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Retention and Graduation Rates as Performance Indicators in  
2-Year and 4-Year Postsecondary Institutions

A Dissertation

Submitted to the Graduate Faculty of  
The University of New Orleans  
in partial fulfillment of the  
requirements for the degree of

Doctor of Philosophy  
in  
Educational Administration

by

Lisa Watson  
BS, Tulane University, 1988  
MEd, University of New Orleans, 2003

December, 2010

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## TABLE OF CONTENTS

|   |     |
|---|-----|
| LIST OF TABLES .....  | vi  |
| ABSTRACT.....   | vii |
| CHAPTER ONE.....  | 1   |
| Introduction.....   | 1   |
| Background.....   | 4   |
| Conceptual Framework.....   | 7   |
| Purpose of the Study .....  | 14  |
| Overview of Methodology .....   | 16  |
| Delimitations.....  | 17  |
| Research Questions.....   | 18  |
| Significance.....   | 19  |
| Definition of Terms.....  | 21  |
| Organization of Study .....   | 27  |
| CHAPTER 2 .....   | 28  |
| Review of the Literature .....  | 28  |
| The Expansion of the Accountability Movement in Higher Education.....             | 28  |
| Performance Indicators in the Accountability Movement in Higher Education.....    | 32  |
| Mismanagement of Funds and Reduced State Appropriations in Higher Education ..... | 47  |
| Societal Expectations in a Changing Economy .....                                 | 49  |
| Accountability versus Autonomy .....  | 57  |
| Allocation Patterns of Funding in Higher Education and the Performance Trio.....  | 60  |
| Status of Performance Trio .....  | 63  |
| Common Performance Indicators .....   | 63  |
| Conclusion from the Literature Review.....  | 65  |
| Summary .....   | 69  |
| CHAPTER THREE .....   | 70  |
| Methods.....  | 70  |
| Preliminary Study .....   | 71  |
| Preliminary Study Findings .....  | 71  |
| Research Questions.....   | 75  |
| Quantitative Research Design.....   | 75  |
| Data Sets .....   | 76  |
| Dependent Variables.....  | 79  |
| Independent Variables .....   | 81  |
| Analysis.....   | 81  |
| Summary.....  | 82  |
| CHAPTER FOUR.....   | 83  |
| Results.....  | 83  |
| Analysis of Research Questions.....   | 83  |
| Research Question 1 .....   | 83  |
| Research Question 2 .....   | 86  |
| Research Question 3 .....   | 88  |
| Research Question 4 .....   | 93  |

|   |      |
|---|------|
| Summary .....   | 97   |
| CHAPTER FIVE .....                                    | 99   |
| Discussion .....                                      | 99   |
| Discussion of the Findings.....                       | 99   |
| Summary of Findings.....                              | 116  |
| Delimitations and Limitations.....                    | 121  |
| Implications for Higher Education and its Policy..... | 122  |
| Recommendations for Future Research.....              | 124  |
| REFERENCES .....                                      | 1256 |
| Appendix.....   | 134  |
| VITA.....   | 135  |

## LIST OF TABLES

|  |     |
|--|-----|
| Table 1 Core Indicators of Effectiveness for Community Colleges, by Mission .....  | 11  |
| Table 2 Indicators Selected by Four or More States (n=11).....   | 39  |
| Table 3 Summary of Performance Indicators (n=27) .....   | 41  |
| Table 4 Indicators Selected by Performance Reports and Performance Funding .....   | 43  |
| Table 5 Differences between Postsecondary Institutions for Retention Rates of Full Time and Part Time Students at Public 2- and 4-Year Institutions in Sixteen State in 2004 ..... | 72  |
| Table 6 Independent Samples <i>t</i> Tests for Retention Rates of Full Time and Part Time Students at Public 2- and 4-Year Institutions in 2004 .....                              | 74  |
| Table 7 Graduation Rates at Title IV Institutions, by Race/Ethnicity, Level and Control of Institution, and Gender: United States, Cohort Years 2002 and 2005.....                 | 80  |
| Table 8 Retention Rate Data by Institutional Level for Full Time Students .....  | 85  |
| Table 9 Retention Rate Data by Institutional Level for Part Time Students .....  | 88  |
| Table 10 Total Graduation Rates by Level and Control of Institution and Ethnicity/Race: Years 2005, 2006, 2007.....  | 92  |
| Table 11 Graduation Rates by Level and Control of Institution, Sex, and Ethnicity/Race: Years 2002 and 2005.....   | 96  |
| Table 12 Retention Rate Data by Institutional Level for Full Time and Part Time Students .....   | 101 |
| Table 13 Graduation Rates at Title IV Institutions, by Race/Ethnicity, Level and Control of Institution, and Gender: United States, Cohort Years 2002 and 2005.....                | 117 |

## **ABSTRACT**

The focus of this dissertation is on performance indicators – specifically, retention and graduation indicators - that impact allocation of the ever-dwindling public sources of money. Decreasing revenue trends make understanding the performance indicators that are often used to fund postsecondary institutions very important. There is a significant amount of literature on funding, types of funding, and performance indicators used in funding; however, there is very little literature on quantitative differences on standard performance indicators in 2-year and 4-year postsecondary institutions. The purpose of this study is to look at retention and graduation rates for part-time and full-time students in public institutions of higher education in the United States.

Retention and graduation rates for first-time full and part-time students from the Integrated Postsecondary Educational Data Systems (IPEDS), within the National Center for Educational Statistics, for the years 2005, 2006, and 2007, will be examined to determine if there are differences between two-year and four-year post secondary institutions.

Keywords: retention rates, graduation rates, community and/or technical colleges, universities, performance funding, appropriations



## CHAPTER ONE

### Introduction

Much has been written about funding, accountability, and the use of performance indicators in accountability (e.g., Burke & Associates, 2005; Ewell, 1999; Hovey, 2001; King, 2000; Kenton, Huba, Schuh, & Shelley, 2005; Layzell, 1998, 2001; Palmer, 2001), but little has been written about differences in performance indicators, such as retention and graduation rates, in public 2-year colleges and public 4-year universities.

I will focus on the public system as it is affected most by state and federal fiscal policy decisions, particularly in terms of state appropriations. The National Center for Education Statistics reported that 2- and 4-year private postsecondary institutions received 88.3% and 83.8% of all operating revenue from tuition and fees respectively, making them less vulnerable to governmental funding changes. On the other hand, 2- and 4-year public, postsecondary institutions received only 17.6% and 16% of their operating funds from student tuition and fees (Knapp, Kelly-Reid & Ginder, 2010), having to rely more upon governmental appropriations.

Knapp et al. (2010) also reported that 4-year institutions relied on state appropriations for 23.3% of their operating revenue while 2-year institutions received 30.5% of their operating revenue from state appropriations. As state funding to higher education declines, access and affordability for many students are jeopardized. Finally, in an environment that views higher education as discretionary budget line items and vulnerable to budget cuts during economic scarcity, it is important to understand states' policies on appropriations, particularly as the largest number of undergraduate students attend public 2- and 4-year institutions. Of the 16.5 million undergraduate students attending higher education institutions in the fall of 2008, 77%, or 12,705,000, students attended public 2- and 4-year institutions (Knapp et al., 2010). When one

considers how important having an educated population is to the health of our economy, these data are compelling.

Performance indicators are a means of measuring concepts of quality in numeric ways (Dochy et al., 1990). For example, postsecondary institutions are often asked to report the percentages of job-placement, student retention, and graduation rates often used as attainment measures, which may impact funding/budgeting decisions. These measures become a point of reference or goal for institutions to compare performance (Cave, Hanney, Henkel & Kegan, 1997).

The Education Commission of the States (ECS, 2000) surveyed state policymakers in all 50 states in 1999 about community college concerns. The ECS reported its survey findings on policy issue concerns, finding that funding was the number one concern for policy makers. Policy makers further reported that the traditional gap between funding policy and the practical implementation at the campus level had changed. These policy makers were linking state funding mechanisms to accountability performance measures linked to state priorities. In other words, state policy makers wanted to see state funding used toward stated goals in measurable ways. Examples of common performance indicators in postsecondary institutions are retention rates, graduation rates, job placement rates, transfer rates, licensure passage rates, faculty productivity, and student learning outcomes (ECS, 2000).

With a wide variety of performance indicators to choose from, indicators such as retention and graduation rates can be both an incentive and an obstacle (Alfred, Shults, & Seybert, 2007). The authors stated that colleges moved quickly to adopt and report performance indicators to satisfy governmental funding requirements, but the speed in which these indicators were implemented hold institutions accountable to criteria that did not necessarily fit with their

institutional mission or their actual performance. For example, a local technical college may be asked to train welders by local industry. The program takes one year to complete, but students can take a nationally-recognized welding exam after nine months and begin welding once they pass the exam. Because of need, local industry recruits students who have passed their welding exam before completion of their technical program. Thus, although the technical college has a 99% placement rate, its graduation rate is only one percent. The one student who has graduated from the welding program is considered successful by state reporting agencies, but the graduate may not have been able to pass the nationally-recognized welding exam and is not eligible for work. In spite of this, ECS (2000) reported that states were redesigning their funding systems and introducing initiatives that award funding based on achieving measurable goals that state governmental bodies deemed priorities.

Traditional state funding practices of meeting postsecondary institution's needs, regardless of performance were the norm in the past (ECS, 2000). At the same time, the writers also noted that state and federal governmental agencies were becoming more interested in the role of community and technical colleges and their expectations that 2-year institutions should become more responsive to state needs by increasing economic development initiatives, offering technical education requiring less than a 4-year baccalaureate degree, and providing developmental and/or general education transfer work. These expectations came in an increasingly competitive funding arena between public 2- and 4-year institutions. Because of fiscal and political changes, postsecondary institutions have found themselves with few fiscal resources because of shifts in state and federal appropriations and greater demands of accountability and productivity (Alfred et al., 2007). Potentially, these changes can and have altered state funding patterns (ECS, 2000).

The ECS has not updated its study of performance indicators; however, Zarkesh and Beas (2004) followed up on the ECS study by examining which indicators community colleges across the country were asked to report and the indicator reporting relationship to state funding formulas. Although they found that fewer states reported using performance indicators in 2003, the researchers found a substantial increase in the requirement that graduation and retention rates be reported. Furthermore, Zarkesh and Beas found that graduation and retention rates were two of the most common indicators attached to performance-based funding. The writers speculated that retention and graduation rates may be measured because they are the easiest to count and that performance indicators are a means to “mollify the public” (p. 74) by being accountable for state funding.

### Background

Studies have looked at how community colleges are funded (Hendrick, Hightower, & Gregory, 2006; Kenton, Huba, Schuh, & Shelley, 2005; Voorhees, 2001). The National Center for Education Statistics (NCES) by means of the Integrated Postsecondary Education Data System (IPEDS) Annual Finance Survey collects information that is used to describe higher education’s condition and resources. Specifically, IPEDS includes revenue data by source, such as tuition and fees and governmental contracts or grants. The NCES examines 12 funding streams in postsecondary institutions across the United States. They are: (1) tuition and fees, (2) federal appropriations, (3) state appropriations, (4) local appropriations, (5) federal grants, (6) state grants, (7) local grants, (8) private grants, (9) endowment income, (10) sales and services of educational activities, (11) auxiliary enterprises, and (12) other sources, which are revenue sources not covered or reported elsewhere, such as bond sales, accrued interest from bond sales, and donated capital assets (St. John, Hill, & Johnson, 2007).

Most community colleges are institutions of higher education established by their respective state systems and, as such, receive the bulk of their funding through state appropriations. It has been said that community colleges have seen reductions in these state appropriations as competition has increased for state funds. For example, Katsinas (2005) stated that when state legislatures cut appropriations equally in the higher education arena, community colleges are more affected because they rely on state funds to a greater degree than do 4-year universities.

When Kenton, Huba, Schuh and Shelley (2005) completed their quantitative study of 212 community colleges in 11 Midwestern states, they found that state appropriations over a five and ten year period showed significant differences over time. In a similar study, Toutkoushian (2001) found a 10% decrease in state revenue sources in state appropriations. Toutkoushian found that in 1974, community colleges received 57% of their funding from state appropriations. This number decreased to 47% by the year 1994. The Southern Regional Educational Board (2006) further corroborated that public colleges and universities have lost ground in funding when inflation is taken into consideration. Finally, Knapp et al. (2010) reported that only 30.5% of operational funding was derived from state appropriations for 2-year institutions.

Other studies have shown that universities and colleges traditionally respond to this loss of state appropriations by increasing tuition and fees (Collins, Leitzel, Morgan, & Stalcup, 1994; Wattenbarger, 1994; Shin & Milton, 2008). The Southern Regional Educational Board (2006) found that most real dollar growth in funding for colleges and universities comes from increases in tuition and fees for students. Consistent with these studies, Toutkoushian (2001) reported that tuition and fees had increased by 8% (from 13% to 21%) in public postsecondary institutions. This trend is troubling when you also look at the increase of cost of attendance for students who

come from low-income households. In 2007, the College Board, *Trends in College Pricing*, reported that the average cost of attendance for low-income students ranged from 28-39% relative to family income, while students from high income households expended only 6-10% of family income to attend college in 2003-04 at public 2- and 4-year postsecondary institutions.

Reinforcing this idea, Heller (1997) reported that some students are sensitive to increases in tuition in enrollment behavior and that students in community colleges and minority students are more responsive than students at 4-year universities and white students are to changes in tuition and aid. In reviewing Heller's work, Paulsen (2001) was not surprised to find that there was an increasing concentration of students from lower-income households in community colleges. What concerned Paulsen was that even when inflation was taken into consideration, tuition had increased from \$750 (\$391 pre-inflation) in 1980 to \$1,627 in 1990. Research has shown that community college students are more sensitive to tuition increases, possibly because those students are often largely represented by minority students from low-income homes and are of non-traditional ages who attend on a part-time basis.

At the same time, state government agencies have become increasingly concerned with quality education after "decades of decline" (Burke & Associates, 2005, p. 6). Burke and Associates outline the search for quality education through accountability in the 1980s, 1990s, and the early 2000s. The 1980s are defined by Burke and Associates as the states' search for quality education through legislatively-mandated plans to assess processes that enable student learning. The 1990s are defined, according to Burke and Associates, by a shift in accountability in public postsecondary institutions from procedural processes to measured performance production through performance funding, reporting, and budgeting policies measured by performance indicators, such as retention and graduation rates (Burke & Associates, 2005).

Finally, Burke and Associates (2005) talk about how accountability shifted yet again in the early 2000s because of reduced state revenues and recessions. Findings in the *1999 Community College Finance Policy Survey* found that the new focus of state accountability encourages program and funding initiatives based on state priorities (Education Commission of the States, 2000). With the notion of performance-based standards becoming acceptable practice in business and government, colleges and universities have found themselves swept up in the same accountability and efficiency trends, regardless of academic support or opposition to the management of higher education (Kitagawa, 2003).

Colleges and universities find themselves increasingly having to report certain indicators, such as retention and graduation rates, in order to receive state funding appropriations. Although most higher education administration would agree that their institutions should be held accountable and report their progress, there is little discussion between policy makers and higher education administration about what would be the best indicators for colleges and universities. This discussion may not occur because of a tension that exists between higher educational autonomy and the state's role of controlling accountability and efficiency that often surfaces in many postsecondary policy debates (Berdahl, 1999)

### Conceptual Framework

In choosing a framework for this study, I focused on the work done by Richard Alfred and his associates on core indicators for community colleges (Alfred et al., 2007). According to this core indicator model, the goal of core indicators is to create a framework that enables community colleges to answer critical accountability questions being raised by external forces (state and federal governmental agencies and legislators, students, business and industry, 4-year postsecondary institutions), to make necessary changes and improve performance. This is done to align indicators

that are required by performance funding and reporting agencies to allow postsecondary institutions, community colleges in particular, to be effective. Alfred et al. (2007) defined effectiveness as a “construct involving multiple constituencies that hold specific (and sometimes conflicting) expectations about what a college should be doing and the results it should produce” (p. 9).

First, Alfred et al. (1999) examined community college effectiveness indicators in roundtable discussion format. This discussion centered on concepts of effectiveness, outcomes and performance, and what the authors called core indicators in community colleges, such as “licensure/certification pass rate,” “degree completion rate,” and “responsiveness to community needs” (p. 10). From this discussion, 14 indicators were synthesized to produce the Comprehensive Effectiveness Model for Assessing the Effectiveness of Community Colleges (1999) and revised in 2007.

Rapidly-changing political and fiscal conditions increased demands for productivity from 2- and 4-year institutions and decreased funding to higher education because of shifts in federal and state spending priorities (Alfred et al., 2007). The researchers felt that higher education was under such rapid changes that it was time to re-examine their original framework. The impetus of this re-evaluation was caused by institutional boundaries, such as distance learning, that were shifting and institutional boundaries that were not as defined in the traditional sense of space and time. Technology has allowed higher education to have more of a regional, national, and even global impact (Alfred et al., 2007). An example of these shifts is professors in New York delivering English courses for college credit to students in 15 different states and to 30 different colleges and universities.

Alfred et al. (2007) argued that new performance indicators were intensifying pressures on community colleges to document performance. The researchers posited that higher education



institutions must illustrate to policymakers in quantitative terms that they are accountable for and responsible with state funding. The authors argued that because only a few colleges could produce credible data on traditional measures of success, such as graduation and retention rates, colleges must use accountability demands and performance indicators to demonstrate effectiveness (2007). The authors argued that it was imperative that 2-year colleges needed to develop ways in which to attract attention and enhance support with a reporting framework that outlines effectiveness with core performance indicators.

The revised Comprehensive Model for Assessing the Effectiveness of Community Colleges (Alfred et al., 2007) was meant to be the means to that end. The model included 16 indicators, and it sought to measure effectiveness by a college's ability to serve the needs of its stakeholders as well as to match the performance results with the college's mission using core indicators as the means of demonstrating good stewardship of state and federal funds. Alfred et al.'s (2007) model of core performance indicators was meant to be relevant to community colleges and represent the internal and external stakeholders (e.g., students, faculty, governmental agencies, and 4-year institutions), core indicators (e.g., degree completion or student goal attainment), and the one of the six missions of a 2-year college (e.g., workforce development or transfer preparation).

The Core Indicators of Effectiveness for Community Colleges by Mission (Alfred et al., 2007) is a list of the 16 indicators divided into six missions. The missions outlined by the authors were: (1) student progress, (2) general education, (3) outreach, (4) workforce development, (5) contribution to the public good, and (6) transfer preparation. The authors took these 16 indicators and created a revised Comprehensive Model for Assessing the Effectiveness of Community Colleges that highlights the least to the most difficult indicators to measure,

compile and report for postsecondary institutions. The least difficult indicators were called compulsory indicators; those indicators with a medium amount of difficulty to measure, compile, and report were called indicators of engagement; and the most difficult indicators to collect were called indicators of macro impact. The mission area and the core indicators are listed in Table 1.

---

Table 1

*Core Indicators of Effectiveness for Community Colleges, by Mission*

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Mission: Student Progress

Core Indicator 1: Student Goal Attainment

Core Indicator 2: Persistence

Core Indicator 3: Graduation Rates

Core Indicator 4: Student Satisfaction

Mission: General Education

Core Indicator 5: Success in Subsequent  
Related Course Work

Core Indicator 6: Program Learning  
Outcomes and Mastery of Discipline

Core Indicator 7: Demonstration of General  
Education Competencies

Mission: Outreach

Core Indicator 8: Regional Market  
Penetration Rates

Core Indicator 9: Responsiveness to  
Community Needs

Mission: Workforce Development

Core Indicator 10: Placement Rates

Core Indicator 11: Licensure and  
Certification Pass Rates

Core Indicator 12: Employer Satisfaction  
With Graduates

Core Indicator 13: Client Satisfaction With  
Programs and Services

Mission: Contribution to the Public Good

Core Indicator 14: Value Added to the  
Community

Mission: Transfer Preparation

Core Indicator 15: Transfer Rates

Core Indicator 16: Performance After  
Transfer

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Note. From *Core Indicators of Effectiveness for Community Colleges, 3<sup>rd</sup> ed.*, by Alfred et al., 2007. Copyright 2007 by the Community College Press. All rights reserved.

Alfred et al.'s study (2007) outlined the most difficult indicator to measure as the macro impact indicator which was developed to measure the value added to the community. The valued added to the community indicator came from various stakeholders describing the economic value or impact provided to the local and greater (regional and national) communities from the institution. The indicators of medium difficulty as outlined by the authors have been outlined as student goal attainment, student satisfaction, responsiveness to community needs, regional market penetration rates, and employer satisfaction with graduates. These indicators measure how involved and satisfied stakeholders were with the institution and the benefits that stakeholders received because of their affiliation or relationship with the college (2007).

Finally, compulsory indicators--indicators that postsecondary institutions are mandated to measure, compile and report--included persistence (retention rates), graduation rates, success in subsequent related course work, program learning outcomes and mastery of discipline, general education competencies, career program placement rates, licensure and certification pass rates, client satisfaction with program and services, transfer rates, and performance after transfer (Alfred et al., 2007).

Alfred et al. stated that the student progress indicators (persistence and degree completion rates) were listed as the most important indicators because of their reporting frequency by governmental entities. However, the authors warned that in the aggregate, these indicators were actually less descriptive and were open to misinterpretation because of the broader missions of 2-year institutions.

