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An Analysis of the Reported and Unreported Baccalaureate Degree Recipients in IPEDS at a Large Public Research Institution

Mary Elizabeth Wallace

University of South Florida, marybeth@sar.usf.edu

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An Analysis of the Reported and Unreported
Baccalaureate Degree Recipients in IPEDS at a Large Public Research Institution

by

Mary Elizabeth Wallace

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education
in Curriculum and Instruction with an emphasis in
Higher Education, Educational Leadership
Department of Leadership, Counseling, Adult, Career, and Higher Education
College of Education
University of South Florida

Major Professor: Kathleen P. King, Ed.D.
Donald A. Dellow, Ed.D.
Thomas Miller, Ed.D.
William H. Young III, Ed.D.

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Keywords: college, graduation, completion, graduation rate, IPEDS, college student
attendance, transfer student, unit record

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DEDICATION

This dissertation is dedicated to my family and friends who provided much support all the way through this process: to my husband, Bill, who gave me space and encouragement when needed; to my children, Jennifer, Chip and Michael, who are now convinced that I am a learner for life; to my parents Bruce and Joanne, who believed I would be done one day; to my sisters Anne, Carolyn, and Peggy, who cheered from afar; to my in-laws Bill and Ann, who always asked how things were going. I appreciate all the kind support and care from my family, friends, classmates, and colleagues about my progress. My heartfelt gratitude to each of you!

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TABLE OF CONTENTS

List of Tables	iv
List of Figures	vi
Abstract	vii
Chapter One: Introduction	1
Historical Context of Higher Education in America.....	2
Political Shift	5
Philosophical Shift.....	6
Background on Graduation Rates Reporting	8
Purpose of the Study	10
Understanding the College Student of Today.....	12
Significance of the Problem.....	19
Scope of the Study	22
Research Questions.....	23
Definitions.....	24
Limitations	28
Chapter Summary	28
Chapter Two: Review of the Literature	30
Philosophical Context of Higher Education	30
Political Context of Higher Education.....	34
Understanding Today's College Students.....	38
Increasing Enrollments	38
Transfer Students	39
Graduation Rates Data	45
Integrated Postsecondary Education Data System.....	45
IPEDS Example: University of South Florida.....	46
Other National Data Sources	48
Issues Related in Graduation Data.....	51
Data collection needs review	52
Unit record system	53
Proposed graduation efficiency metric	55
Other College Completion Information	56
Other influences	60
Chapter Summary	61

Chapter Three: Methods	63
Overview of Methods	65
Population and Sample	66
Data Collection	67
Data Coding	67
Explanation of Variables.....	71
Research Questions.....	74
Statistical Analysis.....	77
Limitations of the Study.....	80
Chapter Summary	81
Chapter Four: Research Findings.....	82
Description of the Data	82
Research Question #1 – IPEDS Reported and IPEDS Unreported Populations.....	83
Research Question #2 – Who Are the IPEDS Unreported Students?.....	87
IPEDS Unreported Demographics, Gender	87
IPEDS Unreported Demographics, Race	88
IPEDS Unreported Demographics, Type Transfer Institution.....	90
IPEDS Unreported Demographics, Completion Age	91
IPEDS Unreported Demographics, College at Graduation.....	93
IPEDS Unreported Demographics, Matriculation Semester	94
IPEDS Unreported Demographics, Financial Aid	95
IPEDS Unreported Demographics, Credit Hours	96
IPEDS Unreported Demographics, Parent College Attendance	98
Summary of the IPEDS Unreported Student	99
Research Question #3 – Differences between IPEDS Reported vs. IPEDS Unreported Populations?.....	100
Gender.....	100
Race.....	101
Age.....	101
College at Graduation	102
Matriculation Semester and Attendance	103
Financial Aid.....	104
Credit Hours.....	104
Parent College Attendance.....	105
Descriptive Statistics Analysis.....	106
Chapter Summary	109
Chapter Five: Conclusions and Implications	111
Problem Statement	112
Research Setting.....	112
Methods.....	113
Research Questions Overview	114
IPEDS Reported and IPEDS Unreported Populations (Question #1).....	114
Who Are the IPEDS Unreported Students? (Question #2).....	115

IPEDS Unreported Demographics of Gender.....	115
IPEDS Unreported Demographics of Race.....	116
IPEDS Unreported Demographics of Type of Institution.....	117
IPEDS Unreported Demographics of Completion Age.....	118
IPEDS Unreported Demographics of College at Graduation.....	118
IPEDS Unreported Demographics of Matriculation Semester.....	119
IPEDS Unreported Demographics of Financial Aid.....	120
IPEDS Unreported Demographics of Credit Hours.....	120
IPEDS Unreported Demographics of Parent College Attendance.....	121
IPEDS Reported vs. IPEDS Unreported Populations (Question #3).....	121
IPEDS Reported vs. IPEDS Unreported, Gender.....	121
IPEDS Reported vs. IPEDS Unreported, Race.....	122
IPEDS Reported vs. IPEDS Unreported, Age.....	122
IPEDS Reported vs. IPEDS Unreported, College at Completion.....	123
IPEDS Reported vs. IPEDS Unreported, Matriculation Semester and Attendance.....	123
IPEDS Reported vs. IPEDS Unreported, Financial Aid.....	124
IPEDS Reported vs. IPEDS Unreported, Hours at Completion.....	124
IPEDS Reported vs. IPEDS Unreported, Parent College Attendance.....	125
Implications for Future Research.....	126
Conclusions and Policy Implications.....	127
Chapter Summary.....	128
References.....	132
Appendices.....	150
Appendix A: Research Flowchart: IPEDS Reported vs. IPEDS Unreported.....	150
Appendix B: List of States with Percentages of “IPEDS Reported” and “IPEDS Unreported” Students.....	151
Appendix C: Letter from Institutional Review Board.....	153
Appendix D: Histograms for IPEDS Reported and IPEDS Unreported on Completion Age.....	154
Appendix E: Histograms for IPEDS Reported and IPEDS Unreported on Credit Hours.....	155
About the Author.....	End Page

LIST OF TABLES

Table 1: Semesters and Types of Entering College Students	20
Table 2: Bachelor degrees conferred, by race (1976-77 vs. 2009-10).....	37
Table 3: Bachelor degrees conferred, by gender (1976-77 vs. 2009-10).....	37
Table 4: Graduation Rates at University of South Florida - Main Campus.....	47
Table 5: Variable Codes, Operational Definitions, and Research Source	70
Table 6: Research Questions and Aligned Variables.....	74
Table 7: Example of Coding Record: First-Time-in-College Student.....	76
Table 8: Example of Coding Record: Transfer Student.....	76
Table 9: IPEDS Reported vs. IPEDS Unreported 2011-2012, University of South Florida – Tampa.....	84
Table 10: IPEDS Unreported USF 2011-12, by Transfer and Other	86
Table 11: IPEDS Unreported USF 2011-12, by Gender.....	88
Table 12: IPEDS Unreported USF 2011-12, by Race	89
Table 13: IPEDS Unreported USF 2011-12, by Race and Student Type Detail	90
Table 14: IPEDS Unreported USF 2011-12, by Type of Transfer Institution.....	91
Table 15: IPEDS Unreported USF 2011-12, by Transfer Institution Type and Transfer Population.....	91
Table 16: IPEDS Unreported USF 2011-12, by Completion Age.....	92
Table 17: IPEDS Unreported USF 2011-12, by College.....	93
Table 18: IPEDS Unreported USF 2011-12, by College/Detail	94
Table 19: IPEDS Unreported USF 2011-12, by Matriculation.....	95

Table 20: IPEDS Unreported USF 2011-12, by Financial Aid	96
Table 21: IPEDS Unreported USF 2011-12, by Credit Hours.....	98
Table 22: IPEDS Unreported USF 2011-12, by Parent College Attendance	99
Table 23: IPEDS Reported vs. IPEDS Unreported, by Gender and Sub-categories	100
Table 24: IPEDS Reported vs. IPEDS Unreported, by Race.....	101
Table 25: IPEDS Reported vs. IPEDS Unreported, by Age	102
Table 26: IPEDS Reported vs. IPEDS Unreported, by College at Graduation	103
Table 27: IPEDS Reported vs. IPEDS Unreported, by Matriculation Semester and Attendance	104
Table 28: IPEDS Reported vs. IPEDS Unreported, by Financial Aid.....	104
Table 29: IPEDS Reported vs. IPEDS Unreported, by Credit Hours	105
Table 30: IPEDS Reported vs. IPEDS Unreported, Parent College Attendance.....	105
Table 31: IPEDS Reported vs. IPEDS Unreported-Statistical Analysis Table	107
Table 32: IPEDS Reported vs. IPEDS Unreported: Chi-square Test for Independence	108
Table 33: IPEDS Reported vs. IPEDS Unreported-Summary Table.....	110

LIST OF FIGURES

Figure 1: 2010 Full-time vs. Part-time Undergraduate Fall Attendance in U.S	13
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ABSTRACT

One of the challenges facing higher education today is to graduate undergraduate students in a timely manner. Graduation rates are reported to students, parents, and the general public as well as academic and political leaders. The rates are derived using different methodologies. The Integrated Postsecondary Education Data System (IPEDS) collects data annually by law from every institution offering federal financial aid in the United States. The “IPEDS reported” students are considered students who start in the fall semester, full-time, first-time in college, and graduate from the original institution (no transfers). The adult, part-time, returning, and transfer students, or “IPEDS unreported” students, are left out of the numbers. The purpose of this research is to understand how current college graduation data are collected in the United States and to compare that information with post-secondary attendance and transfer patterns. This study proposes to document the data of “IPEDS reported” and “IPEDS unreported” graduated students from one academic year and to propose alternatives for holistic and inclusive methods for counting graduation numbers that reflect current enrollment trends. Furthermore, emphasis of the serious implications of these data for students, parents, policymakers, institutional leaders, and politicians who rely on these data to make informed decisions regarding higher education will be discussed. This research contributes to innovative solutions for calculating graduation rates that adhere to updated methods that count and value all graduated students and their successes.

CHAPTER ONE

INTRODUCTION

There is an unmentioned phenomenon of invisible students in America, obscuring the real truth about graduation rates in the United States. Current graduation rates track and focus on one population group of first-time college students, however, this means the transfer and adult populations attending college are not included in these numbers. An argument must be made for counting all students in today's world, where colleges and universities compete for funding sources, facing increased accountability to stakeholders, and wading through tough economic markets. When not all students are included, the retention and graduation rates are skewed, causing an underreporting of the college completers. Further, what are the implications to students, institutions they attend, and higher education in general of using the current practice of reporting graduation rates of one limited population of "traditional" students (first-time, full-time, starts in Fall, graduates from original institution) in the United States?

The solution is to include every student enrolled in college, especially the students who graduate, leaving no student out of today's picture of higher education. Reporting graduation rates of only one specific first-time-in-college population does not consider a vast wave of students attending college from other age groups, part-time enrollment, or transfer from multiple institutions. This population is invisible in the graduation rates as they are currently reported in the United States. Looking at the historical context of

higher education in America, we can draw insight from the way the traditional student population began in the Colonial period.

Historical Context of Higher Education in America

Higher education in America began in 1636 with Harvard, with eight more colonial colleges being established later in the colonial period. These colleges were fashioned after European universities such as Oxford and Cambridge (Rudolph, 1990). During the first century of higher education in this country, the students were comprised of white males whose families could afford the tuition and could devote a male family member to earning an education instead of participating in the family business interests. According to Rudolph, "... the college which would train the schoolmasters, the divines, the rulers, the cultured ornaments of society –the men who would spell the difference between civilization and barbarism" (1990, p. 6). Support came from both church and state with a religious tradition intertwined in the college. The languages of Greek and Latin were the foundations of the curriculum and that knowledge was required for admission (Rudolph, 1990) to the liberal arts colleges. Enrollment was quite limited, with predominately white male students from middle to upper class (Renn & Reason, 2013). Higher education enrollment was entirely male until 1837 when Oberlin Collegiate Institute and Mount Holyoke Female Seminary allowed women to enter their institutions.

Entering into the nineteenth century, higher education experienced the growth of the land grant and state supported public institutions as well as greater opportunity for students previously excluded due to gender, race, religion, or ethnicity. The original nine colleges expanded to two hundred and fifty institutions. The Morrill Land-Grant Act of

1862 and 1892 signaled support from the government for public higher education with institutions in every state (Cohen & Brawer, 2003; Loss, 2012). Historically Black Colleges and Universities (HBCU's) were established with the Morrill Act in 1890 (Renn & Reason, 2013). With both private and public choices, higher education was increasing in size, diversity, and the number of pathways to an education beyond high school. A further turning point was the G.I. Bill of 1944, bringing veterans on campus with funding for a college education after their military service. Growth for higher education, with more than two thousand colleges and an increasingly diverse student body, was prevalent across the country (Snyder, 1993). Agriculture and teacher training were the focus of the land grant institutions along with other areas of interest such as business, journalism, forestry, and social work starting to attract varied students (Cohen & Brawer, 2003, p. 2). The college student population increased, the aspiring middle class set its sights on a college education, and state universities engaged in scholarly and scientific inquiry (Rudolph, 1990). The Higher Education Act of 1965 further assisted college students to meet eligibility requirements to receive federal grants and/or loans (Thelin, 2011). In 1869, the first year of data reporting in the United States, the Office of Education reported that 63,000 students attended higher education institutions. This was about one percent of the 18-24 year old population. Compare that with over 14,000,000 college students in 1992, representing approximately thirty-three percent of the same age population (Snyder, 1993). In 2010, over twenty-one million students participated in higher education (Snyder & Dillow, 2012). Clearly, higher education attendance has changed and increased throughout its history in America.

Another milestone was the junior or community college with two-year programs opening their doors in the early twentieth century, offering a local, lower-cost alternative for a college education. The first such institution was Joliet Junior College, established in 1901 just outside Chicago. Generally, students at a junior/community college can choose either a course of study leading to a vocational/technical career or the transfer track to the university, the associate degree including general education coursework. “Opportunity colleges” heralded open enrollment, serving the local community and broadening the population attending and completing college -- including part-time options for the working adult (Witt, Wattenbarger, Gollattscheck, & Suppiger, 1994). Students could work and attend classes, further diversifying the college-going population and opening more opportunities for the completion of a bachelor’s degree. “As these colleges opened their doors all across America, the population that responded was unprecedented in terms of race, and educational preparation” (Witt, et al., 1994, p. xv). Options for financial aid, part-time attendance or full-time, plus the variety of age groups participating in higher education, including women, minorities, and low-socioeconomic students are all factors that helped increase the college student population during the twentieth century (Cohen & Brawer, 2003; Renn & Reason, 2013). These trends contributed to the diversity and opportunities for postsecondary education for those from many backgrounds and experiences.

Two-year colleges accounted for about 40 percent of all higher education institutions in America (Goldin & Katz, 2008). As the more diverse college enrollment shifts from full-time to part-time and from the first-time-in-college to adult student population, there are more opportunities for higher education for more Americans than in

any previous decade. In spite of their large numbers today in the United States, it is a concern how the community college students are included in the graduation rates. When they transfer to a four-year program, they are simply not included in the current federal method. Unfortunately, they become invisible when they transfer.

Political Shift

Educating a democratic citizenry appears to be a theme across the landscape of American higher education. The colonial colleges had an interest in educating future government and church leaders. At that time, most of the students were white, male, and considered elite (Renn & Reason, 2013; Rudolph, 1990). Later, the public universities were recognized for the success of the returning veterans under the G.I. Bill and providing an education for citizens who had contributed through military service (Loss, 2012; Renn & Reason, 2013). President Roosevelt referred to the “right to a good education” in his State of the Union Address in 1944, an idea that was crucial to the G.I. Bill and Serviceman’s Readjustment Act (Goldin & Katz, 2008).

The junior/community colleges offered locations close to home and lower tuition costs provided greater access to higher education. They are sometimes referred to as the “democratic colleges” (Brint & Karabel, 1989) because of their open enrollment admissions policy, allowing access for those with the desire to learn and participate in higher education. An informed citizen could and can read, analyze, and participate in the government process of this country and therefore contribute to the process of democracy (Elias & Merriam, 2005).

Legislation such as the G.I. Bill, National Defense Education Act, and the Higher Education Act augmented opportunities for a diverse student population in America’s

colleges and universities along with the civil rights and women liberation movements (Loss, 2012, p. 214). In the 1970's, the Pell Grant ("G.I. Bill for everybody"), federal loans, and private loans provided financial assistance to qualified students. Federal support consisted of grants, loans, and work-study programs. Compared to the time of the colonial colleges, a college education is far more accessible in America today, partly due to the financial assistance available to students and an increasing, diverse student body. Students across the socioeconomic spectrum are encouraged to enter college and complete their degrees. These opportunities increased student enrollments and augmented the ways students take classes, such as part-time, online, stop-outs, returners, and transfers (Renn & Reason, 2013). Along with a political shift, a philosophical aspect developed in higher education in this country, which is the focus of the next section.

Philosophical Shift

Education in the colonial colleges placed a high emphasis on Greek and Latin languages and their literature. Proficiency in the classic languages was an admissions requirement and students were tested on their knowledge and ability prior to entering the institution. The critical reading and discussion of the writings of Socrates, Plato, and Aristotle encompassed a classical curriculum and included logic, Hebrew, philosophy, and some mathematics. The early colleges were aristocratic in their nature, students, and learning (Elias & Merriam, 2005; Randolph, 1990; Renn & Reason, 2013), and had a liberal arts approach to the curriculum.

Later, science and mathematics were introduced to the course of study. The ancient tools of the Greek and Latin curriculum were supplemented with observations, questions, and the inquiry of the scientific method. The new curriculum subjects inspired

college students in the world of discovery, new knowledge, and problem solving (Elias & Merriam, 2005). By mid-1700's colleges offered subjects such as surveying, navigation, geography, history, English literature, and natural philosophy, and moved away from the structure of the medieval university education (Randolph, 1990). In the mid-nineteenth century, the new subjects of zoology, physics, botany, chemistry, geology, and mineralogy were taught alongside the French and German languages. A learner-centered approach with vocational education and utilitarian training emerged. The theoretical and practical began to mingle, with students interested in both a profession and a college education.

The Morrill Act of 1862 helped to support at least one agricultural and mechanical arts college in each state across the country. With their practical orientation, the land grant institutions gained in popularity, and by 1955 enrolled approximately twenty percent of all college students in the United States (Rudolph, 1990). Other colleges dedicated to women or minority groups opened their doors. The rise of majors in science and engineering brought the creation of institutions dedicated to aspiring technologies. The democratic philosophy of providing higher education to the aspiring middle class to further the needs of a society moving to industrialization and urbanization pervaded this era.

Progressing into modern times, the liberal arts colleges, universities, and community colleges serve increased numbers of students. A postsecondary education has become critical to meet the demands of the knowledge-based economy. More jobs require at least a bachelor's degree, and studies show increased lifetime earning power for those holding degrees (Carnevale, Smith, & Strohl; June 2010). A college education

began in this country for a select elite population, and now a report by Carnevale et al. stated postsecondary education as the only pathway to middle class jobs (2010) due to the demands of a more highly skilled workforce.

Today, students can attend college with many choices and options, ranging from the type of institution (2 and 4 year, private or publically funded, or for-profit) to numerous programs of study, varied costs, and delivery methods. There are now over 4,400 institutions (Snyder & Dillow, 2012), and as a result higher education opportunities have expanded, changed, and broadened through the years along with the students who attend college. Higher education has evolved from a select few males attending college to prepare for religious or political office to a diverse population with endless possibilities.

Background on Graduation Rates Reporting

Policymakers, institutional leaders, prospective students, along with their parents and the general public look at graduation rates and make decisions about a college or university, and higher education in general. The *Condition of Education for 2012* reported a national graduation rate for a bachelor's degree to be 58% (Aud, Hussar, Johnson, Kena, Roth, Manning, Wang, Zhang, and Notler, 2012, Indicator 45, p. 108). This is not a statistic that speaks well for higher education. For that matter, what does a prospective student or parent think when hearing that in six years just over half of college students graduate with a bachelor's degree? What do taxpayers perceive about the investment of their tax dollars in higher education? Bachelor degree completion is a concern if the United States desires to be competitive in a global market. But

surprisingly, reporting the number of graduates in higher education is not as straightforward as it seems.

One might think that if a student graduated from college, that would count as one student completed. But it does not work quite that way. It appears there are students who are never included at all in the graduation rate. In this country, an “IPEDS unreported” student can be college graduate receiving a diploma, yet remains invisible in the graduation rates. “The fact is, there is no consistent national data source that accurately shows patterns of retention, transfer and program completion in detail and across state lines” (Ewell, Schild & Paulson, 2003, p. 7). An “IPEDS unreported” graduate looks like a dropout in the graduation numbers (Adelman, 2007; Cohen & Ibrahim, 2008; Renn & Reason, 2013). Therefore, institutions of higher education are literally graduating students that cannot be included in their national numbers due to the methodology based only on a small slice of the college population.

Since 1997, colleges and universities in the United States report graduation data to the Integrated Postsecondary Education Data System (IPEDS) annually as required by Student Right-to-Know Act 1990 (Public Law 101-542), passed by Congress on November 9, 1990. According to the regulation, institutions are required to report and make available specific information on completion and graduation rates to the federal government in order to maintain Title IV funding status along with disclosing the information to students, parents, and other stakeholders. Specifically, the Graduation Rate (GR) is defined as follows:

Data are collected on the number of students entering the institution as full-time, first-time, degree/certificate-seeking undergraduate students in a particular year

(cohort), by race/ethnicity and gender; the number completing their program within 150 percent of normal time to completion; the number that transfer to other institutions if transfer is part of the institution's mission. (IPEDS Glossary, 2013)

According to IPEDS, the "six-year graduation rate" data consists of students who **enter** an institution and graduate from **the same** institution within six years (Glossary, 2013). Likewise for the four-year rate and eight-year graduation rates. It appears that part-time students or students who graduate past the mark are considered dropouts (Lipka, 2012). In addition, transfer students do not count in these data since they entered another institution first, and therefore do not meet the criteria of "first time in college" (Renn & Reason, 2013). A natural question to ask is whether this method of reporting implies that transfer and part-time students are not important enough to be included in graduation data?

Additional questions of significant concern, given student demographics, funding of higher education, and possible political agendas, include the following issues. Are adult students considered at all when reporting graduation rates? In other words, how many bachelor degree recipients are institutions of higher education not able to report? Is the graduation rate as it is reported misleading? And if so, how can it be corrected?

Purpose of the Study

The purpose of this study was to understand how college graduation data are collected in the United States and to compare with current post-secondary attendance and transfer patterns. Mainly, what were the gaps in the collection of data when reporting graduation rates? Cited as a major problem, Ewell et al. stated the data collected on college students was incomplete and often inaccurate (2003, p. 1). The transfer student

created some of the complexity. Students who transfer from one institution to another were difficult to track, especially if they cross state lines (Ewell et al., 2003). Other factors that were wrapped in the complexity of graduation rates include the mission of the institution, its resources, and the selectivity of the school (Dellow & Romano, 2002; Hess, Schneider, Carey, & Kelly, 2009). Accurate counting of college students graduating is one issue. Another issue is the interpretation of the numbers.

Cook and Hartle (2011) pointed out a clear example of the complexity of interpreting graduation rates. Consider comparing a private institution with highly selective admissions and 20% of the students receiving Pell Grants, versus a public institution with 80% Pell Grant recipients and admission criteria that is not so selective. Percentage rates from IPEDS do not take admissions selectivity or economic backgrounds into account. Authors Cook and Hartle (2011) suggested developing of a method to normalize graduation rates to be able to compare diverse institutions with differing missions, student characteristics, and communities served. Dellow and Romano (2002) also raised these issues and pointed out serious concerns regarding the perception of institutional effectiveness as explained to the public along with resource allocation. Publishing numbers and percentages is part of the picture on graduation rates, but comparing institutions using these rates can be much more complex.

In this study, the researcher reviewed current college student data enrollment and reviewed the characteristics of student attendance. In addition, the researcher reported on national databases and what criteria are used to count graduates along with the literature relative to the matter. The researcher identified which students were IPEDS reported in

the graduation rates, as well as which students were not. First, let's take a look at some overall statistics regarding today's college student. Who is going to college?

Understanding the College Student of Today

The assumption that students graduate from high school, enroll the next fall in a bachelor's-degree-granting higher education institution, and graduate from that same institution about four years later is anachronistic. An examination of the enrollment patterns of current college student is much more complex; even focusing on the differences between part-time and full-time enrollment is too simplistic today. (Renn & Reason, 2013, p. 45)

For example, approximately 2.4 million did not fit the traditional definition out of five million first-time college students in Fall 2009 (Lipka, 2012). According to figures from the *Digest of Education Statistics 2011*, college and universities served approximately 18.1 million undergraduate students in the fall of 2010 (Snyder & Dillow, 2012, p. 325). This number included students from institutions both public (13.7 million) and private (4.4 million), and not-for-profit and for-profit institutions of higher education. Of these, about 10.4 million attended 4-year institutions and another 7.7 million were enrolled in 2-year institutions. Breaking the numbers down by gender, the report stated over 10.2 million were female and 7.8 million were male. As illustrated in Figure 1, full-time students amounted to 11.5 million (64%), while 6.6 million (36%) attended college on a part-time basis (Snyder & Dillow, 2012, p. 338). With over one-third of the college-going population attending classes part-time, a significant portion of completed college degrees were left out of the federally-defined graduation rate.

