completion and continued receipt of student financial aid. Such policies also best serve the interest of institutional leaders, as the shift in state and federal funding from enrollment-based to completion-based becomes more prevalent (Hauptman, 2012).

The population under study enrolled at a large, public institution in the Midwest (referred to here as MWSU) between 2008-2011. The major selection policy was implemented to encourage persistence to graduation of degree-seeking students enrolled in non-degree programs. The policy reads:

MWSU offers the non-degree Exploratory major on all campuses and generalist majors within most colleges to enable undergraduate students to
explore academic areas and/or meet minimum program requirements.

Baccalaureate-seeking students in these non-degree majors must declare a degree major by the time they have earned 45 semester credit hours at MWSU. Students needing assistance with selecting a major must consult with an academic advisor (MWSU, 2009).

Prior to policy implementation, two governing bodies consisting of academic administrators and faculty labeled degree-seeking students enrolled in non-degree programs as “at-risk.” Students enrolled in non-degree programs were labeled at-risk because at the time the policy was discussed the retention rate for this population was 52% compared to 63% for students enrolled in degree-granting programs (MWSU, 2009).

A comparative study design was used to explore whether implementation of a major selection policy impacts academic outcomes as measured by earned credit hours, college cumulative GPA, and retention. The study examined the differences in academic outcomes and retention for students who enrolled pre-policy (2008 & 2009) and those who enrolled post-policy (2010 & 2011). The independent variables for this study were major selection policy, HSGPA, high school rating and type, family SES, race, gender, parental educational level, and ACT/SAT score. Dependent variables used in this study were retention to the sixth semester, college cumulative GPA, and earned credit hours. The following research questions were used to guide this study:
1. Is there a difference between students enrolled in non-degree programs who fall under the major selection policy and those who do not in regard to academic outcomes?

2. Is there a difference between students enrolled in non-degree programs who fall under the major selection policy and those who do not in regard to retention?

3. How well does the combination of ACT/SAT scores, HSGPA, high school type and rating, gender, race, family SES, parental educational background, and presence of major selection policy predict the academic outcomes of students enrolled in non-degree programs?

4. How well does the combination of ACT/SAT scores, HSGPA, high school type and rating, gender, race, family SES, parental educational background, and presence of major selection policy predict retention of students enrolled in non-degree programs?

**Academic Outcomes of Pre and Post-Policy Cohorts**

A Hotelling-square, a type of MANOVA, was used to analyze research question number one. The statistical analyses of question number one revealed that there was a difference between degree-seeking students enrolled in non-degree programs pre- and post-policy. Specifically, there was a statistically significant difference regarding credit accumulation. Students enrolled pre-policy in non-degree programs had a mean earned credit accumulation of 54.07 (SD = 30.046) while students enrolled post-policy had a mean credit accumulation of 51.39 (SD = 29.673).
There was no difference between the cohorts in regards to college cumulative GPA. As stated earlier, previous studies have concluded that students who select majors that are congruent with their skills and interests are more satisfied with their college experience resulting in higher GPAs and increased chance of persisting (Allen & Robbins, 2008; Tracey & Robbins, 2006). Based on these studies, it was expected that students who enrolled post-policy would have higher college cumulative GPAs but this was not the case. The results found in answering research question number three, provides some insight into why this is occurring. The regression used to answer research question number three, identified CEES, HSGPA and high school rating as factors in college cumulative GPA. The major selection policy was not a factor.

**Retention of Pre and Post-Policy Cohort**

The finding from research question one supports the outcome of the analysis conducted for research question number two and four that revealed that students in the pre-policy cohort were more likely to attend six consecutive semesters or earn a degree than those enrolled in the post-policy cohorts. It was expected, based on the percentage of students enrolled in the post-policy cohort that 44.7% would be retained to the sixth semester and only 38% were retained. The results of the chi-square analysis revealed that neither the pre- nor post-policy groups were retained to the sixth semester at the expected level. In fact, students enrolled pre-policy were retained to the sixth semester at higher levels than expected.