Therefore, I concentrated and guided my research questions on the concepts of retention (persistence) rates and graduation rates as performance indicators. These indicators are considered "absolute minimum" (Alfred et al., 2007, p. 19) because they are measured by all

institutions as mandated by “accreditation, federal and state reporting, governing board bylaws, etc.” (p. 19). All Title IV postsecondary institutions are required to disclose retention and graduation rates under the Higher Education Opportunity Act of 2008 (National Postsecondary Education Cooperative (2009). However, Burke and Minassians (2002d) discovered that while these indicators are acceptable to higher education policymakers, including state and federal policymakers, they are often chosen by both because of the ease in collecting retention and graduation rates, regardless of the appropriateness to accountability.

The Education Commission of the States (ECS, 2000) serves as a study that can enhance the framework of my dissertation. ECS surveyed the needs and concerns of state policymakers. Researchers found that the greatest concern for state policymakers was the financing of postsecondary institutions. A survey instrument was designed and all states were polled. Once all states responded, the survey on funding was refined and redistributed where 45 states responded a second time. Authors found increasing linkages in state funding to measurable performance indicators at 2-year colleges such as job placement rates, transfer rates, graduation rates and retention rates. The authors of the study found state funding systems were being redesigned so that performance-based funding initiatives could be included.

Because of this trend, the ECS surveyed which, if any, performance indicators were being required to be reported and possible links to performance indicators and budgetary allocations. Twenty-seven states stated that community colleges reported performance indicators and 20 of the 27 states responded that they were required to report retention and graduation rates (two of the most common indicators), which were tied to budgetary allocations in some cases.

Because of the potential to change funding for colleges, the ECS study suggested three policy questions for consideration. These questions looked at how meaningful and appropriate

performance indicators were, how much consideration had been given to mission differences among postsecondary institutions when the indicators were created, and how were institutions rewarded for attaining goals from new funding sources. For example, graduation rates may be an appropriate measure of a university's success, but how important are graduation rates for institutions whose students may attend for reasons other than attaining a degree (Zarkash & Beas, 2004)? Measuring graduation rates for first-time full-time students limits and excludes transfer and non-traditional students who have graduated within the 150% of normal time to graduate. It also limits successful reporting and funding for the graduation rate indicators because it measures and funds postsecondary institutions for undergraduate programs, excluding graduate degree programs. These authors wrote that graduation rates may be easy to count and policymakers can use them to justify state appropriations, but does it lead to higher educational reform? The next section outlines how my dissertation will support and extend these studies.

### Purpose of the Study

Two-year community and technical college leaders are challenged to educate policy makers and state legislators in the mission of their institutions so that those performance indicators chosen are reflective of that college's intended mission and accomplishments. There is a wealth of literature on funding, accountability, and performance indicators used in postsecondary institutions; yet, there is an absence in the literature on comparing the use of common performance indicators, such as retention and graduation rates, between public 2-year colleges and public 4-year universities.

In my study, I will study retention and graduation rates by level and control by institution. Institutional level refers to the academic programming that postsecondary institutions offer. Institutions can offer less than two-year programming, four or more years, or institutions

of at least 2 years but less than 4 years (Knapp et al., 2010). Control refers to publicly, or state operated, institutions that are guided by appointed or elected officials or privately operated institutions that receive most of their funding from private resources (Knapp et al., 2010).

I will study public 2-year colleges and public 4-year universities in the United States. Specifically, I will look at differences in retention rates for first-time full-time and part-time students who are seeking degrees/certificates, and I will also study the differences in graduation rates for the total number of completers of a cohort who finish in 150% normal time as reported in IPEDS between publicly controlled, 2-year colleges and public four-year universities in the U.S. (Knapp, Kelly-Reid, & Whitmore, 2006).

These graduation rates will be studied in the years 2005, 2006, and 2007. The Integrated Postsecondary Education Data System Survey asks institutions to report on a variety of topics. Over time, there have been changes to the survey, which may affect comparability of data reported. These three years--2005, 2006, and 2007--were chosen because they represent consistent data being reported by postsecondary institutions for retention and graduation rates.

I will also look at regression models to see if relationships exist in graduation rates between public 2-year colleges and public 4-year universities by ethnicity or sex. In other words, does ethnicity or sex play a role in graduation rates at 2-year and 4-year postsecondary institutions?

By examining these factors, I hope that my study will make the following contributions. In Alfred et al.'s Comprehensive Effectiveness Model/Stage Model for Assessing Effectiveness, I plan to use two core indicators, persistence (Fall to Fall retention) and degree completion (graduation) rates under what Alfred et al. (2007) call the student progress mission or compulsory indicators. It is my intention that my study will serve to complement Alfred et al.'s

model by quantitatively evaluating the student progress mission in the authors' framework with data that examine possible differences between public 2-year colleges and public 4-year universities. Most studies done on performance indicators have been conceptual in nature, and very few have studied indicators from this viewpoint.

The Education Commission of the States (2000) study looked at the following question: Do policymakers consider the distinct mission of community colleges when performance indicators are chosen? I explore this question through possible quantitative data differences in retention and graduation rates between public 2-year colleges and public 4-year universities over three years. In other words, if there are differences between these two types of postsecondary institutions, is the distinct community college mission best served? In addition, this investigation would not be complete without looking at the possible implications that race and sex may play in graduation rates between public 2-year and 4-year institutions.

Finally, I hope to extend Knapp et al.'s (2010) study by using retention and graduation rate data for a three-year period. The authors only briefly discuss their findings, making no conclusions about their results. I hope to extend this study by also looking at the possible differences that ethnicity and sex play in graduation rates at public 2-year colleges and public 4-year universities. To do this, I address the methodology, delimitations and the research questions in my dissertation in the following few sections.

### Overview of Methodology

Quantitative research methods will be used as the best method to answer the questions posed in this research of retention and graduation rates at public 2-year colleges and public 4-year universities. The Integrated Postsecondary Education Data System, under the NCES, defines higher education as education that is beyond compulsory (K-12) education. Therefore, I



will gather postsecondary institution information collected by the Integrated Postsecondary Education Data System (IPEDS) at the NCES on retention and graduation rates within the three-year period of 2005, 2006, and 2007. Retention and graduation rate data will be examined by level and control of institution for differences in public 2-year colleges and public 4-year universities by attendance (full- or part-time) status in retention rates and later for differences of graduation rates by ethnicity and sex by cohort.

I will look at the differences in retention rates and graduation rates in 2-year community college students and 4-year universities for three years. I will also look to see if there is a relationship between graduation rates and ethnicity and sex at both types of institutions. Statistical Package for the Social Sciences (SPSS) Version 17 program and Microsoft Excel 2007 will be used to analyze the differences. Data will be collected from the Integrated Postsecondary Education Data System.

The Integrated Postsecondary Education Data System's (IPEDS) website has information about its mission (<http://www.nces.ed.gov/IPEDS/>). IPEDS is the primary postsecondary education data collection program for the National Center of Education Statistics (NCES) in the U.S. The Integrated Postsecondary Education Data System, or IPEDS, collects data from Title IV institutional providers of higher education in enrollment, graduation rates, finance, student financial aid, financial aid, faculty, staff, program completion, and tuition prices. Students and researchers have been able to electronically access this electronic database at the NCES website since 2000.

#### Delimitations

I will collect data from the IPEDS on retention and graduation rates on two levels. First, I will look at the retention rates of first-time, full-time students (where full-time is equal to or

greater than 12 semester hours) and part-time students (where part-time is fewer than 12 semester hours) who are degree/certificate seeking. First-time students are those undergraduate students who have not had previous higher education experience and who may be enrolled in occupational and academic programs (Knapp et al., 2010).

Second, I will look at the graduation rates of first-time, full-time, degree-seeking students by ethnicity and gender in a particular year or cohort at public 2-year and 4-year postsecondary institutions (IPEDS, n.d.). Graduation rates are expected to occur within 150% normal time for full-time, first-time students; this means that 2-year community college students are expected to graduate in three years and 4-year students are expected to graduate in six years. Therefore, I will study each graduation cohort for full-time, first-time students that were included by the college in the year 2002, 2003, or 2004, and completed by 150% normal time reported by public, 2-year institutions by the year 2005, 2006, or 2007. I will also study graduation cohorts for full-time, first-time students that were included by the college by the year 1999, 2000, and 2001, and completed by 150% normal time reported by public, 4-year institutions by the year 2005, 2006, or 2007.

### Research Questions

Therefore, the following research questions will be addressed:

1. Is there a difference between public 2-year and public 4-year postsecondary institution retention rates for first-time, full-time, degree/certificate-seeking undergraduate students in 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?
2. Is there a difference between public 2-year and public 4-year postsecondary institution retention rates for first-time, part-time, degree/certificate-seeking undergraduate students

in 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?

3. Is there a difference between public 2-year and public 4-year postsecondary institution graduation rates for 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?
4. Is there a difference between graduation rates and ethnicity or sex at public 2-year colleges and public 4-year universities for each year in 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?

### Significance

Understanding the reporting of common performance indicators is crucial as funding becomes more closely tied to performance indicators. With this study, state policymakers will be able to understand differences between two performance indicators, retention and graduation rates, at public 2-year colleges and public 4-year universities. Although Alfred et al. (2007) suggest some sixteen indicators that might be applied to community colleges in evaluation of effectiveness, research has found that policymakers seldom make efforts to tailor performance indicators to fit the distinctive missions of two- and four-year institutions (Burke & Associates, 2005). By my contribution to the literature, state policymakers will be better able to decide if retention and graduation rate data are appropriate performance indicators for all postsecondary institutions in light of various missions that these institutions serve.

The conceptual framework for the proposed study is based on accountability as defined by performance indicators used in public 2-year and 4-year postsecondary institutions. Standard performance indicators, such as retention and graduation rates, have rarely been examined as a comparison in public 2-year and 4-year institutions. This study provides more quantitative

research needed to compare retention rate data for these institutions to clarify potential differences that could affect the impact standard performance indicators have on funding in postsecondary institutions.

I seek to compare persistence (retention) and graduation rates of Alfred et al.'s (2007) Comprehensive Model for Assessing the Effectiveness of Community Colleges to look for possible differences between public 2-year and 4-year postsecondary institutions. Investigating the student progress mission will allow for further studies in differences for other performance indicators. Studying the differences in graduation rates at public 2-year and 4-year institutions also allows me to replicate, extend, and expound upon the results of a NCES report done by Knapp et al. (2010).

## Definition of Terms

**Accountability:** Accountability is defined by Burke & Associates (2005) through the six demands that it imposes on colleges and universities. They are: (1) proper use of power, (2) achievement of institutional mission, (3) performance reporting, (4) efficiency and effectiveness, (5) ensure quality of program, and (6) serve the public good.

**Allowable Exclusions:** Students who may be removed from a cohort for a number of reasons. Those reasons are: to serve in the armed forces; to serve in a church mission; death or permanent disability; or, to serve in a federal government foreign aid organization (Knapp et al., 2010).

**Attendance Status:** On the National Center for Educational Statistics website, the *IPEDS's Instructions for Enrollment* (n.d.) uses this dichotomous variable to describe the number of hours that a student attends as having either part-time attendance status or full-time attendance status.

**Cohort:** A group of students who is identified for a specific purpose to be tracked (Knapp et al., 2010).

**Completers:** This is a student who has a degree or diploma conferred upon him/her (NCES, *IPEDS Glossary*, n.d.).

**Completers within 150% of Normal Time:** Students who are able to complete their program of study within 150% of the expected time (Knapp et al., 2010). For example, students who are seeking an associate degree would be expected to finish their program within two or three years; whereas, students seeking a bachelor's degree would be expected to finish their program within four to six years.

**Compulsory Indicators:** Indicators that all postsecondary institutions are required to measure and report to local, state, and federal funding agencies, as well as accreditation and governing bodies (Alfred et al., 2007). Examples of these indicators are: persistence, graduation rates,

transfer rates, performance after transfer, general education competencies, licensure and certification pass rates, etc.

**Control (by Institution):** This is a classification of postsecondary institutions that are either publicly operated by appointed or elected officials or that receive most of their funding from private resources (Knapp et al., 2010). This dichotomous variable separates institutions into public or private institutions.

**Degree/Certificate Seeking Student:** Students who are in credit-bearing courses in academic and vocational programs recognized by the institution as seeking a degree, a certificate or any other formal award (Knapp et al., 2010).

**Effectiveness:** A concept that involves stakeholders connected to postsecondary institutions and the expectations that these stakeholders have about what higher educational institutions should be doing and the level of performance that they should be producing (Alfred et al., 2007).

**Ethnicity:** This is non-scientific categories of individuals into the community into the following groups: White, non-Hispanic; Black, non-Hispanic; Hispanic; Asian/Pacific Islander; and, American Indian/Alaska Native (Knapp et al., 2010).

**First-Time Student:** An undergraduate level student attending any institution for the first time in occupation or academic programs (NCES, *IPEDS Glossary*, n.d.).

**Four-year institutions:** Four-year institutions are defined in the *IPEDS Glossary* by the National Center of Educational Studies (n.d.) as postsecondary institutions with baccalaureate program offerings of four years and/or institutions that offer post-baccalaureate, graduate, first-professional schools.

**Full-Time Student:** A student who is enrolled in 12 or more undergraduate, semester credit hours each term (Knapp et al., 2010).

**Funding Formulae:** Funding Formulae are methods “that link resources mathematically to an institution’s characteristics...the formula represents the best judgment of those who fashion it” (Caruthers & Marks, 1999, p. 5). It can be used to promote/allocate state funds equitably while minimizing political influences.

**Graduation Rate:** This is the rate of completers of a program within 150% of normal time divided by a cohort group that has been revised because of certain allowable exclusions (Knapp et al., 2010).

**Indicators of Engagement:** These indicators seek to measure 2-year institutional stakeholder’s “involvement, satisfaction and benefits received through affiliation with a college” (Alfred et al., 2007, p. 19). Examples of indicators of engagement are: student satisfaction, student goal attainment, responsiveness to community needs, regional market penetration rates, etc. The researchers felt that indicators of engagement could pose assessment challenges for some institutions.

**Indicators of Macro Impact:** This indicator is meant to measure the regional and national impact that 2-year institutions have had and the value that has been added to the community. Alfred et al. (2007) outline the following examples of this indicator: economic impact, contribution to community well-being, contribution to quality of life, attraction and retention of business and industry, and contribution to workforce development. The writers argue that only 2-year institutions with a great number of resources would be able to measure this type of indicator.

**Higher Education Act (HEA) of 1965:** This law was meant to strengthen resources for postsecondary institutions and provide financial aid opportunities. This act has been amended

throughout the years. (See Higher Education Opportunity Act of 2008 below (<http://www2.ed.gov/about/offices/list/ope/policy.html>)).

**Higher Education Opportunity Act (HEOA) of 2008:** The HEOA of 2008 amended the 1965 HEA to mandate that all Title IV institutions must now measure, compile, and report certain performance indicators for dissemination to students and their families to the National Center for Education Statistics' Integrated Postsecondary Education Data System. This includes retention and graduation rates. (National Postsecondary Education Cooperative, 2009).

**Integrated Postsecondary Educational Statistics (IPEDS):** The Integrated Postsecondary Education Data System is the primary postsecondary education data collection program for the National Center of Education Statistics (NCES) in the United States. Data are collected from Title IV-eligible colleges and universities, including enrollment, retention rates, graduation rates, finances, institutional prices, and student financial aid. The IPEDS website is an invaluable tool for postsecondary institutions (<http://www.nces.ed.gov/ipeds/>).

**Level (of Institution):** A classification of the type of academic programming an institution delivers. Institutional level is usually defined by less than two-year programming, two-year (but less than four-year) programming, or four-year and higher programming (<http://nces.ed.gov/ipeds/glossary/index>).

**National Center for Educational Statistics (NCES):** The National Center for Educational Statistics is the primary collection agency related to education for the U.S. Department of Education and the Institute of Education Sciences. The NCES website has information about multiple variables on a variety of educational institutions (<http://www.nces.ed.gov/>).

**Normal Time to Completion:** It is the amount of time that a student needs to receive a degree or diploma. This is two years for an associate degree and four years for a baccalaureate degree.



This includes 4 semesters at 2-year institutions and 8 semesters at 4-years, which excludes summer semesters (Knapp et al., 2010).

**Part-Time Student:** A part-time student is an undergraduate student enrolled in 1-11 semester hours (Knap et al., 2010).

**Performance Funding:** Performance Funding ties funding directly to performance indicators. If a college achieves a performance indicator, it receives a certain percentage of funding. This practice is premised on the notion funds get distributed after performance (Burke, 2005).

**Performance Budgeting:** Performance Budgeting allows state legislators to look at institutional performance measures or indicators as one factor in the budgeting and distribution of state funds. If a postsecondary institution reaches or improves performance measures, the college or university may or may not receive additional funding (Burke, 2005).

**Performance Reporting:** Performance Reporting uses publicity to encourage public, postsecondary institutions to improve performance and pursue state priorities. Its basic assumption is that institutions will do better if performance results are published. Funding allocations are not directly related to achievement (Burke, 2005).

**Performance Indicators (PIs):** PIs refer to a means of measuring concepts of quality in numeric ways (Dochy, et al., 1990). They are a point of reference or goal for institutions to compare performance (Cave, Hanney, Henkel & Kegan, 1997). These performance indicators are the measures on which to base reporting, funding, and/or budgeting decisions.

**Race/Ethnicity Unknown:** This is the category used for students whose race and ethnicity are not known (<http://www.nces.ed.gov/ipeds/>).

**Retention Cohort:** Retention Cohort for 2-year institutions for the fall 2005, 2006, and 2007, full-time cohort includes first-time degree/certificate-seeking students who were enrolled in fall

2004, 2005, and the fall 2006. Students enrolled for the first-time in the preceding summer term are also included in the fall, full-time cohort. Students who completed a program prior to fall 2004 are included in the re-enrollment count for 2-year institutions

**Retention Rates:** Retention Rates in this study are the percent of the fall 2005, 2006, and 2007, full-time or part-time students who continued in their academic program. These students have re-enrolled at the institution from the previous fall (fall 2004, 2005, or 2006 in this study) or have successfully completed their program by the current fall and are first-time, degree/certificate seeking (IPEDS Glossary, n.d.).

**Title IV Institution:** A postsecondary institution that participates in Title IV financial aid for students and has an agreement with the Secretary of Education (Knapp et al., 2010).

**Two-year institutions:** Two-year institutions are defined as postsecondary institutions with program offerings of at least two but less than four years and usually offer associate degrees and/or certificate programs. These institutions also include occupational and vocational schools with a minimum of 1800 hours (Knapp et al., 2010).

## Organization of Study

Chapter Two reviews the literature on the history of accountability, funding approaches, use of performance indicators, and discusses the conceptual frameworks guiding this project's research questions. Chapter Three provides detailed information on quantitative methodology, including research questions, quantitative research design, data sets and analyses, as well as a summary of the chapter. Chapter Three also describes participants and research findings from a preliminary study done in the summer of 2007.

## CHAPTER 2

### Review of the Literature

The importance of accountability, institutional autonomy, funding approaches, and performance indicators in higher education has been widely researched in the literature (e.g., Alfred et al., 2007; Altbach, Berdahl, & Gumport, 1999; Burke & Associates, 2005; Creech, 2000; Ewell, 1999; Harbour, 2003; Hovey, 2001; Katsinas, 2005; Layzell, 2001; Palmer, 2001; Voorhees, 2001). Accordingly, a comprehensive search was conducted of accountability, performance indicators, and funding policy literature with regard to funding approaches and the use of performance indicators to examine the research body of work.

The purpose of this chapter is to examine the research and literature related to the performance variables of interest - retention and graduation rates. This chapter includes the expansion of accountability and the use of performance indicators as links that are used to define effectiveness for funding. The literature review is divided into five categories of research work. The first section incorporates what is known about the accountability movement. The second section presents what is known about the emergence of performance indicators. In the third section, performance funding, budgeting and reporting policy are discussed. The fourth section discusses the conceptual framework and how it could be used to study retention and graduation rates at public, 2-year community and/or 4-year universities. The fifth section is a summary of available literature and recommendations for future research.

#### *The Expansion of the Accountability Movement in Higher Education*

Burke and Associates write that “Accountability is the most advocated and least analyzed word in higher education” (2005, p. 1). They comment that it is used often but also often met with confusion. The authors write that it may be confusing to administration and faculty

members in colleges because their institutions are held to higher accountability standards while the colleges receive fewer resources. Burke and Associates (2005) comment that it may also be confusing to students and industry that view themselves as consumers of educational services and expect to have their needs met, only to find that their needs are not being addressed. And finally, these researchers say that accountability may be confusing to legislators and government officials who see academic institutions as having long thought academic freedom and institutional autonomy to be their inalienable right without having to be held accountable.

Traditionally in academic circles, higher education institutions have been self-regulating systems that were freely able to teach what they wanted - and how they wanted - with little regard to outside or external constituents, including students (Altbach, Berdahl, & Gumpert, 1999). Altbach et al. further define this idea by stating that overt and covert external intervention may undermine higher education institutions' freedom of autonomy and intellectual independence. A variety of factors, such as globally-changing economic considerations and societal/ consumer requirements, began to emerge in the late 1980s and early 1990s, which has postsecondary institutions concerned about their right and ability to autonomously govern themselves.

Altbach et al. (1999) define autonomy as the power to make decisions free of outside controls and accountability as the ability to demonstrate that those decisions are responsible to those outside controls. The authors further distinguish the three interrelated concepts of autonomy as academic freedom, substantive autonomy, and procedural autonomy. In other words, these concepts translate into the academic pursuit of truth by scholars "free of institutional censorship or discipline" (AAUP, 2006, p. 3), the power of colleges and universities

to determine what goals and programs institutions choose to pursue, and the power of colleges and universities to decide the means or how the institution will pursue these goals and programs.