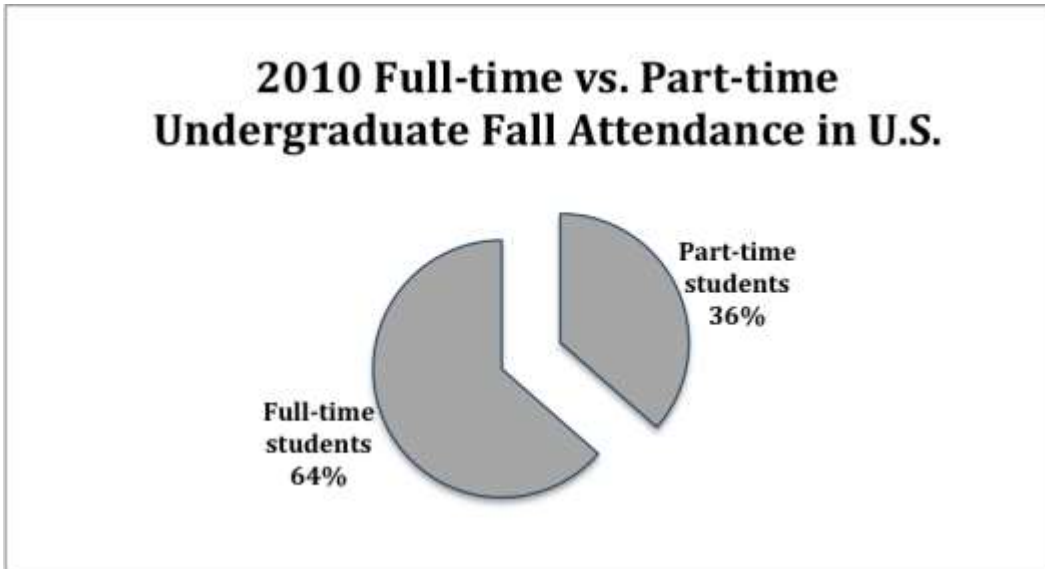


Figure 1. 2010 Undergraduate Fall Attendance in College (Data from the *Digest of Educational Statistics 2011*, Table 214, p. 338)

According to the same report, higher education enrollment rose by 20% in the past 5 years, with projections to increase another 15% by fall of 2020 (Snyder & Dillow, 2012, p. 279). According to *Projections of Education Statistics to 2020*, college enrollments by age group forecasted that the student population between the ages of 25-34 will grow by 21% (Hussar & Bailey, 2011, p. 21). The 35 and over age range is projected to increase by 16%, just a 9% increase for the traditional college age group of ages 18-24 (Hussar & Bailey, 2011, p. 21). Increases in diversity on college campuses can be attributed to the growth the nontraditional age group in higher education or population growth in previously underrepresented groups with the strata of gender, race, ethnicity, and socioeconomic status (Bok, 2013; Renn & Reason, 2013; Snyder & Dillow, 2012).

Further, the National Governors Association *Complete to Compete Report* stated just one-fourth of today's college student population is a "traditional" college student

(Reyna, June 2010, p. 9). Traditional meant enrolled full-time in a residential, 4-year college and dependent on the parents financially, per their report. Lipka (2012) stated in the *Chronicle of Education Almanac of Higher Education*:

Enrollment has ticked up, but who goes to college and how they do it are changing. Students long dubbed "nontraditional" have become more common.

Colleges are seeing more adult learners, significant proportions of part-time students, and increasing mobility through transfers and dual enrollment. (para. 2)

However, the non-traditional student described may be hidden in the current practice of calculating graduation rates (Hossler et al., February 2012, p.5). In fact, any student who is not a freshman, transfers to another institution, attends part-time, or starts in a term other than the fall is not considered under the current practice of graduation rates.

Interestingly, the total number of individuals in the United States with a bachelor's degree has increased over the years. According to 2011 U.S. Census data reported in the *Digest of Education Statistics 2011*, 30.4% of the population has obtained a bachelor degree. In 2000, only 25.6% earned a four-year degree (Snyder & Dillow, 2012, p. 25). So progress is being made in the overall bachelor attainment degree numbers; however, are all of the completers reflected in the graduation rates?

Another aspect of current college students is transfer behavior, including transfer from 2-year to 4-year, reverse transfer, and swirling enrollments. Recently, the *Chronicle of Higher Education* reported that about one-third of college students in the past five years attended more than one institution prior to graduation (*Almanac of Higher Education*, 2012; Hossler et al., February 2012; Peter & Forrest Cataldi, 2005). As illustrated by Ewell et al., a college transcript was described as similar to a quilt -- pieced

together semester by semester (2003, p. 1). The sections of the quilt are attributed to the number of times the student transfers from one institution to another. According to a report of 1999-2000 college graduates, attendance patterns such as transfer, swirling (between 4-year and 2-year institutions), and dual enrollment amounted to 59 percent of the undergraduate population (Peter & Forrest Cataldi, 2005). Over half of the students enrolled in higher education attended multiple institutions, and in some cases, more than four (Peter & Forrest Cataldi, 2005).

In a study of reverse transfer students over a six-year period, the National Student Clearinghouse Research Center reported 14.4 percent of the first time in college students reverse transferred at the same time; however, 71.1 percent of undergraduate students remained enrolled at the same 2-year school for more than one term (Hossler et al., July 2012). The term “reverse transfer” defines students who transfer from a 4-year institution to a 2-year institution (Adelman, 2006; Borden, 2004; Hossler et al., July 2012; Renn & Reason, 2013; Selingo, 2013). Another finding of the study was that 16.1 percent of these students returned to their original 4-year institution. Under the current IPEDS guidelines, only the students who start in the Fall semester as FTIC and graduate from the initial institution are included in graduation cohort. In a recent study of completers, 22.4 percent graduated from another institution vs. the entrance institution (Hossler et al., February 2012). Clearly, students are on the move (Adelman, 2006) and therefore make it difficult to track degree progress, especially across state lines (Ewell et al., 2003). By IPEDS definition, this population of students would not be considered in the graduation rate due to not completing at the original institution. Again, the calculation fails to report

an accurate picture of graduation and overlooks entire populations of students currently attending college in the United States.

Adult students are participating in higher education. The student population over the age of 25 in college is climbing. From 2000 – 2010, there was an increase of 34% in the under 25-age category. However during the same span of years in the over 25-age category, the percentage rose 42%! Over the next 10 years, the National Center for Education Statistics predicted an 11% increase in the under 25 age group with another 20% rise in students over the age of 25 (Snyder & Dillow, 2012, p. 280). Aslanian (2007) remarked on the adult student (age 24 and over) growth in higher education, explaining that the trend for over thirty years has tripled. During this same time period, the high school graduate has increased at modest rates. College study is an activity that does not exclusively occur between the ages of 18 – 22 years. However, the adult college students are not currently tracked in the IPEDS graduation rates, even though this population is showing a marked increase in participation in higher education. IPEDS graduation rates only include first-time in college students who attend school full-time, start in the fall semester complete at the 4-year, 6-year, and now 8-year mark and graduate from the same institution where they started college. Cook and Hartle (2011) stated:

This definition may have been appropriate for higher education institutions in the mid-1980's when traditional students were a much larger share of enrollments. But the rapid increase of non-traditional enrollments means that the current 25-year old definition excludes a huge number of students. (p. 2)

Estimates from the American Council on Education stated that as many as 61 percent of graduations at 4-year and 67 percent of graduations at 2-year institutions are excluded from calculations of graduation rates (Cook & Hartle, 2011, p. 2). In another study conducted by Horn (2006, p. v), institutions reported that 71 percent of admitted freshman were included in the 1998 cohort, which left out any completion information on about 30 percent of incoming students.

Economic factors have played a part in college enrollment. Students are concerned about how to pay for college (College Board and Art & Science Group, LLC; 2010). The United States' economic recession (December 2007-June 2009 per the National Bureau of Economic Research) has forced more undergraduates to work while attending college part-time. *Pew Social & Demographic Trends* reported the economic recovery period (2009-current) continued to struggle in areas such as median household income and poverty rate (Kochhar, 2012). Adults (25+) have responded to the workforce demands and are also working to complete degrees or pursuing career retraining to meet the knowledge needs of the current work environment (Betts, Hartman & Oxholm, 2009, p. 14). The baccalaureate degree is increasingly becoming an unavoidable gateway to an entry-level position in today's workforce (Wellman, 2002).

Adult students are sometimes referred as “non-traditional.” The non-traditional student numbered 73% of college attendees in 1999-2000 as reported in a special subsection in *Findings from the Condition of Education 2002: Nontraditional undergraduates* (Choy, p. 3). According to demographics, the general characteristics of this group were defined as the student meeting one or more of the following criteria:

- Part-time enrollment in higher education

- Enters postsecondary education later than one year after high school diploma
- Works full-time (35 hours a week or more)
- Independent status if receiving financial aid
- Has at least one dependent
- Single parent (not married or separated from spouse)
- No high school diploma (could have General Equivalency Diploma or another high school completion certificate)

(Choy, p. 3, as cited in Horn & Carroll, 1996)

On the other hand, traditional college students were described by Choy as individuals with "...a high school diploma, enrolls full time immediately after finishing high school, depends on parents for financial support, and either does not work during the school year or works part time—is the exception rather than the rule" (2002, p. 1). With 27% meeting the traditional criteria in 1999-2000, the non-traditional numbers (73%) are substantial, far exceeding the traditional age college student.

They engage in nonlinear attendance patterns; go to community colleges; take courses (or entire degrees) online; attend for-profit institutions; come from underrepresented racial, ethnic, and religious groups; speak a first language other than English; work between high school and college; work thirty-plus hours a week *during college*; are international students; raise families; negotiate accommodations for disabilities; or do not complete their intended educational goals. (Renn & Reason, 2013, p. x)

Clearly, non-traditional traits appear to fit the college student of today (Bok, 2013; Borden, 2004; Hossler et al., February 2012). Yet, how many legislators, policymakers,

and members of the general public understand the current attendance patterns of college students? Is it widely known that today's traditional college student is the non-traditional student? In the next section, we will look at importance of graduation rates in the United States.

Significance of the Problem

Student success and accountability are two buzzwords heard frequently in higher education of today (Bowen, Chingos, & McPherson, 2009; Cohen & Ibrahim, 2008; Cook & Hartle, 2011). Before we can effectively assist students to reach their educational goals in a timely manner and achieve success, higher education institutions need to define and accurately assess where they stand on this issue. Student success is a broad issue, encompassing the transition of a student entering college and on unto completion (Renn & Reason, 2013; Tinto, 2012). Full accountability to stakeholders, students, parents, and the public is an ongoing important aspect of this issue (Bailey, Jenkins, & Leinbach, 2005; Cook & Hartle, 2011; Keller & Hammang, 2008; Tinto, 2012). The public perceives that it is the job of higher education to graduate students that complement the workforce, supplying a return on investment that substantiates the cost of the college degree (Cohen & Ibrahim, 2008; Cook & Hartle, 2011). Leaders in higher education need to make sure the graduation rates accurately reflect and describe the work and mission in today's higher education national picture. It is evident from popular and academic venues that legislators, taxpayers, students, parents, and policymakers are watching and looking for the evidence of student completions (Carey, 2010; Hess et al., 2009).

The chart below graphically represents the population of students included in the graduation rate as reported by IPEDS. Table 1 (below) helps to visualize how each of these groups of students is subdivided in relevant aspects.

Table 1
Semesters and Types of Entering College Students

	First-Time in College Students		Transfer Students		Stop-outs or Returning Students	
Fall entry semester	Full-time	<i>Part-time</i>	<i>Full-time</i>	<i>Part-time</i>	<i>Full-time</i>	<i>Part-time</i>
Spring entry semester	<i>Full-time</i>	<i>Part-time</i>	<i>Full-time</i>	<i>Part-time</i>	<i>Full-time</i>	<i>Part-time</i>
Summer entry*	<i>Full-time</i>	<i>Part-time</i>	<i>Full-time</i>	<i>Part-time</i>	<i>Full-time</i>	<i>Part-time</i>

Only “full-time” (no part-timers), “first-time” in college (no transfers or returning students), “fall starts” (no spring and maybe summer*) who start and graduate from the original institution are in the official count for Integrated Postsecondary Education Data System (IPEDS). Note the area in green indicating students included in the IPEDS graduation cohort. All other population sections are invisible in the IPEDS reports. For purposes of this research, “IPEDS reported” were the student completions submitted to IPEDS. Students who were not included in the IPEDS submission as illustrated above, were referred to as the “IPEDS unreported” population.

Looking at the numbers and the research dedicated to graduation rates, one can find a great deal of information on the first-time in college student and risk factors related to not being able to graduate. The college attendance data tell us that the nature of students attending college and earning a bachelor degree has changed over the years. It

appears there are students who are graduating from college but are excluded from IPEDS reporting in the national data on graduation rates.

President Barack Obama stated, “By 2020, America will once again have the highest proportion of college graduates in the world” (Obama, 2009). College graduation rates have taken on greater importance in America upon this statement from the president. At one time, America lead the world in education at all levels, but since the mid-1970’s the numbers have taken a downturn (Bowen, Chingos & McPherson, 2009), and, as reported by Organization for Economic Co-operation and Development (OECD), they have continued to decline. Reported by *OECD Indicators for 2012*, the United States was ranked 14th in bachelor degree attainment of 25-34 year olds compared with other member countries of the world (LaRock, n.d.). Previously, the U.S. was ranked 10th in 2006, 5th in 2001, and 3rd in 1998 (Bowen et al., 2009). Graduation from college must be a priority for this country if we are again to achieve our previous worldwide prominence.

Funding to universities and colleges based on graduation rates is another looming practice being considered in various states. In the Pappas Report, released in 2007, one of the recommendations to the Florida Board of Governors was a revision of funding formulas in Florida based on retention and graduation rates (p. 14). The *Orlando Sentinel* reported that it might happen as early as 2013 (Ordway, 2012), and the Florida Board of Governors worked on performance measures that are reviewed upon requests by the universities for tuition increases (Wilmath, 2012). Graduation rates were mentioned as one of the key areas. The Georgia Regents discussed connecting funding of the thirty-five Georgia intuitions and presidential salaries to college graduation outcomes

(Diamond, 2010). The “Complete College Tennessee Act” outlined funding formulas tied to data of completions along with other state higher education initiatives (Tennessee Higher Education Commission, n.d.). With already tight budgets, awareness of such measures is under discussion amongst higher education leaders.

Clearly, meeting the president’s challenging goal and raising our bachelor degree attainment in this country requires dedicated research. It will behoove higher education to have up-to-date and complete information to obtain these important goals for the individual, for the institutions of higher learning, and for the global economy requiring an educated workforce.

Scope of the Study

This study planned to look at the “invisible” students who are IPEDS unreported in the graduation rates, but who did graduate from the institution. To get an idea of the numbers of possible “invisible” students, Cook and Pullaro (2010) estimated the entering students from the spring and summer terms account for twenty-five percent. Add on another twenty-five percent who began their college careers at another college (such as a 2-year school with plans to transfer) or the 30% from the for-profit sector (Cook & Pullaro, 2010). Lipka (2012) reported that about 40% of entering first year students began as part-timers. Signature Report #5, *Baccalaureate attainment: A national view of the postsecondary outcomes of students who transfer from two-year to four-year institutions*, analysis found that about 62% of two-year to four-year transfers graduated within six years, with another eight percent still being enrolled at the baccalaureate institution (p. 5, 2013). It appears that entire populations of part-time first-time in college students, spring admissions, and transfer students who graduate from another institution

than their original are completely dismissed from the picture of graduation rates.

Transparency in the graduation data is lacking. Further research is necessary to uncover the IPEDS unreported graduates and highlight all of our college completions.

The scope of the study was to report current college student national enrollment data and attendance patterns to include transfers, first-time in college, non-traditional populations. Then, the study discussed college graduation rates as computed by IPEDS and other national databases. This research study examined data of graduated bachelor level students for three semesters in 2011 academic year (Fall, Spring, Summer) at University of South Florida. What were the differences in three semesters of graduated students reported to IPEDS in 2011-2012, compared with the non-reported to IPEDS graduates?

Research Questions

The central question of the study was how many students fall in the categories of “IPEDS unreported” graduates and the “IPEDS reported” graduates in three semesters of graduated student data. The need for this study was driven by several factors: a lack of transparency in the data, the previously mentioned changes in college student enrollments, as well as the resulting inadequate and highly publicized assessments of student graduation rates. Further research is necessary to reveal the graduates not reported in IPEDS and to accurately evaluate college graduation reporting.

This study investigated the phenomenon of “IPEDS unreported” students in college undergraduate graduation rates, using one major public university as an example of national trends.

1. How many students are included in the “IPEDS reported” group (4-year, 6-year, and 8-year cohorts) when USF Tampa sends graduation numbers to the Integrated Postsecondary Education Data System? Conversely, how many 2011-2012 graduated students are in the “IPEDS unreported” group that cannot be included in the IPEDS data? If a student is in the “IPEDS unreported” group, what is the reason (example: transfer, spring start, part-time attendance in Fall semester, etc.)?
2. What are the demographics and characteristics of the “IPEDS unreported” population? In other words, who are these students? Examples are to look at transfers, returning students, age, gender, race/ethnicity, financial aid participants, number of semesters enrolled, and parent’s highest education.
3. What are the demographic differences between the “IPEDS reported” group and the “IPEDS unreported” group of graduated students? Are there any notable trends?

Definitions

The following terms were used for purposes of this study except where noted. Many are from IPEDS 13-14 Survey Materials Glossary website (2013).

Cohort: A specific group of student established for tracking purposes (IPEDS Glossary, 2013). An example of the Graduation Rate Fall 2006 cohort is all freshmen that entered in the Fall 2006 semester who have full-time attendance and first-time at a specific institution.

Adjusted cohort: This population removes allowable exceptions from the cohort. For the IPEDS Graduation Rate (GR), an adjusted cohort is used for graduation and transfer out rates (IPEDS Glossary, 2013).

Counted: Undergraduate student who graduated and is included in the graduation number by the institution. In other words, this student is tracked in the IPEDS cohort and is in the “IPEDS reported” population.

Collection year: The academic year in which IPEDS data were collected (IPEDS Glossary, 2013).

Completer: A student who is conferred a degree, diploma, certificate, or other formal award (IPEDS Glossary, 2013).

Completers within 150% of normal time: Students who completed their program with 150% of the normal (or expected) time for completion (IPEDS Glossary, 2013).

Completions: The number of degrees and awards (such as certificates) conferred each academic year (IPEDS Glossary, 2013). The data are reported by level (associates, bachelor, doctor, and first-professional) and by length of program, race/ethnicity and the Classification of Instructional Programs (CIP) code. Institutions report all degrees and awards conferred during an academic year which is July 1 through the following June 30. For purposes of this study, only bachelor degrees from 2011 are used.

Degree: An award conferred by the institution as the official acknowledgement of the successful completion of a program of study or degree (IPEDS Glossary, 2013).

Entering students: Undergraduate students starting enrollment in the institution for the first time in the fall term (or the summer before and returned in the fall). This population

includes first-time undergraduates, students transferring in for the first time, and non-degree/certificate students all beginning in the fall term (IPEDS Glossary, 2013).

Exclusions: Students removed from the Graduation Cohort when leaving the institution with the following conditions: death, total/permanent disability, service in the armed forces and active duty, service with a foreign aid of the federal government such as the Peace Corps, and service of official church missions (IPEDS Glossary, 2013).

Fall Cohort: Full-time, first-time degree or certificate-seeking students entering an institution in the fall term. This population is established for tracking purposes for the graduation rate (IPEDS Glossary, 2013).

Fall term: The academic term occurring in late August to November 1 (IPEDS Glossary, 2013).

First-time student: Degree-seeking undergraduate student with no prior attendance at a postsecondary institution enrolled in an academic program. Students entering one term prior (summer) can be included as well as students who earned college credits before high school graduation (IPEDS Glossary, 2013). Other terms for this student population are first-time in college or FTIC.

Full-time student: Undergraduate student who is enrolled for at least twelve semester hours in the term, or the equivalent credit, quarter, or contact hours (IPEDS Glossary, 2013).

Graduation Rate: Institutions must report the total number of completers within 150% of the normal time divided by the revised adjusted cohort as required by Student Right-to-Know Act (IPEDS Glossary, 2013).

IPEDS reported: Graduated student included in the IPEDS report submitted by the institution.

IPEDS unreported: Graduated student not meeting criteria of the federal definition to be in the IPEDS report submitted by the institution.

Non-counted: Student who graduated with a bachelor's degree but is not included in the graduation numbers submitted by the institution in the annual IPEDS report. This population is also referred to as "IPEDS unreported".

Normal time to completion: The number of years considered for a student to complete all requirements for a degree or certificate at the institution according to the catalog (IPEDS Glossary, 2013). For example, four years or 8 semesters is thought as the normal time for completion of a bachelor's degree.

Part-time student: An undergraduate student who is enrolled for less than 12 semester hours or less than 24 contact hours for the term (IPEDS Glossary, 2013).

Race/ethnicity: Since 1997, the following categories for race/ethnicity are used for reporting purposes. The first designation is either Hispanic/Latino or Not Hispanic/Latino. The second designations are the following: American Indian or Alaska Native, Asian, Black/African American, Native Hawaiian/Other Pacific Islander, White, (IPEDS Glossary, 2013).

Stop out: A student who departs from an institution and then re-enrolls later (IPEDS Glossary, 2013).

Transfer-in student: "A student entering the reporting institution for the first time but known to have previously attended a postsecondary institution at the same level" (IPEDS Glossary, 2013, p. 31).

Transfer-out student: Transfer student departing from one institution and enrolling in another (IPEDS Glossary, 2013).

Other definitions of terms related to the research design and procedures are introduced in Chapter Three, Methods.

Limitations

This study was limited to three terms of bachelor degree candidates who were awarded their degree in three specific terms in the academic year of 2011-2012 from University of South Florida. The results of this study may or may not be comparable to other institutions of higher learning. No other institutions' student graduation data were used in this study. Students who transferred out of the institution and graduated with a bachelor degree elsewhere were included in this study just as in IPEDS data.

Self-reported data elements were requested in the study such as race or parent college education. These items were optional and self-reported by the student at the point of application to the university. As with any self-reported data, there is a possibility of an individual selecting invalid response (Gall, Gall, & Borg, 2007).

Chapter Summary

The cohort is a typical approach used by higher education to study students. Many freshman students do begin college careers in the fall semester; however, the transfer student enters in any of the entry point semesters (fall, spring or summer). The start semester intensifies the complexity of this data and the student college pathway. Scores of data are available on college students and higher education, but it is problematic that a complete and systematic method of finding out how many students actually graduate from colleges and universities in a given year does not yet exist in this

country. Certain students are “IPEDS reported” and have value in the political and organizational decisions, while other students are “IPEDS unreported” and appear to have less importance due to a method of gathering data that does not align with the attendance patterns of today’s college student. Current college enrollment is widely documented in the literature, and is in part due to the changes in the U.S. economy driving undergraduates to work and to attend college part-time, along with the workforce demands for adults to complete degrees or seek retraining. The forgotten or invisible students who walked down the graduation aisle, but did not fit the criteria to be included in the data, need to be found and reported. Higher education leaders should develop strategies and allocate resources for all students on their campuses, making use of accurate data on the students they serve. There must be more research on the method of counting baccalaureate degrees in the United States.

CHAPTER TWO

REVIEW OF THE LITERATURE

This section discusses the philosophical and political context of higher education in the United States along with the themes brought forth in the literature on calculation of graduation rates and begins to inform the reader on the subject. It is limited to how bachelor degree students are tracked and included in the data within the United States. The theoretical basis of this section reflects on two central areas of in the field of higher education. One, the current college student demographic has changed over the past 30 years, which has in turn changed the enrollment patterns experienced in higher education institutions of today. Secondly, student enrollment and success is related to the philosophical context of and the financing within higher education, the ability to obtain and pay for a college degree, and institutional factors that support such activity. The philosophical and political contexts of higher education must be considered for a full understanding of data on graduation rates to address these issues. This chapter has four primary sections: philosophical context, political context, understanding today's college students, and graduation rates data.

Philosophical Context of Higher Education

The progressive movement began to broaden higher education after the liberal arts era in the United States. Progressive philosophies focused on the scientific method of discovery, student career needs and interests, problem solving, and social

responsibilities, contrasting the traditional liberal education mastery of content, mind, and faith expounded by an authority of the written word as was previously experienced in higher education (Elias & Merriam, 2005). Institutions of higher education moved from teaching and learning to include research and innovation (Goldin & Katz, 2008). Philosophical contexts in this section will progress to behaviorism, humanistic, and then the pragmatic of today's world.

