

THE IMPACT OF PART-TIME FACULTY ON STUDENT RETENTION:
A CASE STUDY IN HIGHER EDUCATION

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CURTIS V. SMITH

B.S. Biology, University of Missouri Kansas City, 1975
M.A. History of Science, University of Kansas, 1992

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Curtis V. Smith, Candidate for Doctor of Philosophy Degree
University of Missouri at Kansas City, 2010

ABSTRACT

There has been considerable debate in community colleges over the last forty years regarding the impact of increased use of part-time faculty (PTF) on student learning. It has been argued that part-time faculty fail to provide the same level of teaching quality as full-time faculty (FTF). The purpose of this study was to determine the impact of part-time faculty on student retention at an average-sized urban community college, Kansas City Kansas Community College. Archival data obtained from the college for 2,030 first-time full-time students (FTFSTS) enrolled by the first day of the Fall semester for academic years: 2003, 2004, 2005 and 2006, were retrospectively analyzed for retention to the Spring semester, and the next Fall semester in each academic year, and for all years combined.

This study applies a multi-step method for model building and a quantitative, descriptive, ex post facto design. The first step involved univariable analysis of six independent variables suggested in the literature to be correlated with retention of all first-time full-time students: (1) exposure to part-time faculty, (2) ethnicity, (3) gender, (4) degree seeking status, (5) developmental or non-developmental learner status, and (6) number of credit hours enrolled during the first semester. Pearson correlations, *t* tests, and

analysis of variance statistical methods were employed in order to obtain Chi Square, means, standard deviations, *t* values and significance scores.

The second step involved binary logistic regression for multi-variable analysis of each academic year in order to assess the six independent variables with the dependent variable, retention, to the respective Spring, and next Fall semester. The final step employed logistic regression to determine what independent variables predicted the likelihood of student retention to the Spring, and next Fall semester with all academic years combined.

Statistical results of the final logistic regression analysis predicted the likelihood of a decrease in first-time full-time student retention with increased exposure to part-time faculty to the next Fall semester and with all academic years combined.

APPROVAL PAGE

The undersigned, appointed by the Dean of the School of Graduate Studies, have examined a dissertation titled “The Impact of Part-Time Faculty on Student Retention: A Case Study in Higher Education,” presented by Curtis V. Smith, candidate for the Doctor of Philosophy degree, and hereby certify that in their opinion it is worthy of acceptance.

Supervisory Committee

Bonita Butner, Ph.D., Committee Chair
School of Education

Patricia Boyer, Ph.D.
Division of Educational Leadership and
Policy Studies
University of Missouri-St. Louis

Stuart McAninch, Ph.D.
School of Education

Robert Gamer, Ph.D.
Political Science Department

James Sturgeon, Ph.D.
Economics Department

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CHAPTER 1

INTRODUCTION

Institutions of higher education have increasingly been called upon to focus greater attention on teaching and student learning. However, over the last 40 years, community colleges have been slowly increasing the rate of part-time faculty (PTF) employment to a point where they comprise the vast majority of teachers on campus. On many levels of analysis it is evident that part-timers are less connected with their colleagues and students at the community college. The trend to hire more part-time faculty is in direct conflict with widely accepted principles for good practice in undergraduate higher education. These principles include institutional commitment to hiring the best available teachers, institutional support for all faculty, and enabling frequent student-faculty contact in and out of classes. Knowing a few faculty members well enhances students' intellectual commitment, encourages them to think about their own values, and is therefore a key factor in student motivation and academic achievement. Community colleges that heavily rely on part-time faculty may be hampered in their attempts to promote student learning outcomes most obviously by high attrition rates. This study seeks to fill the existing void in the literature by examining the impact of part-time faculty on retention of first-time full-time students (FTFTS).

The Problem

The largest group of employees at virtually any community college in the United States is part-time faculty (National Center for Educational Statistics, 2001). However, they

enjoy the fewest privileges when compared to administration, full-time staff, or full-time faculty (FTF) at these same institutions. The lowest paid members of the community college workforce are part-time faculty. They typically do not receive fringe benefits and are rarely included in substantive decision-making that supports improved teaching, learning, and institutional improvement. There has been much debate that students are not receiving an equitable educational experience based on differences between part-time and full-time faculty classroom performance (Burgess & Samuel, 1999).

The ratio of full-time to part-time faculty was roughly 60 percent to 40 percent of all community college faculty in 1970. These percentages have been dramatically reversed, with a national average in 2003 of 33 percent full-time and 67 percent part-time faculty in community colleges (National Center for Education Statistics [NCES], 2005). According to the National Education Association, part-time faculty in 2003 earned \$2,836 per course compared to \$10,563 per course for full-time faculty in all community colleges (National Education Association, 2007).

In a discussion on the use of part-time faculty in 1996, Grace Banachowski states, “the principal reason community colleges expand their use of part-time faculty is to conserve financial resources and to provide the flexibility needed to cope with fluctuating enrollment, state, and local funding” (p. 50). She also found that management believed hiring part-time faculty facilitates screening of future permanent teaching candidates and better prepares them for full-time positions.