The results of the chi-square regarding the pre-policy cohort warrant additional attention. The question has to be asked what happened for pre-policy students that did not
or is happening for post-policy students? Students pre-policy were not asked to confront the issue of major and career so possibly they did not feel their lack of a choice as incongruent with community norms and values identified by Tinto (1993) as an important factor in a student’s decision to voluntarily withdraw. In essence the policy communicated a community norm by which the student could judge their actions, which may have resulted in the student opting to leave. May support Durkheim’s fatalistic suicide label, which occurs when a person opts out of a society because they view regulations as extreme and excessive. The easy answer is to establish a policy for the students to conform to a structure already in place. A more difficult answer would be to reconsider the curriculum and instead focus on reducing the complexity so perhaps all general education coursework could be used toward the maximum number of degrees. Accreditation might not allow for this to happen in some of the professional programs but the majority of academic programs would allow for this option. This is a difficult option because it requires decision-makers to come to some agreement as to what constitutes being educated.

Enrollment in a more flexible structure does not however address the issue of occupational certainty, which Bean found to play a role in student satisfaction and their decision to remain enrolled. This was the case for women students in particular. Institutional leaders might consider putting emphasis and resources toward helping students identify the connections between a baccalaureate degree and future occupational pursuits.
To address the issue of the new financial aid policy regarding gainful employment, students could be enrolled in a general degree program with help to determine if there is a specific major that is in line with their interest, values, and goals. Another possibility that could explain what occurred post-policy that did not occur pre-policy could be linked to the Price study of workplace turnover that was used as the theoretical foundation for Bean’s work. Price indicated that one result of turnover is a decrease in interaction, which leads to a decrease in satisfaction. It is possible that post-policy students were prematurely selecting majors, which resulted in an increase in major changes and possibly a reduction in interaction between the major changer faculty and other students.

**Predictors of Academic Outcomes**

To answer research question number three, a multiple linear regression was performed. The question attempted to determine how a combination of variables predicted college cumulative GPA and earned credit hours. The predictor variables used to answer this question were CEES scores, HSGPA, high school type and rating, gender, race, family SES, parental educational background, and the presence of the major selection policy.

The variables of CEES ($r = .18$, $p = .00$), parental college education ($r = .091$, $p = .00$), major selection policy ($r = -.05$, $p = .009$), and HSGPA ($r = -.04$, $p = .01$) were identified in the order listed as predictors of the number of earned college credits. These results revealed a positive correlation between the variables and earned college credits.
There was a negative correlation between earned college credits and the major selection policy and HSGPA.

The significant factors that predict college cumulative GPA were the same variables as those that predict earned credit hours with one exception. In this analysis, the major selection policy was replaced as a significant factor with high school rating. The analysis also resulted in a different ordering of the factors in regards to strength. CEES \( r = .28, \ p = .00 \) was identified as the highest predictor followed by parent’s having a college education \( r = .17, \ p = .00 \), HSGPA \( r = -.04, \ p = .03 \), and high school rating \( r = .04, \ p = .02 \). The negative correlation between HSGPA and college cumulative GPA is in line with previous findings of college performance for all students and specifically undecided students. Wingard, Trevino, Dey, and Korn, (1991) in a study of average grades in high school and college saw an increase in college cumulative GPA for students who earned grades of B and lower in high school. Decreases in college cumulative GPA were found for students who earned A’s and high B’s in high school (Wingard, Trevino, Dey and Korn, 1991). Astin (1977) found that 33% of college students earn the same grades in college as they did in high school and almost half earn lower grades. Additionally, researchers studying the academic performance of undecided students found this group had lower academic performance (Leppel, 2001; Chase & Keene, 1981).

**Predictors of Retention**

The analysis of research question number four determined that there was at least one significant predictor of retention. The students who were members of the post-policy cohort had a lower mean of earned credit hours than those who enrolled pre-policy. This
outcome is likely because, as was shown in the results of research question number two and four, students enrolled in the post-policy cohort were not being retained through to the sixth semester at the same rate as those enrolled pre-policy.