Large numbers of immigrants, developing democracy, and massive industrialization fueled the movement and development of progressive thought. John Dewey believed in lifelong education for the people, and supported democracy and social change by jointly learning and solving common problems (Elias & Merriam, 2005). He encouraged a learner-centered approach based on the potential of each individual. Progressive learning enabled colleges and universities to embrace the areas of agriculture, industrial training, and vocational studies focusing on learner needs and practical education. Educators took the role of guide, organizer, and resource. Progressive education supported the goals of the individual, but in turn provided a benefit for society in general. The changes resulted in colleges offering degrees addressing learning in the practical study of one's work or livelihood and were of great interest to more potential students and thus enrollments increased.

Scientific research brought forth behaviorism theories founded by John B. Watson and further by B.F. Skinner centering on the observation of animal and human behaviors in laboratory settings (Elias & Merriam, 2005). In a dramatic shift from the religion-centered beliefs of the Liberalists era, behaviorists believed that prior conditioning and external forces of the environment shape the human behavior. Moreover, to understand

human psychology, the observable, factual, scientific inquiry and classic conditioning were employed. Behaviorism suggested the educational system should enhance society overall, and the individuals within the society to learn, train, and survive in this world. “As a manifestation of the behaviorist orientation to education, competency-based emphasizes setting behavioral goals, objectives, or outcomes, demonstrating behavioral change, and measuring the amount of change against predetermined criteria” (Elias & Merriam, 2005, p. 105). From this perspective, Ralph Tyler (1949) explained further that education should focus on the student behavioral changes with the guidance of the instructor. Measurement of such outcomes is designed to evaluate the evidence of learning and progress of students. Behavioral or instructional objectives are a clear outgrowth of this philosophy, and translated into the discussions of accountability within the educational system.

The philosophy of the humanistic theory highlighted the development of the whole person, the freedom and dignity of each individual (Elias & Merriam, 2005). The humanistic view maintained that most individuals are responsible and society strives for the greater good. Personal growth and self-directed learning are emphasized (Zinn in Galbraith, 2004). The basic assumptions of the humanistic philosophy stressed the concepts of autonomy, individuality, self-actualization, selective perception, responsibility and humanity (Elias & Merriam, 2005). Maslow believed that human motivation influenced by the hierarchy of needs, starting with the basics of food and water and proceeding to self-actualization. Educators are facilitators who promote learning based on the student’s learning needs (Elias & Merriam, 2005). The influence of

the humanistic philosophy has impacted the education of adults in America focusing on the learning needs of the individual.

The twenty-first century has brought the demands of a global economy, technological advances, and the complexity of the ever-changing world in a mobile society (Adelman, Ewell, Gaston, & Schneider, 2011; Bok, 2013; Renn & Reason, 2103). Higher education and the students it serves is one facet of this dynamic. Accountability, use of resources, and preparation for the complex jobs of tomorrow are a few of the pragmatic issues being discussed by college and university administrators, legislators, trustees, stakeholders, employers, and the general public. An example of such collaboration is the Higher Education Coordinating Council, mandated by Florida Statute 1004.015 in 2010 to formulate a shared vision and solutions for the State of Florida (Florida Higher Education Coordinating Council, FL Statute 1004.015, 2013). This council included representatives from business and industry plus the Florida Board of Education, Independent Colleges and Universities of Florida, and the State University System of Florida. The Lumina Foundation Report, *The Degree Qualifications Profile* (2011), discussed a framework for undergraduate education encompassing intellectual skills, civic learning, application of knowledge, and collaboration with stakeholders (Adelman et al., 2011). Keeping in mind the societal and economic reasons for earning a degree, the authors emphasized a framework of integration and application of learning in order to enhance the skills needed to solve complex problems. Another undergraduate education researcher stated,

We need to explore the elements that are reshaping the educational environment, both on our campuses and beyond. This evolution includes the patterns of

participation and enrollments that characterize today's student body, the changing nature of the professoriate, and the demands of policymakers for both productivity and accountability. (Ramaley, 2013, p. 2)

Today, a global economy fueled by changes and diversity, along with the complexities of society and cultural interactions, brings many challenges to our world and to higher education.

Historically, one of the goals of higher education was preparation for the life situations and career opportunities of the particular time-period. Today, colleges and universities are not only thinking of the current job market, but also envisioning the critical skills and knowledge necessary for future economic challenges (Bok, 2013; Hayter & Scheppach, 2007). The colonial colleges were open to elite males who could afford a college education; now, the college student body is much more diverse, with a variety of backgrounds, economic statuses, preparation levels, interests, and enrollment patterns. Data gathering and reported trends, such as graduation rates, should reflect the current status of how students attend college and complete degrees.

Political Context of Higher Education

Higher education serves the individual needs of a student with an education in a discipline or major, assistance with future career goals, and preparation for citizens in a society. At the same time, higher education serves the nation and global world by producing a workforce and human capital with the skills to support the needs of a knowledge-based economy along with research in new or critical areas. A college credential is deemed essential for the competitive market of workers, scientists, entrepreneurs, citizens, and leaders of organizations (Goldin & Katz, 2008; Reynolds,

2012; Shapiro, Dundar, Ziskin, Chen, Harrell, Torres & Chiang, August 2013). America proceeded to advance education, produce goods, and technological developments in the twentieth century with the growth of the economy and individual output (Goldin & Katz, 2008).

From the time of the Revolutionary War and the nine colonial colleges to the land grant colleges in the 1800's and up through today, the government has supported higher education in some fashion. Later, agricultural research stations and further development of the land grant institutions further enhanced the relationship between the federal government and higher education. The conclusion of World War II and the G.I. Bill benefits for veterans expanded student enrollment in American's colleges and universities, increasing the idea that educated students become better citizens who are civic-minded and ready to meet future labor challenges (Loss, 2012). Loss further explained that the 1960's brought more challenges to college and university campuses with civil rights and women's movement interests; one of the ways higher education responded was by developing degrees aligning with such interests and the political environment of the time. Examples of such degrees and concentrations are Black, African-American, Latino, and Women's studies, plus other diversity initiatives corresponding to the current politics in the United States (Loss, 2012, p. 6).

These turning points in the history of higher education aligned with policy developments that add to the complexity, financial support, and in many ways, increased educational opportunity for individuals, that in turn, augmented enrollments in higher education institutions. An example was the use of G.I. Bill benefits after World War II that overflowed colleges and universities with veterans and shaped future policy relating

to financial benefits. In the twentieth century, the federal government supported students through ROTC programs, providing financial opportunities for students of diverse backgrounds to engage in higher education and earn a degree after their military service. Another example was the federal work-study program piloted in 1933 (Loss, 2012). Students participated in work-study (from 1934 – 1943) while attending classes to partially finance their college education. Institutions also benefited by increased student attendance after two years of slumping enrollments. Later, federal work-study was revitalized under Lyndon Johnson and the Economic Opportunity Act of 1964. By the 1970's, qualified college students could take advantage of federal loans, grants, and work-study to assist with their college education (Loss, 2012). These enrollments were a significant change from elitism of the first nine colonial colleges of America.

Higher education enrollments began an upward climb with the inclusion of diverse populations heading to colleges and universities along with new methods to finance a college education. The nation benefited from a more educated citizenry in terms of jobs, earning power, civil engagement, communication, and problem solving. As evidenced by the numbers in the *Digest of Educational Statistics 2011-2012*, the number of degrees dramatically increased from 1976-77 to 2009-10. In addition, as an example to show the increased diversity in college attendance, the data (tables below) show percentage increases over the same time period in Black and Hispanic races in bachelor degrees conferred. Females are trending ahead, with 57.2% completions in 2009-10 compared to males at 42.8%. In 1976-77, 53.9% degrees earned were males, while 46.1% were female.

Table 2
Bachelor degrees conferred, by race (1976-77 vs. 2009-10)

	Degrees	White (%)	Black (%)	Hispanic (%)
1976-77	917,900	807,688 (88%)	58,636 (6.4%)	18,743 (2%)
2009-10	1,650,014	1,167,499 (70.8%)	164,844 (10%)	140,316 (8.5%)

Note. (Digest of Educational Statistics 2011, from Table 300, p. 474)

Table 3
Bachelor degrees conferred, by gender (1976-77 vs. 2009-10)

	Degrees	Male (%)	Female (%)
1976-77	917,900	494,424 (53.9%)	423,476 (46.1%)
2009-10	1,650,014	706,633 (42.8%)	943,381 (57.2%)

Note. (Digest of Educational Statistics 2011, from Table 300, p. 474)

Thinking back to the colonial colleges attended entirely by elite white males, college attendance and completions across America have developed and changed. College campuses opened to a diverse population across the educational and economic spectrum and have increased in number, type, and size (Renn & Reason, 2013). In the mid-1880's, institutions opened their doors to specific populations to provide and ensure access. Examples were colleges for women only, Historically Black Colleges and Universities (HBCU), Tribal Colleges and Universities (TCU), Hispanic-Serving Institutions (HSI), and Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI), as well as further inclusion of adult learners and other previously excluded populations combined with publicly supported institutions to expand diversity (Renn & Reason, 2013; Thelin, 2011). Since the 1980's, females have been

outpacing males in college enrollments (*Digest of Educational Statistics* 2011, p. 338). In addition, some strides have been attained in Black and Hispanic attending higher education and completing bachelor degrees. “The U.S. higher education system was, almost from the outset, quintessentially American: geographically close to the people, open in various ways, and replete with variety and competition” (Goldin & Katz, 2008). Access has increased, yet there is still much work to be done in this area as evidenced by the numbers (Tables 2 and 3 above). In the next section, we will look closer at today’s college students.

Understanding Today’s College Students

Today’s college students attend higher education institutions through multiple and varied pathways. Many of us picture the typical high school graduate heading to college to live in a dormitory on campus, study for four years at the same institution, and then graduate to enter the job market. In today’s reality, students do attend full-time, but there are others who are part-time and others who transfer to other institutions (Renn & Reason, 2013). For example, Hossler et al. (February 2012) stated that 33.1 percent transferred to another institution at least once within a five-year period (p. 17) based on a national study conducted on college completion at the National Student Clearinghouse Research Center. This population would not be included in current graduation rate calculations, due to the completion of the degree at a subsequent institutions and not the original where they started their higher education career as a freshman.

Increasing Enrollments

Student enrollments in college are increasing as evidenced by the numbers reported in the *Digest of Education Statistics 2011* (Snyder & Dillow, 2012, pp. 279-

280). In 1990 (and during the timeframe of the Student-Right-to-Know legislation beginnings), close to 12 million students attended degree-granting institutions. Full-time enrollment was about 7 million and part-time enrollment amounted to 5 million. In 2010, the total enrollment rose to 18 million with 11 million full-time and 7 million in part-time status. The part-time student is excluded from the graduation cohorts reported to IPEDS to determine the institution's graduation rate.

In Fall 2010, first-time, full-time students amounted to 15% of the undergraduates attending colleges and universities, while 4% were first-time, part-time attendees (Knapp, Kelly-Reid & Ginder, 2012). According the IPEDS graduation rate calculation, the status of just 15% of the college going population was to be reported in four years and then again at the six and eight year benchmarks.

The *Digest of Education Statistics 2011* reported a percentage increase in college attendance of the population of 25 and older versus the percentage increase of the under-25 college going population (Snyder & Dillow, 2012, p. 280). For example, there was an increase of 34% in the under-25 population attending college from 2000 to 2010. During the same time, the over-25 age population increased by 42% (Snyder & Dillow, 2012, p. 280). Since the IPEDS definition counts only students who are first time in college, it is difficult to know if the over-25 adult learner population attending college would be included at all in the reported graduation rates.

Transfer Students

The transfer student is another factor to understand the enrollment patterns appearing in today's college environment. Wellman (2002) reported about 25% of the first-time in college students at 4-year institutions transfer, and about 43% of the students

at 2-year college transfer at least once. In a more recent study, about one-third of college students transferred to another institution (Hossler et al., February 2012) as evidenced by the data in the *Transfer and Mobility: A National View of the Pre-Degree Student Movement in Postsecondary Institutions Report* from the National Student Clearinghouse, with the second year of college being the most common time for students to change institutions. Higher education experienced growth in a continuum of age groups other than what is thought as the traditional college age. Adding to the complexity of college student enrollments, the students moved from one institution to another with vertical, lateral, swirl, and reverse transfers (Adelman, 2006; Borden, 2004; Hossler et al., February 2012; Renn & Reason, 2013; Selingo, 2013). The four-year prescribed degree paths of the past have become much more varied for the degree-seeking college student of today. Under the current graduation rate guidelines, the transfer student is not included in the originating institution or in the completion institution (Hossler et al., February 2012; Lipka, 2012; Shapiro et al., November 2012). It appears that a transfer student is invisible in the graduation rate.

According to authors Renn and Reason (2013, p. 76), the vertical transfer tended to be the most common transfer mobility scenario. The student who attended a community college, graduated with a 2-year degree, and then matriculated to a 4-year institution is an example of a vertical transfer. This type of transfer is also referred to as a “forward transfer” (Hossler et al., July 2012) or “one way transfer” (McCormick, 2003). Cohen and Brawer (2003) described the transfer function as the primary purpose of the community college’s mission, however, depending on the state or the institutions, there can be concerns regarding the transferability of course credits and how they are

applied to the student's intended degree program. The state of Florida adopted a "2 + 2 articulation" in 1971 that promoted the forward transfer function of two years at the public community/state college and another two years at the public university (Florida Department of Education, *Statewide Articulation Manual, 2011*). This pipeline of students participating in Florida's higher education has also benefited from statewide policies including Common Course Numbering, General Education Core, and the Common Prerequisite Manual (Florida Department of Education, *Statewide Articulation Manual, 2011*).

According to *Digest of Education Statistics 2011*, the two-year degree-seeking student population in the United States amounted to 7.5 million (Snyder & Dillow, 2012, p. 288). The *Digest* defines degree-granting institutions as "postsecondary institutions that grant an associates or higher degree and whose students are eligible to participate in the Title IV federal financial aid programs" (p. 279). Some community college students will transfer to four-year institutions with plans to earn a bachelor degree. Unfortunately, as transfer students are not included, none of these students have been reported in the current method of the graduation rate.

Another type of transfer student is the "reverse transfer," whereby a student starts at a 4-year institution and then moves to a 2-year institution in non-summer months (Adelman, 2006; Borden, 2004; Hillman, Lum & Hossler, 2008; Hossler et al., July 2012; Renn & Reason, 2013). Reverse transfers can occur for a variety of issues: academic, cultural, financial, background characteristics, personal choice, or socialization issues experienced at the 4-year institution, or even being distanced from home (Hillman et al., 2008). In the study conducted by Hossler et al. (July 2012), 14.4 percent of first-time-in-

college students from 4-year institutions migrated to a 2-year institution. According to *Reverse Transfers: A National View of Student Mobility from Four-Year to Two-Year Institutions*, more than a third of the students accomplished this action in their second year of college. In the aforementioned study, Hossler et al. reported that 16.6 % returned to their original institution, 38.3 % went to another 4-year institution, and 55.1 percent did not return to any 4-year institution during the timeline of the study. Goldrick-Rab (2007) found that first generation students and “working class parents” (p. 176) are more likely to reverse transfer. In another study conducted by Hillman et al. (2008), they found that the two strongest predictors of reverse transfers were choice of major (notably health majors) and high school preparation. Hillman et al. stated:

Our findings should not be construed to suggest that reverse transfer is an indicator of student failure or equivalent to dropping out. Rather, it is possible that students enter public 4-year institutions and realize that a community college provides a better fit for their academic, career, and personal goals. (2008, p. 128)

Although reverse transfers are continuing to pursue their degree at another institution of higher education, it is important to note that they will no longer be included in the IPEDS graduation rates because they “left” the institution where they started prior to completion of their degree.

Researchers have taken note of other multi-institutional enrollment patterns in the college experience (Adelman, 2006; Borden, 2004; McCormick, 2003; Renn & Reason, 2013). Swirling describes the practice of students alternating enrollment at more than one institution, such as one semester at one institution and the next semester at another. Another example of student mobility is double dipping, which is concurrent registration

at two institutions during the same semester. Other terms used are “co-enrollment” or “overlapping enrollment” (Peter & Forrest Cataldi, 2005). Clifford Adelman (2006) reported as many as 60% of undergraduates of traditional age participate in attendance patterns across institutions. Today’s students opt to take courses from different institutions for a variety of reasons ranging from online course options, lower cost of tuition, availability of the course, or work obligations. “Swirling” or “double-dipping” may occur for one semester or more, and may not include an official transfer of credit (McCormick, 2003). This type of credit earning make it difficult to track student progress. Student swirl provides challenges in the assessment of learning, completion persistence, and student support services (Borden, 2004; Goldrick-Rab, 2007; Peter & Forrest Cataldi, 2005; Renn & Reason, 2013).

Transfer students have specific needs of importance to higher education professionals. Transfers are already college students, but are now in a new institutional environment and culture. As such, they experience some of the same transition issues of any new student. Issues of importance are the transfer and equivalency of credits, establishment of financial aid, registration, and selection of a major at the new institution. Of concern is the delay in progression, or time to degree if credits or efficiency is lost due to the movement between institutions (Peter & Forrest Cataldi, 2005; Hossler et al., July 2012). Services specific to transfers could be specialized orientation sessions, transition courses, course delivery options, and office hours that are expanded to meet the needs of the adult learner (Goodman et al., 2006; Renn & Reason, 2013; Schlossberg, 1989).

Evans, Forney, Guido, Patton, and Renn (2010) outlined campus planning, networking, counseling and mentoring using Schlossberg’s Transitions Theory originally

based on the adult learner. Schlossberg provided an outline for analyzing transitions by situation, self, support, and strategy (the 4 S's) along with moving in, moving through, and moving out of a transition (Schlossberg, 1989). This student development theory is flexible and can be used by student affairs professionals planning campus programming (Evans et al., 2010; Goodman et al., 2006) along with creative solutions for the individual student (Goodman et al., 2006). However, if transfer students are continually not included in the federal graduation rates, will they be valued enough to justify institutional efforts and resources?

Piland (1995) emphasized that the transfer process needs attention from the leadership of two-year colleges, senior institutions, and state policymakers. Preparation for transfer encourages general education and prerequisite coursework along with good grades, communication of information, understanding admissions and financial aid options across the progression to achieve educational goals. Student mobility across institutions of higher education is an ongoing consideration for understanding persistence, progress, and completion of degrees (Peter & Forrest Cataldi, 2005). Collaboration on all levels to assist adult learners with successful progress to completion of the baccalaureate degree is crucial for this population; however, these students are invisible in the current practice of reporting graduation rates.

Student tuition dollars as well as the state governments finance public higher education. As such, all stakeholders want to make careful choices on how the money is allocated: whether a personal budget decision or a state budget, every dime spent is a consideration and requires review and scrutiny. Stakeholders want to know that their hard-earned dollars are funding education that provides for the future careers of today's

college students, our nation's knowledge resource. Legislators, parents, and the public are all looking closely at bachelor degree production. Graduation rates are just one of the items of information that fuel discussions and decisions about an institution. An explanation of the current practices of obtaining graduation rates begins in the next section.

Graduation Rates Data

The graduation rate metric used by the United States federal government is widely reported. However, there are methods of collecting and understanding the data that need clarification and awareness. In the next few sections, the author will review the Integrated Postsecondary Education Data System and other national sources relating to the graduation rate in the United States.

Integrated Postsecondary Education Data System

By law, all institutions offering federal financial aid must report specific information to Integrated Postsecondary Education Data System (IPEDS). As such, over 7,000 institutions in the United States submit reports annually to IPEDS on enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices, and student financial aid. The response rate is close to 100% due to the legislative mandate and the resulting information becomes the primary source for many postsecondary surveys (Knapp et al., 2012). With a computer and Internet access, one can download information on any participating institution through the "College Navigator" website (IPEDS, n.d., b). According to the website, Congress, federal agencies, state governments, education providers, professional associations, private businesses, media, students and parents regularly use IPEDS data for postsecondary

information. At this time, it is the only national database that all institutions report to annually and publish data on graduation rates that has been located by the researcher. (Other databases will be covered in another section of this paper). The ability to offer federal financial aid to qualified applicants is a motivator for the institution to report annually and on time.

The data collected for the Graduation Rate cohort (GRS) are very specific. Each institution sends the number of first-time in college in the fall semester, full-time degree-seeking students graduating from the original institution to the IPEDS database (Integrated Postsecondary Education Data System, Glossary, 2013). Gender, race/ethnicity, and the number completing within 150% of the normal time to complete are also reported.

IPEDS Example: University of South Florida

As an example, reviewing the data for University of South Florida (USF) on graduation rates, 52% was the overall graduation rate for the first-time, full-time cohort who graduated within the 150% mark for 2005 start at USF, Tampa campus using IPEDS (n.d., a) definition. Added in 2008, the Higher Education Opportunity Act extended the benchmark to 200% of the “normal time” to graduate that translates to 8-year mark (Cook & Pullaro, 2010; IPEDS Glossary, 2013). Again, using the University of South Florida (USF) as an example, *College Navigator* website (IPEDS, n.d., b) reported 4-year, 6-year, and 8-year graduation rates for Fall 2005 starts. Within the same time period, USF also reported a 7% “transfer-out” rate. This was the percentage of full-time, first-time students who transferred to another institution. Nevertheless, if this “transfer-out” population completed at another institution, they were not included in the graduation rate

(Cook & Pullaro, 2010). Once they transferred to another institution, they were no longer “first-time” in college and therefore become an “IPEDS unreported” graduate. In essence, the “IPEDS unreported” student looks like a “drop-out” for any other institution (Cohen & Ibrahim, 2008; Cook & Hartle, 2011). Potentially, this could give an inaccurate and misleading picture of bachelor degree production by looking at one population only (i.e.: first-time in college). The table below presents 2004 and 2006 USF cohorts using data from *College Navigator* (IPEDS, n.d., b).

Table 4
Graduation Rates at University of South Florida – Main Campus

Percentage of Full-time, First-time students graduated in 4, 6, or 8-year cohorts		
Graduated	Entered USF in Fall 2004	Entered USF in Fall 2006
4-years	24%	29%
6-years	51%	57%
8-years	56%	not reported

Note. From IPEDS, *College Navigator*, Bachelor Degree Graduation Rate, USF Tampa.

There is a note of explanation on the website that is very important to understand the numbers for graduation rates:

Note that not all students at the institution are tracked for these rates. Students who have already attended another postsecondary institution, or who began their studies on a part-time basis, are not tracked for this rate. At this institution, 48 percent of entering students were counted as “full-time, first-time in 2012.

(IPEDS n.d., b, Overall Graduation Rate, USF Tampa, Main Campus)

Without delving further into the graduation rate numbers, this could be a very confusing statement (Dellow & Romano, 2002). It is difficult to know if individuals read,

understand, or even see the statement. Cook and Hartle recommend a buyer beware statement: “Because many students are excluded from this calculation, graduation rates may be significantly inaccurate” (2011, p. 2).

There is a history about the graduation reporting data in IPEDS. Originally, student athletes completion numbers by athletic sport were reported to IPEDS by those institutions who offered student athletic scholarship aid. The regulation was changed with the Student-Right-to-Know Act mandated in 1997. IPEDS collects data from all the institutions and calculates the Graduation Rate, known as the GRS (IPEDS Data Collection, n.d., c). Athletic data are reported by posting to the website and providing the website address to IPEDS. To gain further knowledge on graduation rates in this country, we will review how other data are collected and what other experts have written on the subject.

Other National Data Sources

IPEDS is not the only repository of student enrollment information. Other databases collect college graduation data, and it is fascinating to study how the numbers are generated. This is why different graduation rates are reported. In addition to national databases, there are over 39 databases in 43 states according to Ewell et al. (2003). A few of these options will be covered in order to provide an understanding of some of the differences in the data collection.

National Student Clearinghouse (NSC) is a non-profit organization that collects data on student enrollment (students need enrollment documentation for car or health insurance discounts), student loan information (determining deferment or repayment student status), and degree attainment (employer verifying degree). At this time, over

3,400 institutions are participating members of the National Student Clearinghouse representing about 96% of the college enrollment (NSC, 2014). Institutions voluntarily choose to participate in the Clearinghouse, compared to IPEDS being required by federal law.

A distinct advantage of the Clearinghouse data is the ability to report student status of enrollment at the original institution, but the flexibility to report the transfer institution, and, if needed, the subsequent completion institution (Keller & Hammang, 2008). It can be used to track part-time and term of enrollment across state lines along with expanding further than six or eight years. Individual students are tracked in NSC database, which is helpful to obtain an unduplicated headcount of students nationally. One student could be attending two institutions simultaneously and be recognized as such in the NSC data set (Hossler et al., July 2012). As opposed to the IPEDS database, whereby one student attending concurrently two institutions would report as two individuals as there is no linking mechanism across institutions. There are two drawbacks outlined by the authors Cook and Pullaro (2010). First, the NSC database is not publicly available for reporting to policymakers and stakeholders. Secondly, since there is no federal mandate to submit data to the Clearinghouse, the data are incomplete on a national level. However, every year the number of institutions increased as NSC approaches twenty years of existence.