The major disadvantages of utilizing part-time faculty are more nuanced. Banachowski (1996) finds numerous ambiguities in a two-tier faculty system that as a whole

undermines the teaching profession. A general lack of institutional support for part-time faculty deteriorates the campus learning environment. Others have argued that decreasing the number of full-time positions increases full-time faculty teaching load and committee work (Levin, Kater, & Wagoner, 2006). This study thoroughly reviews the literature about the pros and cons of increased use of part-time faculty at community colleges and analyzes whether there is a statistical correlation between increased use of part-time faculty and decreased retention at one community college.

Purpose of this Study

Recent research indicates that hiring part-time faculty at community colleges is excessive and detrimental to the overall learning environment:

- Part-time faculty offer less variety in their instructional practices, are unavailable for extended student learning and advising, and are less connected with colleagues and the institution (Community College Survey of Student Engagement, 2007).
- Part-time faculty do not advise students as often, use active teaching techniques less often, spend less time preparing for class, and are less likely to participate in teaching workshops (Umbach, 2007).
- Part-time faculty at Maricopa County Community College system under-prepare students and less often retain students in math and English for subsequent courses taught by full-time instructors (Burgess & Samuel, 1999).
- There is a negative impact on graduation rates at community colleges where higher percentages of part-time faculty are employed (Jacoby, 2005).

- There is a 2% decrease in student transfer rates to four-year colleges for every 10% increase in credits earned from part-time faculty (Eagan & Jaeger, December 2008).

Researchers argue that increasing levels of first semester exposure groups to part-time faculty decreases the chances for retention to later semesters in college (Harrington & Schibik, 2001; Ronco & Cahill, 2004). The purpose of this study is to examine the impact of part-time faculty on student retention. In particular, the study will examine the percentage of exposure to part-time faculty and the impact on retention of first-time full-time students (FTFTS).

Research Questions

This investigation focused upon five research questions that were answered in five stepwise conditional logistic regression analysis models:

1. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semesters for Academic Year (AY) 2003?
2. What independent variables predict the likelihood of students not being retained to the Spring and next Fall semesters for Academic Year 2004?
3. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semester for Academic Year 2005?
4. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semesters in the Academic Year 2006?
5. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semesters in all four academic years combined?

Hypotheses

This study analyzes statistical data in terms of the deductive reasoning phase of logical positivism, in which scientific reasoning springs from analytical conjectures and refutations. The positivist epistemology is concerned with facts and how precisely these correspond with accepting or rejecting hypotheses in forming a theory of truth. It follows that since a review of the literature leans toward a decrease in the likelihood of FTFTS retention with increased exposure to part-time faculty, the appropriate hypotheses would be to try to refute this evidence. If refutation proves impossible using logistic regression analysis, the hypotheses would be in error but would support the majority of scholarly evidence. Therefore, the hypotheses of this study are that there will not be a decrease in the likelihood of FTFTS retention in comparison and control of other variables with:

- a) increased exposure to part-time faculty in the Fall to Spring semester, or Fall to next Fall semester for academic years 2003, 2004, 2005, or 2006,
- b) increased exposure to part-time faculty in the Fall to Spring semester, or Fall to next Fall semester in all academic years combined.

Assumptions Underlying this Study

Community colleges claim to be focused on how to improve the quality of student learning. Many, including Kansas City Kansas Community College (KCKCC), have committed to the Community College League of Innovation rubric for developing 21st Century Learner Outcomes (21st Century Learning Outcomes, 2010). The goal of the project is to increase the capacity of community colleges to define and document student achievement of learning outcomes necessary for success in the workplace. Under the

auspices of an outcomes assessment officer and the Provost, full-time faculty are required to demonstrate that students are learning based on outcome assessments developed by faculty. The Higher Learning Commission, the national accreditation agency for community colleges, emphasizes these measures. However, part-time faculty, which are the largest group of faculty on community college campuses, are not generally required or asked to be involved with these projects.

Community college administrations also emphasize student learning when they require all full-time faculty to attend in-service training each semester. During these sessions at KCKCC and other community colleges, full-time faculty are engaged by renowned experts on the subject of student learning. Almost all community college in-service education features new spin-off approaches to education based on “The Seven Principles for Good Practices in Undergraduate Education” developed by Chickering and Gamson (1987). The first good principle of sound undergraduate education is student-faculty contact. Part-time faculty are seldom invited to attend programs for developing teaching and learning strategies because they occur during the week prior to the start of classes or on days when classes are not being held.

The literature review will show that part-time faculty at community colleges are not as experienced or educated as full-time faculty. Full-time faculty compile roughly 450 credit hours with five years experience teaching while part-time faculty will only have taught a minimum of 30 to a maximum of 90 credit hours during the same five-year time frame, assuming continuous maximum employment. Even with previous experience as a full-time faculty at another institution, part-time faculty are marginalized and do not have the same

opportunities to improve teaching skills due to dramatic differences in college support services (Wyles, 1998). The evidence for this assertion is based on a significant study provided by the 2007 Community College Faculty Survey of Student Engagement (CCFSSE).