While academic freedom may be recognized as an “unambiguous privilege of university teachers, which must be protected whenever and however challenged” (Altbach et al., 1999, p. 6), as it is a deeply held belief in higher education institutions, the three concepts of autonomy are not synonymous. Academic freedom is universally held to be an inalienable right of faculty, while substantive and procedural autonomy are more parochial and more contextually bound (Berdahl & McConnell, 1999).

A case in point is that while procedural matters--such as state approval procedures for contracts above \$50,000--may be bothersome to an institution, these issues do not usually interfere with the institution’s ability to achieve its goals (Altbach et al., 1999). However, the authors say that substantive autonomy must be safeguarded. They illustrate substantive autonomy in examples such as the freedom to select curriculum content; the freedom to select faculty, staff and students; and finally, the freedom to allocate funds to achieve institutional goals.

If autonomy and accountability are interrelated, Altbach et al.’s (1999) definition of accountability must be evaluated. The authors define accountability as the demonstration of responsible decision-making to outside constituents. The authors argue that this definition begs three questions: What constitutes responsible decision making? Who determines this process? What are the penalties for inadequate or inefficient performance? Berdhahl and McConnell (1999) believe that autonomy is steadily being eroded by accountability and effectiveness demands predicated on financial austerity.

This financial austerity has colleges and universities being asked by various constituents to look at program effectiveness, institutional roles in the community, availability of programming, and educational and operational costs of programming (Berdahl & McConnell, 1999). With wider access to higher educational opportunities and economic success being tied to the attainment of postsecondary degrees, students believe that they are consumers and have made increasing demands on colleges and universities. The authors give examples of these demands with minority students asking for developmental programs to help them prepare for admission to academic programs or special interest groups asking for new vocational programs. With the prospect of declining enrollments, institutions may be forced to yield to public expectations and redistribute resources and faculty to meet the demands of this kind of programming.

If student expectations change how colleges and universities operate, government has the ability to materially change the postsecondary landscape. Berdahl and McConnell (1999) found that autonomous colleges and universities were losing their ability to exercise final judgment on the use of state funds as well as those funds derived from other sources because of such things as reviews by state agencies and state legislatures. The authors state that public postsecondary institutions are dependent upon state legislators understanding the mission of their institutions, understanding their role in funding their institutions, and understanding their judgment of how effectively the institutions are performing. Therefore, Berdahl and McConnell say that these autonomous institutions are accountable to the legislature in demonstrating responsible decision-making, especially as some see legislative sentiment becoming impatient in what some consider the neglect in undergraduate teaching. This sentiment has led to an increase in programmatic evaluations.

Altbach et al. (1999) say that when governmental actions, such as accountability, affect substantive goals, then the essence of academe can become compromised. They further state that government and universities need to negotiate the roles that both will play in higher education. This negotiation will divide power and decision-making roles that each will play in academe. Altbach et al. further define three essential components in ensuring institutional autonomy, the ability of postsecondary institutions to: select staff and students, to determine curriculum, and to allocate funds where needed.

#### *Performance Indicators in the Accountability Movement in Higher Education*

The traditional view of accountability in higher education, as a legal responsibility to a governing authority, has been redefined by the notion that institutions are accountable to governing authorities as well as a variety of other stakeholders (Behn, 2001). The higher education accountability movement has evolved into performance funding and budgeting incentives where money is directly or indirectly tied to achieving certain performance goals or performance indicators that are usually set by external agencies. While performance funding, budgeting, and reporting will be discussed in-depth later, I look at performance indicators next.

Cave, Hanney, Henkel and Kogan (1997) define performance indicators as measures that become a point of reference or goal for institutions to compare performance. One example would be states that mandate postsecondary institutions to record and report their graduation rates in terms of percentage growth terms. The institutions would state and later report that graduation rates at their college or university will grow from 3% in 2010 to 6% in 2015. Performance Indicators refer to a means of measuring concepts of quality in numeric ways (Dochy, et al., 1990).



Stone (2002) states that policy problems are commonly defined as measures or numbers. Statistics are commonly seen in accountability concerns discussions. For example, the National Center for Public Policy and Higher Education's Report called *Measuring Up 2006* compares states on preparation, participation, completion, benefits, affordability, and learning measures and gives a grade for the state on each of these measures. This measures statewide performance but does not necessarily correspond to statewide priorities. Some of these measures, such as learning, are also very complex and difficult to collect. While Burke and Minassians (2002a) believe that collecting quality measures is important, they also suggest that higher education needs to find reliable and valid performance indicators that are accepted on college and university campuses as well as by state legislatures. There are other performance indicator preferences that are more commonly used by higher education institutions.

Several researchers have studied common performance indicator preferences (Burke, 1998; Burke & Minassians, 2002b; Education Commission of the States, 2000; Ewell, 1994; Richardson, 1994). The Education Commission of the States surveyed 10 states about performance indicators (Ruppert, 1994). In this 10-state survey, many authors have used the data from this study in their own research. For example, Richardson (1994) posited questions on performance indicators that were currently being used, indicator development based on changes in higher education governance, design performance indicators to decrease tension and meet the needs of accountability through policy implementation, and the implication of using accountability measures from the ECS report on performance indicators.

Richardson (1994) divides performance indicators into three classifications and uses the concept models of inputs, outputs, and outcomes. He describes inputs as the resources that an institution uses to produce services or other resources. A few examples of input variables would

be average faculty salary, faculty/student ratios, and classroom and lab utilization. In a college or a university, these input variables can be related to the mission (purpose) and the vision (direction) of the institution. Output measures are indicators that count the services or goods produced by an institution. A few examples of this would be enrollment data, such as graduation and retention rates; total student credit hour by program and institution; and 2-year to 4-year transfer rates. Finally, Richardson talks about outcome indicators that assess the impact that an institution has had on its constituents. Outcome performance indicators are defined by a qualitative effort in the differences between institutions. A few examples of this would be the pass rate on professional licensure exams, faculty and staff retention and professional development, student performance on nationally normed exams, and placement of graduates.

In the ten-state study, Richardson (1994) found that very few states were being asked to report input variables by policymakers fifteen years ago. All ten states were surveyed on input variables such as tuition and fee charges to students, facility maintenance, and average class size. None of the 15 input categories was identified by more than four states, and Richardson wonders if these categories were only included to show funding deficits in peer institution comparisons to ask for more funding. In the ECS study, there was greater interest in output variables such as enrollment data, time to degree, and the number of contact hours. The greatest consensus about essential indicators among the 10 states was the identification of enrollment data such as graduation and retention rates. Finally, outcome performance indicators were not as common, Richardson speculated, because of the degree of difficulty in attaining good outcome measures. It is much more difficult to collect job placement data or student success on the job than the number of students utilizing a lab.

All 10 states were concerned about enrollment data such as retention, graduation, and progression data. Richardson notes that the concern in output data reflects a concern with a relationship between costs, benefits, and the services provided. The passage of the Student Right to Know and the Campus Security Act of 1990 also play a significant role in why graduation rates are such a common performance indicator. Concerned with low graduation rates, Congress believed that students could make informed decisions about educational benefits with knowledge of graduation rates (<http://www.securityoncampus.org/schools/cleryact/pl101542.html>). Therefore, these legislative acts were integrated into the Title IV Higher Education Act, which mandates that institutions compile and report graduation rates nationwide (Alfred, Shults, & Seybert, 2007).

Similarly, Ewell (1994) found that nearly one-third of all states had some type of performance indicator reporting system. Ewell descriptively wrote up performance indicator experiences for the participating 10 states in an attempt to examine and analyze the higher education performance indicator phenomena. Although the author found that performance indicators were almost always add-on policy items, were usually quickly implemented, and were usually chosen because they were readily available for institutional collection, those indicators were rarely tied to actual funding or budgeting mechanisms. Ewell wrote that early policy attempts allowed higher education institutions great latitude in choosing how and what they would report.

This led to uneven performance reporting that often could not be reported in a timely manner. In large part, Ewell (1994) said that this occurred because postsecondary institutions were often given complete freedom in what and how they would assess performance. The author

stated that this method had two major flaws: the ability to field credible assessment methods and the ability to report or communicate actions that had been taken as a result of such assessment.

Policymakers viewed these flaws in the current performance policy as ineffective in the management of state resources and pushed for harsher controls over what they considered tighter fiscal realities (Ewell, 1994). Postsecondary institutions found that they were being asked to report efficiency concerns with faculty workloads, undergraduate teaching investments, program duplications, and having small amounts of funding tied to budget allocations. These types of funding evolved into using performance indicators in performance budgeting, performance funding, and performance reporting. Ewell argued that the inclusion and reporting of such domains signaled trends that would eventually link the production function of higher education and engage policy that actually manages instructional delivery from outside the higher education campus.

Ewell (1994) concluded that regardless of the indicators chosen, policy leaders needed to view performance indicators as a means to shape the future in realigning higher education priorities. In the 1994 Education Commission of the States study, graduation and retention rates by ethnicity, gender and program are one of the twelve most common performance reporting indicators reported by the 10 states participating. Using the Education Commission of the States study, Ewell listed the most common performance reporting indicators:

- Enrollment and graduation rates by ethnicity, gender, and program
- Degree completion and time to degree
- Persistence and retention rates by ethnicity, gender, and program
- Remediation activities and indicators of their effectiveness
- Transfer rates to and from two- and four-year institutions

- Pass rates on professional exams
- Job placement data on graduates and graduates' satisfaction with their jobs
- Faculty workload and productivity in the form of student-faculty ratios and instructional contact hours.

In the same study, Ruppert (1994) developed a similar list but had the following indicators to add to his list:

- Admission standards
- Total student credit hours by institution and discipline
- Results of satisfaction studies of alumni, students, parents, and employers
- External or sponsored program funds.

In another article, Burke (1998) used the same 10-state survey from 1994 Education Commission of the States to look for the similarities and differences between performance funding and performance reporting indicators. He outlined similarities of the most common indicators in performance funding and performance reporting. They were retention and graduation rates, faculty teaching load, job placement, licensure test scores, satisfaction surveys, time-to degree, and two-year college transfers.

Burke (1998) further noted that performance indicators overwhelmingly focused on undergraduate education. He was surprised to note that when allocations were tied to performance funding, states shifted away from requiring states to report on ethnicity, sex, access, admission standards, remediation programs and affordability of tuitions and fees--hallmarks of 2-year colleges. Burke criticized performance indicators as failing to capture the true character of institutional quality, but again, retention and graduation rates lead the list of 58 indicators researched.

In another study, Burke (1998) examined 11 states to find what performance indicators were chosen in performance funding and performance reporting. He was interested in finding which indicators were chosen and what did their choices suggest about the values and concerns for institutional excellence. Burke was not surprised to find that performance funding and performance reporting shared common indicators. He was surprised, however, to find that all 11 states had widely diverse choices for their actual funding indicators. Retention and graduation rates were the only performance indicators that ten of the eleven states agreed upon among 67 indicators listed. In the next few sections, I look at the expansion of accountability and the possible reasons that retention and graduation rates are so prevalent.

Burke (1998) further stated that the variance in indicator selection between baccalaureate and two-year colleges illustrates attitudinal differences about these institutions. For example, Burke writes that the lower number of community college leaders choosing retention and graduation rates shows the unease that they have about this measure. I include Burke's 2- and 4-year indicator findings in Table 2.

Table 2

*Indicators Selected by Four or More States (n=11)*

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| <u>Baccalaureate Institutions</u> | <u>No.</u> | <u>Two-Year Colleges</u>       | <u>No.</u> |
|-----------------------------------|------------|--------------------------------|------------|
| Retention and Graduation Rates    | 10         | Retention and Graduation Rates | 8          |
|                                   |            | Job Placement                  | 8          |
| Two-to-Four Year Transfers        | 6          | Two-to-Four Year Transfers     | 6          |
| Faculty Workload                  | 5          | Faculty Workload               | 4          |
| Institutional Choice              | 5          |                                |            |
| Graduation Credits and            |            | Graduation Credits and         |            |
| Time to Degree                    | 4          | Time to Degree                 | 4          |
|                                   |            | Job Placement                  | 4          |
| Licensure Test Scores             | 4          | Licensure Test Scores          | 4          |
| Transfer Graduation Rates         | 4          |                                |            |
| Workforce Training and            |            | Workforce Training and         |            |
| Development                       | 4          | Development                    | 4          |

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Note. From “Performance funding indicators: Concerns, values and models for state colleges and universities,” by J.C. Burke, 1998, *New Directions for Institutional Research*, 97, p. 53.

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Burke (1998) expressed surprise in his text that none of the community colleges reported job placement and transfer rates, as they are fundamental missions of two-year colleges. Nonetheless, retention and graduation rates are the most common performance indicator for baccalaureate and 2-year colleges in this study (Burke).

In 2002, the Education Commission of the States surveyed all 50 states to find out if and which performance indicators were being used in 2-year colleges and which performance indicators were tied to funding allocations. Twenty-seven states reported that they used performance indicators, and the ECS reported the top 12 indicators. I have listed these indicators in Table 3.



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Table 3

*Summary of Performance Indicators (n=27)*

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| <u>Indicator</u>  | <u>No. of States</u> |
|---|----------------------|
| Job Placement   | 17                   |
| Transfer Rates  | 16                   |
| Graduation Rates, certificates and degrees awarded      | 16                   |
| Retention/Time to Degree                                | 14                   |
| Licensure Pass Rates                                    | 11                   |
| Remediation Activities                                  | 10                   |
| Follow-Up Satisfaction Studies (Students and Employees) | 9                    |
| Diversity/Service to Special Populations                | 9                    |
| Student Success after Transfer                          | 8                    |
| Workforce Development Activities/Service to Business    | 8                    |
| Faculty Workload, Productivity and Preparation          | 8                    |
| Student Learning Outcomes                               | 8                    |

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Note. Adapted from *State Funding for Community Colleges: A Fifty State Survey*, by Education Commission of the States, 2000, p. 45. Copyright 2000 by the Education Commission of the States. All rights reserved.

As in previous studies, 16 states reported that they were asked to report graduation rate data, and 14 states were asked to report retention rate data (ECS, 2000). In addition, 12 of the 27 states reported that these performance indicators were directly tied to their budgetary allocations or tied to additional incentive funding for indicator improvements.

Finally, I present Burke and Minassians' (2002a) study, which looked at 29 indicator studies to see what the most common indicators were. They looked at 158 generic indicators that are often used in performance reporting and 55 performance indicators in performance funding. They highlighted the top eight indicators in both sets of studies on performance reporting and performance funding. Graduation or retention rates, student transfers, and licensure test scores were the only indicators listed in both sets of analysis of performance reports and funding. I have included the authors' top eight indicators in Table 4.

Table 4

*Indicators Selected by Performance Reports and Performance Funding*

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| <u>Performance Reports (n=29)</u> | <u>No.</u> | <u>Performance Funding (n=11)</u>  | <u>No.</u> |
|-----------------------------------|------------|------------------------------------|------------|
| Graduation and Retention          | 24         | Graduation and Retention           | 10         |
| Racial Enrollment                 | 21         | Job Placement                      | 8          |
| Sponsored Research                | 20         | Student Transfers                  | 6          |
| Student Transfers                 | 19         | Faculty Workload                   | 5          |
| Tuition and Fees                  | 18         | Institutional Choice               | 5          |
| Financial Aid                     | 17         | Time-to-Degree                     | 4          |
| Degrees Awarded                   | 16         | Licensure Scores                   | 4          |
| Licensure Scores                  | 16         | Workforce and Economic Development | 4          |

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Note. From “Reporting indicators: What do they indicate?,” by J.C. Burke & H.P. Minassians, 2002a, *New Directions for Institutional Research*, 116, p. 34. Copyright 1998 by the Jossey-Bass Publishers. All rights reserved.

Burke and Minassians (2002a) stated that 16 of the 29 study reports used the top eight indicators, or more than 50%, but only 4 of the 11 cases of performance funding included their top eight indicators, or less than 40%. Burke and Minassians rephrase this by saying that while more than half of the studies used their performance indicators, less than one-fourth of the cases applied their indicators. The most common performance reporting indicators were interested in the input categories of access and equity while the most common performance funding indicators were most concerned with the output categories of productivity and efficiency (Burke & Minassians, 2002a). The authors also looked at indicators between 2- and 4-year institutions. Although differences were not great, they recommended that policymakers maintain some shared indicators to reflect common missions and others that portray diverse missions and goals.

Accountability can be both an incentive and an obstacle to postsecondary institutions (Alfred, Shults, & Seybert, 2007). Alfred, Shults, and Seybert (2007) argued that it can push colleges and universities to develop performance models more quickly. Yet, they also argued that accountability can limit an institution's evaluation on criteria that has little or nothing to do with actual performance or institutional mission. The authors stated that 2-year institutions continue to be vulnerable to policymakers on traditional measures, such as graduation and retention rates, as well as have difficulty in influencing policymakers to use alternative performance measures. I look at retention and graduation rates as two of the most common performance measures in higher education.

None would argue that student progress is vital to higher education. Alfred et al. (2007) outlined retention (or persistence) and graduation rates as two important core indicators under the theme of student progress. They described retention and graduation indicators as being less descriptive than other student progress indicators such as student intent, achievement, and

satisfaction. The authors included retention and graduation, not only because of federal and state reporting mandates, but as valuable tools in the larger context of student success and progress. However, the writers caution that researchers should not interpret these data using traditional assumptions about students' aspirations and students' behaviors that persistence follows in the 2-year and 4-year arena. In particular, Alfred et al. (2007) recommended graduation and retention be reported in conjunction, as well as the development of a database to show all student graduation progress. Most performance models request that only first-time, full-time student graduation rates be reported. This graduation rate does not include transfer, returning or part-time students.

Burke and Minassians (2002d) surveyed governors' aides, institutional research directors, legislative chairs, and state higher education finance officers for 2-year and 4-year postsecondary institutions in six states about their reaction to performance indicators and reports. The researchers wanted to know if policymakers approved the indicators that had been chosen, if the financial officers and institutional researchers accepted the indicators chosen, and did the indicators chosen address state priorities or concerns. Certain assumptions were made about the outcomes based on the divergent participants (Burke & Minassians). For example, differences in indicator choices were expected between policymakers and on-campus personnel as well as between 2- and 4-year institutions, and that external or off-campus respondents' indicator choices would reflect critical state policy issues.

Although the authors found slight differences between policymakers and on-campus personnel survey responses, graduation and retention rates had the highest average mean scores in regards to indicator appropriateness for performance reporting. Burke and Minassians (2002d) analyzed the appropriateness of indicator preferences through the assessment of mean

scores to determine the extent of agreement or disagreement. Mean response scores were indicative of 1 that they agreed at “no extent” to 5 that respondents agreed to a “great extent.” The average group means for graduation and retention rates, which was the highest, was 4.39 in extent in agreement as an appropriate indicator in performance reporting as reported by participants. The average mean scores for governors’ aides, legislative chairs, state higher education financial officers, and institutional researchers was 4.73, 4.42, 4.44, and 3.98 respectively.

There were also expected differences between 2- and 4-year institutions, but Burke and Minassians (2002d) were surprised that directors of institutional research at 2- and 4-year postsecondary institutions ranked graduation and retention rates as the third and second most appropriate indicator on performance reporting. This runs contrary to a common assumption that graduation and retention rate indicators are inappropriate measures for 2-year institutions that enroll a large number of part-time and nontraditional students.

But the most disappointing survey result was the conflict between the indicators that were chosen and the state policy priorities. The authors found that the survey rejected the assumption that groups external to the campus would choose indicator choices that would reflect state policy priorities. According to the survey, this was not true. Burke and Minassians (2002d) concluded that campus and state leader responses to the survey illustrated that what those leaders say about issues that are important to postsecondary education in theory are not what they prefer to practice in their indicator choices. The authors’ final findings were that although college affordability and K-16 collaborations as top state priorities or even institutional mission, yet indicator preferences seemed to highlight that campus and state leaders continue to choose indicators that

preserve self-interest. They write that “all too often, acceptability still trumps accountability in indicator preferences” (Burke & Minassians, p. 95).

Some research has looked at the historical factors that gave birth to the accountability movement in higher education institutions (Alexander, 2000; Behn, 2001; Commons, 2003; Ewell, 1994, 2002; Harvey, 2002; Kitagawa, 2003; Shulock, 2004). The literature regarding the expansion of accountability seems to point to the following two theories: first, mismanagement of campus funds or resources at a time when states were reducing higher education appropriations, and second, the societal requirement that higher education institutions become more responsive to the needs of various governmental and community stakeholders in an ever-changing economy. Because of the expansion of accountability, acceptance of retention and graduation rates as common performance indicators has become prevalent. I look at the reduction of state appropriations and societal expectations for responsive postsecondary institutions in the next few sections and then possible reasons why retention and graduation rates may be chosen as a prevalent performance indicators.

#### *Mismanagement of Funds and Reduced State Appropriations in Higher Education*

Colleges and universities, as self-autonomous organizations, largely went unchallenged as long as public opinion had confidence in the system. But as Ewell (1994) pointed out, higher education became involved in public scandals highlighting the mismanagement of funds and resources on campus. This gave rise to suspicions and perceptions that postsecondary institutions were unable or unwilling to regulate themselves. The cries for reform in public schools in a *Nation at Risk* (1983) also drew calls for changes on college and university campuses. Public stakeholders criticized higher education for its neglect of quality teaching and a curriculum that lacked coherence.