The results of the statistical analysis demonstrate that the policy has not met the goal of retaining degree-seeking students enrolled in non-degree programs at the expected level. The results of the chi-square analysis demonstrated that students who were enrolled in the post-policy cohort did not persist at the expected level. While students may be encouraged through the major selection policy to select a major early in their academic career, which would allow them to continue to receive student financial aid, the long-term unintended result is attrition for more students than expected.

**Theoretical Implications**

Tinto’s (1993) SIM theory asserts that student persistence and attrition depend on the interaction between students’ entry characteristics and their experiences in the college environment. Tinto (1993) suggests that institutions have the opportunity to design and shape experiences that will encourage or discourage student persistence. He further proposed his theory as being policy relevant, suggesting that institutions use it as a guide for “institutional actions to retain more students until degree completion” (Tinto, 1993, p. 113). This study provided a lens in which to view how policy shapes the environment and influences the academic integration of degree-seeking students enrolled in non-degree programs.

Tinto’s (1975 & 1993) model is an explanatory, sociological one, which asserts the importance of the social and intellectual context of institutions, which occurs through
informal and formal interactions. These interactions over time can have a direct and indirect impact on a student’s decision to leave or remain. Institutional policy is a formal and indirect mechanism that can impact such decisions by shaping the context and content of the student’s interactions within the environment and members of the institution. According to Tinto (1993), these interactions lead to the student’s continual evaluation of intentions and commitments, which result in decisions to stay or leave. The decision to stay is made most often when a student has come to understand and accept those interactions are ones that are of value. Academic and social integration is accomplished when students believe their values align with other members of the institution and they are able to accept community norms and expectations. Academic and social integration, according to Tinto (1975 & 1993) further shape whether students are committed to completing a degree at a particular institution.

Students in non-degree programs who aim to complete a degree may initially demonstrate they have academically integrated into the institution because they have identified and chosen an academic major. This study, however, revealed that over time that integration is not sustained. When students leave after selecting a major, one can assume, based on Tinto’s (1975 & 1993) theory, a re-evaluation has occurred resulting in a devaluing of the interactions and/or a change in whether community norms and expectations are acceptable. It is conceivable that the reasons for this re-evaluation include one or two factors. The first factor could be that the choice to leave is a reflection of the student identifying his or her future major and career goals and recognizing they do not align with what is offered at the institution or obtaining a degree in general. This
factor would not, however, explain why more students would choose to leave post-policy versus pre-policy. A second factor that would better explain the study outcomes is that students who prematurely select a major that may not align with their values, interests, and skills may find incongruence with other members of the community which might have led to a reevaluation of their goal commitment and intentions to complete that degree. It is also conceivable that students who were unable to select a major did not integrate at all and chose to leave because the policy communicated their inability to meet institutional expectations.

Braxton and Lien (2000) suggest that Tinto’s (1993) model, shown in Figure 5, is in need of revision and offer two options. The first option is to reject the theory completely and the second is to redefine academic integration. In the case of this study, it would seem appropriate to redefine academic integration and explore the common elements and identify what, if any, elements are specific to different populations, such as degree-seeking students enrolled in non-degree programs. A redefinition might also require that more weight be given to some factors than others. For example, across Astin’s (1975 & 1993) and Bean’s (1980 & 1982) studies, three pre-entry factors were found to play a significant role in students’ decisions to leave or stay: HSGPA, intent to complete a baccalaureate degree, and SES. Tinto’s (1993) model seems to give equal weight to all pre-entry factors. This study may lead one to consider the possibility of an additional factor as a critical component of Tinto’s (1993) model. Based on the importance placed on the selection of a major in previous studies and how the selection or non-selection might result in a re-evaluation of intentions and commitment, it might
make sense to add to the model the integration that must occur between the students’ academic pursuits and desired future outcomes. The students enrolled pre-policy were not required to make a decision at any particular time in their academic career so potentially they made a decision when they were ready or had no other choice in order to graduate. It can be assumed from the outcome of this study that those enrolled pre-policy did not choose a major until they felt confident that the choice in major was congruent with his or her skills, interests, and values and thus saw the benefit of persisting on to achieve the chosen degree. It can also be assumed from the study outcomes that students were able to make a connection between the chosen major and future outcomes, which made the effort necessary to complete the degree worthwhile.