Published research demonstrating the impact of part-time faculty on student retention could inform decisions at community colleges in their attempts to promote student learning outcomes. The first courses students enroll in are widely known as “gatekeeper courses.” Faculty teaching “gatekeeper courses” are expected to have some influence on whether students persist to the Spring and next Fall semester. Calls for greater accountability in terms of retention rates and increased economic efficiency among higher education institutions have prompted scholars to examine nontraditional factors that might help to explain the retention puzzle. Recently researchers have started examining the effects of exposure to part-time faculty on student outcomes. Limited attention has been given to the impact part-time faculty has on student decisions to remain enrolled at an institution. Based on the overwhelming evidence found in the literature, this study is grounded in the assumption that student overexposure to part-time faculty is likely to have a negative impact on student retention.

Limitations of this Study

The data for this study comes from the KCKCC Center for Research and Community Development. The researcher is wholly dependent on the coded accuracy of input data from the college admissions system regarding the number of credit hours first-time full-time students (FTFTS) had been enrolled, whether the faculty in each course was part-time or

full-time, their year of enrollment, and whether each class was developmental or non-developmental. Other data provided by students crucial to the accuracy of this study included student ethnicity, gender, and degree-seeking status.

Delimitations of this Study

This study examined the impact of part-time faculty on student retention at one urban community college. Therefore, the generalizability of this study is limited to institutions with similar characteristics. The benefit of a single-institution study is that it informs retention models for single institutions. The drawback is that it can be misleading to apply judgments about one urban community college to otherwise dissimilar institutions.

Definition of Terms

The following definitions highlight major concepts in this study. A more detailed description of these terms and operational variables used appears in Chapter 3.

1. Faculty Type – Faculty type represents the major variations of faculty employed by higher education institutions. The conceptual framework for this study classifies a faculty member in one of two major groups: part-time faculty or full-time faculty. In this study, conditions of employment are the principal determinant factors for making this delineation.

At KCKCC the vast majority of regular part-time faculty teach ten or fewer credit hours per semester, receive no fringe benefits, and are contracted to teach on a semester by semester basis. A special category of faculty at KCKCC, the “Interim Employee,” is allowed to teach over ten credit hours with proportional placement on full-time faculty salary schedule. The “Interim Employee” is counted as part-time in this study. Administration and

staff who are full-time but teach part-time are classified as part-time faculty. High School Partnership faculty who teach college credit classes are classified as part-time faculty.

Full-time faculty are contracted to teach 13-17 credit hours per semester with a minimum average of 30 credit hours for one academic year. They are legally governed by the KCKCC Master Contract. Full-time faculty receive health and life insurance benefits, have special compensatory privileges, and have the right to tenure and continuing contract as stipulated by legal statutes. Faculty who work closely with students in non-classroom teaching roles, such as counselors and librarians, are counted as full-time faculty.

This definition of part-time and full-time faculty is consistent with most community colleges when reporting to the National Center for Educational Statistics. When reporting to the NCES, it is up to the individual institution as to how they determine full-time and part-time employment, teaching loads, and teaching credit hour status.

2. Credit Hours – Credit hours are the number of credits students receive for classes enrolled in at KCKCC. In this study, any classes taught by part-time faculty (adjuncts), administration, interim-employees, or staff were calculated as part-time credit hours.

3. Community College – Cohen and Brawer defined community college as “any institution accredited to award the Associate in Arts or the Associate in Science as its highest degree. [This] definition includes the comprehensive two-year colleges as well as some technical institutes, both public and private” (1996, p. 5).

4. Developmental reading and writing classes – Students are required to be enrolled in developmental classes if they score 75 or below on the Accuplacer entrance examination.

Developmental classes in reading or writing are non-college credit classes that prepare students for college English Composition I.

5. Retention – First-time full-time students (FTFTS) in the Fall semester 2003, 2004, 2005, and 2006 were said to be retained if they were enrolled in at least one class by the first day of class in the Spring and next Fall semester. FTFTS must be enrolled in at least 12 credit hours at the start of their first semester. Students who “stop out” in the Spring semester but enroll in at least one class during the next Fall semester are counted as retained in the next Fall semester. The term “retention” is favored in this study due to preferential usage in data reports provided by KCKCC. Retention is used in this study synonymously with “persistence” and inversely in relation to “withdrawal,” “attrition” and the more colloquial “drop-out.”

6. Six Part-Time Faculty Percentage Exposure Groups – The first step of this study involved one-to-one Pearson correlations of each independent variable, most notably the six part-time faculty percentage exposure groups, in correlation with FTFTS retention to the Spring and next Fall semester: 0% credit hour exposure to part-time faculty; 1%-25%; 26%-50%; 51%-75%; 76-99%; and 100%.