In categorizing community college governance, Cohen and Brawer (2003) introduced three models. They are the bureaucratic, political, and collegial models as explanation of college behavior. The bureaucratic model presents the college as formal structures in organized and defined patterns of behavior based on law and policy. The authors explain that this model views the organization as a pyramid of positions where faculty and students receive the fewest benefits as they occupy the lowest regions of that pyramid. The political model views the organization in perpetual competition for resources among constituents with different interests. Finally, the collegial model calls for shared governance with faculty and students as part of a shared process. Rather than a top-down delegation of authority, decisions are made in collegial framework and through consensus between faculty, staff, students, and governing board.

Cohen and Brawer (2003) wrote about the collegial model, also referred to as the “Snowball in Hell model” (p. 105) is not an accurate portrayal of most higher education institutions. In fact, Cohen and Brawer write that “despite all the rhetoric about satisfying student and community needs, the procedures maintained in community colleges tend toward protecting the staff’s rights, satisfaction and welfare” (p. 105). This situation is not unique to 2-year colleges. This type of mentality angered stakeholders outside the postsecondary institution; thus, higher education saw the rise of the assessment/accountability movement implemented to improve the quality of the undergraduate learning process.

Higher education institutions ultimately serve the people who support them (Berdahl & McConnell, 1999). Berdahl and McConnell give the example of California voters failing to approve state bond issues to build medical school facilities. The authors state that universities will be forced to yield their will when postsecondary institutions fail to deliver on public expectations. Colleges and universities are finding institutional decisions, such as tuition rates,



being influenced externally. Much of the issues that colleges and universities will face in the twenty-first century revolve around the public's challenge to those institutions' social contract with society (Zusman, 1999).

The accountability movement came at a time when many states reduced higher education appropriations. According to the *1996 Digest of Educational Statistics*, the share of state appropriations at public institutions fell from 44% in 1980 to 33.3% in 1994 while tuition increased from 12.9% to 18.4%. Browning and Browning's (1994) comment that "the study of how government policy, especially tax and expenditure policy, affects the economy and thereby the welfare of its citizens" (p. 1) is very important. In *The Finance of Higher Education: Theory, Research, Policy & Practice* (2001), Mortenson stated that higher education has seen the national average tax support drop from \$11.22 to \$7.65 per \$1,000 in the period 1979 to 1999. This picture is even bleaker in the community college arena. As cash-strapped states struggle with finances, community colleges have to simultaneously compete with K-12 education, welfare, healthcare funding and an increased demand in penal institutions (Gold, 1995). Yet unlike K-12 education, which receives appropriations from general state funds set by federal mandates, state funds received by postsecondary institutions are derived from enrollment figures that are regarded as discretionary (Zumeta, 2001). This means that state funding can be postponed when state finances are stretched thin.

#### *Societal Expectations in a Changing Economy*

The second factor that led to the expansion of the accountability movement came from economic pressures put on postsecondary institutions to become more accountable and efficient (Ewell, 2002). Local and regional industrial perspectives contended that for economic growth to occur, incentives and measures were needed to forge links between higher education and the

business community in order to produce graduates to fill highly skilled jobs. Another contribution that postsecondary institutions can make to their region is by providing access to higher education to local students.

Scrutiny at higher education from society and government increased after World War II but more so in the 1990s (Zumeta, 2001). This can be explained by economics. Increasingly, society has demanded that colleges and universities become more responsive to economic needs. Zumeta stated that globalization and rapid changes in technology have led to companies paying attention to costs while downsizing their labor force. Therefore, private business sees higher education as the primary driver to economic competitiveness through its development of human capital.

This concept was further reinforced when the former U.S. Secretary of Labor Marshall stated that higher education had become a crucial component in transforming U.S. low-wage jobs into high-performance, technologically-based occupations. In the past, someone who wanted to become an automotive mechanic would have learned his/her trade on the job. Today, because of the enormous technological changes that have occurred in the automotive industry, automotive technicians really have no choice but to participate in some form of postsecondary education in order to attain the required technical competencies needed to succeed on the job. This is sometimes a difficult endeavor for public, postsecondary institutions, which may not have sufficient funding to offer programs that deliver cutting-edge technology to their students. As a result, some institutions continue to present postsecondary education in the same way that they have always done so, producing graduates that are not up to the demands of the new global, technologically-competitive economy.

More recently, authors of *The Spellings Report* (2006) argued that in the current consumer-driven environment in the U.S., college and university students and the government cared about traditional academic concerns inasmuch as the results benefited both groups. At higher education's peril, the writers accused higher education of not addressing such fundamental issues as the transformation of academic programming to meet changing educational needs and paradigms. The writers wrote that greater accountability measures and performance data were necessary to meet the needs of the nation and to improve postsecondary performance.

These concerns also apply to baccalaureate graduates. A generation or two ago, a student entering a 4-year college was virtually assured a decent position by virtue of that education. However, today's graduating student expects - and is expected - to graduate with a specialized set of skills that will ensure him/her and his/her employer a competitive edge in the global marketplace. Indeed, many speculate that almost half of all college graduates may find themselves underemployed after graduation based upon the 2010 bachelor degree demand projection (U.S. Department of Education, 2001). This projection states that 45% of all baccalaureate graduates will not find employment in their area of study because of a lack of demand. In other words, only one out of two who persists to degree will find commensurate employment (Gray & Herr, 2006). In addition, the authors argue that the belief that everyone should attain a baccalaureate degree has postsecondary institutions accepting students who are under-prepared for the rigor of postsecondary education. They argued that the overall academic ability of college graduates was declining; as a result of this decline, these graduates and dropouts did poorly in the labor market.

Government and business see this as an inefficient use of resources by higher education and complain about the neglect of undergraduate student learning, the preoccupation with and the reward of research by faculty at the expense of teaching undergraduates, and the encouragement of mission and program expansion (Burke & Minassians, 2002a). The article further indicts higher education's failure to meet societal needs with the report that came out at the 1993 National Wingspread conference in higher education. The Wingspread Group charged academia with failing to adapt in light of the demographic, economic and technological changes that society was experiencing. Burke and Minassians further noted that critics' perception of colleges and universities was that of insensitive institutions that accepted too many under-prepared and under-qualified students who never graduated, took too long to graduate, or graduated without the knowledge or skills needed to be successful in a knowledge-and-information based society. This signaled a crisis in postsecondary education that called for rigorous re-direction where the focus would be on undergraduate education and student learning.

Paradoxically, external constituencies and special interest groups hold a variety of sometimes opposing views on the goals that higher education should strive for. External agencies have created policies that are very burdensome to fulfill. The development of human capital theory, advanced through public policy, has advocated the principle of the "massification" or universal access for students to higher education (Altbach et al., 1999).

Currently, community colleges provide services for many purposes, many people, and many systems that struggle to be all things to all people. Richardson and Leslie (2001) and Cohen and Brawer (2003) trace the multiple roles that community colleges undertake. The greatest roles that public 2-year colleges undertake are: (1) developmental education, (2)

collegiate and/or academic transfer to 4-year institutions, (3) vocational or workforce education, and (4) community service, continuing education, and assessment of skill training.

Just as academic freedom is thought to be an inalienable right for those teaching in higher education, open access is one of the central missions of community colleges. Although there have been attempts at standardizing college admissions through entrance exams, colleges and universities can admit whomever they choose as there are no uniform admission policies (Cohen & Brawer, 2003). With the passage of the GI Bill, well-prepared students clamored for admission to higher education institutions and community colleges were the benefactor of a large proportion of student cohorts in the 1950s and 1960s. Cohen and Brawer wrote that as the pool for qualified students got smaller and as competition for that student pool grew fiercer, community colleges responded by admitting everyone.

This open-admission policy meant that public 2-year colleges were also accepting students who were more poorly prepared for the rigors of higher education. How were 2-year colleges to address the academic needs of a populace who didn't know why they were there? This attention to the problem of under-prepared students is one that has become one of the six college missions central to instructional planning in 2-year colleges (Cohen & Brawer, 2003).

This preparation, or lack thereof, has propelled community colleges into the developmental studies arena. The arena of teaching basic skills courses to students is an idea that 4-year institutions have consistently rejected. The accountability movement has forced postsecondary institutions to report their success rate through the use of performance indicators such as retention and graduation rates. Therefore, many four-year universities have set higher admission standards to identify (and exclude) students who may drop/fail out because they are academically under-prepared.

It has been the public community colleges that have borne the brunt of poorly prepared students. Therefore, the problem of the academically under-prepared student has become central to academic planning in most community colleges, thereby making developmental education the third mission to community colleges in the United States.

In addition, the developmental education curriculum is sometimes in conflict with the collegiate function because remediation is thought to lessen the legitimacy of a community college's academic function. Community colleges have responded to this challenge by mandating placement testing and organizing an integrated curriculum to benefit the marginally-prepared student. Curricula were set up to supplement classroom instruction with tutoring, academic preparation courses, etc. to affect retention, learning, and the following measures: grade-point average, graduation rates, and successful transition to college-level courses at their native community colleges and transfer institutions. In addition, developmental course instructors, because of these external measurement demands, have begun to build strong professional associations and institute departmental exit exams to illustrate patterns of learning.

Success in the developmental courses is preparation for the second mission of many public 2-year colleges, which is the 2-year college transfer and/or collegiate mission. It is also sometimes called the collegiate function or general education transfer/liberal arts curriculum (Cohen & Brawer, 2003). This general education curriculum includes education that is steeped in the humanities, sciences, and social sciences.

This function, also known as the general education ideal, is to “help people evaluate their society and gain a sense of what is right and what is important” (Cohen & Brawer, 2003, p. 317). In other words, they are the core academic courses that help students become critical thinkers. General education courses expose students to various competencies that an educated, informed

person needs to be free and able to participate in his/her community. It is based on the premise of the Greek ideal of political participation of citizens. It is a framework which helps students think critically, develop personal values, respect diverse cultures, and encourages the action required to use that knowledge. These general education goals have become more than just words on a page as state and accrediting agencies ask community colleges to quantify how these goals are being reached at their institutions.

Articulation, or transfer of general education courses, has become very important, and they are only important inasmuch as they can be transferred to other 2-year or 4-year institutions. In other words, students will frequently ask, “Will my credits transfer?” Cohen and Brawer (2003) stated that the variety of general education courses across the country is fairly consistent with courses such as English Composition I and II, American History and History of Western Civilization, Biological and Physical Science, as well as College Algebra.

The third mission of 2-year colleges is the vocational or workforce mission. Although community colleges believe that one of their missions is to deliver the two years of technical school training for employees (Cohen & Brawer, 2003), it wasn't until the Smith-Hughes Act of 1917 and 1937 that federal monies were earmarked for institutions that provided the training. Historically, the delivery of this type of education placed community colleges as one of the primary providers, and this was reinforced with the passage of the Vocational Education Act of 1963 (with amendments in 1968 and 1972), the Carl D. Perkins Vocational Education Act (1984), and the Workforce Investment Act of 1998 (Cohen & Brawer).

With the influx of federal funds, most research has shown that occupational enrollment has stabilized since the 1960s to today (although difficult to measure accurately). Community and Technical Colleges serve employers and students by training workers who are well-prepared.

Again, while difficult to measure, most students seem satisfied with the training and successful employment placement by the colleges, and most employers seem satisfied with the quality and responsiveness of training for current and new employees gained from the colleges.

One caveat that Cohen and Brawer (2003) highlight is that while community colleges seek to legitimize both missions (collegiate and vocational) of their institutions, many employers do not give preference to degreed students in workforce programs and, in fact, lure students in high-demand blue-collar professional occupations away before they can attain the certificate or degree. Therefore, program completion research is confounded and makes it truly difficult to accurately report. One example would be welders. Once students acquire their national certification, the demand is so great that students are offered lucrative positions before the program is finished. Today, community colleges are beginning to marry their collegiate (general education courses) and vocational education to achieve the necessary skills and competencies outlined by industry, thus blurring vocational and collegiate education.

In addition to serving the developmental, academic, and vocational needs of students, the public 2-year college also serves a community service mission. The fourth and final educational mission that Cohen and Brawer (2003) talk about is the community college's role in Community Education: adult education, continuing education, lifelong learning, community service, community-based education and contract training. This chapter reviews the rationale behind these types of community education, which is to edify all in the community. These courses are usually paid for by the students themselves at a rate that normally only covers the cost of instruction. There are some who believe that because community education is often connected to personal enrichment courses which benefit the student, taxpayers should not have to subsidize this aspect of a community college's mission. But advocates argue that because of the short



nature of this type of programming, participation is usually very large in colleges that offer them and success is quite high when the student is able to define his/her own goals. One limitation of this argument is that these two indicators (enrollment and success) are very difficult to measure by traditional performance measures and, therefore, are not often being captured and reported accurately by the institutions.

Other forms of program validity for community education show that community education serves the entire population. Older student enrollment boosts the college during enrollment declines and also proposes new roles for the colleges rather than face failures in old roles. Therefore, Cohen and Braver state that colleges should not confuse open-admission of accepting all students in a population with a college's ability to solve all social and community problems of the college's population base. Yet, one has to ask if community colleges have open admission policies, are they responsible for also ensuring robust retention and graduation rates and why are these two performance indicators the most popular at 2-year and 4-year postsecondary institutions?

#### *Accountability versus Autonomy*

Roueche, Roueche, and Ely (2001) warned that institutions had to be on guard and aware of attitudes and changes toward higher education. They argued that institutions should self-impose quality monitoring practices and to act before external constituents impose constraints. Michael Burawoy, President of the American Sociological Association, wrote, "For too long too many of us have been hiding behind academic freedom and university autonomy – all in the name of truth. But the chickens are coming home to roost as the public is no longer interested in our truth, no longer prepared to subsidize our academic pursuits.... We have to demonstrate our

public worth” (*Chronicle of Higher Education*, August 13, 2004, B24). This concept of postsecondary disconnect to society has led to increased interventions and decreased autonomy.

Originally, assessments and accountability mandates provided campuses with the offer of continued autonomy with the provision of more decentralization so that they could develop and meet performance standards that the colleges themselves set. This new accountability accepts that decentralized university campus autonomy as being important but rejects the concept that accountability invades academic freedom (Burke & Minassians, 2002a).

Alexander (2000) concludes that how resources are spent continues to be scrutinized by government attempting to get more value from existing resources. The author stated that government initiatives continue to seek greater efficiencies by utilizing techniques that compare college and university performance, which constitutes the driving force of the accountability movement. This value for resources can be highlighted in the following four ways: (1) value-added measurements, or output categories, to graduating/transferring/departing students, (2) efficiency measurements of input categories, such as faculty student ratio, (3) return on investment and needs measurement to determine institutional effectiveness, and (4) the consumerism approach of higher education’s impact in meeting individual and state priorities and needs.

Yet Hearn and Holdsworth (2002) recommend that external stakeholders respect institutional autonomy and allow flexibility in assessment and measurement policies. The authors examined states’ efforts at policies that could potentially influence higher education outcomes. Hearn and Holdsworth particularly focused on funding and incentive-based funding formulas as well as accountability and mission differentiation between institutions. They wrote

that respect for institutional autonomy on postsecondary institutional campuses was an effective way of enhancing policies or practices to positively influence undergraduate education.

This is an important concept as the largest expenditure on college and university campuses is the cost of faculty salaries. Hearn (1999) found that there was a positive relationship between faculty salary and teacher productivity and research on higher education campuses. Therefore, low funding of faculty salaries and raises can negatively impact student learning with possibly disaffected faculty and/or high faculty turnover (Hearn & Holdsworth, 2002). Thus, student learning can suffer as a result of funding policies that could be considered intrusive or punitive.

As resources become scarcer, states have created mechanisms to ensure that state appropriations are used judiciously. One such mechanism is the use of formula funding. Marks and Caruthers (1999) speak of funding formulae in their *A Primer on Funding of Public Higher Education*. They define a funding formula as a “funding method that links resources mathematically to an institution’s characteristics...and represents the best judgment of those who fashion it” (p. 5). The authors further talk of formula funding as being used as a mechanism to provide funding to postsecondary institutions that meet state priorities and needs while decreasing political influences on the process.

Generally, there are two types of funding formula methods. The first is dollars per unit, which is based on dollars allocated per full-time equivalency (FTE) enrollment. Thirty-seven of fifty states in the US define that an FTE equals “30 annualized credit hours” (ECS, 2000, p. 17). An amount is then assigned to the type of student, undergraduate or graduate, per credit hour. The second formula funding method is the student-to-faculty-ratio times salary rates. In this method, FTEs are used to decide upon the number of faculty members who will be needed from

a ratio stating the number of students-to-faculty. When the number of positions is determined, the institution will multiply the average salary that has been agreed upon to generate a budget request (Marks & Caruthers, 1999).

Regardless of the method used, concerns about equity among different types of institutions brought about the “weighting” of indicators and “rolling average” rules to distribute state funds. This has complicated the issue and made it difficult for colleges and universities to understand what they need to have for funding to address state priorities and local needs. The formula must balance need with reality and accountability with autonomy (McKeown, 1996). Funding formulae have been used for more than 50 years. Marks and Caruthers illustrate the evolution from adequacy in the 1950s, growth in the 1960s, equity in the 1970s, stability/quality in the 1980s, to stability/ accountability reform of the 1990s (1999, p. 5). Accountability reform has brought performance based funding.

#### *Allocation Patterns of Funding in Higher Education and the Performance Trio*

SREB states, where the community college system is large (e.g., Florida and North Carolina), community college receive at least 75% of their funding from the state (Cohen & Brawer, 2003). Wattenbarger and Starnes (1976) list four typical state-supported funding allocation patterns: negotiated budget, unit-rate formula, minimum foundation, and cost-based programs. The most common pattern in states is the unit-rate formula, which allocates funds, usually full-time equivalents (FTEs), through a formula (Education Commission of the States, 2000). Negotiated budget funding, which is highly accountable, increases or decreases funding based on prior-year data. Cohen and Brawer (2003) describe minimum foundation and cost-based funding as allocation methods where: (1) state appropriations are made at variable rates based on available local funds and (2) support based on actual school expenditures. Regardless

of the funding formula, it is a complex system and benefits some schools and programs while withholding funds from others.

In the 1990s, Burke (1998a) wrote that scarce resources had legislators and state leaders re-evaluating their state funding formulae along with complaints about performance in postsecondary institutions. In response, states began to tie state funds to achieved performance rather than promised performance. Burke (2005b) wrote that the adage “what gets measured is what gets valued” has been extended to include “only what gets funded, budgeted or possibly reported” (pp. 217-218) is what gets valued. From this paradigm shift came three funding approaches. This *Performance Trio* (Burke, 2005b) consists of performance funding, performance budgeting, and performance reporting. Allocations are respectively tied “directly and tightly” (Burke & Minassians, 2003, p. 3), loosely or indirectly, or not at all to achievement in colleges and universities.

Burke and Minassians (2003) define the following three funding approaches as follows: *Performance Funding* ties state funding allocations directly and tightly to performance measures or indicators. If a postsecondary institution achieves or reaches its performance indicator(s), the college or university receives a formulaic amount of funding.

*Performance Budgeting* allows state legislators to look at institutional performance measures or indicators as one factor in the distribution of state funding allocations. If a postsecondary institution reaches or improves performance measures, the college or university may or may not receive additional funding.

*Performance Reporting* uses reporting of statewide postsecondary performance measures or indicators to inform legislators, students and parents of public institutions’ improvement or progress. Funding allocations are not directly related to achievement or attainment.

If funding is directly tied to state appropriations, as it is with performance funding, there is some argument among state officials in allocation methods of performance differences. Most arguments fall into two groups. The first group ties performance funding on additional money given to colleges and universities based on some type of indicator or behavior that enhances state priorities. This type of performance funding is also vulnerable to budgetary availability. States, such as Kentucky, have legislative provisions that permit the elimination of performance funding in the case of large reductions in state budgets (Serban, 1998).

One example is the Louisiana Board of Regents (BoR) Formula Funding composed of an operating funding plan with three major components: Core Funding, Quality/Campus Improvements and State Priorities, and Performance Incentive Initiatives (Louisiana Board of Regents Funding Formula for Louisiana's Public Postsecondary Institutions (n.d.)). Within the Core Funding component, BoR has included quantitative and qualitative enrollment factors that encourage campus growth as one of its main goals. BoR has set three-year moving average FTE Enrollment that must be attained in order to access a percentage of the \$5 million appropriation to be allocated through its Core Growth/Enrollment Incentive Funding. However, FTEs are usually based on traditional full-time students on campus, while most community colleges have part-time students as a majority.

Some believe that performance funding appropriations should be a part of the base college or university budget. These proponents argue that colleges would be less vulnerable to large budget cuts and would make institutions more vested in attaining performance measures desired. In one example, Arkansas colleges were unable to attain required levels of performance and were unable to receive funding on that indicator. Money was then reallocated to more successful postsecondary institutions. Because Arkansas used standard performance indicators

for all postsecondary institutions, “baccalaureate institutions outperformed two-year colleges and thus gained more money” (Serban, 1998, p. 65).

### *Status of Performance Trio*

Over a seven-year period, the Rockefeller Institute of Government annually conducted telephone surveys of state higher education financial officers (SHEFOs) to find out the “current status, future prospects and perceived impact of performance funding, budgeting and reporting in the fifty states” (Burke & Minassians, 2003, p. 2). In its last survey (2003), SHEFOS reported that 15 states used performance funding, 21 states used performance budgeting, and 47 states used performance reporting in colleges and universities.