Bean’s (1981) theory further supports the assertion that an additional component to Tinto’s (1993) model that considers the integration of major selection and career certainty is worthwhile. Bean (1980) defined major and job certainty as the degree to which students were certain about their major and occupational choice. Bean (1980) identified this factor as playing a role in student decisions to leave. Perhaps because students are unable to make a connection between the chosen academic program and their future intentions, the effort needed to complete the degree was not seen as worthwhile. Students may have even failed to identify future intentions and are unable, therefore, to see the value in their pursuit of the chosen degree path. Bean (1980) defined this phenomenon as practical value. Practical value is the condition of students believing that the effort to obtain a degree will result in a practical payoff upon graduation in the form of employment. Students who are unable to make a choice that they feel aligns with their
values, skills, and interests may also find it difficult to identify the practical value of putting forward the effort to complete a degree. Tinto (1993) saw the internal college environment as sitting within a larger external context that influences student decisions to stay or leave. In this instance, the external context of careers may have an influence that cannot be fully measured in this study.

A look at developmental factors in relation to the selection of a degree program may have led to different decisions regarding the policy. For example, Chickering and Reisser’s sixth vector, developing purpose, includes the ability to be intentional in decision-making and persist despite obstacles (Chickering & Reisser, 1993). During this vector, students are able to integrate unpaid or paid vocational plans and ambitions with personal interests and interpersonal and family obligations (Chickering & Reisser, 1993). Students are expected to move through vectors five through seven during the junior and senior year. Based on this theory, the policy timeline is perhaps too soon for some students to be expected to make such a decision prior to achieving junior or senior status.

Data from this study demonstrate that the selection of a major may be an early indicator of a student’s academic integration but may not be sustained if students are asked to select a major before they are committed and understand the reason for their selection. Students may need opportunities to explore the numerous options available to them and determine the one that has the best personal and future professional fit. The structural variables suggested by Bean (1981) to influence student attitudes and subsequent behaviors were only approached through policy in this institution. This structural variable did not; however, seem to result in a positive change in attitude or
behavior of degree-seeking students enrolled in non-degree programs. The policy only seemed to manage behavior by requiring students to choose a major in order to adhere to institutional policy. What the policy may not have impacted is attitude and/or long-term intentions. Further, the results of this study lead to the conclusion that the structural variable of policy in itself does not facilitate successful integration into college.

**Practical Implications**

Based on the results of this study, major selection policies alone are not sufficient in assisting students in persisting to the sixth semester. A major selection policy may help students to identify what is expected and the parameters associated with the community, but do not in itself provide the support necessary to move students from non-degree programs to graduation. Based on the results of this study, the policy or policy alone has unintended and unexpected outcomes that in the long-term may have negative consequences for the students and the institution. Requiring students to select a major by way of a policy may be analogous to a doctor treating the symptom rather than the medical cause. The cause of students not selecting a major may be indicative of larger developmental issues and/or inability to see the connection between completing a degree and reaping any desired benefits.

A cursory review of the study results may lead institutional decision-makers to opt for no policy; however, a closer look at the results of the chi-square analysis should instead prompt decision-makers to examine how best to aid students enrolled in non-degree programs. The chi-square analysis identified a relationship between retention and the major selection policy and also revealed that only 55% of the students, who were
enrolled in the pre-policy cohort, were retained to the sixth semester. Doing nothing does not seem to net the desired outcome of significantly increasing persistence. When asked over the last 20 years why they attend college, students more often selected the option, “to obtain a job,” over all other reasons (Eagan, Lozano, Hurtado, & Case, 2013). If this is the case, students who begin their college career enrolled in non-degree programs need some guidance on how to meet their own expectation of obtaining a job after graduation.