7. Individual Percentage Exposure to Part-Time Faculty – The first step of this study also involved one-to-one Pearson correlations for FTFTS retention to the Spring and next Fall semester with individual percentages of exposure to part-time faculty from 0% to 100%.

Significance of this Study

Most of the literature related to higher education lumps part-time and full-time faculty together when it comes to operational issues like improving teaching effectiveness or efficiency at community colleges. Previous studies have examined community college full-time faculty culture (Kempner, 1990) and their professionalism (Hutcheson, 2000; Rhoades, 1998), but only a few consider part-time faculty culture (Banachowski, 1996; Wagoner, Metcalfe & Olaore, 2004), how they may be integrated into the institution (Lyons, 2007), or union organized (Berry, 2005).

This investigation is the first to examine the impact of student retention based on exposure to part-time faculty in community colleges. This study will be especially valuable to community colleges with strategic plans favoring improved student retention.

A review of the higher education environment since the 1960s demonstrated that community colleges increasingly rely on part-time faculty. The public largely views and expects student learning and quality of support instruction to at least remain constant or improve. There is mounting evidence that neither is the case. Recent research at community colleges suggests that increased efforts and attention to faculty development promotes student learning and retention. This is an important outcome of higher education. As colleges attempt to encourage faculty to modify their teaching practices, those institutions that rely upon part-time faculty most heavily face additional problems affecting student learning and retention. This study seeks to make recommendations to community college stakeholders about how to improve student retention and elucidate differences between part-time and full-time faculty.

The literature review examines previous studies about the differences between part-time and full-time faculty: labor conditions, political economy, and organizational culture. As there are a limited number of studies analyzing how part-time faculty influence retention at four-year institutions, this study could be helpful for those studying academic organizations and labor issues, as well as academic leaders facing difficult decisions about the appropriate staffing levels for full-time faculty.

CHAPTER 2

REVIEW OF LITERATURE

This institutionally-based study analyzes relations between part-time faculty and student retention while controlling for student demographics such as gender, ethnicity, academic levels, and intention to obtain a degree. In order to provide context, it is important to examine national community colleges and individual community colleges regarding part-time faculty. This literature review includes: (a) The history of increased reliance on part-time faculty at community colleges; (b) a national comparison of part-time and full-time faculty characteristics; (c) compensation and legal issues involving part-time faculty; (d) the political economy of part-time faculty; and (e) the impact of part-time faculty on student retention.

Setting

Kansas City Kansas Community College is similar to many other urban two-year higher education institutions in the United States trying to work out issues involving the use of part-time faculty. Most of the literature supports the argument that expanded use of part-time faculty minimizes the traditions of maintaining policies, practices, and procedures consistent with the traditions of faculty governance (Hamilton, 2002). In this way, KCKCC is not unlike many other colleges that reduce academic freedom, tenure, and faculty primacy in curriculum development. The college has experienced a dramatic increase in the number of part-time faculty over the last 40 years, but provides fringe benefits and collective bargaining only to the full-time tenure track faculty. The information found in the literature

review is not meant to harm part-time faculty or any single community college. It is designed to face the reality of working conditions for the vast majority of part-time faculty in the United States and to review and assimilate ways for administration, full-time faculty, and the public alike to move toward improving the quality of higher education based on the foundational measure of improved retention. Students cannot be learning at college if they are not being retained.

Although caution must be taken when generalizing the results of this study to any other community college, KCKCC is similar to many other community colleges:

- According to a KCKCC executive summary of the National Community College Benchmark Project, the percentage of credit hours being taught by part-time faculty at KCKCC was 53.76% in 2007. This percentage of part-time faculty credit hours places KCKCC higher than 73% of the 176 participating community colleges in the benchmark analysis (Kansas City Kansas Community College [KCKCC], 2007). Like many community colleges, KCKCC has gradually increased the number of credit hours taught by part-time faculty: In 1980-81 it was 24%, in 1990-91 it was 40.49%, in 2000-01 it was 44.87%; in 2004-05 it was 49.86%, demonstrating increased reliance on part-time faculty (KCKCC, 2008).
- KCKCC data from 2007 indicate that entry level students have improved slightly in writing, reading, and math Accuplacer tests since 2001-02, while exit exam scores in writing, reading, and math have remained roughly the same (KCKCC, 2009b). The Accuplacer is a standardized, commonly used assessment tool

operationally designed for analyzing entry level reading, writing, and math skills. Almost half of all first-time full-time students are required to take developmental reading or writing classes, providing a convenient split between developmental and non-developmental students for statistical purposes.

- Part-time faculty at KCKCC are seldom included in the following traditional faculty governance activities: determining appropriate curriculum, textbook selection, course competencies, learning outcomes, class offerings and scheduling, setting departmental budget priorities, conducting student advising, participating in new faculty hiring committees, or salary negotiations, benefits and working condition discussions. There is a non-mandatory part-time faculty orientation prior to the start of the semester during which part-timers are informed about syllabi preparedness. Part-time faculty teaching specifically in certain career programs are provided textbooks and room keys; they are also shown their shared office, desk, file cabinets, and shared computer by a full-time faculty mentor, coordinator, or director. In so-called “general education” courses, which comprise the vast majority of part-time teaching at KCKCC, assigned full-time faculty are given a small amount of reassign time in order to make the time to provide the aforementioned teaching provisions to part-timers. All part-time faculty at KCKCC are given a Part-Time Faculty Handbook developed by Faculty and Staff Development.