In spite of the popularity of tying performance to accountability through these three funding approaches, Burke and Minassians (2003) felt that these programs had very little impact in changing institutional behavior that ultimately improve the college or university. On a scale from 1-6, with (1) great extent, (2) considerable extent, (3) moderate extent, (4) minimal extent, (5) no extent, and, (6) being cannot judge, impact scores were very low. Colleges and universities reported the following perceptions of improved performance on institution impacted by performance funding, budgeting and reporting: 46.5% (seven of the fifteen) of the states felt that performance funding had considerably to moderately impacted change; 38% (eight of the twenty-one) of the states felt that performance budgeting had moderately impacted change; and, 10.5% (five of the forty-seven) of the states felt that performance reporting had greatly to considerably impacted change. The next section looks at common performance indicators.

### *Common Performance Indicators*

Although some states have tried to take the distinct mission of 2- and 4-year institutions into consideration when developing performance indicators, most states still use the same

performance indicators for public 2-year community and public 4-year universities. Burke and Minassians (2002b) and Burke and Serban (1998) have looked at the reporting of performance indicators used in postsecondary institutions. The authors looked at 29 performance reports as well as 11 Performance Funding Reports and ranked the top eight indicators. In both cases, the top indicators required in Performance Reporting and Performance Funding were graduation rates and retention. In 24 incidences (where n=29), Graduation Rates and Retention played prominent roles in Performance Reporting for 2- and 4-year institutions. In 10 incidences (where n=11), graduation rates and retention played a prominent roles in Performance Funding for public 2- and 4-year institutions.

Burke and Minassians' (2002b) findings illustrate that the most common indicators reported point to a stronger shift to inputs and externally generated concerns. The authors go on to recommend that 2- and 4-year colleges and universities should have common performance indicators to reflect those values that are shared but also different performance indicators to illustrate their own distinct missions. Zarkesh and Beas (2004) conclude that performance indicators have had the most impact on 2-year colleges; yet, research on their effects has been minimal. They believe that "college scholars and practitioners must pay closer attention to the ways in which performance indicators relate to the mission and purpose of each college and must more fully examine the benefits and drawbacks of using performance indicators in state funding formulas" (Zarkesh & Beas, p. 74).

In a similar study, the ECS (2000) highlight 12 performance indicators that were reported by states who have indicators to report. The study found that more than half of the states (27 of 50) collect and report data on at least one type of indicator to the state. The four indicators with the highest number of states reporting were Job Placement (63%, or 17 of 27 states), Transfer



Rates (60%, or 16 of 27 states), Graduation Rates (60%, or 16 of 27 states), and Retention/ Time to Degree (52%, or 14 of 27 states). Within the SREB region, 7 of 16 states with performance indicators reported some type of retention as an indicator. For example, Tennessee reports Retention/Persistence as a part of the State's accountability program. Virginia reports two indicators that deal with retention rates. They are Retention rate (returning students, but not progressing of higher level) and Persistence rate (students returning regardless of program placed level) (ECS, 2000).

In addition to accountability programs, institutions are also required to report certain indicators to outside agencies such as the National Center for Educational Statistics. Along with demographic data and graduation rates, all postsecondary institutions (who receive federal financial aid) must report their retention rate (fall to fall) in October to the NCES' Integrated Postsecondary Educational Data Systems (IPEDS).

#### *Conclusion from the Literature Review*

Much of the literature reports the number and performance indicators that are used or the methods used to allocate state funding. Yet, other researchers look at the policies of performance indicators and funding. Ultimately, throughout the literature, there still exists a gap in statistically evaluating differences between institutions in the reporting of performance indicators. Therefore, my research specifically seeks to extend the literature on the use of standard performance indicators between community/technical colleges and universities.

Accountability and efficiency have become the catchwords for the new millennium. Burke and Minassians (2002c) state that managing, measuring, and rewarding results have become the new trinity in the accountability movement. But, does the search for quality through the use of performance indicators truly portray all postsecondary institutions and the contexts in

which students find themselves? Could the use of performance indicators have the potential to reduce a community college's funding and impact access for students? With these factors in mind, this research looks at the use of performance indicators. Specifically, I wish to analyze retention data, as reported in IPEDS, to see if there is a statistical difference between 2-year and 4-year institutions for part-time and full-time students.

Regardless of the allocation method used, "there is one constant: every state uses some measure of enrollment as the center-piece of its allocation process" (Cohen & Brawer, 2003, p. 147), usually full-time equivalents (FTEs). For community colleges, the decline in funding of FTEs has been documented (U.S. Department of Education, 2005). In 2001, the National Center for Education Statistics examined current revenue per full-time equivalent student at public degree-granting institutions from 1970 to 2001.

The researchers studied three revenue streams: government appropriations (federal, state, and local government), tuition and fees, and other general appropriations (private gifts, private and government contracts, and endowment income). In 1971, total revenue generated per student was \$8,794. Government appropriations accounted for almost 60% or \$5,227, and student tuition and fees only accounted for almost 16% or \$1,364. In stark contrast, the 2001 results of total revenue generated per student was \$11,696. Government appropriations accounted for only 46% or \$5,409, and student tuition and fees accounted for 23% or \$2,716. In constant dollars, this represented only a 3% increase in government appropriations but a 99% increase in student tuition and fees by 2001.

Although this is troubling, Palmer wrote that in an era of consolidation, postsecondary education is marked by attempts to achieve greater operating efficiencies as the demand for higher education outpaces public funding. Therefore, the author asks not "Will community

colleges survive?” but “On what basis will public subsidies be made?” (Palmer, 2001, pp. 208-09). He posited that funding concerns lie with an inability to reconcile the multiple roles or missions of community colleges and a conflicting economic imperative.

From a campus standpoint, if it is FTEs that are measured and funded, where do the goals of access or student learning fit in? In addition, those scholars with ties to and in support of the community college movement have argued that from a policy viewpoint, state funding should be consistent with the primary role, scope, and mission of those institutions through the following tenets: (1) open access, (2) curricular comprehensiveness, (3) local control, (4) low cost to students, and (5) being responsive to local needs (Martorana & Wattenbarger, 1978; Wattenbarger, 1985).

With higher education now looking at students as consumers and education as a product, these postsecondary institutions find themselves caught between what they think students require and what students demand. Cohen and Brawer (2003) discuss the changing emphasis in open access and the expectation of serving all students’ needs with whatever programming they desire. The role that community colleges will play and the concerns of funding community colleges in the 21<sup>st</sup> century will grow more precarious and continue to challenge colleges to maintain the integrity of their programs and to serve their varied student populations. Arthur Levine (1997) postulates that the decrease in funding is due to politicians privately giving up on the goal of access.

Levine (2001) discusses the two most common theories about the reduction of higher education funding – fewer state dollars to distribute to higher education and a shift in funding priorities. He also postulates a third theory, which states that higher education has become a mature industry. With few exceptions, enrollment in higher education increased every year,

making it a growth industry during the twentieth century. In fact, Levine writes that more than 60% of high school graduates are currently attending postsecondary institutions. State legislators look at this attendance rate and state graduation rate and view them as sufficient. Therefore, the government now looks at higher education as a mature industry, which needs less governmental input. It treats colleges and universities differently from growth industries by asking, as it does other mature industries, “hard questions about their cost, efficiency, productivity and effectiveness. It attempts to limit their size and funding. [The government] reduces their autonomy, increases their regulation, and demands greater accountability” (Levine, 2001, p. 39). Because Levine believes these changes are permanent, he recommends that higher education faculty and staff begin learning how to answer the hard questions that the state and federal government are asking.

Accountability has forced postsecondary institutions to report their success rates through the use of performance indicators such as retention and graduation rates. Therefore, many 4-year universities have set higher admission standards to identify (and exclude) students who may drop out or fail because they are academically under-prepared. It has been the public community colleges that have borne the brunt of poorly-prepared students. Access may become threatened by the reduction in funding from the state, accountability, and large enrollment growths (Hendrick, Hightower, & Gregory, 2006).

## Summary

In summary, the review of literature reported in this study has illustrated evolution of accountability, funding, and performance indicators in higher education. The review has situated an historical context of this evolution and the policy research done to allocate scarce public resources. Although accountability policy has tried to reflect the needs of the State, postsecondary institutions, and the market, performance indicators have not always been chosen based on the mission of the institution. This proposed framework seeks to statistically illustrate the need for performance indicators to reflect the specific type of mission of an institution.

## CHAPTER THREE

### Methods

Decreasing state funding is a concern at public 2-year colleges across the country. This is especially troubling as the demands for more services, programs, and performance increase while actual state dollars decrease at postsecondary institutions. I will address the gap in the literature on comparative data on the performance indicators of retention and graduation rates as reported by the primary providers of postsecondary academic, vocational, and professional continuing education to the Integrated Postsecondary Education Data System (IPEDS) in the U.S. (<http://nces.ed.gov/IPEDS/about/>, Retrieved May 17, 2010). This chapter presents a summary of the quantitative methods that will be used to study retention and graduation rates in public 2-year colleges and public 4-year universities.

Data on retention and graduation rates will be collected from the Integrated Postsecondary Educational Data System (IPEDS) database, which surveys higher education institutions in the U.S. Quantitative research methods will be used. Since the data from IPEDS are a census and contain information on all 2- and 4-year public institutions, results reflect the larger US population of public 2-year colleges and public 4-year universities. Similar to Dowd and Grant's (2006) study on community college appropriations, I do not treat retention and graduation data as a sample but as a population and, therefore, do not present statistical tests for differences in values. Included in this chapter is a discussion of research questions, research design, data sets, data collection procedures, data analysis, and limitations involved in this study.

### Preliminary Study

I conducted a preliminary study using retention rate data from IPEDS from a sample of 16 southern states at 4-year and 2-year public postsecondary institutions. I compared retention rates to determine the significance levels of means in independent samples *t*-test (Gray & Airasian, 2003). First, data were separated into two groups of institutions: public 4-year institutions (designated 1) and public 2-year colleges (designated 0). There were 163 universities and 380 colleges that became part of the data. The data were imported into an SPSS program for analysis where the two institutional types were split and descriptive statistics and independent samples *t*- tests were run.

### Preliminary Study Findings

The two institutional types were separated to gain descriptive statistics on each. Four-year institutions' descriptive statistics are below. The mean retention rate in 2004 for full-time students was 70.52 where  $n = 153$ . The standard deviation for the same institutions and students was 16.13. The mean retention rate for part-time students in 2004 was only 45.34 where  $n = 148$ . The standard deviation for the same institutions and students was 23.26.

Two-year colleges' descriptive statistics are also reported below. The mean retention rate in 2004 for full-time students was 55.13 where  $n = 376$ . The standard deviation for the same institutions and students was 14.84. The mean retention rate in 2004 for part-time students was 41.07 where  $n = 368$ . The standard deviation for the same institutions and students was 17.90. I have reported the descriptive statistics for retention rates in Table 5.

Table 5

*Differences between postsecondary institutions for Retention Rates of Full-Time and Part-Time Students at Public 2- and 4-Year Institutions in Sixteen States in 2004*

| <u>Retention Level</u>   | 4-Year   |           | 2-Year   |           | <u>df</u> | <u>t</u> |
|--------------------------|----------|-----------|----------|-----------|-----------|----------|
|                          | <u>M</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |           |          |
| 2004 Retention Full-Time | 70.52    | 16.13     | 55.13    | 14.84     | 527       | 10.55    |
| 2004 Retention Part-Time | 45.34    | 23.26     | 41.07    | 17.90     | 220       | 2.01     |

I compared retention rates to determine the significance levels of means in independent samples *t*-test (Gray & Airasian, 2003). Independent samples *t*-test were “used to determine whether the mean value on one group of subjects is different from a mean value on the same variable with a different group of subjects” (McMillan & Schumacher, 1997, p. 634). This statistic produces a number that determines the level of probability (*p* level) of rejecting the null hypothesis and must meet three statistical assumptions: (1) the comparison populations of each group has a normal frequency score distribution, (2) population variance is equal, and (3) score observations of each group is independent from the second comparison group (McMillan & Schumacher, 1997).

Once the descriptive statistics were found in the pilot study, I combined 2- and 4-year institutional data and ran independent samples *t*-tests for 2004 for full- and part-time students at public 4-year and 2-year institutions. In the pilot study, independent samples *t*-tests were



completed to examine the differences of retention rates of part-time students in 4-year and 2-year postsecondary institutions. Levene's Test for Equality of Variances was computed with no significant differences being found for retention rates for full-time students ( $p > .05$ ). Therefore homogeneity of variance was assumed (Huck, 2004). A significant Levene's Test,  $F = 17.38$ ,  $p < .05$ , indicated the variances between institutional types were unequal for retention rates for part-time students. Homogeneity of variance was not assumed (2004).

Retention rate results for full-time and part-time students in 2004 were significantly larger where the significance in a two-tailed test was .0001 and .046 respectively. The hypothesis that there would be significant retention rate differences for full-time and part-time students was supported by these data. In the preliminary study, the average retention rates for first-time, full time students at 2- and 4-year students in 2004 were 71% and 55% respectively. The average retention rates for first-time, part-time students in 2004 for 2- year institutions were 41% and 4-year institutions were 45%. These results encouraged me to examine standard performance measures for community and technical colleges and universities; it warrants further research. Please see Table 6 for tabular results of this pilot study.

Table 6

*Independent Samples t Tests for Retention Rates of Full-Time and Part-Time Students at Public 2- and 4-Year Institutions in 2004*

|                                | Levene's<br>Test for<br>Equality of<br>Variances | <i>t</i> -Test for Equality of<br>Means |       |        |       |
|--------------------------------|--|---|-------|--------|-------|
|                                | <i>F</i>   | <i>t</i>                                | Sig.  | Lower  | Upper |
| 2004 Retention Full-Time       |  |   |       |        |       |
| Equal variances<br>Assumed     | .03  | 10.55                                   | .0001 | 12.53  | 18.26 |
| Equal variances<br>Not assumed |  | 10.18                                   | .0001 | 12.416 | 18.37 |
| 2004 Retention Part-Time       |  |   |       |        |       |
| Equal variances<br>Assumed     | 17.38  | 2.24                                    | .03   | .52    | 8.009 |
| Equal variances<br>Not assumed |  | 2.01                                    | .046  | .07    | 8.46  |

## Research Questions

The importance of understanding whether differences occur in common performance indicators is crucial as funding becomes more closely tied to these indicators. This research seeks to examine the relationship of retention and graduation rates. Therefore, this research specifically looks at the following questions:

1. Is there a difference between public 2-year and public 4-year postsecondary institutions in retention rates for first-time, full-time, degree/certificate-seeking undergraduate students in 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?
2. Is there a difference between public 2-year and public 4-year postsecondary institutions in retention rates for first-time, part-time, degree/certificate-seeking undergraduate students in 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?
3. Is there a difference between public 2-year and public 4-year postsecondary institutions in graduation rates for 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?
4. Is there a difference between graduation rates, ethnicity, and sex at public 2-year colleges and public 4-year universities for each year in 2005, 2006, or 2007, as reported to the Integrated Postsecondary Education Data System?

## Quantitative Research Design

Quantitative research methods will be used. Since the IPEDS database contains information on all 2- and 4-year public postsecondary institutions, results represent the

population of interest. For consistency, data will be collected from the NCES' Integrated Postsecondary Educational Data System database for the retention rates in the years 2005, 2006, and 2007.

A sample of public 2- and 4-year postsecondary institutions was used in the preliminary study; therefore, statistics gathered using Independent Sample *t*-Tests were used. This use can increase statistical problems concerning probability level distortion. To correct this concern in this study, the entire NCES IPEDS population will be used.

Finally, I will look to see if there are differences between graduation rates, sex, and ethnicity at public 2-year institutions of higher education and public 4-year postsecondary institutions for full-time or part-time students.

#### Data Sets

I will use public 2-year college and public 4-year university data from the National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS) database. The data for this project are available to researchers through the IPEDS Data Center. The NCES initiated the collection of data for postsecondary education through IPEDS in 1986 (Jackson, Jang, Sukasih, & Peecksen, 2005). Further, staff at the NCES defined Postsecondary Education as formal education for students beyond the compulsory age for high school.

IPEDS is the core, federal reporting database system for all institutions that deliver postsecondary education in the country and receive Title IV federal student financial aid funding. These postsecondary institutions have Program Participation Agreements with the Department of Education through the Office of Postsecondary Education. In fact, postsecondary institutions receiving Title IV funds have been required to report their institution's data since 1992 (Jackson,

et al., 2005). This number currently exceeds 6,500 postsecondary institutions. In addition, institutions not participating in Title IV funding may voluntarily submit data to IPEDS.

The NCES, through IPEDS, establishes the IPEDS universe in the fall, and data are collected in a fall, spring, and summer collection. Postsecondary institutional information is collected on nine separate components about institutional characteristics, enrollments, program completions, graduation rates, student financial aid, human resource information on faculty and staff, and finances. Enrollment data are collected every year by institutional level (graduate, undergraduate, and first professional), by race and sex of students, and on the number of part-time and full-time student status in the fall, winter and spring. In addition, demographic data are collected on age, state of residence for first-time freshmen, and those students who have graduated in the past 12 months ([http://nces.ed.gov/IPEDS/about/info\\_collected.asp](http://nces.ed.gov/IPEDS/about/info_collected.asp), “Enrollment”, Retrieved May 25, 2007).

Although IPEDS surveys colleges and universities on a number of indicators, this study will be restricted to retention and graduation rates for public 2-year and public 4-year universities for the years 2005, 2006, and 2007, to see if there are differences between the two types of institutions. This time period will be limited to these years for consistency. In prior years, retention rate data were not collected by the National Center for Educational Statistics. Changes were made because of the passage of the Higher Education Opportunity Act of 2008 (<http://ed.gov/policy/highered/leg/hea08/index.html>). These changes include how data are reported on race/ethnicity on indicators and by level of control of an institution (Knapp et al., 2010). The NCES collects ethnicity and sex data on its graduation rate data collection. Therefore, I will look at differences between ethnicity, sex, and graduation rates.

The IPEDS Programs' data collection was redesigned and converted to a fully web-based system in the 2000-01 collection year ([http://nces.ed.gov/IPEDS/about/ipeds\\_history.asp](http://nces.ed.gov/IPEDS/about/ipeds_history.asp), IPEDS History, Retrieved May 16, 2010). The new collection was developed with the capability to tailor data collection screens for each institution and to provide immediate feedback on data input errors. This has allowed for earlier data release to institutions. (Knapp et al., 2010).

I will electronically retrieve data from the IPEDS Data Center website. I will access adjudicated data as a Guest and download into Microsoft Excel files as well as data dictionaries and read programs that could be imported into SPSS. (<http://nces.ed.gov/ipeds/datacenter/>, IPEDS Data System, Retrieved May 23, 2010). With the IPEDS Data Center, I will create data files according to specifications set by my research questions.

First, retention and graduation rate data will be recoded for two types of institutions: 4-year institutions (designated 1) and 2-year colleges (designated 0). The data will be imported into Statistical Package for the Social Sciences (SPSS) Program Version 17.0 for analysis and an excel spreadsheet where the two institutional types will be split and descriptive parameters will be run. As I am dealing with the entire population of schools, no inferential statistics will be required. Any differences found will be real population differences by definition.

Retention rates will be the first survey component collected on IPEDS under enrollment that I will study. Researchers at IPEDS also separate retention data on two levels – retention rates of full-time students (where full-time is equal to or greater than 12 semester hours) and part-time students (where part-time is fewer than 12 semester hours). Finally, graduation rate data are separated by ethnicity and sex by researchers at the National Center for Educational Statistics. These data will be used to find differences.

### *Dependent Variables*

In this study, I use performance indicators, which are comparable across data sets. Retention rates and graduation rates were chosen based on a number of studies done on the frequency of performance indicators reported in postsecondary institutions. Burke and Minassians (2002b) and Burke and Serban (1998) looked at 29 Performance Reports and 11 Performance Funding Reports and ranked the top eight indicators in frequency of occurrence. In both cases, the top indicators required in Performance Reporting and Performance Funding were graduation and retention rates.

In 2010, the National Center for Educational Studies printed a report on graduation rate differences between 2-year and 4-year institutions (Knapp, 2010). Knapp collected graduation rate data on a cohort of first-time, full-time, degree-seeking students enrolled at 4-year institutions in the 1999 academic year and at 2-year institutions in the 2002 academic year in which graduation occurred within 150% of time. This meant that 4-year students completed their program within 6 years and 2-year students completed their program within 3 years. I have adapted the author's data reported in Table 7. The 53% graduation rate for 4-year institutions of first-time, full-time freshman at 150% is higher than the 22% graduation rate for first-time full-time students at 2-year institutions. Furthermore, graduation rates at 4-year institutions by race/ethnicity is 56.2%, 37.3%, 43.1% and 63.6% for White, Black, Hispanic, and Asian first-time, full-time students, respectively. Graduation rates for students at 2-year institutions were only 22.0%, 24.5%, 14.4% and 26.5% for first-time, full-time White, Black, Hispanic, and Asian students, respectively. These data are contained in Table 7.