If a major selection policy is used as a strategy for encouraging persistence it may need to be paired with interventions that allow students the opportunity to make decisions based on knowledge and experience. Drawing on conclusions from the meta-analysis of career interventions conducted by Brown et al. (2003) may assist administrators to determine what may best complement a major selection policy. Brown et al. suggest that there are five career interventions that are most effective in helping students make career decision choices: (a) written exercises, (b) individualized interpretation and feedback of career assessment results, (c) current and reliable career information, (d) career role models, and (e) help identifying and developing a support network. Based on the results of this study and Tinto’s (1993) assertion regarding long-term indecision, it is critical that additional structural variables be provided as early as possible to support students required to select a major through university policy. These structural variables should be employed as early as it is known to the institution that the student will begin his or her career in a non-degree program, which typically occurs at the point of admissions. Shortly after admission, students could be asked to provide a brief statement regarding their enrollment in a non-degree program. In the brief statement, students could be asked
to identify areas of interest and why they are interested in these particular areas. Once students arrive on campus for orientation, this brief statement could be used in conjunction with the results of a career assessment such as the Self Directed Search (Revels, 2011) or the Career Maturity Index (Crites, 1961) to talk with students about their interests, readiness to decide, and the resources that will help them to narrow their choices. During the first-semester, students could then be asked to research career information such as tasks and salaries and match this information with their assessment results and identified interests. Students could also conduct research through career role models suggested by Brown et al. For some students a brief process that includes these interventions will result in an early decision regarding a major and how it connects to their future career pursuits. For other students, these interventions—or what could be considered structural variables—will need to occur multiple times before a major decision and related career connections can be made (Gordon, 2007). For another group of students, the barriers to making these decisions and connections are beyond what can be solved through these structural variables and may require counseling or result in attrition.

It might also be useful and important to assess a student’s readiness to make such a decision to determine how best to assist the student in selecting a major. Gordon (1998) identified seven types of undecided students that could be used as a guide in determining how best to help students meet the demands of the major selection policy: very decided, somewhat undecided, unstable undecided, tentatively undecided, developmentally undecided, seriously undecided, and chronically undecided. For example, those students
who are seriously or chronically undecided may select a major because the policy requires them to do so but may, in fact, need career counseling to understand their decision-making difficulties and how they may play a role in selecting a major.

Currently the major selection policy at MWSU does not apply to students who begin their career in degree-granting programs but at some point enroll in non-degree programs due to a change in their intent or academic performance. While this study did not examine the outcomes of this population, these students may require the use of structural variables to reduce the chance of attrition, especially if this shift occurs late in their academic career.

Limitations

One limitation of this study is the multi-dimensional nature of retention and college academic outcomes. There are numerous factors that play a role in these outcomes that are impossible to account for in one study. A very small amount of variance in predicting retention could be accounted for in the model used in this study.

This study only looked at retention at one institution and does not examine whether students persist to graduation at other institutions. It is likely that once students who were initially not enrolled in a degree program, identified a desired academic path and chose to leave the institution to pursue a major not available at the current institution. This study does not examine all aspects of integration, which may influence the outcome of the study. For example student intentions were not explored and could likely have played a role in the student decision to leave or stay.
It is also possible that intention to earn a baccalaureate degree was implied because the student entered into an institution that grants this credential, but this question was not explicitly asked of this group. The selection of a non-degree program could be an indication that the student has not committed to obtaining a baccalaureate degree but has only chosen to explore this as an option.