- KCKCC is well funded by a thriving local tax base, with 8 million dollars in reserves as part of a \$41 million budget at the start of the current study in 2008 (KCKCC, 2009b).
- KCKCC is an average size urban community college, with roughly 6,000 students and an overall 33.79% minority population in 2007 (KCKCC, 2009b).
- The KCKCC strategic plan includes a commitment to improve student retention.
- A 2008 Employee Survey called for “improving the working conditions of adjunct faculty by providing more space and resources on campus for this important constituency” (KCKCC, 2008)

The History of Increased Reliance on Part-Time Faculty

Perhaps as revealing as anything about part-time faculty is the list of terms that have grown up as euphemisms: “Roads Scholars,” “the academic underclass,” “freeway flyers,” “a corps of unregulated personnel,” “hopeful part-timers,” “the have nots,” “disposable faculty,” “anchorless street-corner men,” MIAs,” “moonlighters,” “gypsy scholars,” “necessary evils,” and “invisible and expendables” (Banachowski, 1996, p. 50). Community college contracts refer to part-time faculty as non-tenure track, interim employee, and adjunct professor (Baldwin & Chronister, 2001). Two terms for part-time faculty that perhaps should be used are “Associate Faculty” or “Community Faculty” (Lyons, 2007, p. 2).

In keeping with the most of the community college literature, “part-time faculty” is used here to describe community college faculty who do not teach sufficient credit hours at any one single institution on a continuous basis in order to receive health and life insurance

benefits, to be considered part of the bargaining unit, or to fall under the compensatory privileges of those deemed full-time faculty. By most accounts, in 2004-2005, there were roughly 600,000 part-time instructors employed regularly in North American colleges and universities (Almanac of Higher Education, 2006). Not only have the faculty split into virtually independent groups of full-time and part-time faculty, the part-time professorate has grown explosively and is the most diverse because of its motivations, commitments, and qualifications.

As the average number of credit hours taught by part-time faculty has exceeded 50% at community colleges, the debate has shifted to one of appropriate staffing levels and the creation of institutional mechanisms to deal with this two-tier system of teaching. The increased teaching role of part-time faculty has largely been under the radar of the public and some in academe. The American Association of State Colleges and Universities cautions, “because of its potential to adversely affect institutions, the extensive use of part-time faculty should be carefully re-examined as part of a larger re-examination of appropriate faculty mix” (1999, p. 24).

The university leaders who measured the need for two-year higher education institutions at the turn of the last century could not have imagined enrollments in higher education at 6.39 million students in 1966, and expanding to almost 16 million by 2004 (Keller, 2004). Over 700 new community colleges have been created since 1966, for a total of 1,202 American community colleges serving 11.6 million students. One idea to cut costs at more than 700 new community colleges since 1966 has been to hire part-time faculty,

who are without the possibility of tenure, health benefits, and of much lower remuneration than typifies tenure track full-time teaching status (Baldwin & Chronister, 2001).

Biles and Tuckman in 1986 found that part-time faculty policies are often based on a previous era (pre-1960s) of fewer part-time instructors. For this reason the authors predicted a high potential for problems and the need for administrators and faculty alike to ensure that equitable adjunct policies address changing concerns. Various national groups have spoken out against institutional policies that allow hiring large numbers of adjuncts. In 1996, the Modern Language Association (MLA) voted down a resolution to penalize institutions that hire part-time professors because the resolution would have penalized the significant number of part-time instructors that wanted to be part-time (Wilson, 1997). The MLA revisited the part-time issue in a meeting with leaders of the American Historical Association and the American Association of University Professors and called for more groups to become involved, including regional accrediting bodies (Leatherman, 1997).

Building upon the early work on part-time faculty by Tuckman (1978), Judith Gappa and David Leslie published a seminal work, *The Invisible Faculty*, in 1993. Their findings included a typology of part-time instructors based on interviews in which they asked questions about lifestyles and motivation to teach. The authors found the extent of teaching involvement for part-time faculty ranged from no more than incidental, to a career that was at least as time-consuming as full-time faculty:

- Career Enders - are generally a group of baby-boomer retirees or semi-retirees grounded in the civil rights, antiwar, and women's movements;

- Professionals/experts/specialists - are faculty employed full-time outside the academy who choose to teach mainly for their own edification;
- Aspiring academics - are “hopeful full timers” including recent graduate students and
- Freelancers - concurrently work more than one part-time job, thrive on variety and unique psychological rewards, and include artists of many types (Gappa & Leslie, 1993; Leslie & Conley, 2002).