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Table 7

*Graduation Rates at Title IV Institutions, by Race/Ethnicity, Level and Control of Institution, and Gender: United States, Cohort Years 2002 and 2005*

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| <u>Level</u>                              | <u>Total</u> | White | Black | Hispanic | Asian |
|---|--------------|-------|-------|----------|-------|
| 4-year institutions<br>(cohort year 2002) | 53.3         | 56.2  | 37.3  | 43.1     | 63.6  |
| 2-year institutions<br>(cohort year 2005) | 22.0         | 24.5  | 14.4  | 16.8     | 26.5  |

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Note. Adapted from *Enrollment in Postsecondary Institutions, fall 2008; Graduation Rates, 2002 & 2005 Cohorts; and Financial Statistics, Fiscal Year 2008*, by Knapp, L.G., 2010, p. 14. Copyright 2010 by the Integrated Postsecondary Educational Data Statistics. All rights reserved.

Overall, 4-year institutions had higher graduation rates at 53% compared to 2-year institutions with a graduation rate of 22%. Further investigation revealed that this percentage was the lowest for Blacks at 2-year institutions with a graduation rate of 14% compared to 37% for Blacks at 4-year institutions. There may be many reasons for this percentage difference, but if funding was based on a graduation rate performance indicator, community colleges would fare much worse.



### *Independent Variables*

I will use independent indicator variables to represent public 2-year community/technical colleges and public 4-year universities. Once retention rate and graduation data are recoded for two types of institutions--public 4-year institutions (designated as 1) and public 2-year colleges (designated as 0)--I will look for differences in retention rates of full-time and part-time students at public 4-year and 2-year postsecondary institutions as well as differences in graduation rates by sex and ethnicity/race.

Although the NCES collects data on retention rates for full- and part-time students, it does not collect other retention rate data, such as sex or ethnicity. Therefore, I will be able to compare retention rate differences between public 4-year and public 2-year institutions but I will be unable to look for possible differences on retention rates with ethnicity and sex. However, graduation rate data, including ethnicity and sex, are collected by the NCES, but they are collected and reported together. Because ethnicity and sex are highly correlated to graduation rates, I will also look for differences in graduation rates.

### Analysis

Retention and graduation rate data will be examined by level and control of institution for differences in public 2-year colleges and public 4-year universities by attendance (full- or part-time) status in retention rates. Although IPEDS surveys colleges and universities on a number of indicators, this study restricts itself to only retention and graduation rates for 2-year community/technical colleges and 4-year universities for the years 2005, 2006, and 2007, to see if there are significant differences between the two types of institutions in relation to sex and ethnicity.

## Summary

Retention and graduation rate data will be analyzed by level and control of institution for differences in public 2-year colleges and public 4-year universities by attendance (full- or part-time) status in retention rates and graduation rates by ethnicity and gender by cohort using Microsoft Excel 2007 and Statistical Package for the Social Sciences (SPSS) Version 17.0 program.

Although IPEDS surveys colleges and universities on a number of indicators, this study restricts itself to only retention and graduation rates for 2-year community/technical colleges and 4-year universities for the years 2005, 2006, and 2007, to see if there are differences between the two types of institutions in relation to sex and ethnicity.

## CHAPTER FOUR

### Results

The purpose of this study was performance indicators that impact allocation of ever-dwindling public sources of money. I examined the dependent variables of retention rates and graduation rates to determine if there were any real differences between 2- and 4-year postsecondary institutions. Through the NCES Integrated Postsecondary Education Data Systems, the results represented the population of public 2-year and 4-year postsecondary institutions as well as first-time, full- or part-time students in the years 2005, 2006 or 2007, in this chapter. I also examined whether there were differences in graduation rates and ethnicity for the same group of institutions. My expectation was that postsecondary institutions' administrators and policymakers would be able to utilize the results to better understand possible funding implications.

#### *Analysis of Research Questions*

##### *Research Question 1*

Research Question 1 asked if there was a difference between public 2-year and public 4-year postsecondary institutions in retention rates for first-time, full-time, degree/certificate-seeking undergraduate students in 2005, 2006, or 2007. Data were collected from the NCES Integrated Postsecondary Education Data System as reported by public 2- and 4-year postsecondary institutions.

My results indicated that there were differences in retention rates for first-time, full-time students in public, 2- and 4- year postsecondary institutions. In 2005, there were a total of 1,705 2- and 4-year institutions that participated in the NCES Integrated Postsecondary Education Data System. There were a total of 1,630 2- and 4-year institutions that reported their retention rates for their first-time, full-time students and 75 institutions that did not respond to these survey

questions. From these institutional data, the average retention rates were calculated for first-time, full-time students.

I collected retention rate data from 589 public 4-year institutions and 1,041 public 2-year institutions. There were large differences in the first-time, full-time retention rates between 4-year and 2-year institutions. The retention rate for 4-year institutions was 71.26% as compared to the retention rate of 2-year institutions at 56.39%. That is a 14.87% difference in retention rates between the two types of institutions.

There were similar results from 2006. In 2006, there were a total of 1,708 public 2- and 4-year institutions according to the NCES Postsecondary Education Data System. There were a total of 1,625 2- and 4-year institutions that reported their retention rates for their first-time, full-time students and 83 institutions that did not respond to these survey questions. From these institutional data, the average retention rates were calculated for first-time, full-time students.

I gathered retention rate data from 1,035 2-year institutions and 590 4-year institutions. From these institutions, the average retention rates were calculated for full-time students. Again, there were differences in the full-time retention rates between 2-year and 4-year institutions. The retention rate for 4-year institutions was 71.93% as compared to the retention rate of 2-year institutions at 55.79%. That is a 16.14% difference in retention rates between 2- and 4-year institutions, which is an increase of 1.27% in retention rate differences between the two types of institutions.

Finally, I have reported the results from 2007. My results indicated that there were large differences in retention rates for first-time, full-time students in public 2-year and 4-year postsecondary institutions. In 2007, there were a total of 1,683 postsecondary institutions from the 2- and 4-year postsecondary population that were eligible to participate in the NCES

Integrated Postsecondary Education Data System enrollment survey. There were a total of 1,623 2- and 4-year institutions that reported their retention rates for their first-time, full-time students and 60 institutions that did not respond to these survey questions. From these institutional data, the average retention rates were calculated for first-time, full-time students.

I collected retention rate data from 1,020 2-year institutions and 603 4-year institutions. Again, there were large differences in the first-time, full-time retention rates between 2-year and 4-year institutions. The retention rate for 4-year institutions was 71.65% as compared to the retention rate of 2-year institutions at 56.85%. That is a 14.8% difference in retention rates between the two types of institutions. All retention rate data for first-time, full-time students are contained in Table 8.

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Table 8

*Retention Rate Data by Institutional Level for Full Time Students*

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| <u>Retention Level</u>   | <u>4-Year</u> |                   | <u>2-Year</u> |                   |
|--------------------------|---------------|-------------------|---------------|-------------------|
|                          | <u>N</u>      | <u>Percentage</u> | <u>N</u>      | <u>Percentage</u> |
| 2005 Retention Full Time | 589           | 71.26             | 1,041         | 56.39             |
| 2006 Retention Full Time | 590           | 71.93             | 1,035         | 55.79             |
| 2007 Retention Full Time | 603           | 71.65             | 1,020         | 56.85             |

---

Based on the retention rate data results, there are differences between 2- and 4-year institutions for first-time, full-time, degree/certificate-seeking students for the years 2005, 2006 and 2007. Those differences were 14.87%, 16.14% and 14.8% for years 2005, 2006 and 2007, respectively for first-time, full-time students.

### *Research Question 2*

Research Question 2 asked if there were differences between public 2-year and public 4-year postsecondary institutions in retention rates for first-time, part-time, degree/certificate-seeking undergraduate students in 2005, 2006, or 2007. Data were collected from the NCES Integrated Postsecondary Education Data System as reported by 2- and 4-year postsecondary institutions.

My results indicated that there were differences in retention rates of first-time, part-time students in public 2- and 4-year postsecondary institutions. In 2005, there were a total of 1,705 2- and 4-year institutions that participated in the NCES Integrated Postsecondary Education Data System. There were a total of 1,604 2- and 4-year institutions that reported their retention rates for their first-time, part-time students and 101 institutions that did not respond to these survey questions. From these institutional data, the average retention rates were calculated for first-time, part-time students.

I collected retention rate data for 2005 from 569 public 4-year institutions and 1,035 public 2-year institutions. There were differences in the part-time retention rates between 4-year and 2-year institutions. The retention rate for part-time students at 4-year institutions was 44.31% as compared to the retention rate of part-time students at 2-year institutions at 39.44%. That is a 4.87% difference in retention rates between the two types of institutions.

There were similar results in 2006. In 2006, there were a total of 1,708 public 2- and 4-year postsecondary institutions according to the NCES Integrated Postsecondary Education Data System. There were a total of 1,575 2- and 4-year institutions that reported their retention rates for their first-time, part-time students and 133 institutions that did not respond to these survey questions. From these institutional data, the average retention rates were calculated for first-time, part-time students

I gathered retention rate data in 2006 from 1,028 2-year institutions and 547 4-year institutions. From these institutions, the average retention rates were calculated for first-time, part-time students. There were differences in the part-time retention rates between 2-year and 4-year institutions in 2006. The retention rate for 4-year institutions was 47.70% as compared to the retention rate of 2-year institutions at 39.84%. That is a 7.56% difference in retention rates between 2- and 4-year institutions, which is a larger increase in retention rate differences between the two types of institutions.

Finally, there were differences in retention rates for first-time, part-time students in public 2-year and 4-year postsecondary institutions. In 2007, there were a total of 1,683 postsecondary institutions from the 2- and 4-year population that were eligible to participate in the NCES Integrated Postsecondary Education Data System. There were a total of 1,584 2- and 4-year institutions that reported their retention rates for their first-time, part-time students and 99 institutions that did not respond to these survey questions. From these institutional data, the average retention rates were calculated for first-time, part-time students.

I gathered retention rate data from 1,014 2-year institutions and 570 4-year institutions. Again, there were differences in the first-time, part-time retention rates between 2-year and 4-year institutions. The retention rate for 4-year institutions was 47.78% as compared to the

retention rate of 2-year institutions at 40.79%. That is a 6.99% difference in retention rates between the two types of institutions. All retention rate data on first-time, part-time students are contained in Table 9.

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Table 9

*Retention Rate Data by Institutional Level for Part Time Students*

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| <u>Retention Level</u>   | <u>4-Year</u> |                   | <u>2-Year</u> |                   |
|--------------------------|---------------|-------------------|---------------|-------------------|
|                          | <u>N</u>      | <u>Percentage</u> | <u>N</u>      | <u>Percentage</u> |
| 2005 Retention Part Time | 569           | 44.31             | 1,035         | 39.44             |
| 2006 Retention Part Time | 590           | 47.40             | 1,028         | 39.84             |
| 2007 Retention Part Time | 570           | 47.78             | 1,014         | 40.79             |

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Based on the retention rate data results, there are differences between 2- and 4-year institutions for first-time, part-time students for the years 2005, 2006 and 2007. Those differences were 4.87%, 7.56% and 6.99% for years 2005, 2006 and 2007, respectively for first-time, part-time students in public, 2-year and 4-year institutions.

*Research Question 3*

Research Question 3 asked if there was a difference between public 2-year and public 4-year postsecondary institutions in graduation rates for 2005, 2006, or 2007. Data were collected



from the NCES Integrated Postsecondary Education Data System as reported by 2- and 4-year postsecondary institutions.

My results indicated that there were large differences in graduation rates between 2-year and 4-year postsecondary institutions for all three years. In 2005, there were a total of 1,618 2- and 4-year institutions that were required to report their graduation rates to the NCES Integrated Postsecondary Education Data System. Overall, there were 1,605 2- and 4-year postsecondary institutions that reported their graduation rates to the NCES and 13 institutions that were excluded from the survey.

I collected 2005 graduation rate data from 1,027 2-year institutions and 578 4-year institutions. From these institutional data, the average graduation rates were calculated for a first-time, full-time cohort of students that began in 1999 for 4-year institutions or 2002 for 2-year institutions and graduated within 150% of normal time. The graduation rate for 4-year institutions was 44.05% as compared to the graduation rate of 2-year institutions at 25.55%. That is an 18.50% difference in graduation rates between the two types of institutions.

In 2006, there were a total of 1,615 2- and 4-year institutions that participated in reporting graduation rate data to the NCES Integrated Postsecondary Education Data System. There were 1,602 postsecondary institutions that reported their graduation rates and 13 institutions that were excluded from the survey.

I downloaded 2006 graduation rate data from 1,022 2-year institutions and 580 4-year institutions. From these institutional data, the average graduation rates were calculated for the first-time, full-time cohort of students that began in 2000 for 4-year institutions or 2003 for 2-year institutions and graduated within 150% of normal time. In 2006, the graduation rate for 4-

year institutions was 44.50% as compared to the graduation rate of 2-year institutions at 24.94%. That is a 19.56% difference in graduation rates between the two types of institutions.

My examination of data for graduation rates in 2007 indicated that there were large differences in graduation rates between 2-year and 4-year postsecondary institutions. In 2007, there were a total of 1,610 2- and 4-year institutions that reported their retention rates to the NCES Integrated Postsecondary Education Data System with no cases excluded.

I collected graduation rate data from 1,013 2-year institutions and 597 4-year institutions. From these institutional data, the average graduation rates were calculated for a cohort of first-time, full-time students that began in 2001 for 4-year institutions or 2004 for 2-year institutions and graduated within 150% of normal time. In 2007, the graduation rate for 4-year institutions was 44.47% as compared to the graduation rate of 2-year institutions at 22.81%. That is a 21.66% difference in graduation rates between the two types of institutions. All graduation rate data for the years 2005, 2006, and 2007, are contained in Table 10 by institutional level.

I also calculated the total average graduation rates for 2- and 4-year institutions by ethnicity. In 2005, the 4-year graduation rates for students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 26.06%, 37.83%, 33.13%, 34.67%, 44.57%, 22.75% respectively. The 2-year institutions' graduation rates for students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 12.04%, 17.87%, 16.14%, 17.22%, 27.15%, and 13.60% respectively in 2005.

In 2006, the graduation rate for 4-year institutions whose students classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 25.91%, 39.64%, 32.71%, 35.22%, 45.20%, and 24.77%

respectively. The 2-year institutions' graduation rates for students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 11.81%, 17.39%, 14.36%, 17.13%, 26.45%, and 13.88% respectively in 2006.

Finally, in 2007, the 4-year graduation rates for students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 26.83%, 39.47%, 32.92%, 35.61%, 44.50%, and 25.70% respectively. The 2-year institutions' graduation rates for students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 11.10%, 16.10%, 12.83%, 15.46%, 24.56%, and 13.45% respectively in 2007. Race/Ethnicity Unknown is the category that refers to students whose ethnicity and race are unknown (<http://www.nces.ed.gov/ipeds/>).

Based on the graduation rate data results, there are differences between 2- and 4-year institutions for first-time, full-time students for the years 2005, 2006 and 2007. On average, the graduation rates for 2-year institutions were almost half the graduation rates for 4-year institutions in the total and every ethnic/racial category for all three years of the population. The overall total differences were 18.50%, 19.56%, and 21.66% for years 2005, 2006 and 2007, respectively for first-time, full-time students. All data are presented in Table 10.

Table 10

*Total Graduation Rates by Level and Control of Institution and Ethnicity/Race: Years 2005, 2006, 2007*

| <u>Level</u>           |                      | <u>Total</u> | <u>Am. Indian/</u> | <u>Asian/</u>   | <u>Race/Ethnicity</u> |                 |              |                |
|------------------------|----------------------|--------------|--------------------|-----------------|-----------------------|-----------------|--------------|----------------|
|                        |                      |              | <u>Alaska</u>      | <u>Pacific</u>  | <u>Black</u>          | <u>Hispanic</u> | <u>White</u> | <u>Unknown</u> |
|                        |                      |              | <u>Native</u>      | <u>Islander</u> |                       |                 |              |                |
| 4-year<br>institutions | Graduation Rate 2005 | 44.05        | 26.06              | 37.83           | 33.13                 | 34.67           | 44.57        | 22.75          |
|                        | Graduation Rate 2006 | 44.50        | 25.91              | 39.64           | 32.71                 | 35.22           | 45.20        | 24.77          |
|                        | Graduation Rate 2007 | 44.47        | 26.83              | 39.47           | 32.92                 | 35.61           | 44.50        | 25.70          |
| 2-year<br>institutions | Graduation Rate 2005 | 25.55        | 12.04              | 17.87           | 16.14                 | 17.22           | 27.15        | 13.60          |
|                        | Graduation Rate 2006 | 24.94        | 11.81              | 17.39           | 14.36                 | 17.13           | 26.45        | 13.88          |
|                        | Graduation Rate 2007 | 22.81        | 11.10              | 16.10           | 12.83                 | 15.46           | 24.56        | 13.45          |

#### *Research Question 4*

Research Question 4 examined if there was a difference between graduation rates, ethnicity, and sex at public 2-year colleges and public 4-year universities for each year in 2005, 2006, or 2007. Data were collected from the NCES Integrated Postsecondary Education Data System as reported by 2- and 4-year postsecondary institutions.

I calculated the average graduation rates for 2- and 4-year institutions by sex and race/ethnicity. The NCES reports these data as one number. In other words, an institution must report the number of female, Asian students who graduated within 150% of normal time. In 2005, the graduation rate for 4-year institutions for men was 40.35% and for women was 47.75% while the 2-year institutions' graduation rate for men was 24.14% and for women was 26.96%. The 4-year institutions' graduation rates for male students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 22.98%, 33.85%, 29.79%, 31.12%, 40.61%, and 20.79% respectively in 2005. The 2-year institutions' graduation rates for male students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 10.10%, 16.32%, 15.61%, 16.84%, 25.82%, and 13.06% respectively in 2005.

I also examined the 2005 graduation rate for women by ethnicity/race at 4-and 2-year institutions. In 2005, the 4-year institutions' graduation rates for female students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 29.13%, 41.81%, 36.48%, 38.22%, 48.52%, and 24.72% respectively. The 2-year institutions' graduation rates for female students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White,

as well as Race/Ethnicity Unknown were 13.98%, 19.41%, 16.66%, 17.59%, 28.49%, and 14.14% respectively in 2005.

In 2006, the overall graduation rate for males at 4-year institutions was 40.78% and 48.21% for women while the 2-year institutions' graduation rate for males was 23.78% and 26.11% for women. The 4-year institutions' graduation rates for male students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 22.59%, 35.13%, 29.24%, 31.03%, 41.65%, and 22.74% respectively. The 2-year institutions' graduation rates for male students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 10.26%, 15.99%, 14.01%, 16.22%, 25.12%, and 13.03% respectively in 2006.

I also examined the 2006 graduation rate for women by ethnicity/race at 4-and 2-year institutions. In 2006, the 4-year institutions' graduation rates for female students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 29.21%, 44.13%, 36.17%, 39.40%, 48.74%, and 26.79% respectively. The 2-year institutions' graduation rates in 2006 for female students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 13.36%, 18.78%, 14.71%, 18.03%, 27.77%, and 14.72% respectively.

Finally, in 2007, the overall graduation rate for 4-year institutions for males was 40.85% and females was 48.09% while the 2-year institutions' graduation rate for males was 21.89% and 23.73% for females. The 4-year institutions' graduation rates for male students who classified themselves as American Indian/Alaska Native, Asian/ Pacific Islander, Black, Hispanic, White,

as well as Race/Ethnicity Unknown were 23.99%, 36.08%, 28.71%, 32.51%, 42.19%, and 23.00% respectively. The 2-year institutions' graduation rates for male students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 10.06%, 14.93%, 12.27%, 14.63%, 23.58%, and 13.28% respectively in 2007.

The 2007 graduation rate for women by ethnicity/race at 4- and 2-year institutions was 48.09% and 23.73% respectively. In 2007, the 4-year institutions' graduation rates for female students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 29.66%, 42.85%, 37.12%, 38.70%, 48.80%, and 28.39% respectively. The 2-year institutions' graduation rates for female students who classified themselves as American Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White, as well as Race/Ethnicity Unknown were 12.14%, 17.27%, 13.38%, 16.30%, 25.53%, and 13.62% respectively in 2007. All data are contained in Table 11.

Table 11

*Graduation Rates by Level and Control of Institution, Sex, and Ethnicity/Race: Years 2005, 2006, 2007*

| <u>Level</u>         | <u>Total</u> | <u>Am. Indian/<br/>Alaska Native</u> | <u>Asian/<br/>Pacific<br/>Islander</u> | <u>Black</u> | <u>Hispanic</u> | <u>White</u> | <u>Race/Ethnicity<br/>Unknown</u> |
|----------------------|--------------|--------------------------------------|--|--------------|-----------------|--------------|-----------------------------------|
| 4-year institutions  |              |                                      |  |              |                 |              |                                   |
| Men                  |              |                                      |  |              |                 |              |                                   |
| Graduation Rate 2005 | 40.35        | 22.98                                | 33.85                                  | 29.79        | 31.12           | 40.61        | 20.79                             |
| Graduation Rate 2006 | 40.78        | 22.59                                | 35.13                                  | 29.24        | 31.03           | 41.65        | 22.74                             |
| Graduation Rate 2007 | 40.85        | 23.99                                | 36.08                                  | 28.71        | 32.51           | 42.19        | 23.00                             |
| Women                |              |                                      |  |              |                 |              |                                   |
| Graduation Rate 2005 | 47.75        | 29.13                                | 41.81                                  | 36.48        | 38.22           | 48.52        | 24.72                             |
| Graduation Rate 2006 | 48.21        | 29.21                                | 44.13                                  | 36.17        | 39.40           | 48.74        | 26.79                             |
| Graduation Rate 2007 | 48.09        | 29.66                                | 42.85                                  | 37.12        | 38.70           | 48.80        | 28.39                             |
| 2-year institutions  |              |                                      |  |              |                 |              |                                   |
| Men                  |              |                                      |  |              |                 |              |                                   |
| Graduation Rate 2005 | 24.14        | 10.10                                | 16.32                                  | 15.61        | 16.84           | 25.82        | 13.06                             |
| Graduation Rate 2006 | 23.78        | 10.26                                | 15.99                                  | 14.01        | 16.22           | 25.12        | 13.03                             |
| Graduation Rate 2007 | 21.89        | 10.06                                | 14.93                                  | 12.27        | 14.63           | 23.58        | 13.28                             |
| Women                |              |                                      |  |              |                 |              |                                   |
| Graduation Rate 2005 | 26.96        | 13.98                                | 19.41                                  | 16.66        | 17.59           | 28.49        | 14.14                             |
| Graduation Rate 2006 | 26.11        | 13.36                                | 18.78                                  | 14.71        | 18.03           | 27.77        | 14.72                             |
| Graduation Rate 2007 | 23.73        | 12.14                                | 17.27                                  | 13.38        | 16.30           | 25.53        | 13.62                             |



## Summary

The results of the research questions and the analyses were presented in this chapter. Data from 1,700 postsecondary institutions were collected from the National Center on Education Statistics Integrated Postsecondary Education Data System each year in 2005, 2006, and 2007. Data analyses for the first two research questions examined retention rate differences at 2- and 4-year institutions and for the last two research questions examined total graduation rates as well as graduation rates by sex and ethnicity/race for three years.