The Beginning Postsecondary Students Study (BPS) is another national database from the National Center for Education Statistics (NCES), estimating a graduation rate at least every four years (National Center for Education Statistics, BPS, n.d., b). This is a sample survey following a cohort of college students for six-years (Cook & Pullaro,

2010). The sample is drawn from cohorts of students in the National Postsecondary Student Aid Study (NPSAS). The NPSAS survey is conducted to look at how students fare financially when attending college (National Center for Education Statistics, NPSAS, n.d., a). The sample size for the BPS 2004 survey was comprised of over 16,000 students. Interviews of first-time in college students are conducted at two and five years. Information in this survey included the reasons students do not finish degrees, persistence and completion due to finances, and specific degree program completions (Cook & Pullaro, 2010).

One of the advantages to BPS data was that it included part-time, transfers, stop-outs, and cross-enrolled students in the sample attempting to be representative of the national picture of college students. Since BPS followed the student, the graduation rate was measured by when the student graduates from college, not which institution graduated students (Cook & Pullaro, 2010). It is a student-based perspective. Another key advantage was the participant survey data: the BPS was a mixed method research study conducting web, phone, and in-person interviews (Cook & Pullaro, 2010). The richness of the stories of the students added a perspective above and beyond numbers and statistics (Gall et al., 2007).

The disadvantage was this is a longitudinal study, which as it is named, took a longer time to complete as it is spread over years (Gall et al., 2007). In the case of the BPS survey, cohorts began every seven to eight years. By the time the survey data are compiled and disseminated, the graduation rate trend could be out-of-date and of no assistance to stakeholders, institutional leaders or policymakers. For example, 2004 cohort students were interviewed in 2006 and 2009. Results were released in July 2011.

Another disadvantage to BPS was the lack of data by institution or state. Again, the intention was for the survey to be student-based, so some data elements were just not available due to the small sample size for state level comparisons (Cook & Pullaro, 2010).

All this being said, graduation rates do not appear to change drastically from year to year. As pointed out by Cook and Pullaro (2010), IPEDS 6-year data (4-year schools) showed an overall graduation rate of 54.3% in fall 1997 and then 55.9% in fall 2002. BPS data revealed a five-year graduation rate of 51% in 1994 and then 53% in 2001 (p. 18). As such, graduation rates can be used as a resource; however, it requires one to research and understand how the numbers are generated.

Issues Related to Graduation Data

A common theme in the literature involved the complexity of collecting complete and encompassing data. One of the most compelling statements was by Margaret Spellings, former U.S. Secretary of Education, who offered insight to the issue. “Currently, we can tell you anything about first-time, full-time college students who have never transferred---about half of the nation’s undergraduates” (*The Detroit News* as cited by Aldeman, 2007). In other words, we do not have a full picture of the current trends on college graduation rates in this country (Adelman, 2007; Ewell et al., 2003; Hess et al.; 2009). A partial picture gave us an incomplete look at retention rates and graduation rates as our college students move through the many colleges and universities (Adelman, 2007; Cohen & Ibrahim, 2008; Dellow & Romano, 2002; Ewell et al., 2003). Without current enrollment and graduation statistics, higher education leaders, researchers, and

policymakers have difficulty planning effective and informed student success strategies to increase baccalaureate production (Ewell et al., 2003).

Data collection needs review. Clifford Adelman, formerly a researcher at the U.S. Department of Education, offered four suggestions to resolve issues surrounding the data for graduation rates (2007) that are of interest to this subject. Below are his suggestions for a more inclusive system to look at graduation rates:

- Academic year to encompass the entire year (instead of just Fall)
- Report separate groups of traditional student beginners (under 24) and non-traditional (age 24 and up which he defines as independent student beginners)
- Report transfer students in another group (defined as students who apply and send transcripts to another institution, and are admitted)
- Report graduates at different intervals (such as associate degrees at four and six-year marks; bachelor degrees at six and nine-year marks; transfer students reported at four and six-year similar to the 2-year schools)

Albright (2010) conducted a qualitative research study of the comments and questions asked on the IPEDS Common Dataset listserv, a source of information for IPEDS users. The findings indicated questions or concerns in four main areas:

1) identifying the beginning student cohort; 2) counting the completers; 3) the length of time to completion, and 4) reporting transfers leaving the institution. The information in the study described the complexities of gathering the data consistently and how it was possible for institutions to have different interpretations of the IPEDS reporting responsibilities. Accuracy and consistency of the data were concerns, especially as

policymakers, institutional leaders, and stakeholders looked at national numbers and needed to be able to make informed decisions.

Unit record system. An innovative suggestion brought forth in a Commission Report to then Secretary of Education Margaret Spellings, was the use of a student unit record system (U.S. Department of Education, 2006). The purpose was to be able to track students as they move from institution to institution supported by the transfer rate and attendance at multiple institutions currently identified as a characteristic by today's college student (Adelman, 2007; Ewell et al., 2003; Peter & Forrest Cataldi, 2005). The unit record (UR) would be designed to cross state lines, include all postsecondary institutions, and provide a level of detail not available in current systems (Cunningham & Milam, 2005; Ewell et al., 2003). Cunningham and Milam (2005) explained that a unit record system would be more comprehensive and able to track current trends in enrollment such as transfers, part-time students, etc. In a report commissioned by the Lumina Foundation, Ewell et al. (2003, p. 37-38) reported the following suggestions:

- Development of state databases with common definitions and common coding structures to allow for exchange of data while maintaining strict privacy
- Base Common Data set to include demographics (sex, race/ethnicity, date of birth, geographic origin, program/major, high school attended, credits earned and attempted along with overall GPA and degree awarded)
- Expanded Data set for reporting admissions test scores, high school GPA, joint-enrollment (for high school or college) flag, distance learning flag

- Unique Identifier to link postsecondary attendance records (a new identifier, not social security number)
- Common gateway to link state unit record databases
- Voluntary participation by the states

The thought was to start with the states willing to share information and protect privacy concerns in hopes of building consensus. However, the main political and organizational issues brought up by Ewell et al. (2003) have been barriers to such a system, and one would want to add consideration for budgetary barriers present in our current difficult economic situation.

In the feasibility study by Cunningham and Milam (2005) for the National Center for Education Statistics, several data elements were suggested. If such changes were made through legislative authorization in the Higher Education Act alongside the appropriate funding, there could be implementation of a new UR system. Included in this plan was information about enrollment, completions, graduation rates, financial aid and price for institution and student level reporting. Resolutions of any discrepancies would be communicated to the IPEDS reporting office at each institution. Examples were record mismatches, data on subsequent enrollment, and verification of enrollment for students receiving financial aid. Other areas of concern described were: privacy and confidentiality, new institutional burdens, timing, coordination, and technical issues. In general, Cunningham and Milam (2005) stated that a new UR system was possible given enough time for planning and implementation, and the end result would be a more accurate picture of postsecondary education in the United States. In 2006, the legislation for developing such a system was denied due to concerns of cost and privacy (Zemsky,

2011). At the point of a 2006 study, there was no formal plan to implement such a system; however, states may decide to do so, provided that they receive funding (National Association Independent Colleges and Universities).

Proposed graduation efficiency metric. Cohen and Ibrahim (2008) proposed a different metric to highlight graduates, especially recognizing the limitations and exclusions of the current IPEDS rate which counts first-time, full-time students who start in the fall semester and graduate from the original institution. And, taking into account the realities of the current, mobile college population enrollment patterns, they offered a different method for institutions to consider. Cohen and Ibrahim (2008) looked at the number of graduates produced in relation to the student full-time equivalent referred to as FTE. This calculation, referred to as “Graduation Efficiency,” took into account calculations for the beginning or first-year student, the transfer student, the number of years to complete a bachelor degree efficiently (which could be two years for a community college transfer student or four years for university student), and the total number of FTE enrollment capturing all students, both full-time and part-time students. Cohen and Ibrahim stated, “Graduation efficiency represents the fraction of students who graduate every year out of the number of FTE students who enter the university annually” (p. 50).

The advantages of this calculation were primarily in data collection. This formula required collecting transfer student data on a national level, but it did not need individual student records -- alleviating the privacy concerns with the proposed Unit Record system. In addition, it was more inclusive of all college students, not exclusive to one population of full-time freshman starting in the fall and completing their degree at one institution.

Institutions dedicated to access will be able to account for their part-time student populations who enter at various semesters depending on their work, family, and personal schedules. Looking at students with variable college attendance patterns had big-picture value to the policymakers and stakeholders who were suggesting methods to improve college completion in America. Dr. Cohen provided information that there was little reaction from the higher education community to the article published in 2008 (Cohen, 2012).

Other College Completion Information

Motivated by the Spellings Commission Report (U.S. Department of Education, 2006) on lack of useful national data on student progress and graduation rates, the Voluntary System of Accountability (VSA) was started in 2007 (Keller & Hammang, 2008). Two public university organizations, American Public and Land-Grant Universities (APLU) and American Association of State Colleges and Universities (AASCU), formed a partnership to initiate the VSA providing pertinent information on student learning outcomes, a college search tool, and most importantly, to exhibit transparency and accountability relating to public higher education. Over eighty leaders in higher education from seventy different institutions participated in the planning. A common set of data is displayed on their website, entitled “College Portrait for Undergraduate Education” (VSA, 2011) to assist prospective students, parents and stakeholders with reliable and comparable information (Keller & Hammang, 2008). Currently, approximately three hundred public universities participated and paid dues to the organization: but there is no charge to view the information on the website. Keller and Hammang (2008) stated that the VSA project was intended to focus on the data,

possible improvements, and performance of the institutional mission and the students served.

The Voluntary System of Accountability collects information on two cohorts of students at the four and six year benchmarks. One cohort is the first-time, full-time degree-seeking student and the other is composed of full-time transfer students. “Student Success and Progress” is an indicator that relates to graduation rates. This data element uses information from the National Student Clearinghouse numbers previously discussed. The VSA “Student Success and Progress” rate reports on four elements: graduation from the reporting institution, enrollment at the reporting institution, graduation from a consequent institution, or current enrollment at such institution (Keller, 2013). The Student Success and Progress rate is an alternative method to the IPEDS four and six-year graduation rates. A more complete picture of student outcomes is available to the user; however, the part-time student does not appear to be reported in their metrics, which is similar to IPEDS reporting.

Recently, *The Chronicle of Education* built a website dedicated to providing information on graduation rates entitled “College Completion” (n.d.). Contained on the website is 2010 NCES data by state or an overview along with graphs, tools, and some news coverage on the topic. One can delve into completion rate statistics using state data, by institution title, or type of institution, such as 4-year public or 2-year public. The data is generated from United States institutions numbering over 3,800 granting degrees and is limited to those institutions with at least a cohort of 100 students reported in 2010 with bachelor degrees awarded between 2008 and 2010. Further, this data is limited to the first-time in college, full-time student population entering in the Fall semester, and

graduating from the original institution where they started. According to the *Chronicle's* College Completion website (n.d.), 4.3 million freshmen began their college career in the fall semester of 2004. There are 1,019,000 estimated graduates reported from this original group; comprised from public universities (487,000), community colleges (119,000), private colleges (292,000), and for-profits (121,000). Over 3 million are “mysteries,” because the students are not tracked if they re-enroll at another university, transfer, drop-out, stop-out for personal reasons, or attend college part-time. Where are the students?

Using the state of Florida as an example, the College Completion website (n.d.) showed 35.4% of the IPEDS reported population (34,627 students) graduate in four years using 2010 data. The six-year graduate rate in Florida graduate rate was 61.4%. Florida was ahead of the national numbers. Across America, 31.3% graduated in four years, with 56% graduating in six. The website made an important clarification: students included in the graduation data and the students left out. The IPEDS reported group amounted to 40.7% of the 2004 entering class in Florida. Another 59.3% of the students were categorized as “left out,” with a notation that part-time freshman and previously enrolled college students are not included in the official graduation rate in the U.S. There are eight states where the “left out” number is higher than the “counted” (or “IPEDS reported”) figure with Florida as one of these states (Appendix B). Using the figures from the *Chronicle*, an average of 61.8% of students are “IPEDS reported” and 38.2% are “left out” of the numbers. Refer to Appendix B to review the state percentages of students included or not in the graduation rates per the *Chronicle* figures. At this point, the data has not been updated from the 2010 NCES numbers. Comparing one year to

another would be interesting, and it could assist states and institutions with metrics of how they are progressing.

The Student Achievement Measure (SAM) Project, announced in June 2013, described a collaborative effort of reporting student progress and completion. Six higher education associations, the American Council on Education (ACE) and American Association of Community Colleges (AACC) along with American Association of State Colleges and Universities (AASCU), Association of American Universities (AAU), Association of Public and Land-grant Universities (APLU), and the National Association of Independent Colleges and Universities (NAICU), supported this initiative. The data will be calculated using the National Student Clearinghouse Student Tracker. The SAM project initial plan was to report a six year time period (students who entered in Fall 2007 term and access their progress at end of Summer 2013 term). This project is a voluntary alternative reporting mechanism to the traditional IPEDS method required by the federal government and is more inclusive of transfer students from multiple institutions as well as students still in the pipeline, taking classes but not yet finished with their degree (Mangan, 2013). The current IPEDS definition would leave out both groups of students.

Institutions volunteer to upload their data to the SAM project and then will be able to receive report outcomes at various timeframes. The two models are the bachelor degree seeking and associate or certificate programs. The bachelor degree model will have reports available at four-year, five-year and six-year benchmarks, while the other model will be available at the end of six years. According to the website, the SAM report consists of percentage of students graduated from reporting institution, still enrolled at reporting institution, transferred and graduated at another institution,

transferred and still enrolled at another institution, or current status unknown regarding enrolled or graduation (SAM, 2013). Currently, there are about 115 participating institutions noted on the website. October 2013 was the launch of data collection. The SAM implementation is at the beginning stages and all information regarding the process is not yet available. It will be important to review the numbers of institutions who volunteer to participate and to try and understand how this new measure tells the story of progress and degree completion in this country.

Other Influences. Other factors, such as choice of major, have been studied to determine any effects on graduation rates. Kroc, Howard, Hull, and Woodard (1997) studied record files of graduated students from 1988 and 1990. Data were sent from Land Grant, Research I, and AAU universities by Classification of Instructional Programs code (CIP). Their research, drawn from forty-four universities, reported that Engineering students are enrolled more semesters to complete the degree. Business students finish in less time with a diploma in hand.

Another factor researched by Cabrera, Nora, and Castafieda (1992) is the financial aspect of how the student pays for college. Financial aid can help with persistence in college and is often thought of as an “equalizer,” affording an educational opportunity to those with various economic backgrounds. Cabrera et al. (1992) discussed the persistence factor with the assistance of financial aid, but also how the aid may give the student the opportunity to engage more fully in the social aspects of the college experience alongside the academic. Both could increase motivation on the part of the student to complete the degree (Cabrera et al., 1992).

Chapter Summary

The philosophical contexts of higher education have influenced institutions and their missions throughout the history of advanced learning in this country. Freedom transcends the fabric of our nation and is embraced by colleges and universities. Some institutions follow a liberal arts curriculum, while others have chosen a different educational path, which could be a form progressive, behaviorism, or possibly humanistic theory. Institutions select their mission and curriculum based on their philosophy of choice, mindful of their campus culture, people, teaching/learning process, and society in general. Students select the institution whereby they feel meets their need for an education. Completion with a diploma is assumed to be the educational goal. The students who are reflected in the graduation rates developed by IPEDS are one population attending college. They are full-time and first-time-in-college freshmen. They start college in the Fall semester and finish at the same institution four or six years later. All others, for example a part-time student or a transfer student, are not included in the graduation rate.

The literature on this topic provided an overview of concerns regarding the specifics of the graduation rate. Adelman (2007) and Ewell et al. (2003) outlined specific issues and gaps with the current practice in the United States for determining graduation rates. Albright (2010) explained concerns from IPEDS users in reporting consistent and accurate data on graduation numbers from the college and universities. Ewell et al. (2003) and Cunningham and Milam (2005) explained possibilities of transitioning to a new Unit Record System for determining graduation rates to include all students. Kroc et al. (1997) reported on differences in choice of major on college completions and Cabrera

et al. (1992) discussed the role of financing and persisting to degree. Cohen and Ibrahim (2008) proposed a different calculation of graduation rates that they feel is more inclusive of the different types of students served by institutions. The National Student Clearinghouse continues to add institutions to their data set with additional information in the form of reports on student mobility and transfers. *The Chronicle of Higher Education* created a website to bring attention to the numbers of students who are “left out” or “IPEDS unreported” in graduation numbers. A new voluntary project, Student Achievement Measure, was announced in June 2013 and reported a more inclusive method of reporting. However, due to the gaps in the knowledge of students who are graduating (but considered non-graduates or drop-outs for reporting purposes), more research is needed. Methods for the proposed study are in the next section.

CHAPTER THREE

METHODS

The purpose of this study was to examine the population of graduates from the University of South Florida (Tampa)'s 2011-2012 academic year to determine the percentage of those graduates that would be captured by the National Center for Education Statistics database, showing graduation for the same time period. To further explore how students are IPEDS reported or not in the graduation data, a quantitative analysis study was proposed, using secondary data from the University of South Florida, Tampa, Florida. In this chapter, the researcher was interested in determining differences, if any, between the "IPEDS reported" and "IPEDS unreported" graduation groups of students. Ewell et al. (2003) stated that the data collected on college students are incomplete and many times inaccurate. The researcher planned to report on graduated "IPEDS reported" and "IPEDS unreported" students to uncover the data using quantitative methods of educational research. The focus of the research was to determine the differences, if any, between the two populations. The students unreported by IPEDS have been invisible in the current data gathering methods; therefore, this study will begin to improve understanding of this hidden population and will be of interest to researchers, institutions of higher education, legislators, and other stakeholders.

The University of South Florida (USF) is a large urban campus in Tampa, Florida, with classification in the top tier by the Carnegie Foundation for the Advancement of

Teaching, and reported in the top fifty universities for federal research dollars in the nation (University of South Florida, 2013a, *About USF Overview*). The USF System enrolled 57,666 students in 2012-2013 (University of South Florida, 2013b, *USF InfoCenter*, “Annual Unduplicated Student Headcount Report” retrieved September 8, 2013) and is currently composed of three separately accredited member institutions: USF Tampa, USF Sarasota-Manatee, and USF St. Petersburg. USF’s *InfoCenter* provided an accessible data-reporting system, encompassing numerous reports relating to many aspects across the USF System such as campus, students, courses, faculty, enrollment and so on (University of South Florida, 2011a). The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) is the regional accrediting body of jurisdiction for the university (University of South Florida, 2009, *Accreditation*). USF Tampa is located in Hillsborough County, which had an estimated population of 1,277,746 in 2012 according to U.S. Census Bureau (QuickFacts, 2013). The University of South Florida offers bachelor, master, specialist, doctorate, and doctor of medicine degrees.

In Fall 2012, the full-time freshman class numbered 2,782 plus an additional 15 part-time students (University of South Florida, 2013d). USF has a strong transfer population, amounted to 2,721 in Fall 2012 taking full-time enrollment plus 1,229 part-time students for a total new transfer population of 3,950 students. USF enrolled 61 more full-time, first-time students versus full-time transfer students in the 2012 fall semester. The full-time first-time population was very close in number to the transfer population. However, as described at length in Chapter One of this document, the freshmen will be included in the graduation rate, while the transfer students will be invisible.

Many of the transfers originally started at the state/community colleges in the region. Upon anticipation of earning a two-year Associates of Arts degree, students may consider applying to any of the State University System institutions within the state of Florida, taking advantage of the “2+2” state articulation agreement (Florida Department of Education, *State Articulation Manual*, 2011, p. 14). As such, students complete the first two years of coursework at the two-year college and then apply for transfer at one of the public universities in Florida in order to complete the bachelor degree. Closest in proximity to USF Tampa are the following public institutions: Hillsborough Community College, St. Petersburg College, Pasco-Hernando Community College, Polk State College, and State College of Florida Manatee-Sarasota (Florida College System, *Annual Report 2013*). Using the example above from fall 2012 new student data for USF, and the understanding from IPEDS that part-time and transfer students are excluded, it is clear that the 15 part-time students plus all transfer students (3,950) will not be included in the graduation rates for USF Tampa upon graduation of those students. However, 2,797 full-time first-time-in-college will be included for IPEDS reporting, if they graduate within four, six, or eight year time limits.

Overview of Methods

In this section, an overview of the methods of research is described, along with processes and details relating to the study. Authors Gall et al. (2007) stated, “descriptive research is a type of quantitative research that involves making careful descriptions of educational phenomena” (p. 300). Additionally, they explained that this research relates to “...characteristics of a particular sample of individuals” (p. 298). A quantitative study was selected by the researcher to discover the hidden population of “IPEDS unreported”

baccalaureate recipient students. The “IPEDS reported” graduates are a specific subset of the college population, limited to only first-time in college students who begin in the fall semester, attend full-time, and completed at the original institution (Adelman, 2006; Cohen & Ibrahim, 2008; Horn, 2006, Renn & Reason, 2013). Descriptive statistics were used to uncover characteristics of the “IPEDS unreported” population and compare differences, if any, with the “IPEDS reported” population of students.

Further, the study as explained by Gall et al. is classified as nonexperimental in that the researcher planned to study the “phenomena as they exist” (2007, p. 299). Reviewing the four main purposes described by the educational researchers (description, prediction, improvement and explanation), this study reviewed data at one point in time that aligned with the description study focus (Gall et al., 2007). Descriptive statistics were recommended for this purpose and provided a base of knowledge for a particular population (Gall et al., 2007). The specific population and sample for this research study will be described in the following section.

Population and Sample

The population for the study was comprised of USF Tampa undergraduate students who were awarded bachelor degrees in the academic year of 2011-2012. According to USF *InfoCenter*, there were 7,473 bachelor degrees earned on the USF Tampa campus during this time period (University of South Florida, 2013c). The unit of analysis is the student. As Cohen and Ibrahim (2008) explained,

To come at this problem from a different direction, one might begin with the number of graduates produced in a given year. After all, a graduate is a graduate, whether that person took four or 10 years to earn a diploma, attended one

institution or several, attended continuously or intermittently, or began in a fall or spring semester. By beginning with graduates, at least we know that all who receive a diploma are included in the calculation. (p. 49)

The researcher was interested in determining how many in a given year of graduates are included versus not included using the IPEDS cohort model. All USF Tampa bachelor recipients were reviewed from the academic year of 2011 – 2012 to ensure an inclusive method that did not leave out any graduated student in the study population. Therefore, the decision was made to include all records of 2011 - 2012 graduated baccalaureate students from USF Tampa. A sampling method of this group was employed in this study. Data from the entire population was gathered and analyzed.

Data Collection

This study used secondary data. Specifically, educational records provided the data for the study with appropriate permission and approval from USF Institutional Review Board (IRB) and USF University Registrar. The data request encompassed the parameters needed to answer the research questions. The identified data points are listed in the next section, Table 5. Confidentiality of the data was strictly maintained.

Data Coding

Data was presented in aggregate. That is, total numbers were reported but no identifying numbers or names were used. The researcher has over fourteen years of experience reviewing transcripts in Admissions and Academic Advising at USF Sarasota-Manatee, Office of Student Services. Her extensive transcript review experience included evaluation of coursework from in-state and out-of-state institutions, grades, grade point averages, course descriptions, and advising students on their next steps to

accomplish their educational goals, based on the grades earned and courses completed. Therefore, she was well prepared to evaluate the institutional records. At the beginning of the project, raw data was visually inspected and spot-checked for errors. In addition, the data was stored securely in order to ensure confidentiality and in case re-analysis of data was required.

The first step was to assign case numbers to each student data record (different from the student University ID number). The analysis consisted of two phases of coding. The first phase filtered for the “IPEDS reported” and “IPEDS unreported” groups in the bachelor degree recipient academic records from the USF 2011- 2012 academic year. Two groups were maintained (refer to Flow Chart, Appendix A). The first group was students included in a cohort sent to IPEDS (reported population). The second group was students not included in the cohort (IPEDS unreported population). The data were recorded in a spreadsheet with appropriate security measures for confidentiality of data using password and a secure server.

Data was examined by the IPEDS collection method of determining graduation rates. The IPEDS Glossary (2013) provided the definition of the Graduation Rate (GR). It stated,

Data are collected on the number of students entering the institution as full-time, first-time, degree/certificate-seeking undergraduate students in a particular year (cohort), by race/ethnicity and gender; the number completing their program within 150 percent of normal time to completion; the number that transfer to other institutions if transfer is part of the institution’s mission.

The Association of Institutional Research (AIR) and IPEDS provide online resources to assist with interpretation of data reporting for institutions. The researcher employed these tools in the study as a resource for review of the records. The first resource (Association for Institutional Research & Integrated Postsecondary Education Data System, 2012a) was an online tutorial entitled, *Who to Report (Graduation Rates, 2012-2013)*. This tutorial provided training in how records are reviewed annually by institutions for IPEDS submission. In addition, a document of the tutorial script (AIR and IPEDS, 2012b) provided a written guide for reference and consistency for the researcher during the review process.

Consultation with the USF Office of Decision Support ensured reasonable coordination of the method used for “IPEDS reported” vs. “IPEDS unreported” students. Those students who met the criteria for the 4-year cohort graduation were noted FTIC_4year group (see Table 5 in the next section). Likewise, the same process was accomplished for the 6-year and 8-year cohorts. The students not identified in any cohort per IPEDS will be in the “IPEDS unreported” group. These datasets were used to answer the research questions for the study. The independent variable was the type of student and the remainder is dependent.