**Implications for Future Research**

Gordon (2007) defines undecided students as those who are “unwilling, unable, or unready, to make an educational or vocational decision” (p. x). Scales of economy have led many institutions to provide the same “treatment” to all students when in fact the results may be very different for dissimilar groups. Future studies should explore these different types of undecided students in relation to the predictor variables used in this study. Each of these distinct groups may experience different outcomes and require different approaches. A distinction might be made between high- and low-achieving students, as well as students who begin college already having earned college credit through Advanced Placement or enrollment in college coursework. There was a low negative and statistically significant correlation between AALANA status and the major selection policy. It was more likely that students enrolled in the post-policy cohort also met the criteria for AALANA. This is of interest because students who meet the criteria for AALANA are also more likely not to persist. Based on previous studies, an examination of race and gender in relation to major selection and retention would make a significant addition to the literature.
Future studies should seek to identify factors that would explain greater amounts of variance in the outcomes for degree-seeking students enrolled in non-degree programs. Bean (1980 & 1982) viewed attrition and persistence as an outcome of psychological responses to the internal and external environment and Tinto (1975 & 1993) framed this phenomenon as a sociological one. A study that examines psychological and sociological factors, such as intentions, practical value, and interactions, would further our understanding of how policy and other structural variables encourage persistence of non-degree program students. A qualitative approach might provide insight regarding the sociological and psychological responses to the predictor variables used in this study and other factors not examined. For example, the level of parental education may play a role in a student’s ability to draw connections between a selected major and future occupational goal.

Future research may also review how, when, and why students are selecting a degree program to determine if they are committed to and understand the implications of their decision. This type of study would provide guidance on what practices would be of most benefit to students who face the challenge of selecting a degree program. An empirical study that involves the assignment of students to different interventions or no intervention would allow for a causal connection to be drawn regarding the factors used in this study. Further, it may be necessary to examine when students dropout and determine if attrition occurs because the student is unable to make a decision.

Although conflicting results have been presented regarding the role financial aid plays in a student’s decision to leave, a look at this factor in relation to the selection of
major might have practical implications for college administrators. College cost in itself may play a role in a student’s decisions to leave, especially if he or she is unable to make the connection between effort and outcomes. Students who select a major because they are required to do so, but are unable to feel confident that the choice is congruent with who they are and what occupational future they desire, may not see the monetary investment as worthwhile. This group of students may decide the cost of college is too great to continue if they are unsure of how that investment will pay off. This is almost certainly the case for students unable to select a major at all.

**Conclusion**

This study investigated the impact of a major selection policy on degree-seeking students enrolled in non-degree programs at a large Mid-western university. A review of literature revealed conflicting information regarding this population. Studies on this population have focused mostly on comparing students in non-degree programs with those in degree-granting programs (Gordon & Steele, 2003; Graunke, Woosley, & Helms, 2006; Lewellan, 1993). When compared with students enrolled in degree-granting programs, students enrolled in non-degree programs experience similar outcomes. The conflicting study outcomes are a result of differences in populations under study and institutions, variables used, and outcomes of interest (Lewallen, 1993).

The primary focus of these studies has been on retention of degree-seeking students enrolled in non-degree programs from first to second-year. The insight provided through these studies has been useful in thinking about the many nuances of working
with students enrolled in non-degree programs, but have led to conflicting conclusions leading institutional decision-makers with little guidance on how to move this population from first year to graduation.

This study serves a different purpose by comparing outcomes for students enrolled in non-degree programs in relation to the structural variables put in place to support this population through to graduation. By focusing beyond the first year of enrollment, this study explores Tinto’s (1993) statement, “unresolved intentions over an extended period can lead to departure both from the institution and from higher educational enterprise as a whole” (p. 41). The structural variable examined in this study is a major selection policy that requires students who begin college in non-degree programs to select a major the semester upon earning 45 credit hours.

Results of this study have theoretical and practical implications for scholars and administrators. Structural variables, such as institutional policy, are for the purpose of influencing behavior and helping students understand what is expected (Adelman, 2006; Carey, 2005; Kuh, 2010). Tinto’s (1975 & 1993) and Bean’s (1981) models on attrition provided a framework in which to examine this topic and answer the research questions associated with determining the impact of one type of structural variable on the academic career of degree-seeking students enrolled in non-degree programs.