According to most recent national data provided by Schuster and Finkelstein (2006), community colleges by far employ mostly freelancers (41.6%); Aspiring Academics (28.5%); Community Experts (15%), and Professionals (14.5%). It is significant to note that the percentages of these four groups are inverted when compared to their frequency in four-year colleges and universities.

According to Gappa and Leslie (1993), employment of part-time faculty has been a constant in college and university staffing since the end of World War II. Three different rationales were used between 1960 and 1991 by colleges for hiring part-time faculty. The initial impetus was, “The multiplying, ever-narrowing areas of specialization in most fields created widespread need for part-time faculty with expertise in a special area” (Gappa & Leslie, 1993, p. 2). By the end of the 1960s, emphasis on “community experts” was set aside with increasing numbers of available doctoral graduates being offered teaching positions. Employment data for the period exhibits a general decline in the percentages of part-time faculty in higher education, from estimates of about 35 percent in 1960 to 22 percent in 1969.

During the 1970s, however, a second rationale for using part-time faculty gained ascendance that subjugated favoring rare or special curriculum needs. The 1972 Carnegie Commission on Higher Education Report forecast a period of retrenchment for colleges and universities based on anticipated declines in enrollment to be accompanied by 20 percent reductions in education budgets (Gappa & Leslie, 1993). To meet the new austerity, the Carnegie Commission recommended utilizing more part-time faculty. The rationale for the decision was purely one of economic flexibility. The colleges that began to hire more part-time faculty in the early 1970s considered the measure temporary: “everyone involved assumed that that part-timers would soon be phased out” (Franklin, Laurence & Denham, 1988, p. 15).

The employment of part-timers in the entire U.S. higher education system reached 30 percent of total faculty by 1977 and 40 percent by 1980. At community colleges, the numbers were significantly higher as part-timers grew from almost 40 percent in 1972 to 55 percent in 1975, just three years after the Carnegie Report of 1972 (Gappa & Leslie, 1993). The reason for this dramatic shift in the use of part-time faculty was due to a key flaw in the Carnegie Report. While predictions were correct about cuts in state and local funding for higher education, due to a lack of accepted definitions there were grossly erroneous estimations about drops in enrollment during the late 1970s and 1980s.

As late as 1987, the Department of Education highlighted how the forecasted decline in enrollment had yet to materialize, and instead, enrollment was continuing to increase (Gappa & Leslie, 1993). Four-year schools and community colleges adopted different strategies to deal with the influx of students during a time of budget constraint. Colleges and

universities to some extent returned to their previous policies of maximizing employment of full-time faculty, although they began to use graduate assistants to teach undergraduate courses. According to Leslie, Kellams, and Gunn, community colleges transformed their rationale for employing part-time faculty “from one of temporary adjustment to one of vital and necessary measures to meet increased enrollment” (1982, p. 29). Economic flexibility created by part-timers now became the main reason to employ them in a period of increasing enrollment. By the 1990s the economic flexibility rationale became so pervasive that the possibility of eliminating part-time faculty no longer seemed plausible since institutional, local, and state budget makers were fully conditioned to the huge cost savings of using part-time employees to teach slightly less than half of all courses being offered (Lustig, 2002).

State budget cuts have signaled the retraining of faculty and changes in curricula in order to better fit or boost local economy. According to William Zumeta, in the *NEA Almanac of Higher Education*, over the last 30 years, the average reduction in state budgets for postsecondary education has reached 34 percent (2006). The direct effect of these cuts has been to increase the number of poorly compensated part-time faculty. Cuts in budget have also meant an increase in class size, increased course load, wider and broader responsibilities for college operations, and more hours of work per week for full-time faculty.

What began with the rationale to strengthen curriculum with a group of “community experts” in the 1960s was switched to a need for economic flexibility in the 1970s and 1980s (Gappa & Leslie, 1993). The escalating use of part-time faculty since the 1990s, on the other hand, strains the notion of economic flexibility in community colleges. Due to the fact that

community college funding is principally based on local taxes, and not state funding like K-12 and four-year colleges and universities, community colleges have often been in stronger financial positions in counties or towns where the economy has been strong. Since the 1990s the overuse of part-time faculty at community colleges has evolved into a way to cover rising health benefit costs, to aid in full-time faculty and administrative salary increases, for use in pet building projects, and to make cuts in local mill levies (Levin et al., 2006).

As mentioned in the introduction, what was supposed to be a “temporary solution” to a tight monetary situation has developed into a “permanent fix” (Gappa & Leslie, 1993). According to Pamela Balch (1999), the ratio of full-time to part-time faculty, roughly a 60-40 percent ratio before 1970, has reversed, with some community colleges reporting closer to 80 percent part-timers. Institutions of higher education have discovered that employment of part-time faculty provides more than the flexibility needed to cope with variable student enrollment, the ebb and flow of state revenues, and the swiftly changing trends of the job market. The employment of part-time faculty has evolved into a means of profitability and entrepreneurship (Lustig, 2006).