The next step was based on the literature relating to the understanding of graduation rates and detailed student factors described in the literature by Adelman (2006, 2007), Albright (2010), Bowen et al. (2009), Cabrera et al. (1992), Kroc et al. (1997) and Shapiro et al. (November 2012). Each student on the 2011- 2012 academic year bachelor earned list was coded according to the following variables. Table 5

illustrates the coding scale for the study based on the literature, IPEDS and institutional definitions.

Table 5
Variable Codes, Operational Definitions, and Research Source

Variable Description and Code	Operational Definition	Research Source
1. Type of student	<p>FTIC_4year (First Time in College)= BL student started at USF as a first-time-in-college student. (Started at USF in Fall 2007 and graduated at USF 2011 within 4 years). (1=included IPEDS cohort)</p> <p>FTIC_6year (First Time in College)= BL student started at USF as a first-time-in-college student. Started at USF in Fall 2005 or 2006 and graduated at USF 2011 within 6 years). (2=included IPEDS cohort)</p> <p>FTIC_8year (First Time in College)= BL student started at USF as a first-time-in-college student. Started at USF in Fall 2003 or 2004 and graduated at USF 2011 within 8 years). (3=included IPEDS cohort)</p> <p>LTRAN (Lower-level Transfer Student) = student admitted to USF with 12 - 59 hours. (0=not included in IPEDS cohort)</p> <p>UTRAN (Upper-level Transfer Student) = student admitted to USF with more than 60 hours. (0 = not included in IPEDS cohort)</p> <p>Other FTIC = all other FTIC's who are not part of an IPEDS cohort</p>	<p>USF student data IPEDS definition of "first-time student" IPEDS Glossary, 2013</p> <p>Note: Codes 1, 2, 3 = IPEDS reported data Code 0 = IPEDS unreported</p>
2. Attendance (FTIC only)	<p>Full-time student = 12 or more hours first semester in college (1) Part-time student = 11 hours or less (0)</p>	<p>USF student data Full-time is reported to IPEDS</p>
3. Transfer Institution (transfers only)	<p>JL or UL = Florida College State System (1) JU or UU = Other Transfer (0) NULL = No transfer institution</p>	<p>USF student data</p>
4. Matriculation semester	<p>Student entered USF in Fall semester (1) Student entered USF in Spring or Summer (0)</p>	<p>USF student data</p>

Table 5 Continued

5. Total credit hours	Number of credit hours at time of graduation with bachelor's degree	USF student data
6. Gender	Male (1) Female (2) Gender – not reported (0)	USF student data
7. Race, self-reported by student at time of Application (definitions used by <i>USF InfoCenter</i>)	American Indian (I) Asian (A) Native Hawaiian/Pacific Islander (P) Black, non-Hispanic (B) Hispanic (H) White, non-Hispanic (W) Non-resident Alien (N) Two or more race (T) Race - not reported (O)	USF student data
8. Age at completion	Age in years at time of graduation	USF student data
9. College at completion	Arts & Sciences (A) Behavioral & Community (BC) Business (B) Education (E) Engineering (EN) Medicine (MD) Nursing (N) Public Health (PH) The Arts (F) Undergraduate Studies (US)	USF student data Kroc et al. (1997)
10. Student Financial Aid	No Financial Aid (0) Accepts Financial Aid (1) Pell Grant awarded (P) Florida Bright Futures (F)	USF student data Cabrera et al. (1992)
11. Mother college attendance	Mother with no college 0 Mother attended college 1	USF student data Bowen et al. (2009)
12. Father college attendance	Father with no college 0 Father attended college 1	USF student data Bowen et al. (2009)

Explanation of Variables

The “*type of student*” referred to the status of the student when admitted to the university. Undergraduate students can apply as first-time-in-college (FTIC) or as transfers. In the USF Banner System, FTIC students are coded BL (Beginner FTIC – Lower Level). FTIC who entered USF in Fall 2007 and graduated in 2011-12 were

coded FTIC_4year representing the 4-year cohort. First-time students who started in Fall 2005 or 2006 have the code FTIC_6year designating the students in the 6-year cohort. Lastly, FTIC_8year was comprised of the FTIC students who started in Fall 2003 or 2004 and graduate in 8-year cohort at USF. All the students coded FTIC will be included in the IPEDS reporting.

Transfers were admitted upon meeting USF admission criteria as lower-level with 12 to 59 transferable hours or upper-level with more than sixty transferable hours. For purposes of this study, lower-level transfers were coded LTRAN and upper level transfers had the designation of UTRAN. Transfer students were not included in the IPEDS report as they moved from the original institution where they started their postsecondary education (Association for Institutional Research & Integrated Postsecondary Education Data System, 2012).

“*Transfers only*” provided additional information on the transfer population. USF coded lower-level admits with JL (FL College Transfer – Lower Level) or UL (Other Undergraduate Transfer – Lower Level) depending the last institution attended prior to transfer. Upper-level transfers were coded JU (Florida College Transfer – Upper Level) or UU (Other Undergraduate Transfer – Upper Level).

“*Matriculation Semester*” referred to the term the student entered the university. IPEDS includes freshman students who start in the Fall term. First-time students who start in the Spring or Summer were not included in the IPEDS report (Association for Institutional Research & Integrated Postsecondary Education Data System, 2012).

“*Total credit hours*” was the total number of credit hours upon graduation with the bachelor’s degree.

“*Attendance*” referred to full-time or part-time enrollment during the first semester at USF for the FTIC population. Full-time attendance is enrollment of 12 or more credit hours. Part-time attendance is 11 or less credit hours enrolled. Freshman who enter in the Fall with full-time enrollment are reported to IPEDS (Association for Institutional Research & Integrated Postsecondary Education Data System, 2012).

“*Gender*” was self-reported by the student at the time of application to the university. The choices were: male, female, and gender not reported. Students also had the opportunity to report “*race*” on the USF application if they choose to do so. Students may select: American Indian, Asian, Native Hawaiian/Pacific Islander, Black non-Hispanic, Hispanic, White non-Hispanic, non-resident alien, two or more race, or race not reported. Student “*age*” was reported in the number of years at the time of graduation.

“*College at graduation*” referred to the college at time of the student’s graduation. The USF Tampa colleges are: Arts & Sciences, Behavioral & Community, Business, Education, Engineering, Nursing, Medicine, Public Health, The Arts, and Undergraduate Studies. Kroc et al. (1997) studied completion records by major of first-time students as defined by IPEDS from research and public land-grant institutions. Their findings demonstrated business majors completed fastest while engineering majors took additional time.

“*Student Financial Aid*” referred to the student acceptance of financial aid awards including Pell Grant or Florida Bright Futures or not. Cabrera et al. (1992) explained in their study how finances in part, can assist with persistence in college and commitment to earning a degree. Bowen et al. (2009) and Renn and Reason (2013) outlined the complexities of financial aid process. The researcher reported findings on this variable.

“*Mother college attendance*” and “*Father college attendance*” indicated college experience of the student’s parents. Bowen et al. (2009) concluded in their study of student characteristics at public universities that parental education attainment was a factor in student completions. The researcher looked at both FTIC and transfer populations on this factor.

Research Questions

The categorical variables are derived from the study’s research questions leading to the development and selection of these specific data elements. The following table (Table 6) illustrated how the research study questions are aligned with corresponding variable(s) of Table 5 from the previous section.

Table 6
Research Questions and Aligned Variables

RQ	Research Question	Variable Description
1a.	How many students are included in the “IPEDS reported” group (4-year, 6-year, and 8-year cohorts) when USF Tampa sends graduation numbers to the Integrated Postsecondary Education Data System?	v1. Type of student
1b.	Conversely, how many 2011-2012 graduated students are in the “IPEDS unreported” group that cannot be included in the IPEDS data?	v1. Type of student
1c.	If a student is in the “IPEDS unreported” group, what is the reason?	v2. Attendance (FTIC only) v3. Transfer Institution (Transfer only) v4. Matriculation semester Reason not reported to IPEDS (examples: transfer, spring start, part-time attendance, graduated beyond cohort year limits, etc.)

Table 6 Continuing

2a.	What are the demographics and characteristics of the “IPEDS unreported” population? In other words, who are these students? Examples are to look at transfers, returning students, age, gender, race/ethnicity, financial aid participants, number of semesters enrolled, and parent’s highest education.	v1. Type of student v5. Total credit hours v6. Gender v7. Race v8. Age at completion v9. College at completion v10. Financial aid v11. Mother college attendance v12. Father college attendance
3a.	What are the demographic differences between the “IPEDS reported” group and the “IPEDS unreported” group of graduated students?	Same as above
3b.	Are there any notable trends of the two groups?	Same as above

The researcher used an Excel spreadsheet to record and store 2011-2012 academic year bachelor recipients’ data. Each record was reviewed and researched to determine student type by first-time-in-college (FTIC) and transfer (LTRAN or UTRAN denoting lower-level transfer or upper-level transfer) student. Cases coded FTIC_4year, FTIC_6year, and FTIC_8year; with fall term starts and full-time attendance were placed in separate tables labeled as such. These three groups would be included in the numbers sent to IPEDS, and therefore in the “IPEDS reported” group. The cases remaining (FTIC in other cohort years or other starting terms, LTRAN, and UTRAN) were placed in the IPEDS unreported table. Data were reviewed for missing items, outliers, or inconsistencies. Incomplete records were removed. The Office of Decision Support staff reviewed the data for errors.

A trial run of the coding and reporting procedures was conducted as suggested by Gall et al., (2007). A colleague experienced in coding records reviewed the trial run coding in order to check for consistency and determine potential conflicts, discrepancies,

questions, etc. Adjustments in coding and procedures in this chapter were made, when necessary, prior to analysis of the graduation data. The inter-rater verification of the coding process increased its reliability (Gall et al., 2007; Stemler, 2001).

Providing examples of analysis often makes the process and results more clear.

Therefore, Tables 7 and 8 represent two examples of coding cases for the research study:

Table 7

Example of Coding Record: First-time-in-College Student

Student Case Identifier	C1	Notes
Semester Graduation	Spring 2011	
Type of student	FTIC_4year	4-year cohort student
Attendance (FTIC only)	1	Full-time
Matriculation semester	1	Entered Fall
Total credit hours	120	
Gender	2	Female
Race	H	Hispanic
Age at completion	23	Age in years
College at completion	B	Business
Student Financial Aid	1P	Yes and Pell Grant
Mother college attendance	0	
Father college attendance	1	Father USF alum
Included IPEDS Graduation data	1	IPEDS reported

Table 8

Example of Coding Record: Transfer Student

Student Case Identifier	C2	Notes
Year Graduation	Fall 2011	
Type of student	UTRAN	Upper-level transfer
Transfer Institution (transfers only)	UL	Florida College System
Matriculation semester	0	Entered Spring
Total credit hours	130	
Gender	1	Male
Race	W	White, Non-Hispanic
Age at completion	27	Age in years
College at completion	A	Arts & Sciences
Student Financial Aid	1	Yes
Mother college attendance	1	Mother completed BA
Father college attendance	0	
Included IPEDS Graduation data	2	IPEDS unreported, transfer

Examples of the Coding Record (Tables 7 and 8) provided specific information on the variables identified by the study research questions and how the data was coded. Then, the student records were reviewed carefully for each variable and coded as such, which in turn, organized the information for the research questions later in the study.

Stemler (2001) identified that detailed instructions are critical to maintaining consistency and stability of the review. This section sought to specify the procedures and instructions.

Statistical Analysis

Gall et al. (2007) stated specific questions could be formulated to attempt to advance knowledge on a subject (p. 52). This study's research questions related directly to the "IPEDS unreported" and "IPEDS reported" student populations, designed to uncover the data on the complete picture of all students who graduated in a given year at USF Tampa. By including all graduated students, the study reported on full-time, part-time, first-time in college, and transfer students regardless of the academic term they started. In other words, the study encompassed all graduated students (2011-2012 academic year from USF Tampa) and not limited to one class level such as freshman only.

Gall et al. (2007) suggested exploratory data analysis techniques to gain an understanding of the data collected as well as to observe patterns. Therefore, the researcher reviewed the raw data and provided histograms for data points especially if outliers appeared to present (Gall et al., 2007). Descriptive statistics (mean, mode, median, frequency, and standard deviation) were reported in a table, bar graph, or histogram as determined by the researcher and the data presented. SPSS (Statistical

Package for the Social Sciences) and Microsoft Excel software was used for the research study.

Next, the descriptive statistics in each category for the baccalaureate degree recipients were tabulated and summarized. Most of the variables used in this study were described as categorical data. Gall et al. (2007) explained, “Category values are measured by nominal scales, which can be defined as measures in which numerical scores can be used to represent categories, but the scores have no order or quantitative meaning” (p. 132). An example was *gender male* cases were coded to “1” which represented a category, neither a rank in order, nor a greater score. Additionally, *gender female* coded to “0” is not indicative of assigning a value. The coding allowed for sorting of data and solely represented a difference (not a value) within the category of *gender* (Gall et al., 2007).

Along with reporting the numbers in each category and within each population of “IPEDS reported” and “IPEDS unreported,” measures of central tendency provided further understanding with a numerical value and tell the story (Glass & Hopkins, 1996) of these graduated students as a group, and then by population of “IPEDS reported” or “IPEDS unreported”. The central tendency measures that were used in the study are the mean (average), mode (frequency), and median (mid-point). Also, the researcher determined range, frequency distributions, and percentages to further describe differences (Glass & Hopkins, 1996). The researcher presented results in tables and charts in order to increase readability while also providing trend and visual analysis (Gall et al., 2007; Glass & Hopkins, 1996).

According to Gall et al. (2007), descriptive studies are useful to unveil critical knowledge (p. 302). Therefore, differences were observed, if any, for each variable in the form of charts and totals. For example, were there any differences in students who were excluded from the graduation cohort because they started at USF Tampa in the spring semester vs. fall semester? The IPEDS graduation rate includes only students who start college in the fall (in some cases summer starts can be included if the student registers for the fall semester at the same institution). Or was the largest difference transfer students who, by the simple step of applying and being accepted to a new institution, were removed from the IPEDS report? By comparing each defined variable the researcher attempted to have a greater understanding of the IPEDS unreported students in the University of South Florida's 2011- 2012 academic year.

Data were reported on the "IPEDS unreported" and "IPEDS reported" populations using the variables defined in the study in a table. Graphs were generated to display the data. A chi-square analysis was used to examine the demographics and how they related to the students "IPEDS reported" or "IPEDS unreported" statuses. Note that statistical significance tests were performed, as Gall et al. (2007) explained that when an entire population is studied it described a "true difference" as opposed to if a sample population was used for the study (p. 142). Other data points were graduation cohort (if applicable), race, gender, age, college at graduation, financial aid, number of semesters at USF, and parent college attendance groups. Further analysis of the transfer student population of upper-level or lower-level admissions, along with previous postsecondary education from the Florida College System or other institutions, was performed.

Limitations of the Study

This study was subject to a number of limitations. The data for this study was from one student population from a large public research university at the University of South Florida (Tampa). Further, it was limited to one academic year of 2011-2012 bachelor degree recipients. In addition, students who transferred to another college or university and earned a degree elsewhere were not included. No other data from other universities were used in the study. Readers should be cautious when attempting to generalize these results to other institutions or settings. However, the research method could be replicated by analyzing another population of graduated students in a different time period or at another institution.

Another limitation was self-reported data and the possibility of students either selecting an invalid response (Gall et al., 2007) or not making a selection at all in their institutional records. At the time of application to the university, students had the option to report race, highest degree of mother, and highest degree of father. These data points were subject to the responses of the individuals at the time of application to the university. For instance, studies have demonstrated reluctance to reveal true values in some areas due to fears of discrimination or in some cases lack of complete knowledge (Gonyea, 2005). This study has to rely on the responses provided by the students.

The limitation of graduated students in the study population focused the research plan to only students who have earned the degree at a 4-year university (in this case USF Tampa). Potential factors relating to completion, time to degree, and persistence are not studied. It is beyond the scope of this study to look at reasons why students did not graduate and achieve their educational goal.

Chapter Summary

The research study proposed to use student data at the University of South Florida to include only those undergraduates with bachelor degrees awarded in 2011-2011 academic year. Students were placed in the “IPEDS reported” group or the “IPEDS unreported” group based on Integrated Postsecondary Education Data System criteria. Statistical procedures were conducted and results recorded to find out more information on the “IPEDS unreported” yet graduated students and report differences, if any, between these groups. The purpose was to gain insight regarding students who officially graduated from the institution but remained invisible in the national data on graduation rates, as those students have not been included in the current reporting structure.

CHAPTER FOUR

RESEARCH FINDINGS

The focus of this research study was to examine completion data of undergraduate students in two populations: “IPEDS reported” and “IPEDS unreported” from the University of South Florida in the 2011-2012 academic year on the Tampa campus. The study used quantitative methods of educational research to determine the differences, if any, between the two populations. In this chapter, the researcher utilized secondary data from the university to answer the three research questions. The analysis included descriptive statistics and chi square examination. The third research question discussed the differences, if any, in the two groups of students in the study population. A separate section for each question reported the research findings and discussion. At the end of the chapter, there is a summary of the findings.

Description of the Data

After approval of the Institutional Review Board (IRB), the data was requested and received by the researcher from USF Office of Decision Support. The data consisted of university records of students awarded bachelor degrees in the academic year of 2011-2012 at USF Tampa compiled in an Excel spreadsheet. The Office of Decision Support staff removed identifiers, and coded the records using Table 5, *Variable Codes, Operational Definitions, and Research Source*; therefore, maintaining complete anonymity of the data prior to delivery to the researcher. The Excel file consisted of

7,473 cases. Five cases were removed from the study data due to incomplete information. The remaining cases amounted to 7,468 rows. The data was based on a complete actual dataset aligned with the research questions for this study. As a point of clarification, a sampling method was not employed in this study since a subset was not extracted. Another point of clarification is the researcher used the completion semester to determine the population, rather than the start semester as conventional IPEDS cohorts are analyzed. Therefore, the reader must keep in mind this research does not reflect IPEDS graduation rates methodology using start semesters.

Further, the researcher needed the Office of Decision Support to provide additional detail on the FTIC groups. For instance, there were students who started as a first-time-in-college student and graduated in three years. The FTIC one, two, and three year completers were included with the FTIC 4-year cohort. Likewise, the FTIC who completed in five years were added to the FTIC 6-year cohort and all other IPEDS reported completers identified by the Office of Decision Support to the remaining 8-year cohort. The tables in this section report according to the three main cohort groups as IPEDS uses, which are the 4-year, 6-year, and 8-year cohorts. The researcher developed three research questions outlined in Chapter 3, Methods. In the subsequent sections, each question is addressed individually and data tables or graphs visually illustrate the information.

Research Question #1 –

IPEDS Reported and IPEDS Unreported Populations

How many students are included in the “IPEDS reported” group (4-year, 6-year, and 8-year cohorts) when USF Tampa sends graduation numbers to the Integrated

Postsecondary Education Data System? Conversely, how many 2011-2012 graduated students are in the “IPEDS unreported” group that cannot be included in the IPEDS data? If a student is in the “IPEDS unreported” group, what is the reason (example: transfer, spring start, part-time attendance in Fall semester, etc.)?

The first two parts of this research question utilized the variable “*type of student*” as defined in Chapter 3, Methods, Table 5. This variable referred to the status of the student when admitted to the university either as a first-time-in-college or transfers. The first-time-in-college students who meet criteria for IPEDS were in the dataset for “IPEDS reported” population. This included separate codes for 4-year, 6-year, and 8-year FTIC cohorts reported to the National Center for Education Statistics by USF Tampa as defined in Table 5 of Chapter 3. The data showed there were 2,728 (37%) USF Tampa cohort students in the 2011-2012 academic year reported to IPEDS as graduated in 2011-2012 (refer to Table 9).

The “IPEDS unreported” population consisted of all other students who earned bachelor degrees in the 2011-2012 academic year and were not reported to IPEDS as they did not meet the criteria to be included in the cohort. The types of students in this category included lower-level transfers, upper-level transfers, and FTIC students who did not meet the IPEDS cohort definition. This population amounted to 4,740 bachelor degree recipients (63%) and is referenced in this paper as “IPEDS unreported.”

Table 9
IPEDS Reported vs. IPEDS Unreported 2011-2012, University of South Florida – Tampa

	N of students	Percent
IPEDS Reported	2728	37%
IPEDS Unreported	4740	63%
Total Bachelor Degrees 2011- 2012	7468	100%

The last part of the first research question delved into the reasons students are excluded from the FTIC cohort reported to IPEDS. In the IPEDS Glossary, the definition to track the graduation rate cohort stated:

Data are collected on the number of students entering the institution as full-time, first-time, degree/certificate-seeking undergraduate students in a particular year (cohort), by race/ethnicity and gender; the number completing their program within 150 percent of normal time to completion; the number that transfer to other institutions if transfer is part of the institution's mission. (IPEDS, 2013)

Therefore, to address this question, the dataset for the "IPEDS unreported" population was used exclusively (n=4740). In addition, the researcher utilized the following variables from Chapter 3, Table 5:

- Attendance (full-time or part-time)
- Transfer institution if any (Florida College State System or other transfer institution which indicate private or out-of-state schools)
- Matriculation semester (Summer/Fall or Spring)

By virtue of the IPEDS definition above, all transfer students are excluded from IPEDS reporting. As shown below in Table 10, there were 276 lower-level transfer students (Row A) and 3,931 upper-level transfer students (Row B) in this dataset totaling 4,207 (Row C) in this study population.

The group of students referred to as "Other FTIC" student type in this research project, did not qualify for one of the FTIC cohorts or transfer populations. The staff of the Office of Decision Support confirmed the students in the "Other FTIC" group. Utilizing filter options in Excel, the researcher ran reports using the data fields of

semester start and attendance following groupings also listed in Table 10. Students in the “Other FTIC’s” group totaled 533 or 11.2% (Row G) of the IPEDS unreported population. They may have started college in a semester other than fall, attended part-time or graduated after 8 years from the start semester.

Table 10
IPEDS Unreported USF 2011-2012, by Transfer and Other

ROW	Reason for excluding from cohort (n=4740)	Students and percentage
A	Transfer students lower-level	276 (5.8%)
B	Transfer students upper-level	3931 (82.9%)
C	<i>Total transfer</i>	<i>4207 (88.8%)</i>
D	Other FTIC (Fall part-time)	73 (1.5%)
E	Other FTIC (Spring start)	57 (1.2%)
F	Other FTIC (Summer start)	403 (8.5%)
G	<i>Total FTIC IPEDS unreported groups</i>	<i>533 (11.2%)</i>
H	<i>Grand Total IPEDS Unreported</i>	<i>4740 (100%)</i>

Students who matriculate into college in the Spring semester are all excluded from IPEDS reporting under the current guidelines. In the 2011-2012 academic year bachelor recipients, there were 57 (1.2%) Spring starts (Row E) in the “Other FTIC” group (refer to Table 10). Fall starts amounted to 73 (1.5%) students attending part-time with no transfer institutions indicated (Row D). There were 403 Summer starts, or 8.5% (Row F) of the “IPEDS unreported” group. In total, the “Other FTIC” group amounted to 533 completions with students starting in all three semesters (Row G). The “IPEDS unreported” was a sizable group and included 4,740 graduated students (Row H); however, none are included in the IPEDS cohorts.

Research Question #2 –

Who are the IPEDS Unreported students?

What are the demographics and characteristics of the “IPEDS unreported” population? In other words, who are these students? Examples are to look at transfers, returning students, age, gender, race/ethnicity, financial aid participants, number of semesters enrolled, and parent’s highest education.

The “IPEDS unreported” students were the majority of the study population at 4,740 (63%). While much is written annually about the “IPEDS reported” population (*Condition of Education; Digest of Educational Statistics*), this research question delved into gathering information on the “IPEDS unreported” student. To address this question, the researcher sorted and filtered the Excel spreadsheet using the appropriate codes as defined in Chapter 3, Methods, Table 5. The variables used for this section were the following: gender, race, completion age, college, total credit hours, financial aid, and college attendance of parents (mother and father). In each section, the variable was described and descriptive statistics reported for the “IPEDS unreported” population.

IPEDS Unreported Demographics, Gender. Beginning with the sub-category of gender, this data was collected by the university at the time of application and was self-reported by the student. There were three selections: male, female, and not reported. The data showed more females (59.1%) than males (40.7%) in the study population. Only .2% decided not to provide gender data at the time of application to the university. The females graduated in higher numbers than the males not only in the total numbers, but also across each grouping within the “IPEDS unreported” population with one

exception. Males were slightly ahead of females in the lower-level transfer category (refer to Table 11).

Table 11
IPEDS Unreported USF 2011-12, by Gender

	Totals	Transfer (lower)	Transfer (Upper)	Other FTIC
Total	4740 (100%)	276 (100%)	3931 (100%)	533 (100%)
Male	1927 (40.7%)	142 (51.4%)	1581 (40.2%)	204 (38.3%)
Female	2802 (59.1%)	133 (48.2%)	2344 (59.6%)	325 (61%)
Not Stated	11 (0.2%)	1 (0.4%)	6 (0.2%)	4 (0.7%)

IPEDS Unreported Demographics, Race. Race was also indicated by the student in the process of application to the university, and was therefore, self-reported. This data element was listed in Table 12 along with the code used for research purposes. Students were not required to report race/ethnicity, but most opted to make a selection (97.7% self-reported).