The results of this study give some support to the Braxton and Lien (2000) recommendation to revise Tinto’s (1993) theory. The results of the regression and chi-square analysis demonstrated that the major selection policy played a role in credit accumulation and retention to the sixth semester. Specifically, students’ enrolled post-
policy were more likely not to persist to the sixth semester and had a lower mean of earned credit hours. This outcome may support further investigation of what constitutes integration and whether the ability to connect a major to future occupational goals is critical for students to remain committed to completing a baccalaureate degree. Similar to the external factors that impact students’ decisions to stay or leave, student and career development issues might play a role in a student’s ability to meet the demands of his or her new environment based on developmental level. This is especially warranted now more than in the past as the world has grown more complex requiring that students attain specific skills and knowledge gained through the completion of a baccalaureate degree in order to access higher paying positions. While four-year institutions resist the pull to become training facilities for jobs, students enter institutions expecting that upon graduation they will be fully prepared for what the future will demand.

Institutions considering the use of Tinto’s (1993) and Bean’s (1981) theories as guides for policy should consider what, if any, additional structural variables need to be in place to support the goal of the policy. From the results of this study, a major selection policy alone does not provide the desired benefit of degree-seeking students enrolled in non-degree programs being retained to the sixth semester or academic outcomes in regards to earned credit hours. The longitudinal nature of Tinto’s (1993) theory accounts for the shifts that might occur throughout a student’s academic career so policy will need to also be prepared to help students manage those shifts. While selecting a major could be one large step to assist students to persist to graduation, institutions will need to determine what additional structural variables are needed to help students make the
decision to remain enrolled until the completion of a degree. It is logical to think that
some students, after selecting a major, may choose to persist at another institution simply
because the institution does not offer the path they desire or what they have chosen does
not require them to obtain a degree. It would be prudent, however, for institutions to
make the distinction between these students and those who simply leave because they are
unable to select a major or make the connection between the chosen degree path and the
future it will provide. The inability to choose or make this connection will likely result in
the student deciding that the effort required to complete a degree will not provide
sufficient benefit. Bean (1980) labeled the ability for students to make this connection as
practical value. When students make that choice, it is likely they will voluntarily opt out
and decide to leave the institution and higher education as a whole. Making the
distinction between these groups will allow institutions to be thoughtful and intentional
about what structural variables are critical and when they should be provided.

This study presented the results of four statistical analyses to answer the primary
question of what role a major selection policy plays in the academic outcomes and
retention of degree-seeking students enrolled in non-degree programs. The analyses
revealed that the policy played a role in how many credit hours a student earns and
retention to the sixth semester. For MWSU the policy played a negative role in these
outcomes--meaning that students enrolled in the post-policy cohorts were more likely not
to persist to the sixth semester or earn more credit hours than students enrolled
pre-policy. The results of these analyses are beneficial for institutions considering what
policies will assist this population of students. It is apparent from the results of this study
that institutions should consider a full array of structural variables to support any such policies. Many researchers have identified the importance of policy in shaping the environment and communicating community expectations; however, this study reveals that additional opportunities to communicate expectations and support students who are subject to this policy are critical.

The results of this study were surprising. It was hypothesized that students enrolled in the post-policy cohort would be more likely to be retained until the sixth semester and have earned more credit hours. The assumption was that students who were able to select a major earlier in their academic career were more likely to have the attitude and made subsequent decisions indicating they have academically integrated to the institution. The results of this study demonstrated instead that the policy had the opposite effect for many enrolled post-policy. This study did, however, support the importance of structural variables because the pre-policy group did not persist at a high percentage. Yet, the structural variables cannot be limited to policy and must include additional factors that may communicate to students what is expected while supporting the needs they may have to meet the expectations. Institutions seeking easy answers to complex circumstances may find it simpler to just institute a policy but may instead experience unintended consequences if they chose to focus only on the symptom and not the cause. It is clear from the results of this study that a major selection policy is not a significant factor in the retention of degree-seeking students enrolled in non-degree programs.
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