Comparing Part-Time with Full-Time Faculty

In the serial publication *New Directions in Community Colleges*, an issue from 1980 titled “Using Part-Time Faculty Effectively,” offers a superlative window into the earliest studies about part-time faculty in community colleges. In one of the articles in this journal, Jack Friedlander (1980) reviewed monographic studies comparing the instructional practices of part-time faculty with full-time faculty during the 1970s. Case studies at that time showed

that full-time faculty held longer office hours, spent more time in class preparation, attended curriculum development-based department meetings and division meetings, more often took opportunities for professional development, and helped with student advising. Since his conclusions were based on limited data, Friedlander (1980) left open the question about whether greater use of part-time faculty undermines or contributes to teaching effectiveness and student learning pending broader national educational statistical analyses. Instead, he emphasized the obvious benefit that hiring part-time faculty saved major institutional dollars for other purposes.

Even with the cost benefits of hiring part-time faculty by the late 1980s, faculty leaders in the community college movement were starting to rethink the rapidly increasing use of part-time faculty. In 1988, the Commission on the Future of Community Colleges reported, “The increasing numbers of part-time faculty at many colleges [is] a disturbing trend” and urged, “The unrestrained expansion of part-time faculty should be avoided” (p. 1). The Future Commission recommended, “A majority of credits awarded by a community college should be earned in classes taught by full-time faculty” (p. 1). Also in 1988, The Carnegie Foundation for the Advancement of Teaching recommended, “That no more than 25% of the faculty be made up of part timers” and “That no more than 50% of total credit hours be taught by part-time faculty” (p. 1). Finally, a 1988 California law mandated staffing ratios of no less than 70% full time and 30% part-time faculty at community colleges throughout the state.

The words of the Future Commission went unheeded as rates of part-time faculty employment continued to escalate as shown in National Center for Educational Statistics from 2001 and 2008 (see Table 1).

It is important to recognize that national part-time percentage rates would be much higher if the Board of Governors for the California Community College system had not started the effort to establish the goal of utilizing 70 percent full-time faculty as early as 1977 (Chancellors Office of California Community Colleges [COCCC], 1987). In 1988, California AB1725 set the statutory goal of funding community colleges in order

Table 1

Numbers of Full-Time and Part-Time Faculty in Two-Year Colleges, 1968-2003

Year	Total	Full-Time		Part-Time	
		Number	Percentage	Number	Percentage
1968	97,443	63,864	66	33,579	34
1973	151,947	89,958	59	61,989	41
1978	213,712	95,461	45	118,251	55
1983	254,449	106,868	43	142,170	57
1988	254,449	108,868	42	147,580	58
1993	276,661	110,111	40	166,550	60
1998	301,000	113,760	38	187,824	62
2003	344,700	114,700	33	230,100	67

(NCES, 2001, 2008)

to achieve and maintain this percentage lest the Chancellor’s Office of California Community Colleges (COCCC) withhold a portion of that district’s program improvement allocation. Most of the California Community College districts have met this “full-time faculty obligation” at the time of the completion of this study (COCCC, 2009).

In 1996 Grace Banachowski weighed the literature from the 1980s and early 1990s and made a comparison of the advantages and disadvantages of using part-time faculty. She found the four main reasons community colleges increasingly hire part-time faculty is largely because they save the institution money, increase institutional flexibility in matching the demands of varying enrollments, bring “real world vocational experience” to the college, and fourth, employing part-timers functions as a training process for full-time positions. In a later publication Banachowski (2000) added to her four other reasons to hire part-time faculty based on her assessment from an administrative perspective. In a large survey of academic leaders at community colleges, she learned that hiring part-timers worked as a screening process for determining the best teaching candidates.

The principal disadvantages cited by Banachowski are the extensive use of part-time faculty at community colleges where it is more likely to “undermine academic integrity” and lead to “differentiated teaching services” (1996, p. 8). However, Banachowski was still unconvinced about the magnitude of this particular aspect at the time of her 1996 publication when she asserted, “The differences in quality of instruction and the amount of learning by students is inconclusive” (p. 10). In 1996 there were no national studies showing that, for example, part-timers more often relied on the traditional teaching methods at community colleges.

The second disadvantage of overuse of part-time faculty that Banachowski cited is lack of institutional support, stating that there is general indifference when it comes to integrating part-time faculty into the institutional culture (1996). She found few colleges

provided formal orientation, a part-time faculty handbook, or had funding for professional development for part-timers.

The third disadvantage, according to Banachowski, is that, “part-timers are vulnerable largely because they are paid low wages” (1996, p. 10). One of the first to highlight this concern at the National Conference of the Community College Humanities Association was Helen Twigg (1989), who recognized that “there is a gross injustice and outrageous hypocrisy in the pretense of professional equality when adjuncts are paid one-third of the salary of full-time professors” (p. 3). Basically, this issue boils down to not having any organized capacity for negotiating salary. It is a disadvantage, furthermore, for any worker in any profession who does not have full-time employment. Community college part-timers, as in other areas of part-time employment, have no health insurance and little or no voice in raises, promotions, or working conditions.