The table below aggregated the data of the “IPEDS unreported” graduate by race and from highest number to lowest. The “IPEDS unreported” group showed race or ethnicity composition was 60% White/Non-Hispanic, 16.4% Hispanic, 13.5% Black/Non-Hispanic, and 4.9% Asian. Diversity representation also included Non-resident Alien (1.8%), Two or more race (0.8%), American Indian (0.3%), and one student who indicated Native Hawaiian/Pacific Islander. Non-resident Alien referred to International students. Only 2.3% of the study population did not report race/ethnicity information.

Table 12
IPEDS Unreported USF 2011-12, by Race

Race	Totals and Percentages
White/Non-Hispanic (W)	2846 (60%)
Hispanic (H)	778 (16.4%)
Black/Non-Hispanic (B)	638 (13.5%)
Asian (A)	230 (4.9%)
Race - not reported (O)	110 (2.3%)
Non-resident Alien (N)	84 (1.8%)
Two or more race (T)	40 (0.8%)
American Indian (I)	13 (0.3%)
Native Hawaiian/Pacific Islander (P)	1 (0.0%)
Total IPEDS Unreported	4740 (100%)

Below in Table 13, is another look at race in the “IPEDS unreported” population. This table was sorted by race and the three categories of student type (lower-level transfer, upper-level transfer, and Other FTIC’s). It was arranged in the same order as the aforementioned table. The white/non-Hispanic race sub-category had the most students, followed by Hispanics, Blacks, and Asians in all three populations.

In other words, no matter if the students transferred from another university or was an FTIC that does not fit the IPEDS cohort, the diversity of the study population showed consistency. One difference appeared to be the Black/Non-Hispanic “Other FTIC” group revealed 27.2% compared with Black/Non-Hispanic in the transfer categories. Black/Non-Hispanic lower-level amounted to 8.7% and upper-level was 11.9% of the respective populations.

Table 13*IPEDS Unreported USF 2011-12, by Race and Student Type Detail*

	Transfer (lower)	Transfer (upper)	Other FTIC
White/Non-Hispanic (W)	178 (64.5%)	2427 (61.7%)	241 (45.2%)
Hispanic (H)	48 (17.4%)	621 (15.8%)	109 (20.4%)
Black/Non-Hispanic (B)	24 (8.7%)	469 (11.9%)	145 (27.2%)
Asian (A)	14 (5.1%)	193 (4.9%)	23 (4.3%)
Race - not reported (O)	7 (2.5%)	91 (2.3%)	12 (2.3%)
Non-resident Alien (N)	2 (0.7%)	82 (2.1%)	0 (0%)
Two or more race (T)	1 (0.4%)	38 (1%)	1 (0.2%)
American Indian (I)	2 (0.7%)	9 (0.2%)	2 (0.4%)
Native Hawaiian/ Pacific Islander (P)	0 (0.0%)	1 (0.0%)	0 (0.0%)
Totals (N=4740)	276 (100%)	3931 (100%)	533 (100%)

IPEDS Unreported Demographics, Type of Transfer Institution. Transfer students indicated on the university application the previous institution(s) attended. Official transcripts were matched with the student record as they are received and then keyed into the USF computer system. This data was collected in the USF Student Information System and coded by the type of transfer institution: Florida College System or other institution (ex: State University System, out-of-state or private). As such, this data element does not apply to all of the students in the “IPEDS unreported” group. However, the researcher reported on the data at hand.

In the “IPEDS unreported” group (n=4740), 4207 records or 88.7% indicated a transfer institution. No transfer institution was reflected on 11.3% or 533 records; therefore, in this section only the students with transfer records were analyzed (n=4207). The Florida College System represented 65% (n=2735) of the transfer population, while 35% or 1472 students transferred from other institutions (see Table 14).

Table 14
IPEDS Unreported USF 2011-12, by Type of Transfer Institution

<u>Transfer Population (n=4207)</u>	
Florida College System	2735 (65%)
Other Institution	1472 (35%)
<hr/>	
Totals	4207 (100%)

Table 15 reflected a further break-down of the transfer students by lower-level transfer (6.6%) and upper-level transfer (93.4%). In this table, it was noted that students appeared to transfer to USF more often as an upper-level transfer. A similar trend was observed in the “Other Institution” category with 186 (or 4.4%) in lower-level transfers, and 1286 (or 30.5%) in upper-level.

Table 15
IPEDS Unreported USF 2011-12, by Transfer Institution Type and Transfer Population

<u>Transfer Population</u>	<u>Florida College System</u>	<u>Other Institution</u>
Transfer lower-level = 276 (6.6%)	90 (2.1%)	186 (4.5%)
Transfer upper-level = 3931 (93.4%)	2645 (62.9%)	1286 (30.5%)
<hr/>		
Totals n=4207 (100%)	2735 (65%)	1472 (35%)

IPEDS Unreported Demographics, Completion Age. The age at completion of the degree was another data element in this research study. USF collects applicant birthdates in the admissions application process. The Office of Decision Support provided data regarding the age at degree completion for the study population. To facilitate further analysis of the data on age, the researcher patterned the tables for age

groupings in the same manner as the “Postsecondary Education, Enrollment” section of the *Digest of Educational Statistics* (Snyder & Dillow, 2012, Table 202).

The range of age was 18 to 69 in this study population. In the “IPEDS unreported” group, 53% of the students completed their degree between the ages of 18-24. The next largest groups were the ages of 25-29 (28.1%), 30-34 (9.1%), and 35-39 (4%). The remainder of the age groups was 2% or less.

Table 16
IPEDS Unreported USF 2011-12, by Completion Age

Age Groups	Total	Transfer (lower)	Transfer (upper)	Other FTIC
18-24	2511 (53%)	170 (61.6%)	1865 (47.4%)	476 (89.3%)
25-29	1333 (28.1%)	80 (29%)	1201 (30.5%)	52 (9.8%)
30-34	431 (9.1%)	19 (6.8%)	411 (10.5%)	1 (0.2%)
35-39	188 (4%)	3 (1.1%)	184 (4.7%)	1 (0.2%)
40-44	108 (2.3%)	1 (0.4%)	106 (2.7%)	1 (0.2%)
45-49	79 (1.7%)	1 (0.4%)	78 (2%)	0 (0%)
50-54	43 (0.9%)	2 (0.7%)	41 (1%)	0 (0%)
55-59	31 (0.6%)	0 (0.0%)	31 (0.8%)	0 (0%)
60-64	10 (0.2%)	0 (0.0%)	10 (0.3%)	0 (0%)
65-69	1 (0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)
Age not stated	5 (0.1%)	0 (0.0%)	3 (0.1%)	2 (0.3%)
Totals	4740 (100%)	276 (100%)	3931 (100%)	533 (100%)

In Table 16 above, lower-level transfer, upper-level transfer and the “Other FTIC” groups were further broken down by the age groupings. In the upper-level transfer population, showed 47.4% graduating at the ages of 18 – 24, and another 30.5% of students were ages 25-29. Lower-level students from 18-24 represented 61.6%, and the

25-29 age groups amounted to 29%. As the age groups progressed upwards, the completion numbers were smaller in the study population.

IPEDS Unreported Demographics of College at Graduation. Institutional records provided the student’s college at the time of completion for all study population records. The total number of completions and percentages for the “IPEDS unreported” population was listed below in Table 17 from highest number to lowest by college. The highest numbers of graduates in this population were located in the College of Arts and Sciences (2,158 completions). The top six colleges were Arts & Sciences, Business, Behavioral & Community Sciences, Engineering, Education, and Nursing in the study population.

Table 17
IPEDS Unreported USF 2011-12, by College

College	Total Number Completions and Percentages
Arts & Sciences	2158 (45.5%)
Business	907 (19.1%)
Behavioral & Community Sciences	473 (10.0%)
Engineering	317 (6.8%)
Education	315 (6.6%)
Nursing	308 (6.5%)
The Arts	119 (2.5%)
Undergraduate Studies	65 (1.4%)
Public Health	62 (1.3%)
Medicine	16 (0.3%)
Total	4740 (100%)

The next table (Table 18) further aggregated the “college at completion” data and provided a closer look at the “IPEDS unreported” study population groupings. The order

of the colleges was repeated from the previous table with the added information of each sub-group. In each of the sub-groups of lower-level, upper-level and “other FTIC,” the top six colleges were represented similarly by percentages across each college and sub-group. For a few of the colleges, the rank order of distribution of graduates varied somewhat by tenths of percentage points, and nearly identical in the first two columns. These variations were highlighted in Table 18. The last column (Other FTIC) had more differences in the rank order of colleges compared to the first two columns (Transfer lower and upper).

Table 18
IPEDS Unreported USF 2011-12, by College/Detail

College at Completion	Transfer (lower)	Transfer (upper)	Other FTIC
Arts & Sciences	137(49.6%)	1747 (44.4%)	274 (51.4%)
Business	60 (21.7%)	759 (19.3%)	88 (16.5%)
Behavioral & Community	24 (8.7%)	371 (9.4%)	78 (14.6%)
Engineering	16 (5.8%)	278 (7.1%)	23 (4.3%)
Education	16 (5.8%)	275 (7%)	24 (4.5%)
Nursing	8 (2.9%)	289 (7.4%)	11 (2.1%)
The Arts	10 (3.6%)	97 (2.5%)	12 (2.3%)
Undergraduate Studies	2 (0.7%)	63 (1.6%)	0 (0%)
Public Health	2 (0.7%)	40 (1%)	20 (3.8%)
Medicine	1 (0.4%)	12 (0.3%)	3 (0.6%)
Total (n=4740)	276 (100%)	3931 (100%)	533 (100%)

IPEDS Unreported Demographics, Matriculation Semester. Transfer students can apply to the university for Fall, Spring or Summer admission. In the “IPEDS unreported” population, the data revealed Fall semester has the largest population in two of the sub-categories with 2,279 students in upper-level transfer and 148 students in

lower-level transfer (refer to Table 19). However, Spring/Summer starts in the transfer population were not far behind Fall with 1,652 upper-level transfers and 128 lower-level group. In the “Other FTIC” group, there were 460 graduates who matriculated in the Spring or Summer semesters in the “IPEDS unreported” population.

Table 19
IPEDS Unreported USF 2011-12, by Matriculation

Matriculation Semester	Transfer (lower)	Transfer (upper)	Other FTIC
Entered Fall: 2500 (52.7%)	148 (3.1%)	2279 (48%)	73 (1.5%)
Entered Spring/Summer: 2240 (47.3%)	128 (2.7%)	1652 (35%)	460 (9.7%)
Totals (N=4740) 100%	276 (5.8%)	3931 (83%)	533 (11.2%)

IPEDS Unreported Demographics, Financial Aid. Financial Aid use was illustrated amongst the “IPEDS unreported” study population in Table 20 (below). More students took advantage of financial aid options (83.9%), while 16.1% were not using aid. Financial aid consisted of Florida Bright Futures, Pell Grants, Federal loans, scholarships and other forms of aid, which the qualified student used for tuition and other expenses including room and board. Applications and additional paperwork completed by the student are generally required to receive financial aid.

Table 20
IPEDS Unreported USF 2011-12, by Financial Aid

Financial Assistance Use (N=4740)	IPEDS Unreported	Percent
Used Financial Assistance	3979	83.9%
No Financial Assistance	761	16.1%
Total	4740	100%

IPEDS Unreported Demographics, Credit Hours. The data variable, total credit hours, referred to the final number of credit hours earned when a student completed the bachelor degree at USF. Per the Florida Board of Education *Articulation Manual* (2011, p. 17), the criteria for completion of a bachelor degree included, but is not limited to, the successful completion of 120 credit hours. With these criteria in mind, 120 credit hours was the first benchmark in reviewing this data.

To further analyze the credit hour data in the study population, the researcher referenced state statutes to determine a method to review the number of hours students in the study population earned upon graduation. The second and subsequent benchmarks were aligned with the most current version of the Florida Statutes (Florida Educational Scholarships, Fees, and Financial Assistance, FL Statute 1009.286, 2013) referred to as the “Excess Credit Hour Surcharge.” Universities are required to charge fees to students exceeding 110% of the required number of hours to complete a bachelor degree. This translated to a threshold of 132 hours. Therefore the researcher set the second benchmark at 121 hours to 132 hours. This range of credit hours was selected because under current regulations students in these groups would not be charged the Excess Hours Fee by their institutions.

The third benchmark was 133 credit hours or more, thus exceeding the credit hour limit as designed by the Florida Legislature. The benchmarks were developed as a method to examine the number of credit hours in the study group rather than analyzing each individual number of credit hours. However, the Excess Credit Hour fee began in the Fall of 2009; therefore, it is unlikely that any of the students in the study data were held to the rule. At the same time, interpreting the credit hour data within the scope of current guidelines provided the most relevant standard for this information to be useful to the study institution and for future research studies.

The “IPEDS unreported” population indicated there were 386 of the 4,740 students who completed at 120 credits or less (8.1%). Those who finished with 121 – 132 credits amounted to 1,389 or 29.3%. Together, these two groups amounted to 1,775 or 37.4% in a timely manner or close. The largest group reported was 133 credits or more. This group totaled 2,965 students or 62.6% and would be in the range to be considered excess credit hours by the aforementioned statute. It is possible that some of the students graduated with a double major and that could explain the number of hours. However, the dataset does not provide sufficient information to determine whether double majors were awarded.

There were 334 students who graduated right at 120 credit hour mark and another 157 students at 121 hours. These two data points contained the most students reported. The range in credit hours was 100 to 328 with many data points with only one student indicated in those particular categories. Readers may also want to review the histograms on this variable in Appendix E.

Table 21
IPEDS Unreported USF 2011-12, by Credit Hours

IPEDS Unreported	120 credits or less	121 – 132 credits	133 cr or more
Transfer-lower (n=276)	24 (0.5%)	101 (2.1%)	151 (3.2%)
Transfer-upper (n=3931)	311 (6.6%)	1067 (22.5%)	2553 (53.9%)
Other FTIC (n=533)	51 (1.1%)	221 (4.7%)	261 (5.5%)
Totals (n=4740) 100%	386 (8.1%)	1389 (29.3%)	2965 (62.6%)

IPEDS Unreported Demographics of Parent College Attendance. The Office of Decision Support and the Office of Financial Aid confirmed the data element of parent highest degree was an optional question on the financial aid application; therefore, each record may not have a response reported to the institution. In addition to the question being optional, the data was self-reported by the student plus this question could be further compounded if a student had more than two parents. The factors combined to provide incomplete data for the entire dataset. Based on the data provided, every student case has a code from the variable table (Chapter 3). Nonetheless, the question related to much research in the field of higher education and may require additional exploration.

Based on the data provided, Table 22 showed in the “IPEDS unreported” group there were more students with a parent with no college reported. There were 2,891 (or 61%) that reported their mother did not attend college and 3,025 (or 63.8%) who stated their father did not attend. Thirty-nine percent stated their mother did attend college and 36.2% indicated their father attended.

Table 22*IPEDS Unreported USF 2011-12, by Parent College Attendance*

Parent College Attendance (n=4740)	Transfer (lower)	Transfer (upper)	Other FTIC
Mother with college 1849 (39%)	115 (2.4%)	1511 (31.9%)	223 (4.7%)
Mother with no college 2891(61%)	161 (3.4%)	2420 (51.1%)	310 (6.5%)
Father with college 1715 (36.2%)	102 (2.2%)	1425 (30.1%)	188 (4.0%)
Father with no college 3025 (63.8%)	174 (3.7%)	2506 (52.9%)	345 (7.3%)
Total IPEDS Unreported (N=4740)	276	3931	533

Summary of the “IPEDS Unreported” Student

The characteristics of the “IPEDS unreported” group of the study population have been outlined in this section. A typical student might enter in the Fall semester as an upper-level transfer from the Florida College System. Most likely, the “IPEDS unreported” student would be a white female between the ages of 18-24 with a major in the College of Arts and Sciences. The likelihood was the student used financial aid and had a parent who has not experienced college based on this dataset.

In the next section, the researcher compared the “IPEDS reported” group with the “IPEDS unreported” group. The researcher described both populations based on the characteristics of gender, age, race, attendance, use of financial aid, college at

completion, credit hours at completion, and parent with or without college. The researcher utilized SPSS software to analyze data for both populations.

Research Question #3 --

Differences between IPEDS Reported vs. IPEDS Unreported populations?

What are the demographic differences between the “IPEDS reported” group and the “IPEDS unreported” group of graduated students? Are there any notable trends of the two groups?

Gender. The “IPEDS reported” population contained 2,728 awarded bachelor degrees. This group revealed more females (1,656 or 60.7%) than males (1,072 or 39.3%) earned bachelor degrees (refer to Table 23). In addition, females (2,802 or 59.1%) outpaced the males (1,927 or 40.7%) in the “IPEDS unreported” population. In two of the “IPEDS reported” sub-categories (6-year and 8-year cohorts), the males were slightly ahead of the females. In the study population, both groups reported higher numbers of females than males in completions.

Table 23
IPEDS Reported vs. IPEDS Unreported, by Gender and Sub-categories

	Male	Female	Gender Not Stated
<i>Total IPEDS Reported (n=2728)</i>	<i>1072 (39.3%)</i>	<i>1656 (60.7%)</i>	
4-year cohort (n=2193)	796	1397	
6-year cohort (n= 473)	243	230	
8-year cohort (n= 62)	33	29	
<i>Total IPEDS Unreported (n=4740)</i>	<i>1927 (40.7%)</i>	<i>2802 (59.1%)</i>	<i>11 (.2%)</i>
Lower-level Transfer (n=276)	142	133	1
Upper-level Transfer (n=3931)	1581	2344	6
Other FTIC (n=533)	204	325	4
<i>Grand Totals (n=7468)</i>	<i>2999</i>	<i>4458</i>	<i>11</i>

Race. In the table below, “IPEDS reported” population and “IPEDS unreported” indicated the White/Non-Hispanic as the largest group at 62.6% and 60% respectively. Both study populations showed Hispanic, Black/Non-Hispanic and Asian with the next largest percentages with consistency. Non-resident alien, two or more race, American Indian, and Native Hawaiian/Pacific Islander followed with consistent and smaller percentages. 2.6% of the “IPEDS reported” group and 2.3% of the “IPEDS unreported” population did not indicate race.

Table 24
IPEDS Reported vs. IPEDS Unreported, by Race

Race	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
White/Non-Hispanic (W)	1708 (62.6%)	2846 (60%)
Hispanic (H)	485 (17.8%)	778 (16.4%)
Black/Non-Hispanic (B)	215 (7.9%)	638 (13.5%)
Asian (A)	205 (7.5%)	230 (4.9%)
Race - not reported (O)	71 (2.6%)	110 (2.3%)
Non-resident Alien (N)	22 (0.8%)	84 (1.8%)
Two or more race (T)	9 (0.3%)	40 (0.8%)
American Indian (I)	11 (0.4%)	13 (0.3%)
Native Hawaiian/Pacific Islander (P)	2 (0.1%)	1 (0.0%)
Grand Totals (n=7468)	2728 (100%)	4740 (100%)

Age. The “IPEDS reported” population encompassed two age groups with 95.6% in 18 - 24 and 4.4% in 25 - 29. The “IPEDS unreported” study population was a broader age range of 51 years from 18 – 69 (refer to Table 25). However, the majority of the students for both populations were in the age groups of 18 – 24 (53%) and 25 - 29 (28.1%), totaling 81.1% between the ages of 18 to 29.

Table 25
IPEDS Reported vs. IPEDS Unreported, by Age

Age Groups	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
18-24	2609 (95.6%)	2511 (53%)
25-29	119 (4.4%)	1333 (28.1%)
30-34	0 (0%)	431 (9.1%)
35-39	0 (0%)	188 (4%)
40-44	0 (0%)	108 (2.3%)
45-49	0 (0%)	79 (1.7%)
50-54	0 (0%)	43 (0.9%)
55-59	0 (0%)	31 (0.6%)
60-64	0 (0%)	10 (0.2%)
65-69	0 (0%)	1 (0%)
Age not stated	0 (0%)	5 (0.1%)
Totals (n=7468)	2728 (100%)	4740 (100%)

College at Graduation. The five top colleges in both study populations were Arts & Sciences, Business, Behavioral & Community Sciences, Engineering, and Education. The College of Nursing showed 6.5% in the “IPEDS unreported” group, while in the “IPEDS reported” indicated 1.8% of the population. In the academic areas of The Arts, Undergraduate Studies, Public Health and Medicine, there was three percent or less in both study populations.

Table 26
IPEDS Reported vs. IPEDS Unreported, by College at Graduation

College	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
Arts & Sciences	1475 (54.1%)	2158 (45.5%)
Business	480 (17.6%)	907 (19.1%)
Behavioral & Community Sciences	218 (8.0%)	473 (10.0%)
Engineering	182 (6.7%)	317 (6.8%)
Education	155 (5.7%)	315 (6.6%)
Nursing	48 (1.8%)	308 (6.5%)
The Arts	103 (3.8%)	119 (2.5%)
Undergraduate Studies	0 (0.0%)	65 (1.4%)
Public Health	56 (2.1%)	62 (1.3%)
Medicine	11 (0.4%)	16 (0.3%)
Totals	2728 (100%)	4740 (100%)

Matriculation Semester and Attendance. For the “IPEDS reported” population, 2,727 students indicated Fall beginning semesters (Table 27). Only one student was reported in another semester. The “IPEDS unreported” population showed 2,500 (or 52.7%) with Fall starts and another 2,240 (or 47.3%) started in another semester. Full-time or part-time enrollment during the first semester at USF was captured for the IPEDS cohort report (Association for Institutional Research & Integrated Postsecondary Education Data System, 2012). Full-time attendance referred to enrollment of 12 or more credit hours. Part-time attendance was 11 or less credits enrolled. Freshman who entered in the Fall with full-time enrollment were reported to IPEDS. There were 2,727 full-time students in the “IPEDS reported” group and 1 student not reported (refer to Table 27). In the “IPEDS unreported” group, there were 4,214 not reported, 479 part-timers, and 47 full-time students.

Table 27*IPEDS Reported vs. IPEDS Unreported, by Matriculation Semester and Attendance*

Matriculation Semester	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
Fall	2727 (100%)	2500 (52.7%)
Spring/Summer	1 (0.0%)	2240 (47.3%)
Full-time attendance	2720 (99.7%)	47 (1%)
Part-time attendance	0 (0.0%)	479 (10.1%)
Not-reported	8 (0.3%)	4214 (88.9%)
Totals	2728 (100%)	4740 (100%)

Financial Aid. The “IPEDS reported” and the “IPEDS unreported” populations showed the use of financial aid with 95.1% and 83.9% respectively indicating the use of some type of financial aid (refer to Table 28). The “IPEDS reported” group revealed 4.9% and 16.1% of the “IPEDS unreported” group with no financial assistance.

Table 28*IPEDS Reported vs. IPEDS Unreported, by Financial Aid*

Financial Aid Use	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
Used Financial Assistance	2893 (95.1%)	3979 (83.9%)
No Financial Assistance	135 (4.9%)	761 (16.1%)
Grand Totals (n=7468)	2728 (100%)	4740 (100%)

Credit Hours. Reviewing the credit hour benchmarks for the “IPEDS reported” and “IPEDS unreported” study groups showed the “120 credits or less” to be 8% and 8.1% respectively (refer to Table 29). The next benchmark was “121 – 132 credits” at completion. The “IPEDS reported” group showed 37.5% while the “IPEDS unreported”

indicated 29.3%. The “133 credits or more” was the largest group for both populations. “IPEDS reported” was 54.5% and the “IPEDS unreported” at 62.6%.

Table 29
IPEDS Reported vs. IPEDS Unreported, by Credit Hours

Credit Hours	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
120 credits or less	220 (8.0%)	386 (8.1%)
121 – 132 credits	1028 (37.5%)	1389 (29.3%)
133 credits or more	1480 (54.5%)	2965 (62.6%)
Totals (n=7468)	2728 (100%)	4740 (100%)

Parent College Attendance. The parent college attendance data was self-reported by the student at the time of filing a financial aid application. “IPEDS reported” data revealed “Mother with College” and “Mother with no College” at 50% for each group (refer to Table 30). “Father with College” reported 48.1% while “Father with no College” was 51.9% in the same group.

Table 30
IPEDS Reported vs. IPEDS Unreported, by Parent College Attendance

Parent’s College	IPEDS Reported (n=2728)	IPEDS Unreported (n=4740)
Mother with College	1364 (50%)	1849 (39%)
Mother with no College	1364 (50%)	2891 (61%)
Father with College	1313 (48.1%)	1715 (36.2%)
Father with no College	1415 (51.9%)	3025 (63.8%)
Grand Totals (n=7468)	2728 (100%)	4740 (100%)

In the “IPEDS unreported” data, the “Mother with College” came in at 39% and “Mother with no College” at 61% of the study population (refer to Table 30). The “Father with College” was 36.2% and “Father with no College” was 63.8% in the “IPEDS unreported” group.