Research Question 1 compared retention rates at 2-year and 4-year institutions for first-time, full-time students in the years 2005, 2006, or 2007. Average retention rates were calculated for the two types of institutions, and I found that there was a 14.87% difference between 2- and 4-year institutions in 2005, a 16.14% difference between 2- and 4-year institutions in 2006, and a 14.8% difference between 2- and 4-year institutions in 2007. In all cases of retention rate differences for full-time students, 4-year institutions had a much higher retention rate.

Research Question 2 compared retention rates at 2-year and 4-year institutions for first-time, part-time students in the years 2005, 2006, or 2007. Average retention rates were calculated for the two types of institutions, and I found that there was a 4.87% difference between 2- and 4-year institutions in 2005, a 7.56% difference between 2- and 4-year institutions in 2006, and a 6.99% difference between 2- and 4-year institutions in 2007. In all cases of retention rates differences for part time students, 4-year institutions had a higher retention rate.

Research Question 3 was an examination of graduation rates at 2-year and 4-year postsecondary institutions for those students who were able to graduate within 150% of normal time. For university students, they were able to graduate with a cohort of students within six

years of entry. For community/technical college students, they were able to graduate with a cohort of students within three years of entry. The total graduation rate for 4-year institutions was almost double the graduation rates for 2-year institutions. This was also true for each race/ethnic category for all three years. Four-year institutions had a graduation rate of almost double that of 2-year institutions for Asian/Pacific Islander, Black, Hispanic, and White students, with the exceptions of American Indian/Alaska Native and Race/Ethnicity Unknown in the year 2005. In 2007, the graduation rate for American Indian/Alaska Native and Black students were almost three times larger in 4-year institutions as they were in 2-year institutions. The graduation rate in every category has declined for 2-year institutions over that three year period.

Research Question 4 was an examination of differences for graduation rates divided by sex and ethnicity/race. Women had higher graduation rates across all ethnic/racial groups, and 4-year institutions had higher graduation rates than 2-year postsecondary institutions. White and Asian/Pacific Islander female students at 4-year institutions had the highest graduation rates with almost 50% graduation rates for each year of 2005, 2006, or 2007. American Indian/Alaska Native and Black male students in 2-year institutions had the lowest graduation rates in the years 2005, 2006, or 2007. Those students had just over a 10% graduation rate. In almost every case, the students' graduation rate for 4-year institutions increased in every category. However, in every case, 2-year institutions' student graduation rate had decreased by every category except for one over the same three year period.

## CHAPTER FIVE

### Discussion

The reporting of certain performance indicators is required for postsecondary institutions by a variety of state and federal stakeholders (HEA 1965, 1965; HEOA of 2008, 2008); however, current literature provides little empirical information to higher education administrators and policymakers who provide funding to choose those performance indicators that are meaningful and appropriate to 2-year colleges and 4-year universities (ECS, 2000; Zarkesh & Beas, 2004). The purpose of this study was to explore two critical variables for 2-year and 4-year higher education institutions: retention rates and graduation rates. The two primary research questions which framed this study were: (a) Are there differences in retention rates for first-time, full- or part-time students at 2- and 4-year institutions? and (b) Are there differences in graduation rates for students in 2- and 4-year institutions by ethnicity/race and sex? These indicators were chosen because they are the most common core indicators that 2- and 4-year institutions are asked to report. I will discuss these indicators as they relate to my findings, implications for policymakers, limitations of the study, and recommendations for future research.

### Discussion of the Findings

Much research has been done on performance indicator reporting as a means to conceptualize accountability measures in higher education (Alfred et al., 2007; Burke & Associates, 2005; ECS, 2000; Knapp et al., 2010; Zarkesh & Beas, 2004). I concentrated my study on the concepts of retention rates and graduation rates as performance indicators in 2-year and 4-year postsecondary institutions over a three year period.

## Discussion of the Retention and Graduation Rates as Performance Indicators

Retention and graduation rates are two of the most common indicators of performance in higher education today (Burke & Minassians, 2002b; ECS, 2000). There were real differences between retention rates and graduation rates at 2- and 4-year postsecondary institutions in my study. Part-time student retention rates at 2-year institutions were 5-7% smaller than 4-year institutions in my study in the years of 2005, 2006, and 2007. During the same time period, 4-year institutions had an almost 15% higher retention rate for their full-time students than 2-year institutions, as I have reported in Table 12.

Table 12

*Retention Rate Data by Institutional Level for Full Time Students*

| <u>Retention Level</u>   | 4-Year   |                   | 2-Year   |                   |
|--------------------------|----------|-------------------|----------|-------------------|
|                          | <u>N</u> | <u>Percentage</u> | <u>N</u> | <u>Percentage</u> |
| 2005 Retention Full Time | 589      | 71.26             | 1,041    | 56.39             |
| 2006 Retention Full Time | 590      | 71.93             | 1,035    | 55.79             |
| 2007 Retention Full Time | 603      | 71.65             | 1,020\   | 56.85             |

*Retention Rate Data by Institutional Level for Part Time Students*

| <u>Retention Level</u>   | 4-Year   |                   | 2-Year   |                   |
|--------------------------|----------|-------------------|----------|-------------------|
|                          | <u>N</u> | <u>Percentage</u> | <u>N</u> | <u>Percentage</u> |
| 2005 Retention Part Time | 569      | 44.31             | 1,035    | 39.44             |
| 2006 Retention Part Time | 590      | 47.40             | 1,028    | 39.84             |
| 2007 Retention Part Time | 570      | 47.78             | 1,014    | 40.79             |

In terms of policy-makers using retention rates as a core indicator, these results are not surprising when you consider that most 4-year institutions have higher, more selective admission standards than most 2-year institutions with open access policies. It is, therefore, easy to

conclude that students who are able to choose more selective institutions with higher admission standards, even when they are public institutions, have been shown to be more likely to be retained and to graduate (Astin, Korn, & Green, 1987). This is especially true at institutions that expend more of their operational budget on instructional or academic functions (Gansemer-Topf & Schuh, 2006), which 4-year institutions can do. Gansemer-Topf and Schuh (2006) found that instructional/academic expenditures affected retention and graduation rates at more highly-selective institutions, but that this type of spending did not affect open access institutions, such as 2-year postsecondary institutions.

Gansemer-Topf and Shuh (2006) have suggested that because open access/less selective institutions enrolled less academically-prepared students, they would have more difficulty retaining and graduating them. They also reasoned that 2-year postsecondary institutions had limited resources and that decreasing funding forced institutions to allocate their budgetary expenditures across more budget line items on their campuses. Retention and graduation rates could be hindered because there is just not enough funding to make a difference to open-access, 2-year institutions' efforts through instructional and academic spending. Given these factors, we can begin to see that schools don't all view their educational mission in the same way and that gaps are developing between the differing roles institutions play such as the 15% retention rate differences as mentioned above; this, then, would also suggest that how we gauge institutional success may need to differ as well.

For example, Louisiana State University and A&M College (LSU) and the University of New Orleans (UNO) both belong to the Louisiana State University System. They both provide baccalaureate, master, and doctoral degrees and are located in mid-size cities (NCES, 2008). However, when you look at their student demographics, student data profiles as reported to the

NCES by each institution show a very different student population. LSU is considered a research-extensive, public institution in Louisiana and the flagship institution in the State. Almost 96% (or 27,658 students) of all LSU students received some type of financial aid with 80% of those students receiving most of that aid from state merit-based funding through the Louisiana's Taylor Opportunity Program for Students. Only 15% of LSU's students received need-based Pell grants. Ethnically, 80% of all undergraduate students were White, almost 9% were Black, and 3% of all students were Asian, Hispanic, or Race/Ethnicity unknown for each group for a total of 9% for these three groups. Twenty-one percent of LSU's students accepted student loans.

If full-time attendance is an important funding indicator, then LSU would have an advantage over UNO with a larger number of its undergraduate and graduate students attending full-time. With 94% of LSU's undergraduate and 76% of their graduate students attending full-time, it would be easy to understand why the university has a higher first-time, full-time student retention rate of 85% for students and a 6-year graduation rate average of 58%.

Finally, 81% of all degrees awarded at LSU in 2008 were awarded to baccalaureate students, and 19% were awarded to graduate students. LSU's 6-year, undergraduate graduation rate (NCES, 2008) is divided by ethnicity as follows:

- American Indian 57%
- Asian 54%
- Black 50%
- Hispanic 56%
- White 60%
- Race/Ethnicity Unknown 53%

- Non-Resident Alien 72%

By comparison, UNO is also a research-, public institution under the LSU System.

Based on the same NCES data (2008), 86% (or 9,828 students) of all UNO students received some type of financial aid, with only 68% of those students receiving aid from state merit-based funding through the Louisiana’s Taylor Opportunity Program for Students. However, UNO’s students appeared to have a much higher financial need, with 32% of UNO’s students receiving need-based Pell grants. This is more than double the number of need-based students who received Pell funding at LSU. In the data reported in 2008, NCES reported that UNO’s ethnic student population was comprised of 59% White students, 18% Black students, 6% Asian students, 7% Hispanic students, and 4% of all students were of Race/Ethnicity unknown. Thirty percent of UNO’s students accepted student loans.

Only 76% of UNO’s undergraduate and 46% of their graduate students attended full-time. The university had a lower first-time retention rate of 69% for full-time students and a lower 6-year graduation rate average than LSU did at 23.5%. These statistics are much lower than Louisiana State University’s statistics (retention rate was 16% lower and 6-year graduation rate was 34.5% lower).

Finally, UNO awarded 66.5% of its total degrees to its undergraduate students and successfully awarded 33.5% of its total degrees to its graduate students. Although 6-year graduation rates averaged 23.5%, UNO’s undergraduate graduation rates (NCES, 2008) were divided by ethnicity as follows:

- Asian 21%
- Black 14%
- Hispanic 16%



- White 27%
- Race/Ethnicity Unknown 22%
- Non-Resident Alien 25%

Graduation rates were much lower at UNO than LSU's graduation rates in each category with Asians graduating at a 33% lower rate, Blacks graduating at a 36 % lower rate, Hispanics graduating at a 40% lower rate, Whites graduating at a 33% lower rate, Race/Ethnicity Unknown graduating at 31% lower rate, and Non-Resident Aliens graduating at a 47% lower rate.

These two examples illustrate the complex contexts in which most postsecondary institutions find themselves. It would be simplistic, yet easy, to look and compare both institutions' first-time full-time retention and 6-year graduation rates of 85% and 58% at LSU and 69% and 23.5% at UNO respectively. Yet, it is not as simple as comparing two statistical markers – retention rates and graduation rates for two institutions in the same system. These institutional examples would be, and are, rewarded or punished when tied to retention and graduation rate funding.

I looked at two performance indicators, retention and graduation rates, in order to help administrators, policymakers, and postsecondary community stakeholders understand how the role that 2- and 4-year institutions play can be hindered by a lack of funding based only on those indicators. The "Louisiana Granting Resources and Autonomy for Diplomas Act," or Louisianan House Bill 1171, was passed in the summer of 2010 and is more commonly called the LA Grad Act (<http://www.legis.state.la.us/billdata/streamdocument.asp?did=722570>, Retrieved August 15, 2010). Currently, Louisiana postsecondary institutions cannot increase tuition without the passage of legislation by the House, Senate, and Governor's approval. This legislation allows 2- and 4-year institutions to increase their tuition rates if they agree to attain

graduation rate targets set by the state. The purpose is to increase effectiveness and efficiency at postsecondary institutions and allow more institutional autonomy. LSU and UNO are participating and, as such, will be required to report their graduation rates in order to continue to take advantage of the freedom to increase their own tuition, which legislators say should increase institutional competitiveness and revenue.

However, if policymakers aren't able to grasp the mission differences between these two institutions, UNO and its students will lose based on 2010 legislation House Bill 1171. This legislation will give state legislators and the Louisiana Board of Regents' auditors the ability to request graduation rate information to analyze for an economy and efficiency study. Legislators or the Board of Regents can revoke any and all autonomies granted to that institution if the institution is not abiding by the agreement and standards set by the State.

In fact, although UNO did better than LSU in awarding graduate degrees, the LA Grad Act measures undergraduate performance. UNO would lose tuition revenue and its ability to control tuition rates regardless of its performance as a graduate school. The legislation does not measure graduate degree graduation rates; yet, graduate programs are much more expensive to deliver. If UNO receives less funding because their focus may not be in baccalaureate education, it will also lose its ability to re-focus any additional tuition revenue toward sustaining its graduate programs. Going one step further, would a university department receive any funding if it did not serve undergraduate students? In my example, UNO seems to have a greater focus on its graduate programs as seen by its larger number of graduate degrees awarded but may have to decrease its graduate program offerings because it is not funded to deliver them.

Funding ultimately drives education, so funding is seen as a system of rewards and punishments. This begs the question, then, as to which institution should be rewarded or

punished through funding based on retention or graduation rates of undergraduate students as performance indicators? Is it the 2-year institution for not retaining a larger percentage of students even though the student's primary goal (transfer, training, interest, etc.) has been successfully completed during his/her time at school (and not necessarily for a full two years)? Is it the 4-year institution that has retained a large number of its students but whose students fail to graduate four to six years later because those students were under-prepared when admitted? How about the 4-year institution whose primary mission may not be focused on undergraduate programming?

Graduation rate data for 2-year institutions in my study were almost half that of 4-year institutions by ethnicity/race and sex in almost every category. For example, graduation rates in 2005, 2006 and 2007, for Asian students were 37.83%, 39.64%, and 39.47% at 4-year institutions but only 17.87%, 17.39%, and 16.10% at 2-year institutions. These rates represent less than half for 2-year students. Similarly, Black and Hispanic student graduation rates were 33.13%, 32.71%, 32.92% and 34.67%, 35.22%, 35.61% at 4-year postsecondary institutions respectively. Again that represents less than half of the 4-year rate; 2-year institutions' graduation rates were 16.14%, 14.36%, 12.83% and 17.22%, 17.13%, and 15.46% for Black and Hispanic students in 2005, 2006 and 2007, respectively.

Even then, slightly fewer than one out of two women (47.75%, 48.21% and 48.09% in the three years studied) graduated with a baccalaureate degree, and only two out of five men (40.35%, 40.78%, and 40.85% in years 2005, 2006, 2007) successfully attained their 4-year degree. The total graduation rate for 2-year institutions in this study was only about one in four for men and women (24.14%, 23.78%, and 21.89% for men; 26.96%, 26.11%, and 23.73% for women). I examined the race/ethnicity of the following groups. They were: American

Indian/Alaska Native, Asian/Pacific Islander, Black, Hispanic, White and one group whose Race/Ethnicity was unknown. When I looked at graduation rates and race/ethnicity and sex, I saw that this number drops drastically for Native American men at 2-year institutions with only one in ten (10.10%, 10.26%, and 10.06%) receiving an associate degree. Black and Hispanic men do not fare much better with only approximately 15% receiving an associate degree (15.61%, 14.01%, and 12.27% for Black men; 16.84%, 16.22%, and 14.63% for Hispanic men). This is disappointing when you consider that a large percentage of minority students attend community colleges.

Though such low, minority graduation rates in 2-year institutions may be disappointing, it really shouldn't be surprising once you understand the institutional mission of 2-year institutions and the demographics of the students that they serve. The American Association of Community Colleges (AACC) staff reports data regarding 2-year community colleges (<http://www.aacc.nche.edu/AboutCC/Pages/fastfacts.aspx>, Retrieved July 15, 2010). As of December 2009, AACC staff reported that almost half of all postsecondary students attend 2-year institutions, and two-thirds of those students attend as part time students. Three out of five 2-year students are women, and the majority of Black and Hispanic students study at these institutions. There are many reasons why the majority of 2-year students are enrolled as part-time students. A few final characteristics that AACC reported about students at 2-year institutions are that one out of three is considered low income and that four out of five must work to meet their familial and academic obligations.

To further define a typical 2-year student served at a 2-year institution at a more local level, I describe students from the Louisiana Community and Technical College System. After working with 2-year students for seven years in this system, I have looked at problems that

students encounter as a result of economic and educational deficiencies that must be overcome to persist in school, to graduate, and to transfer to a four-year institution. These problems are academic ones tied to deficient public school resources and accountability issues as well as others connected to deficient family resources, first-generation incidence, and intervening personal issues (River Parishes Community College TRIO Student Support Services Grant, 2009). Regardless of the problem and contributing sources, Louisiana 2-year students have great difficulty managing to succeed. In fact, this issue starts even earlier: a typical 9th grader in any Louisiana public school has less than a 15% chance of graduating from high school on time, enrolling in college the semester after high school graduation, persisting into the second year of college, and graduating with a degree within 150% of their degree time (NCHEMS, 2007). Louisiana's cohort persistence rate is the fifth lowest in the nation.

Graduation rate data from the *Is Student-Right-To-Know all You Should Know? An Analysis of Community College Graduation Rates* study reported that there was a consistent negative relationship between enrollment size and graduation rates (Bailey, Calcagno, Jenkins, Leinbach & Kienzl, 2006) at 2-year institutions. Bailey et al. investigated graduation rates at 915 community colleges and found that community colleges with a high share of women, part-time and minority students had lower rates of graduation. They found that the location of the college, because of state policies, had a strong bearing on graduation rates as a performance indicator. The authors determined that urban community colleges were impacted to a greater degree with at-risk students and graduated students on average 4% less frequently than the average community college in the U.S. Bailey et al. postulated that graduation rates are generally based on first-time, full-time community college students, which actually only represents about 10% of community college populations. Reduction of funding to 2-year

institutions in the U.S. based on a very small number of students (first-time freshman) not being retained would greatly hinder institutions that are already contending with factors that have been shown to lower graduation rates, such as type of institution, size, or selectivity of institution.

At some point in time, we will have to recognize that “producing graduates is important but not sufficient” (Votruba, 2006, p. 79). Essentially the more traditional indicators – retention and graduation rates – do not tell the whole story. Nolan (2006) wrote that as politically popular as retention and graduation rates are as performance indicators, these performance indicators are not designed to take into consideration student transfer and students who may have to stop and re-start their postsecondary education. Measurement of retention and graduation rates may even penalize institutions with unique missions such as community colleges, urban universities, or historically black colleges and universities.

For example, undergraduate students who attend urban institutions sometimes choose their institution based on convenience and location. Undergraduate urban students may face the same obstacles as 2-year students. They attend their local urban institution because they are geographically bound, a few years after they have graduated, doing so as a part-time student and one who is, perhaps, under-prepared. Their prior educational experiences may not have been positive and those students could very well need additional resources for their success. They may take much longer than six years to graduate because they have multiple responsibilities and are not able to attend in a continuous manner. In Louisiana, these graduation rates increase very little even if schools were allowed to report a 10- year graduation rate measure.

Reporting retention and graduation rates encourages institutions to enroll students who are the most likely to succeed. Because retention rates and graduation rates are considered to be measures of institutional effectiveness (Alfred et al., 2007; Burke, 1998; Burke & Minassians,

2002b; Education Commission of the States, 2000; Ewell, 1994; Richardson, 1994), requiring institutions to report their retention and graduation rates without taking institutional context and mission into consideration encourages institutional behavior that ultimately looks only at opportunities that increase retention and graduation rates, regardless of student goals and success. I look at core indicators for 2-year institutions and their institutional effectiveness in the next section within the core framework of this research.

#### Core Indicators for 2-Year Institutions and Institutional Effectiveness

Policymakers want to ensure that public funds are used responsibly. They are concerned about quality, productivity, efficiencies, and outcomes. Colleges and universities in the U.S. are interested in these factors too; however, they are also interested in a humanistic approach to teaching, research, and public/service to individuals and the community (Scott, 2006). Public service to individuals and the community can be defined as program and service outcomes and benefits that a community receives and are offered (Alfred et al., 2007). Policymakers and higher education personnel expend considerable effort in understanding their institutional role, and both feel that they know what is best to ensure that our students and our communities are well served through higher educational opportunities. These priorities are not always the same.