In the next section, the researcher reviewed the differences using descriptive statistic analysis, if any, between the “IPEDS reported” and “IPEDS unreported” groups in the study population. In addition, any notable trends were outlined.

Descriptive Statistics Analysis

The categorical data was reported with frequencies and percentages for gender, race, type of transfer institution, college at graduation, matriculation semester, financial aid, and parent college attendance in the previous sections. The descriptive statistics of central tendency for the ratio level data of “age at completion” and “credit hours at completion” are reported below (refer to Table 31). By using SPSS (Statistical Package for the Social Sciences) with the study population the mean, mode, median, minimum, maximum, and standard deviation were presented.

Referencing Table 31 in the “IPEDS reported” group, the mean (or mathematical average) for the “age at completion” variable (22.24) was slightly higher than the median (22.00), indicating a slight positive skew. The “IPEDS unreported” showed a mean of 26.57 and a median of 24.00. This also indicated a positive skew. Both groups showed the same mode of 23 (most often reported age). Gall et al. (2007) defined standard deviation as “a measure of the extent to which the scores in a distribution deviate from their mean” (p. 653). The standard deviation (SD) for the “IPEDS reported” group was 1.1555 while the “IPEDS unreported” was 6.556 (refer to Table 31 below). The larger

standard deviation score for the “IPEDS unreported” group indicated the ages at completion are more spread out among this group.

Table 31

IPEDS Reported vs. IPEDS Unreported Bachelor Degrees – Statistical Analysis Table

Item	Group	# of Students	Mean	Mode	Median	Min	Max	S.D.
Age at Completion	IPEDS Reported	2728	22.24	23	22.00	19	29	1.155
	IPEDS Unreported	4735	26.57	23	24.00	18	69	6.556
Credit hours at Completion	IPEDS Reported	2728	139.55	120	134	96	247	18.798
	IPEDS Unreported	4740	144.95	120	140	67	328	24.693

Note: The age at completion was not stated for five students in the “IPEDS unreported” group (see Table 25).

Looking at the variable of “credit hours at completion” there was a wide range reported for both groups (refer to Table 31); however, the mode for both was 120 credit hours. Again, another similarity in both study populations and aligned with the number of credit hours defined for most majors. The “IPEDS reported” group of 2,728 graduates, showed a mean of 139.55, with a median of 134 and a standard deviation of 18.798. Since the median score of 134 was lower than the mean of 139.55, there was a positive skew indicated. A skewed distribution was defined as “a set of scores that form a nonsymmetrical curve when plotted on a frequency graph” (Gall et al., 2007, p. 653). The skew provided an indication of where the credit hours were clustered when visualizing the distribution of hours. The “IPEDS unreported” group indicated a mean at 144.95, a median score of 140 and, therefore, a positive skew. The positive skew was indicated at the higher credit hour amounts. The standard deviations were 18.798 for “IPEDS reported” and 24.693 for “IPEDS unreported” groups. Again, the standard

deviation score indicated a larger spread for the “IPEDS unreported” group. Refer to Appendix E for a histogram on this data.

A chi-square analysis using the categorical study data was run in SPSS to compare “IPEDS reported” and “IPEDS unreported” groups. The table below compiled the information from each run of the selected variable with the two groups (see Table 32). Chi-square test for independence indicates the relationships were significant as all the associated significance (Asymp. Sig.) values are less than .05. Refer to the table below for the specific values for each variable listed. The phi coefficient values are listed in the last column of the table. The phi coefficient values were “a measure of the magnitude of the relationship between two dichotomous variables in a chi-square analysis” (Gall et al., 2007, p. 648). Values that were higher indicated a stronger association.

Table 32
IPEDS Reported vs. IPEDS Unreported: Chi-square Test for Independence

Variable	# of Students (n=7468)	Chi-Square	Asymp.Sig	Phi
Gender		7.859	.020	.032
Race		93.014	.000	.112
Attendance		7250.483	.000	.985
College at Completion		172.694	.000	.152
Mother Education		84.889	.000	-.107
Father Education		102.060	.000	-.117

The effect size is “a statistical measure of the strength of an observed difference between groups on a test or other instrument or the strength of an observed relationship

between two or more measured variables” (Gall et al., 2007, p. 639). The parent education (mother and father) was considered a very small effect per Cohen (1992) effect sizes. Gender (.032), race (.112), and college at completion (.152) were small effects while attendance was a large effect at .985 indicating a stronger association.

Chapter Summary

In conclusion, Chapter 4 was a presentation of each research question and the data analysis from the study population results. The researcher used Microsoft Excel spreadsheets and Statistical Package for the Social Sciences (SPSS) for each table of information throughout the chapter, double-checking the data reported by using both technology methods. A Summary Table on the next page (refer to Table 33) compiled all the data for the “IPEDS reported” and “IPEDS unreported” study populations using all 7,468 records with frequencies (number of students) and percentages.

Table 33*IPEDS Reported vs. IPEDS Unreported Bachelor Degrees – Summary Table*

<u>Characteristic</u>	<u>Classification</u>	<u>IPEDS Reported</u>	<u>IPEDS Unreported</u>
Total (n=7468)		2728 (100%)	4740 (100%)
Student Type	FTIC_4year	2193 (80%)	n/a
	FTIC_6year	473 (17%)	n/a
	FTIC_8year	62 (3%)	n/a
	Lower Transfer	n/a	276 (5.8%)
	Upper Transfer	n/a	3931 (82.9%)
	Other FTIC	n/a	533 (11.3%)
Gender	Male	1072 (39.3%)	1927 (40.7%)
	Female	1656 (60.7%)	2802 (59.1%)
	Not reported	n/a	11 (0.2%)
Race	American Indian	11 (0.4%)	13 (0.3%)
	Asian	205 (7.5%)	230 (4.9%)
	Hawaiian/Pacific	2 (0.1%)	1 (0.0%)
	Black, non-Hispanic	215 (7.9%)	638 (13.5%)
	Hispanic	485 (17.8%)	778 (16.4%)
	White, non-Hispanic	1708 (62.6%)	2846 (60%)
	Non-resident Alien	22 (0.8%)	84 (1.8%)
	Two or more race	9 (0.3%)	40 (0.8%)
	Not reported	71 (2.6%)	110 (2.3%)
Attendance	Full-time	2721 (99.7%)	47 (1%)
	Part-time	0 (0.0%)	479 (10.1%)
	Not reported	7 (0.3%)	4214 (88.9%)
Age at Completion	18-24	2609 (95.6%)	2511 (53%)
	25-29	119 (4.4%)	1333 (28.1%)
	30 and older	0 (0.0%)	896 (18.9%)
College at Completion	Arts & Sciences	1475 (54.1%)	2158 (45.5%)
	Behavioral & Comm.	218 (8%)	473 (10%)
	Business	480 (17.6%)	907 (19.1%)
	Education	155 (5.7%)	315 (6.6%)
	Engineering	182 (6.7%)	317 (6.7%)
	Medicine	11 (0.4%)	16 (0.3%)
	Nursing	48 (1.8%)	308 (6.5%)
	Public Health	56 (2.1%)	62 (1.3%)
	The Arts	103 (3.8%)	119 (2.9%)
	Undergraduate Studies	0 (0.0%)	65 (1.4%)
Credit hours at Completion	120 or less	220 (8%)	386 (8.1%)
	121 – 132	1028 (37.5%)	1389 (29.3%)
	133 or more	1480 (54.5%)	2965 (62.6%)
Parent College Education	Mother with college	1364 (50%)	1849 (39%)
	Mother no college	1364 (50%)	2891 (61%)
	Father with college	1313 (48.1%)	1715 (36.2%)
	Father no college	1415 (51.9%)	3025 (63.8%)

CHAPTER FIVE

CONCLUSIONS AND IMPLICATIONS

Current graduation rates reported in the IPEDS database, the source for many public comparisons, do not reflect a sizeable portion of students who graduate in the United States and focus on a single population of college students. First-time college students are tracked and reported to IPEDS when they attend college as a full-time student, enter in the fall semester, and remain at the same institution until graduation. Graduation rates are reported at 4-year, 6-year and 8-year benchmarks for these specific cohorts of students. A student who does not fit this profile is not reported to IPEDS as a graduate.

A transfer student is one example of the “IPEDS unreported” group. About one-third of the college student population over the past five years attended more than one institution before graduation (*Almanac of Higher Education*, 2012; Hossler et al., February 2012; Peter & Forrest Cataldi, 2005). A transfer student is left out of the numbers and looks like a drop out (Adelman, 2007; Cohen & Ibahim, 2008; Renn & Reason, 2013). Dedicated adult students returning to college after a lapse in their educational career are never included in the reporting. In essence, these students and others are invisible in the graduation reporting.

Problem Statement

There is a definite incongruity in using one population to calculate graduation rates. The full-time freshman student starting in the fall semester is included in IPEDS graduation rates, while an adult part-time student is not. Just how many graduates are produced by the United States across all the populations of college students?

Competition for resources, accountability to stakeholders, the political and economic climate surrounding higher education would seem to require a more complete reporting of graduation. The solution is to include every student completing college successfully in the numbers to create a better vision of today's picture of higher education. Transparency is called for in reporting graduation rates, bringing greater clarity to the complete story of higher education in the nation.

Research Setting

The study examined the population of graduates from the University of South Florida (Tampa) 2011-2012 academic year to determine the percentage of those graduates that are captured by the National Center for Education Statistics database, in any of the IPEDS cohorts. Similarly, the graduates who were not included in the cohort, but completed their studies during 2011-2012 academic year, *are* included in the study. The researcher was interested in determining differences, if any, between the "IPEDS reported" vs. "IPEDS unreported" graduation groups of students for one academic year at USF Tampa. The students unreported by IPEDS are invisible in the current data gathering methods.

The University of South Florida (USF) is a large urban campus in Tampa, Florida, with classification in the top tier by the Carnegie Foundation for the Advancement of

Teaching, and reported in the top fifty universities for federal research dollars in the nation (University of South Florida, 2013a, *About USF Overview*). Over 57,666 students attend the USF System in 2012-2013 (University of South Florida, 2013b).

Methods

The researcher conducted a quantitative study. The purpose was to discover the characteristics of the hidden population of “IPEDS unreported” graduated students. Specifically, the study population consisted of USF Tampa undergraduates completions of the baccalaureate degree in 2011-2012. The “IPEDS reported” graduates were a specific subset of the college population, limited to only first-time in college students who begin in the fall semester, attended full-time, and completed at the original institution (Adelman, 2006; Cohen & Ibrahim, 2008; Horn, 2006, Renn & Reason, 2013). Descriptive statistics were reported in Chapter 4, uncovering characteristics of the “IPEDS unreported” population and compare differences, if any, with the “IPEDS reported” population of students.

Following IRB approval (refer to Appendix C), the Office of Decision Support provided the data in an Excel spreadsheet to the researcher using the coding method described in Chapter 3, Table 5. No identifying student information was used in this research study maintaining confidentiality and safeguarding raw data. SPSS (Statistical Package for the Social Sciences) and Microsoft Excel software were employed to report frequencies and percentages for “IPEDS reported” and “IPEDS unreported” groups and other statistical processes. Decision support personnel provided feedback and additional suggestions. The data were tabulated and summarized in reference to the three research

questions of this study. The following sections provided the discussion of these data results.

Research Questions Overview

The next section provided a systematic review of each research question. For ease of the reader, each research question from Chapter 1 is repeated. Corresponding paragraphs include discussion of the study data and related information from the literature review.

IPEDS Reported and IPEDS Unreported Populations (Question #1)

How many students are included in the “IPEDS reported” group (4-year, 6-year, and 8-year cohorts) when USF Tampa sends graduation numbers to the Integrated Postsecondary Education Data System? Conversely, how many 2011-2012 graduated students are in the “IPEDS unreported” group that cannot be included in the IPEDS data? If a student is in the “IPEDS unreported” group, what is the reason?

In the academic year of 2011-2012, USF Tampa was able to report 37% of the graduated students to IPEDS (Table 9). In other words, approximately one out of every 2.7 students who graduated with a bachelor’s degree in 2011 – 2012 was reported under the current definition to IPEDS. Based on the criteria for reporting graduation to the federal government, the other 63% are invisible. This population of students appeared the same as dropouts in the graduation numbers as referenced by researchers Adelman (2007), Cohen and Ibrahim (2008), and Renn and Reason (2013).

As previously stated, the *Chronicle of Education* “College Completion” website (n.d.) data reported a national average of 61.8% students were included in the IPEDS calculations using data from 2010. Thirty-eight percent of the students were “left out” of

the national averages according to the *Chronicle* data. In this research study, USF could report 37% to IPEDS, compared with the 61.8% reported by “College Completion” data. These data illustrate a considerable difference in reporting of data (amounting to 24.8 percentage points) in the one year of data from USF compared with the findings of the *Chronicle* study (see Appendix B for complete data reported by state and in total). Additionally, according to the *Chronicle* study results for Florida, there were 40.7% of the graduates reported to IPEDS and 59.3% who were not reported. These results were closer to the study population at USF showing 37% “IPEDS reported” and 63% who are unreported to IPEDS.

By virtue of the IPEDS definition, all transfer students are excluded from IPEDS reporting. As shown in Table 10, there were 276 lower-level transfer students and 3,931 upper-level transfer students in this dataset. The lower-level and upper-level transfer group of 4,207 was the largest population of the study data and appeared to be the main reason a student is not a part of the IPEDS cohort. The total transfer population was excluded from the IPEDS reporting and comprised of 88.8% in the “IPEDS unreported” group (see Table 10). The 2 + 2 Articulation is emphasized in the State of Florida (Florida Department of Education, *Articulation Manual*, 2011). Many students transfer from the Florida College System to the State University System, therefore, the data result was not surprising.

Who are the IPEDS Unreported students? (Question #2)

What are the demographics and characteristics of the “IPEDS unreported” population?

IPEDS Unreported Demographics of Gender. The data on gender in the study population showed more females (59.1%) than males (40.7%) in the “IPEDS unreported”

population. Note that in Table 11, the females graduated in higher numbers than the males not only in the total numbers, but also across each grouping within the “IPEDS unreported” population (with one exception). Males were slightly ahead of females in the lower-level transfer category. More females than males participated in higher education since 1979 (Bowen et. al, 2009, p. 29; Renn & Reason, 2013, p. 10; Snyder & Dillow, 2011). According to the *Condition of Education*, the national averages in 2010 indicated 59% female and 41% male (2012, p. 36). The study population was very close to the national data regarding the gender category, and therefore not surprising.

IPEDS Unreported Demographics of Race. Among the overall “IPEDS unreported” group (refer to Table 12), the self-reported racial or ethnicity composition was 60% White/Non-Hispanic, 16.4% Hispanic, 13.5% Black/Non-Hispanic, and 4.9% Asian. Diversity representation also included Non-resident Alien (1.8%), Two or more races (0.8%), American Indian (0.3%), and one student who indicated Native Hawaiian/Pacific Islander.

Snyder and Dillow (2012, Table 300) reported in the *Digest of Educational Statistics* the following race/ethnicity statistics for bachelor degrees conferred in 2010: 70.8% White, 10% Black, 8.5% Hispanic, 7.1% Asian/Pacific Islander, and .8% American Indian. The “IPEDS unreported” population was closely aligned with the national numbers on race for degree completers in the top four reported races. However, there was a difference in the study population that Hispanics (16.7%) were slightly ahead of Blacks (11.8%) compared to the national figures showing Blacks at 8.5% and Hispanics at 7.1% (refer to Table 12).

Race and Student Type detail (Table 13) showed consistency in the percentages across the types of students in the “IPEDS unreported” group for most race categories. However, in the “Other FTIC” sub-group (n= 533), the percentages of Hispanic (20.4%) and Black/Non-Hispanic (27.2%) were higher than the Transfer sub-groups. Transfers in the study population were Hispanic (17.4% and 15.8%) and Black/Non-Hispanic (8.7% and 11.9%) respectively. More research will be needed to determine patterns or trends, if any.

IPEDS Unreported Demographics of Type of Transfer Institution. The transfer student population amounted to 4,207 different records in the study population. The Florida College System represented 65% (n=2735) while 35% or 1,472 students transferred from other institutions (see Table 14). The larger percentage of transfer students originating from the Florida College System was not surprising, due to Florida’s 2+2 Articulation (Florida Department of Education, *Articulation Manual*, 2011).

The data appeared to reflect that students transfer to USF more often as an upper-level transfer (refer to Table 15). Again, this was not surprising due to strong institutional commitment to Florida’s 2 + 2 Articulation between the Florida College System and the State University System. A similar trend was observed in the “Other Institution” category with 186 (or 4.4%) in lower-level transfers, and 1,286 (or 30.5%) in upper-level. Admissions requirements are more rigorous for lower-level transfers which include high school and college GPA and SAT or ACT test scores, which may account for the difference in numbers for these populations (USF Undergraduate Catalog, Admissions, 2008). Names of the transfer institutions were not provided in this study,

however, the researcher recommends the specific data element could be useful if the study were to be replicated.

IPEDS Unreported Demographics of Completion Age. In the “IPEDS unreported” group, 53% of the students completed their degree between the ages of 18-24 (refer to Table 16). The next largest groups were the ages of 25-29 (28.1%), and then ages 30-34 (9.1%), and 35-39 (4%). This data did not appear to be out of the ordinary compared to the national data. *The Condition of Education* (Aud et al., 2012, p. 114) reported an increase in the number of bachelor degrees in the age group of 25-29 reported during the timeframe of 1980 to 2011. The percentage rose to 32% nationally compared to 28.1% in the study population of 25-29 year olds. The researcher recommended that if this study was replicated, the completion age should be examined carefully. As previously stated, adult students in higher education are on the rise (Aslanian, 2007; Choy, 2002; Lipka, 2012; Snyder & Dillow, 2012), therefore future numbers may trend differently.

IPEDS Unreported Demographics of College at Graduation. The highest numbers of graduates in the “IPEDS unreported” graduates were located in the College of Arts and Sciences (refer to Table 17), which is not surprising since it is the largest college at USF Tampa. The top six colleges were Arts & Sciences, Business, Behavioral & Community Sciences, Engineering, Education, and Nursing in the study population. Reviewing the sub-groupings of lower-level, upper-level and “other FTIC” in Table 18, it does not appear to be surprising or out of the ordinary data in these areas. The representation of “college at completion” seemed to be fairly consistent across this group of students.

Looking at national data, there were similarities in comparing majors of completion with the “IPEDS unreported” group. According to *The Condition of Education* (2012, p. 94), there were 22% degrees awarded in business fields (which includes personal and culinary services) in the United States while the research study population showed 19.1% (does not include personal and culinary services). Education degrees awarded amounted to 6% and in the “IPEDS unreported” population showed 6.6%. The percentages in the national and study population in regards to the selected majors appeared to be comparable.

Nationally, 8% of the degrees were reported in the health professions, while the study population at USF Tampa in the areas of Nursing, Public Health and Medicine was similarly at 8.1% completions. Again, the collected data aligned with the distribution of the national data. Kroc et al. (1997) studied over 130,000 first-time-in-college students from forty-four public land-grant and research institutions. One of their findings indicated 26% graduated in business fields (p. 4). In comparison, this study revealed 19.1% graduated in business among this study population at this one institution. The time difference of fourteen years in addition to the quantity of institutions in the Kroc et al. study could be a factor in comparison of the study populations.

IPEDS Unreported Demographics of Matriculation Semester. In the “IPEDS unreported” population, the data (refer to Table 19) revealed Fall semester has the largest population in two of the sub-categories of upper-level transfer (2,279 graduates) and lower-level transfer (148 graduates). These data points follow similar patterns, as many students in the entire educational system started in the fall time frame. In the “Other FTIC” group, the highest number of students matriculated in the Spring or Summer

semesters (460) in the “IPEDS unreported” group. Additional research might be indicated in order to find out more about the preferences and characteristics of this specific group.

IPEDS Unreported Demographics of Financial Aid. College students utilize financial aid to assist with funding to complete their degrees. The “IPEDS unreported” group consisted of more students who use financial aid options (83.9%), while 16.1% do not use aid (Table 20). Although the majority of “IPEDS unreported” population consisted of transfer students, the percentage of students using aid is reported to be the same within a few percentage points of the national figure. The *Condition of Education 2012* explained there was an increase in the use of financial aid from the years 2006-2007 at 75% to 85% in 2009-2010 (p. 100). This publication reported financial aid of first-time, full-time students attending 4-year universities in the United States.

The findings of Cabrera et al.’s (1992) research study illustrated the importance of financial aid in the persistence of students to degree completion (p. 589). In future studies, a greater number of information and research variables such as socioeconomic status, work hours if any, and other financial support characteristics would be helpful. Specifically, such information would yield more detail and specifics on this issue to provide better understanding of the college student and the factor of financial aid.

IPEDS Unreported Demographics of Credit Hours. The “IPEDS unreported” population showed 1,775 students or 37.4% who graduated in a timely manner or close to 120 credit hours (refer to Table 21). There are 2,965 students or 62.6% who graduated with 133 credits or more. It is possible that some of the students graduated with a double major that could explain some of the high number of credit hours. However, if this study

were to be replicated after the Florida legislation on “Excess Credit Hour Surcharge” (Florida Educational Scholarships, Fees, and Financial Assistance, FL Statute 1009.286, 2013) went into effect, it would be valuable information to see if there were any changes in graduates’ number of credit hours at completion.

IPEDS Unreported Demographics of Parent College Attendance. The self-reported data in the “IPEDS unreported” group showed there are more students in the study population with a parent with “no college” indicated (refer to Table 22). There were 2,891 (or 61%) reported their mother did not attend college and 3,025 (or 63.8%) stated their father did not attend. Thirty-nine percent (39%) stated their mother did attend college and 36.2% indicated that their father attended.

Further examination of the study population reveals that 3,382 students (or 45%) are first generation students with no mother or father reported with college attendance. This group is comprised of 1,014 (37% of the IPEDS reported population) and 2,368 (50% of the IPEDS not-reported population). Expanded data collection and analysis on the parent education variable could be an additional research project for the future.

IPEDS Reported vs. IPEDS Unreported populations? (Question #3)

What are the demographic differences between the “IPEDS reported” group and the “IPEDS unreported” group of graduated students? Are there any notable trends of the two groups?

IPEDS Reported vs. IPEDS Unreported, Gender. The *Condition of Education* (2012, p. 108) reported for public institutions, first-time-in-college females graduated in higher numbers than males (58% female, compared with 53% male) for the six-year cohort starting in Fall 2004. In the study populations, both groups reported higher

numbers of females than males in completions (refer to Table 23). This gender distribution is not out of the ordinary as more women have been enrolled in higher education since the late 1970's (Bowen et. al, 2009, p. 29; Renn & Reason, 2013, p. 10; Snyder & Dillow, 2011).

IPEDS Reported vs. IPEDS Unreported, Race. As referenced earlier, regarding the distribution of race identification in the study population, Snyder and Dillow (2012, Table 300) reported in the *Digest of Educational Statistics* similar race percentages nationally. The exception to this trend is that the Hispanic population was a greater number than the Black/Non-Hispanics across both study groups. This higher number could be attributed to the strong Hispanic population (23.6%) in the state of Florida that was reported recently by U.S. Census Bureau (QuickFacts, 2014). In the same census report, 17.1% Hispanic are reported across the United States.

IPEDS Reported vs. IPEDS Unreported, Age. As previously explained, the study populations were patterned by age groupings in the postsecondary enrollment report in the *Digest of Educational Statistics* (Snyder & Dillow, 2012, Table 202). Reviewing Table 25 in both the "IPEDS reported" and the "IPEDS unreported" groups, the majority of students fell between the ages of 18-24 (5,120 graduates or 69%). It is interesting to note the majority of students in the "IPEDS unreported" group were of what is considered traditional college age (2,511 students or 53%); however, this population of students is not tracked in an IPEDS cohort by the federal government. In the entire study population of 7,468 records, 6,572 (or 88%) students completed their degree between ages of 18 to 29. Only 12% (or 896 completions) were between the ages of 30 to 69 and all are in the "IPEDS unreported" population.

Referencing Table 31, there was slightly over four years between the averages (means) of the two study groups, “IPEDS reported” (22.24 years old) and “IPEDS unreported” (26.57 years old). Similarly, the most frequently reported age (mode) in both study groups was 23 years old. However, the 23 year olds in “IPEDS reported” group were included in the graduation rate. Conversely, the 23 year olds in the “IPEDS unreported” population were not. The standard deviation scores show “IPEDS reported” (1.155) and “IPEDS unreported” (6.556) indicated a wider distribution in the later of the two groups. Refer to Appendix D for histograms to give a visual picture of the data on age at completion.

IPEDS Reported vs. IPEDS Unreported, College at Completion. The data in both study populations was fairly consistent looking at percentages of each college with the exception of Nursing (refer to Table 26). It should be noted that Nursing has a stronger completion number in the “IPEDS unreported” population (308 graduates or 6.5%) versus the “IPEDS reported” was smaller at 48 completions or 1.8%. The Nursing transfer population was articulated in the 2 + 2 pathway (Florida Department of Education, *Statewide Articulation Manual, 2011*) with the Associate in Science in Nursing (A.S.) to Bachelor of Science in Nursing (BSN). This is reflected in the “IPEDS unreported” numbers for this college with higher transfer numbers than first-time-in-college students. Overall, this data was not surprising due to the state-wide plan for students in this program.