For example, postsecondary institutions and systems continue to face budgetary reductions. For 2-year college systems, which are more recent postsecondary entities than 4-year institutions, it is a difficult position to be in because of the funding needed to continue to grow. In deciding how one southern, 2-year college system would fund its newest online institution in light of state budgetary reductions, the system decided to decrease payments to 2-year colleges already participating in online programming to fund a separate system-controlled institution. Therefore, one community college, which had accommodated the largest number of online

students in the system, had its budget reduced by 50 full-time equivalents (FTEs). This represented a \$175,000, or a 3%, reduction in its overall budget for the year. This doesn't sound like a terribly large reduction; however, the loss of \$175,000 is equal to the loss of three faculty positions and, conservatively, being unable to serve an additional 1,000 students. Losing three instructors will have a considerable impact on this 2-year college, as it has also had the fastest enrollment growth in the system with an average 35% for each of the last two years. This open-admission institution must now turn away students, as it cannot absorb this type of funding loss as a larger, more-established institution would be able to do. Other colleges had their budgets reduced as well, but frustrating the process for this small college is that the 50 FTEs removed from the budget were imposed arbitrarily by the system to fund its own online college. Prior to the reduction, the 2-year college worked hard to support the development of the system's online college as it was a system priority. Yet, the community college has essentially been penalized for successfully enrolling and serving the student support needs of the system online college population. Ironically, institutions which had no enrollment growth and those that had refused to accept online students had no reduction in their budget because they had not participated in the System's program and had no online student FTEs to take away.

Perhaps an even greater concern is that 2-year and 4-year institutions will continue to be forced to yield their autonomy in the selection of curriculum content; the freedom to select faculty, staff, and students, and finally; the freedom to allocate funds to achieve institutional goals if they are perceived to fail to deliver what that public expects (Altbach et al., 1999). These concerns still hold true and yet have a greater impact than they did ten years ago.

What the public seems to expect is what Scott (2006) calls the "multiplicity of mission" (p. 3) in higher education. This expectation, however, fails to consider types of institutions in



higher education (2- and 4-year) and the multiple layers that co-exist within liberal arts and sciences, vocational, and graduate instruction missions, basic and applied research missions, and “contributions to the public good” (Alfred, 2007, p. 39) or being responsive to local needs (Wattenbarger, 1985). The concepts of contributing to society or the public good were first introduced by the Morrill Acts of 1862 and 1890 as well as the Wisconsin Idea of 1904 (Scott, 2006). Scott looks at these legislative acts as promotion of this third university/college mission, which is service to the public. Scott (2006) gives the example of the urban university mission as another strand of public service to the community. Scott uses the Wisconsin Idea to illustrate the service mission of 2- and 4-year institutions. Van Hise, former President of the University of Wisconsin, wrote that “the boundaries of the University are the boundaries of the state,” which implies that postsecondary institutions are responsible for providing programs and services for their citizens (<http://www.wisconsinidea.wisc.edu/history.html>, Retrieved August 3, 2010) as well as institutional outreach to citizens in relevant and useful ways.

However, postsecondary institutions also find themselves being viewed as businesses that must serve the needs of their consumers--the students. A market mentality, the antithesis to the Wisconsin Idea, often demands that 2- and 4-year institutions respond to short-term, individual wants (Burke, 2006). For example, student markets may want medical schools that specialize in heart surgery because of the high salary associated with that occupation; however, society may really need more primary care physicians. The true mission of public good deals with long-term and society’s collective needs. Therefore, Burke wrote that “rising markets often mark momentary fads, but public universities must continue critical programs that society needs” (p. 1). The mission that contributes to the public good is the mission where students are encouraged to develop talents and interests that will serve civic interests (Bogue, 2006). Bogue stated that

this concept is in direct conflict with principles of the marketplace and culture of corporations and, therefore, is often contradictory, guarantees public examination, and invites public criticism of our institutions of higher education.

This gap between perceived need and real need can be bridged when the institution develops a mission that reflects all of the stakeholders, effectively communicates that mission to all of the stakeholders, adheres to that mission, and regularly evaluates the outcomes of that mission. Choosing the right core indicators that truly reflect the institution's mission will go a long way in diminishing the differences that arise between constituents. Alfred et al. (2007) wrote that core performance indicators can be used to measure institutional effectiveness when those indicators help the college achieve its mission and goals while still meeting the needs of its constituents as a collective whole. They classified student goal attainment as the most basic and important under the student progress mission of a 2-year postsecondary institution. If core performance indicators are used to allocate funding that stimulates educational improvements and enhances student learning, accountability efforts should facilitate postsecondary improvement (Nolan, 2006). Nolan wrote that because of declining state revenue, survival is more immediately relevant than broader goals. Again, what gets measured and funded is what gets institutional attention. Retention and graduation rates become a means to an end with no regard to what they measure in higher education or even if they demonstrate efficiency, effectiveness, or good stewardship of state budgetary resources.

The student attainment core indicator, or what the student's educational goals are, gets short shrift by policymakers and college administration because it is not an easy indicator to measure. It would mean understanding what each student is trying to accomplish. For example, are they attending a 2-year to complete a set of developmental courses to prepare them for

transfer to a 4-year institution? Are they attending to take one course in photography? Are they working on a certificate program in a patient care technician program, which is completed in one year? These goals are often associated with 2-year institutions.

Because this type of data is cumbersome to manage and request, retention and graduation rates get more attention, as they are often easier to measure and must currently be tracked by federal mandate. Although retention and graduation rates can be valuable when used within the context of student progress and goal attainment, Alfred et al. (2007) warned that these aggregate data can be misinterpreted if traditional, 4-year student behavior is assumed. In other words, students who attend 4-year institutions may have very different aspirations as well as retention and graduation patterns than 2-year students.

Further, Burke and Minassians (2002d) surveyed gubernatorial staff, legislative leaders, postsecondary administration, and staff about priorities and appropriate performance indicator measures and were those acceptable measures to address critical policy issues. The authors were surprised by a few of their findings. First, they were surprised that 2- and 4-year institutional researchers chose retention and graduation rates as number 2 and number 3 as the most appropriate measures for their institutions. This was unanticipated because Burke and Minassians expected to see more institutional mission differences between 2- and 4-year institutions, which did not occur. There was more agreement between the two types of institutions than expected, which was puzzling as it is a common assumption 2-year students are often part-time, non-traditional, and not always seeking a degree. Second, they felt that there was a lack of agreement on appropriate core indicators that address critical policy concerns among the policymakers and 2- and 4-year institutional administration and staff. Burke and Minassians concluded that acceptability of easy core indicators by postsecondary administration

and staff must stop and be replaced, with accountability playing a much stronger role in order to receive funding and address pressing societal needs. I agree. We must know what our story is and be able to tell it.

### Summary of Findings

Previous research has been written on common core indicators, but little quantitative research has been done to test differences between 2- and 4-year institutions. This gap in research is important as it does not address the current public accountability challenges that postsecondary institutions face and the possible impact on funding that the indicator measures chosen play. There is a need to have more research that evaluates/looks at the core indicators that are often chosen for us, often without taking the institutional mission of 2- and 4 year postsecondary institutions into consideration. The retention and graduation rate data that I found are consistently lower for 2-year institutions across each category, including ethnicity/race and gender and full- or part-time attendance status across all three years of 2005, 2006, and 2007. I have provided examples of data differences in Table 13 for full-time and part-time students at 2-year and 4-year higher education institutions.

Table 13

*Retention Rate Data by Institutional Level for Full Time Students*

| <u>Retention Level</u>   | 4-Year   |                   | 2-Year   |                   |
|--------------------------|----------|-------------------|----------|-------------------|
|                          | <u>N</u> | <u>Percentage</u> | <u>N</u> | <u>Percentage</u> |
| 2005 Retention Full Time | 589      | 71.26             | 1,041    | 56.39             |
| 2006 Retention Full Time | 590      | 71.93             | 1,035    | 55.79             |
| 2007 Retention Full Time | 603      | 71.65             | 1,020    | 56.85             |

*Retention Rate Data by Institutional Level for Part Time Students*

| <u>Retention Level</u>   | 4-Year   |                   | 2-Year   |                   |
|--------------------------|----------|-------------------|----------|-------------------|
|                          | <u>N</u> | <u>Percentage</u> | <u>N</u> | <u>Percentage</u> |
| 2005 Retention Part Time | 569      | 44.31             | 1,035    | 39.44             |
| 2006 Retention Part Time | 590      | 47.40             | 1,028    | 39.84             |
| 2007 Retention Part Time | 570      | 47.78             | 1,014    | 40.79             |

I found similar result differences for graduation rates in the years 2005, 2006, and 2007, between 2-year institutions and 4-year institutions. In every category, by ethnicity/race and

gender, 4-year institutions had higher graduation rates. For example, Asian men at 4-year institutions were more likely to graduate (33.85%, 35.13%, and 36.08%) in 2005, 2006, and 2007, respectively, than Asian men graduating from 2-year institutions at the same time (16.32%, 15.99%, and 14.93%). In fact, Asian men's graduation rates at 4-year institutions were steadily increasing while Asian men at 2-year institutions were decreasing.

The results of my research extend previous research done on the core indicators of retention and graduation rate research. In the past, indicator research looked only at the most common indicators used in performance funding, reporting, and budgeting. My research quantitatively demonstrates that 2-year institutions do not do as well as 4-year postsecondary institutions in regards to retention and graduation rates. One implication of these data is that 2-year institutions will not fare as well in funding when these traditional core indicators are utilized to allocate funding to 2-year and 4-year institutions. In fact, Weertz (2002) wrote that there was evidence that research universities in states that had accountability systems had financial advantages over other 2-year and 4-year institutions within their state. One has only to look at the LSU and UNO comparison mentioned earlier to see that UNO will lose funding with LSU appearing to do much better with its retention rate of 85% and its 6-year graduation rate of 58% as compared to UNO's rates of 69% and 23.5% respectively.

However, these findings do not imply that 2- and 4-year institutions should not be held accountable to their constituents. I concur with the concepts of Joseph Burke who wrote that "responding to state priorities, academic concerns, and market forces offer[s] a challenge, not a choice for higher education...[that] must serve all but submit to none of those imperatives" (2005, p. 296). It means that faculty and administration at 2-year and 4-year postsecondary institutions need to understand, identify, and disseminate data that is relevant to the 2-year and 4-

year institutional missions as well as to how we serve our students and our communities with this mission. In fact, I conclude that postsecondary institutions need to know and explain their institutional mission and context based on the retention and graduation rate data collected in this study where 2-year postsecondary institutions do not do as well as 4-year institutions in every category (attendance, sex, and race/ethnicity).

All 2-year and 4-year postsecondary institutions that participate in Title IV financial aid funding were/are required to report their retention and graduation rates in the NCES IPEDS system. The data collected and results compiled from these two core indicators for the years 2005, 2006, and 2007, supported previous research in that retention and graduation rates are pervasively used to evaluate these institutions' results or accomplishments. Each time a student requests that his/her financial aid information be given to that 2- or 4-year institution, the graduation rate percentage is prominently displayed for the student. Each time Louisiana legislators ask the Board of Regents information about Louisiana postsecondary institutions' graduation rates in conjunction with the LA Grad Act, they are given graduation rate percentages. These groups get graduation rate data without any context or institutional mission. In other words, data are given without the whole story.

There is a gap in the literature on comparative data on performance indicators on retention and graduation rates as reported by the primary providers of postsecondary education. This study allows postsecondary administrators to utilize these data trends over three years to build a case to support the concept that institutional context must be considered, especially in regards to funding. Retention and graduation rate data in my study consistently were lower for 2-year institutions across the country and across race/ethnicity and sex. I also believe that it is the responsibility of higher education, especially 2-year institutions, to propose alternative core

indicators of accountability and to be prepared to explain those indicators that they are asked, or mandated, to report by outside constituents. Within a framework, as suggested by Alfred et al. (2007), my findings for 2-year institutions would allow postsecondary institutions to choose quantitative performance indicators that express the context in which their institution operates. Institutions are not a one-size-fits-all proposition.

For example, the 2-year institution I serve would do very poorly if measured in terms of workforce development, as we have no workforce or technical education on our campus— a traditional mission of 2-year institutions. When River Parishes Community College was created 11 years ago, we were restricted by our system and our Board of Regents to offer only associate degrees in liberal arts, sciences, and general education and/or the first two years of transfer coursework to 4-year institutions. Therefore, you would think that we would then do very well in graduation rate indicators. However, this is not the case, as a very large number of our students' educational goal is to transfer before graduation. We could use transfer data to improve our graduation rate but do not have access to transfer data unless done anecdotally within relationships developed with our partner, 4-year institutions. These are examples of how one institution would be/is impacted by policy and mandates that use retention and/or graduation rates as a measure of success or efficiency.

Unfortunately, policymakers rarely think about the theoretical problems associated with higher educational context or mission (St. John & Parsons, 2005). These authors wrote that policy and advocacy have largely continued because of tradition more than critical examination, including funding patterns. However, St. John and Parsons have written that in the context in which institutions find themselves, the policymakers who argue for funding or reduction of funding for 2- and 4-year institutions often do so without thinking critically about those policy



choices. In other words, decisions are made intuitively rather than based on facts. If policymakers had quantitative evidence of success or efficiency within a 2- or 4-year institution's mission, policy makers could use data such as those in my study to "help build a sounder base for policy discussions, creating a shared understanding among proponents of different ideological positions" (St. John & Parsons, 2005, p.4).

### Delimitations and Limitations

Previously established delimitations reviewed in Chapter 1 were related to data collection and the performance indicators chosen from the NCES Integrated Postsecondary Education Data System. In addition, database collection has several associated limitations that may have impacted this study. The first limitation of this study has to do with response error and missing data. Because most of the data in the IPEDS collection are derived from self-reported information from colleges and university personnel, there are concerns about participant response errors and IPEDS' ability to verify these reported data (Cunningham & Milam, 2005). Edit checks are built into the IPEDS database to check for reporting errors and allow participating institutions to correct prior data if originally reported in error. But, because of multiple reporting requirements of various stakeholders, survey questions may be confusing or unclear and lead to different interpretations by participants of the same item for retention rate and graduation rate data (2005). The chance for data collection mistakes and errors is high during time-consuming, online processes (Lefever, Dal, & Matthiasdottir, 2007). For example, Knapp et al. (2010) stated that some respondents did not report all data for all parts of the IPEDS enrollment surveys and had to be imputed by the NCES.

A second limitation of the IPEDS database involves the collection of aggregate data. It is difficult to use aggregate data for different levels of analysis (Cunningham & Milam, 2005). The

researchers also said that examining relationships among variables is very difficult to meet different reporting needs. Examples of that could be found in my study. It was very difficult to run various tests for graduation rates because sex and ethnicity were intertwined. Additionally, there were no data about ethnicity and sex for retention rates in 2005, 2006, and 2007. IPEDS is trying to rectify these limitations.

### Implications for Higher Education and its Policy

There are a number of implications for higher education and policy. Those implications have to do with institutional mission and autonomy and performance reporting and funding. The first implication has to do with institutional mission and autonomy. The postsecondary context, in which higher education works, has changed dramatically over the last 40 years. Colleges and universities exist in the age of the “bottom line” and are expected to be run and managed like a business. However, higher education is clearly different from other businesses. Student retention and student graduates are not easily measured like outputs/products in businesses. Although education can and should be responsive to market needs, postsecondary institutions’ sense of self extends beyond that need (Anctil, 2008). “Education is mission driven precisely because its mission is *not* business; it provides higher education as a social institution” (Anctil, p. 4).

Two-year institutions are comprised of complex variations of postsecondary institutions and, therefore, serve multiple missions to multiple constituents (Askin, 2008). More than 20 years ago, Adelman (1992) characterized the community college role as the “occasional role” (p.22) where students came and went freely depending on their educational interests. Institutions, such as open-access, must defend measures that result in measures lower than expected (Blake, 2006). This open-admission mission is traditionally thought to be a hallmark of

2-year institutions, but that is not always the case. For example, the University of Kansas operates as a relatively open-admission institution (<http://www.insidehighered.com/news/2007/01/10/kansas>, Retrieved July 7, 2010). This is unusual for a flagship institution, as most flagship or research extensive universities choose more selective admission requirements. They want to recruit the best and the brightest. Therefore, Redden (2010) reports that the University of Kansas' retention and graduation rates are well below other state flagship universities at 54.7% while Indiana State University and the University of Georgia have graduation rates of 71.2% and 72.4%, respectively. The University of Kansas has gone to the Kansas Board of Regents and asked to be allowed to raise its admission criteria so that it can be ranked in the top 25 universities in the country. If policymakers do not understand why the University of Kansas' graduation rate was lower than their peers, they could be punished for a mission mandate not of their choosing.

Another example of where institutional mission and autonomy are challenged is the American Graduation Initiative which can be seen as limiting success to only retention or graduation rate data. This legislation was introduced by President Obama last July and would give \$12 billion to community colleges in the form of grants, financial aid, and capital funding over the next 10 years (<http://www.aacc.nche.edu/Advocacy/aginitiative/Pages/default.aspx>, date Retrieved July 7, 2010) if they respond by graduating more students with associate degrees and offering better transfer opportunities for those who aspire to a bachelor's degree. President Obama also wrote that he would award large amounts of funding to those who systematically reform their 2-year institutions (based on the federal government's interpretation of that reform) but take funding away if demonstrable progress had not been made by year three of the initiative.

This would change the landscape of 2-year institutions and be primarily based on graduation and transfer rate data.

### Recommendations for Future Research

Given the ubiquitous nature of performance indicators--specifically, retention and graduation rates--several lines of inquiry bear examination in future research. First, future research in current and appropriate performance indicators is crucial to develop clear and discrete indicators that align with institutional missions. Cunningham and Milam (2005) allude to this when they write that graduation rates should take institutional missions into account and retention rates should take student mobility (moving from institution to institution) and non-traditional enrollment patterns (stopping out) into account.

While results from my study have provided empirical data on retention and graduation rates for 2- and 4-year institutions for three years, more research is necessary to determine which indicators are true and effective representations of accountability for postsecondary institutions. This line of inquiry might identify additional performance indicators than those already identified in the literature. Scholarly work expanding the number and types of indicators would provide policymakers with additional tools to better inform state legislators to develop state funding mechanisms that provide financial support of higher education institutions (ECS, 2000). Additionally, a qualitative line of inquiry would be useful to explore the experiences of those who report indicators to local, state and federal agencies.

Another perspective useful to consider would be the involvement of 2- and 4-year faculty to assess student learning measures separate from retention and graduation rates as one aspect of performance measures (Cohen & Brawer, 2003). If we are to serve our students, it would behoove postsecondary institutions to demonstrate student learning based on institutional

missions. A graduate student at a research extensive university has very different goals from a student who wants to attain his welding certificate at a community and technical college. One is no less important to the student who enrolls in that program and no less important to the community that will benefit from the skills and knowledge acquired. Therefore, institutions should not be denied funding because of indicators that don't capture the whole story of our students' educational experiences.

Future research could also quantitatively and qualitatively investigate a comparison between indicator differences reported in relation to attaining additional and/or state funding. Finally, my study found differences between retention rates and graduation rates at 2- and 4-year postsecondary institutions but did not look at possible reasons for these differences. Further research should be conducted on why these indicators were different. These differences could be tied to the mission of the 2- or 4-year institution.

In light of the fact that retention and graduation rates have traditionally satisfied state governments' quest for markers of institutional success and that the federal government appears to be headed in the same direction with President Obama's American Graduation Initiative, 2- and 4-year institutions need to think about mission first and foremost. Specifically, 2-year and 4-year institutions need to focus on how their mission statements impact the needs of their student population and their community at large and to choose core indicators that will accurately demonstrate that they have fulfilled their postsecondary institutional mission and have produced successful students. Although 2- and 4-year institutions should be held accountable to their constituents, reporting retention and graduation rates can become a distraction from the real issues we face and not necessarily tell the whole story of success or failure of postsecondary institutions.

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## APPENDICES

### ***University Committee for the Protection of Human Subjects in Research***

#### **University of New Orleans**

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##### *Campus Correspondence*

Principal Investigator: Louis V. Paradise  
Co-Investigators: Andre Perry and Lisa M. Watson  
Date: June 22, 2010  
Protocol Title: "Retention and Graduation Rates as Performance Indicators  
in 2-Year and 4-Year Postsecondary Institutions"  
IRB#: 04June10

The IRB has deemed that the research and procedures described in this protocol application are exempt from federal regulations under 45 CFR 46.101 category 4 due to the fact that the research will involve the collection or study of existing data.

Exempt protocols do not have an expiration date; however, if there are any changes made to this protocol that may cause it to be no longer exempt from CFR 46, the IRB requires another standard application from the investigator(s) which should provide the same information that is in this application with changes that may have changed the exempt status.

If an adverse, unforeseen event occurs (e.g., physical, social, or emotional harm), you are required to inform the IRB as soon as possible after the event.

Best wishes on your project.  
Sincerely,

Robert D. Laird, Chair  
UNO Committee for the Protection of Human Subjects in Research

## VITA

Lisa Keller Watson was born in Reserve, Louisiana. She received her Bachelor's of Science in Management from the A.B. Freeman School of Business at Tulane University in 1988. She received her Master's in Education from the University of New Orleans in 2003. She has taught English as a Second Language since 1988. From 1998-2002, she taught ESL at Tulane University. In 2003, she moved to River Parishes Community College to work in Student Services. She has worked in Student Services, Institutional Research and Restricted Funds Accounting. Currently, she leads the River Parishes Community College Institutional Advancement Department in sponsored programs, fundraising, public relations, external affairs, and the RPCC Foundation.