IPEDS Reported vs. IPEDS Unreported, Matriculation Semester and Attendance. This variable was useful to confirm the study populations, but it was not remarkable. The “IPEDS reported” group indicated 99.7% in full-time enrollment in

Table 27, which made sense as full-time attendance is a criteria for the first-time-in-college cohort student. For the “IPEDS unreported” population, 88.9% were “not-reported” in the study data, which again makes sense since this population is not tracked at all by IPEDS.

The “IPEDS reported” students entered in the Fall semester as explained with 2,727 of 2,728 students matriculating in the Fall (Table 27). One record appeared in another semester other than Fall, indicating the possibility of an error. The “IPEDS unreported” group start term was basically divided rather evenly between Fall semester (2,500 students) and Spring/Summer (2,240 students) confirming a fairly consistent transfer population across all semesters.

IPEDS Reported vs. IPEDS Unreported, Financial Aid. These data (refer to Table 28) need more detail to be useful for the research study. If the study is replicated, the researcher recommends that Financial Aid data be paired with additional variables with confirmed student information in a detailed analysis. Items such as socioeconomic status, dependents, work hours, attendance levels, and specific types of funding could better inform another study.

IPEDS Reported vs. IPEDS Unreported, Hours at Completion. Both study populations showed over 50% of the students completing their degree with 133 credit hours or more, while degree programs are customarily 120 credits (refer to Table 29). The “IPEDS reported” (54.5%) and “IPEDS unreported” (62.6%) indicated over half of the students are taking a considerable number of hours to complete degrees.

The mode for both populations was 120 credit hours, which aligned with the number of hours needed to graduate from the university (USF catalog, 2008). The mean

(or average) for both study groups was over 120 hours with “IPEDS reported” at 139.55 credits and “IPEDS unreported” at 144.95 credit hours (refer to Table 31). The “IPEDS reported” and “IPEDS unreported” were indicating positively skewed distributions, as the numbers of credit hours were as high as 247 or 328 credits respectively (see Appendix E for histograms).

The number of credit hours has implications for time to degree, efficiency, and financial concerns. As evidenced by the “Excess Hours” legislation (Florida Postsecondary Student Fees, FL Stat 1009.186, 2013), stakeholders are watching this issue closely. More research is needed on comparing first-time-in-college and transfer student progression to degree completion efficiency.

IPEDS Reported vs. IPEDS Unreported, Parent College Attendance. The “IPEDS reported” group was almost 50/50 for mothers and fathers with or without college (refer to Table 30). Students starting at a four-year institution in the Fall semester could have been encouraged to do so by their parents, and therefore be a part of the “IPEDS reported” cohort. According to the National Center for Education Statistics data, beginning students from four-year colleges reported 49.4% of their parents earned a bachelor degree and another 26.2% indicated their parents experienced some college (2010, p. 8).

The “IPEDS unreported” group revealed a smaller percentage of parents with college in the study group, mothers 39% and fathers 36.2% respectively. Further, the study group reported more parents with no college (mothers 61% and fathers 63.8%). Many first generation students began at two-year institutions (Nunez & Cuccaro-Alamin, 1998; Renn & Reason, 2013). This factor may be contributing to larger percentages in the

“IPEDS unreported” parent college education categories. More information and research will be needed in this area to confirm the exact reason however.

Implications for Future Research

Reviewing the “IPEDS reported” and “IPEDS unreported” groups, the researcher noted 37% of USF Tampa students in the 2011-2012 academic year study population (“IPEDS reported”) met the criteria to be reported to the federal government as degree completers. The other 63%, or “IPEDS unreported” group, completed their degree but these students were not reported in the federal graduation rate due to the criteria restrictions set forth in the IPEDS definition of the graduation rate (IPEDS Glossary, 2013). The limitations of the study are important to note, as the researcher used one academic year of completed baccalaureate degree holders and one academic institution. Expanding the study to include more institutions and more academic years is recommended for future studies.

Characteristics determined by the researcher in the “IPEDS reported” and “IPEDS unreported” groups showed many similarities; yet only one group is tracked and reviewed by IPEDS. Gender, race (with the exception of the “Other FTIC” population), use of financial aid, and college at completion were very consistent percentages across the “IPEDS reported” and “IPEDS unreported” groups. Age comparisons of these two groups showed the majority of students completed at age 29 or earlier. Only 896 of the total 7,468 students graduated beyond the age of 30. Students graduating with more than 133 credit hours are a concern for both study groups and require more research especially as the “Excess Credit Surcharge” (Florida Educational Scholarships, Fees, and Financial Assistance, FL Statute 1009.286, 2013) implementation in the state. “Parent with or

without college” was self-reported data and not required in the financial aid application. With this in mind, the information was interestingly consistent in the two populations. An entire research study on this variable, and at more institutions, could give more insight to administrators, higher education professionals, and stakeholders.

Conclusions and Policy Implications

As stated earlier, the purpose of this research study was to gain insight on the students who officially graduated from the institution but, due to the current reporting structure, have remained invisible in the national data on graduation rates. Ewell et al. (2003) explained that data collected on college students have been incomplete and inaccurate. Reporting students who start at different semesters other than only fall semesters is complicated, but critical for institutions to be able to count all their graduating students. Adelman (2007) suggested that, along with reporting traditional and non-traditional students in separate groups, different intervals other than the 4-year and 6-year benchmarks could be used. Many students attend college part-time rather than full-time. How can the part-timers' graduation story be heard? Other data elements have been suggested by researchers, such as gender, race/ethnicity, financial aid, and program or major that could be included in the annual data collection (Cunningham & Milam, 2005; Ewell, 2003).

Complete information would inform higher education leaders, policymakers, and stakeholders on possible gaps, trends, and needs to improve knowledge for the future of colleges and universities to advocate for specific policy directions. Consistent and complete measures across the nation's college and universities could provide insight on

what is working and what is not with the goal of an effective and transparent metric on how students graduate and then enter the workforce.

Improved data collection that allows for a inclusive and expanded picture of how students progress from the semester start to graduation day is critical for the nation to meet the economic and workforce challenges of the future. These data can provide researchers and higher education leaders the institutional information necessary to effect change and improvements where needed, and celebrate successes in completion measures. Basic and clear-cut information for students and their parents on graduation statistics empowers their admissions decisions. A collective policy review and effort placed to improve the mandatory reporting to IPEDS with baseline and comprehensive methods needs to occur sooner than later. Further, a public reporting mechanism that is inclusive of all college students should be recommended and implemented in order to improve graduation data, determine interventions if necessary, and provide better decision-making data.

Chapter Summary

Clear and transparent reporting of all undergraduate degree completions in this country is imperative. The story of how many students complete college degrees and graduate needs to be told in entirety with all the complexities of today's undergraduate student attendance patterns. These students more frequently attend more than one institution of higher learning, start in the Spring semester, and/or attend part-time because of full-time work. Visions of classrooms filled with full-time students, starting in the Fall, and attending the same institution for four years is a hold-over of the past. Our

reporting methods need to be adjusted to the reality of how college students attend and complete degrees of today.

In addition, in Chapter 2's Literature Review, it was pointed out that the adult non-traditional population is increasing in higher education (Aslanian, 2007; Choy, 2002; Lipka, 2012; Snyder & Dillow, 2012) in the United States and participating in the workforce while attending classes (Betts, Hartman & Oxholm, 2009). Preparing to meet the needs of the adult student population is important, but preparing to effectively report the outcomes of this increasingly expanding population is critical as well. Appropriate methods for curriculum and metrics for first-time-in-college students may be very different than those needed to teach and track experienced learners. Administrators may want to prepare now to tell the story of the graduations of this population, rather than catching up to reporting methods later.

The first-time-in-college cohort is only one measure of graduation numbers and outcomes. The researcher suggests other methods should be implemented along with current IPEDS reporting to have a richer set of data and giving a more complete picture of college attendance and graduation measures in the United States. Students are on the move and completing degrees. Their accomplishment and value needs to be included in institutional reporting to provide the accurate big picture report on completion rates. Further steps and policy recommendations can be crafted with better data collection to create a complimentary reporting method along with the current cohort methodology.

Since this research project was conceptualized, planned, approved, implemented and written, changes have been happening at the national level on these very issues. According to the NCES website (n.d., c.), work in this direction is planned by IPEDS to

begin with a pilot collection. The details describing all the changes in Outcome Measures for next year are listed (NCES, n.d., c.).

In 2015-2016, institutional data will include both full-time and part-time students for first-time-in-college and “non first-time” students who enter in the fall. NCES is addressing the issues of full-time and part-time attendance, as well as students who transfer, stop out, etc. However, no other entering semester is mentioned. And race, ethnicity or gender will continue to be omitted.

The posted guidelines also indicated that students’ completion status will be recorded at the reporting institution and if information is available from another institution. Both two-year and four-year institutions are included in these data collection requests. These changes are a few steps ahead in garnering more complete and transparent data; however, exactly what the new reporting will look like or when it will be ready is not clearly articulated yet.

By maintaining additional and more comprehensive data and reporting, a clearer picture of who is graduating in the United States will be possible. A student who simply transfers and completes a degree in another state will be a graduate, and not look like a drop out. An adult student who begins their college degree well after high school graduation will be reported in this new system. Although the unit record system is currently outlawed in this country (Zemsky, 2011), there may be value to review such a system and prepare for confidentiality of records, student attendance patterns, and inclusive record-keeping for who attend institutions of higher education in the United States. Addressing the public conversation on institutional accountability and expanding graduation tracking beyond a single, select population of students is essential for the

future of higher education and an educated workforce for the future. Moreover, our students and post-secondary institutions need to be able to celebrate the true story of successful higher education achievement, and address the true needs which remain.

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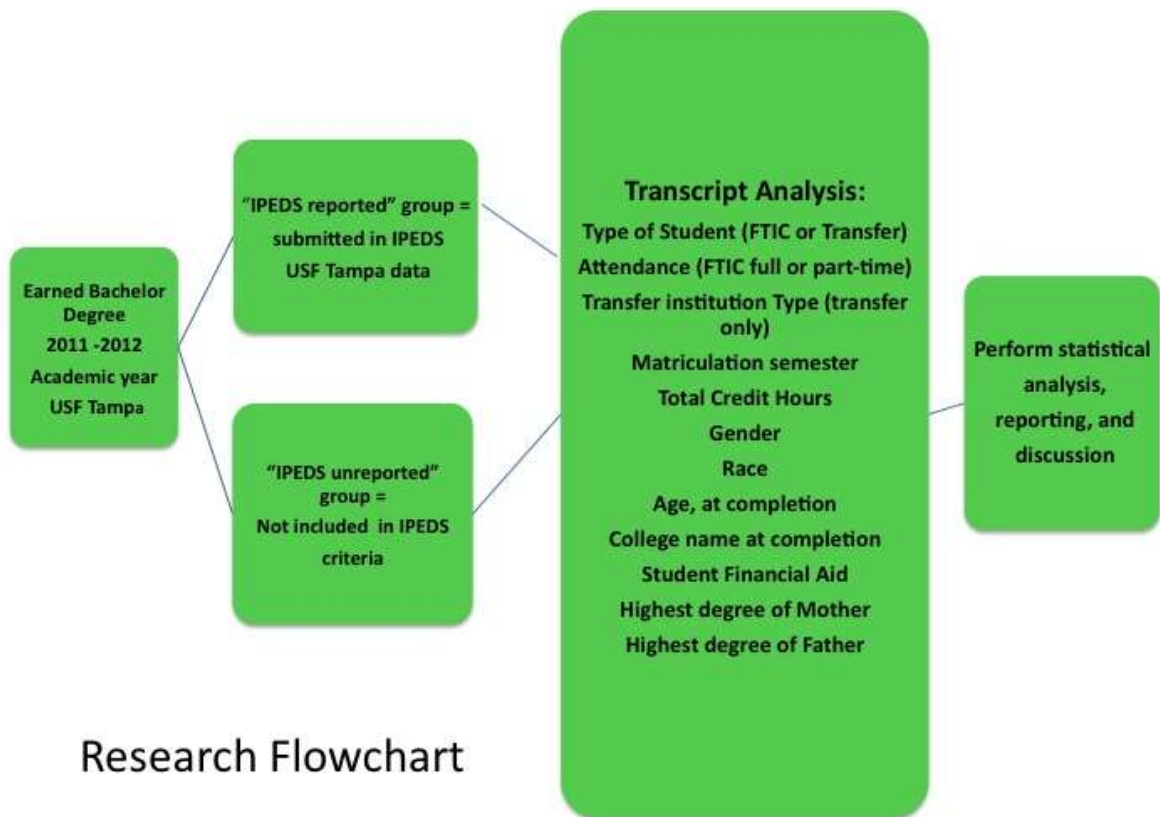
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APPENDICES

Appendix A:

Research Flow Chart: IPEDS Reported vs. IPEDS Unreported



Appendix B:

List of States with Percentages of “IPED Reported” and “IPEDS Unreported” Students

State	2010 IPEDS reported	2010 IPEDS unreported
Alabama	57.5%	42.5%
Alaska	22.2%	77.8%
Arizona	63.7%	36.3%
Arkansas	56.6%	43.4%
California	53.6%	46.4%
Colorado	57.3%	42.7%
Connecticut	67.1%	32.9%
Delaware	87.0%	13.0%
District of Columbia	44.0%	56.0%
Florida	40.7%	59.3%
Georgia	58.4%	41.6%
Hawaii	40.2%	59.8%
Idaho	41.1%	58.9%
Illinois	60.9%	39.1%
Indiana	65.4%	34.6%
Iowa	68.3%	31.7%
Kansas	62.4%	37.6%
Kentucky	70.2%	29.8%
Louisiana	79.2%	20.8%
Maine	59.5%	40.5%
Maryland	59.1%	40.9%
Massachusetts	68.1%	31.9%
Michigan	72.9%	27.1%
Minnesota	56.9%	43.1%
Mississippi	68.2%	31.8%
Missouri	61.1%	38.9%
Montana	69.5%	30.5%
Nebraska	67.6%	32.4%
Nevada	32.8%	67.2%
New Hampshire	77.1%	22.9%
New Jersey	57.4%	42.6%
New Mexico	66.2%	33.8%
New York	57.4%	42.6%
North Carolina	65.3%	34.7%
North Dakota	67.2%	32.8%
Ohio	77.9%	22.1%
Oklahoma	87.3%	12.7%
Oregon	47.4%	52.6%
Pennsylvania	72.7%	27.3%
Rhode Island	65.2%	34.8%
South Carolina	73.0%	27.0%
South Dakota	69.6%	30.4%
Tennessee	61.0%	39.0%

Texas	61.3%	38.7%
Utah	44.3%	55.7%
Vermont	66.5%	33.5%
Virginia	69.5%	30.5%
Washington	54.6%	45.4%
West Virginia	76.2%	23.8%
Wisconsin	63.1%	36.9%
Wyoming	58.2%	41.8%
Average percentage	61.8%	38.2%

Note: Data is from the *Chronicle of Higher Education* website, *College Completion: Who graduates from college, who doesn't, and why it matters*. The data is compiled from 3,800 degree-granting US institutions reporting to IPEDS with at least 100 first-time, full-time undergraduate students in the cohort in 2010 and bachelor degrees awarded from 2008 to 2010.

Appendix C:

Letter from Institutional Review Board



RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC055 • Tampa, FL 33612-4799
0813 974-5638 • FAX 0813 974-7091

April 18, 2014

SUPERSEDES LETTER OF April 15, 2014

Mary Wallace
USF Sarasota/Manatee - Student Services
8350 N. Tamiami Trail
Sarasota, FL 34243

RE: NOT Human Research Activities Determination

IRB#: Pro00016701

Title: Study of College Undergraduate Graduation Rates in the United States: Who is Reported and Unreported in IPEDS at a Large Public Research Institution?

Dear Ms. Wallace:

The Institutional Review Board (IRB) has reviewed the information you provided regarding the above referenced project and has determined the activities do not meet the definition of human subjects research. Therefore, IRB approval is not required. If, in the future, you change this activity such that it becomes human subjects research, IRB approval will be required. If you wish to obtain a determination about whether the activity, with the proposed changes, will be human subjects research, please contact the IRB for further guidance.

All research activities, regardless of the level of IRB oversight, must be conducted in a manner that is consistent with the ethical principles of your profession and the ethical guidelines for the protection of human subjects. As principal investigator, it is your responsibility to ensure subjects' rights and welfare are protected during the execution of this project.

Also, please note that there may be requirements under the HIPAA Privacy Rule that apply to the information/data you will use in your activities. For further information about any existing HIPAA requirements for this project, please contact a HIPAA Program administrator at 813-974-5638.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

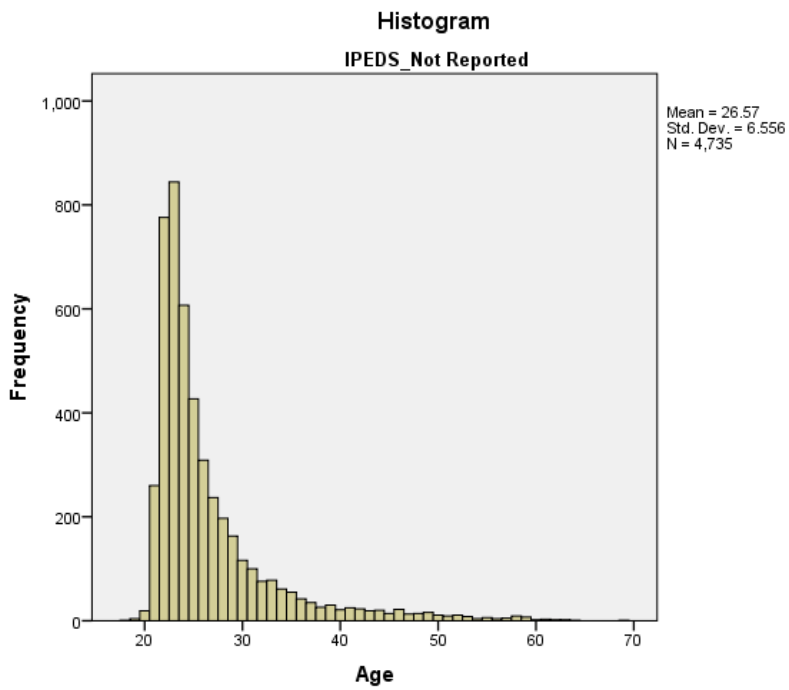
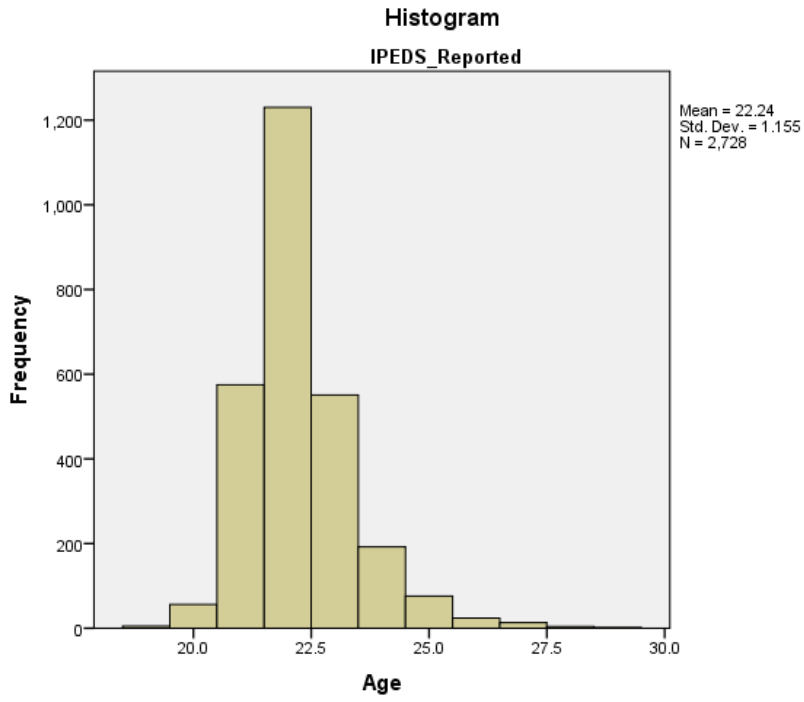
Sincerely,

A handwritten signature in black ink that reads "John A. Schinka, Ph.D.".

John Schinka, Ph.D., Chairperson
USF Institutional Review Board

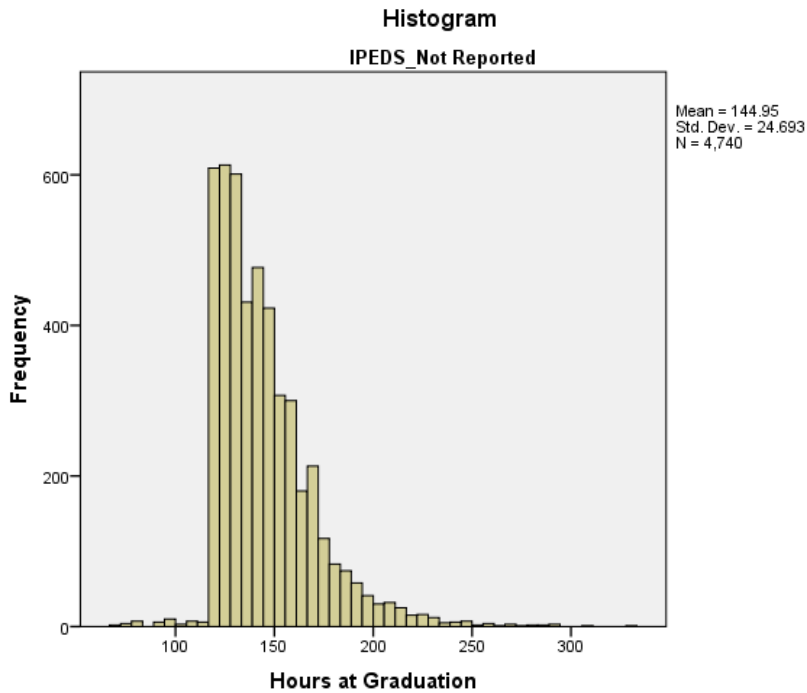
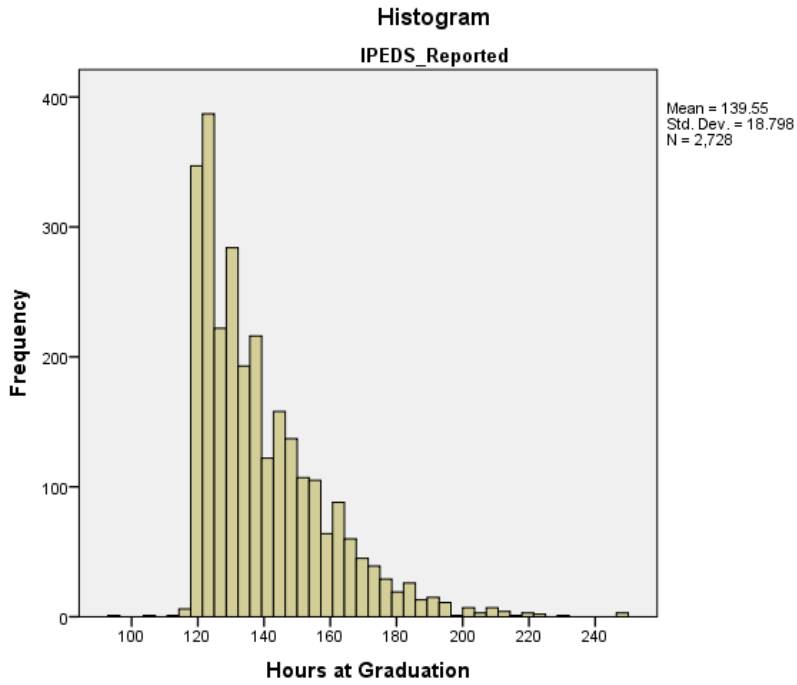
Appendix D:

Histograms for “IPEDS Reported” and “IPEDS Unreported” on Completion Age



Appendix E:

Histograms for “IPEDS Reported” and “IPEDS Unreported” on Credit Hours



ABOUT THE AUTHOR

Mary Elizabeth Wallace (Mary Beth) completed her bachelor's degree at Western Illinois University in Elementary Education. She taught second and fifth grades in Memphis, Tennessee and Baton Rouge, Louisiana. Later moves to Nashville, Tennessee and Sarasota, Florida brought more experiences and three children, Jennifer, Chip and Michael. Mary Beth began her higher education career in Academic Affairs in 1998, and then Academic Advising along with various areas related to Student Services. Wallace earned a Masters of Arts in Library and Information Sciences at University of South Florida and then later, a Graduate Certificate in Leadership in Developing Human Resources. Wallace has taught undergraduate courses in student leadership and student success for students transitioning to the university. She currently serves as Assistant Vice President for Student Success and Engagement at the University of South Florida Sarasota-Manatee. Bill and Mary Beth live in Sarasota, Florida.