The fourth disadvantage, according to Banachowski (1996) is that full-time faculty are being called upon to carry extra teaching responsibilities where there is overuse of part-timers. Twigg (1989) has found that part-timers are too often used to teach developmental or entry level courses at community colleges. She argues that part-timers actually harm full-time faculty since they “have ethical obligations to help train adjuncts and to familiarize them with the curriculum, materials, and procedures of the department, thereby adding extra work to an already heavy workload with no additional pay” (Twigg, 1989, p. 3). Full-time faculty are often held responsible for part-time faculty by their academic dean. They may be involved with locating part-timers, conducting the hiring process, making sure they have the necessary textbooks and other materials, and following up on the quality of their work. Full-

time faculty must absorb the problem of a part-timer doing a poor job, especially if they quit during the semester. Most important is that retiring full-time faculty have been replaced with less costly part-timers. For Banachowski (1996), the challenges run two ways: “one against the part-timers who are severely under compensated and want full time employment, and secondly against the full-timers who must compensate the institution for any deficiencies” (p. 11). It is a seldom recognized problem that hiring too many part-time faculty may bring down the overall quality of full-time instruction.

In a performance-based study by Burgess and Samuel (1999), the authors compared the academic performance and retention of students enrolled in sequential English and mathematics courses, with either part-time or full-time professors. The results confirmed their hypothesis that in both developmental and regular classes, community college students taking their first course from a part-time instructor, and who took the second course in the sequence from a full-time instructor, were under-prepared for the second course. Students experiencing a full-time combination were statistically more likely to be retained and achieve “C” grades or better in the second course. The authors were critical of the fact that only 27 percent of 19,326 students who took both English 101 and 102 had full-time faculty for both courses. Burgess and Samuel (1999) hypothesized lower retention and academic achievement were due to poor conditions of employment among part-time faculty: lower pay, less security, no benefits, and inadequate facilities.

David Leslie and Valerie Conley (2002) were among the first to shed light on what academic areas most overuse part-time faculty. Utilizing data from the 1993 National Survey of Postsecondary Faculty, the researchers found “a higher proportion of part-time

humanities and social science faculty were employed in community colleges than in any other academic area except education” (p. vii). This was viewed as a considerable deviation from the original intent and purpose of hiring part-timers in business, technology, or vocational subject areas, where real-life experience was needed in order to enhance program quality. Leslie and Conley (2002) also found that 47% of part-time faculty in higher education stated the lack of full-time employment was the principal reason for working part-time, and the largest portion of these were in the humanities and social sciences.

The next significant review about the quality of part-time faculty teaching in community colleges was published in the 2002 issue of *New Directions in Community Colleges*. Finally, enough national data had been acquired by 2000 for Pam Schuetz (2002) to elucidate the findings from Center for the Study of Community Colleges survey of more than 1,500 faculty respondents from over 100 community colleges nationwide. Schuetz (2002) rejects the hypothesis that the teaching methods and extracurricular involvement with students, colleagues, and institutions are statistically indistinguishable from full-time faculty. Her conclusion from the data is as follows:

Although part-time faculty are generally well-qualified to perform their duties, and although many colleges are working to orient and integrate them more fully into the college infrastructure, it can be argued that part-timers are more weakly linked to their students, colleagues, and responding institutions than full-timers. This analysis confirmed that part-time faculty tend to have less total teaching experience, teach fewer hours per week than corresponding institutions, use less innovative or collaborative teaching methods, and interact less with their students, peers, and institutions. Part-timers tend to be less familiar with availability of campus services such as tutoring and counseling and express less knowledge of students’ need for or use of support services. Part-timers are also less likely to sustain the kind of extracurricular student faculty interaction that has been linked to enhance student learning. Ultimately it seems that students are unlikely to receive the same quality of instruction from more tenuously linked faculty. (Schuetz, p. 44)

There is little argument about the fact that faculty interaction with students and the overall impact this experience has on student development is important for student learning. Critics of any difference between part-timers and full-timers on faculty interaction with students have, over the years, argued there is little interaction between full-time faculty and their students. This argument is no longer tenable in any general sense, as “the Schuetz Report” makes clear in the first large national study, that part-timers are severely limited in their capacity to meet with students when compared to permanent faculty because they are generally much less likely to have either an office on campus, have a phone or computer on campus, or have office hours on campus.

In 2007, a study was completed titled the Community College Faculty Survey of Student Engagement (CCFSSE). This study involved 223 participating community colleges. Forty percent of all faculty respondents in this study reported as part-time. This under-reporting was likely due to the inability of many colleges to provide valid email addresses for part-time faculty since 67% of all faculty at community colleges are part-time. The 2007 CCFSSE study is especially pertinent to this investigation since Kansas City Kansas Community College is a participatory institution. The most relevant data includes the following list of significant statistical differences between part-time and full-time faculty at the 223 participating community colleges (Community College Survey of Student Engagement [CCSSE], 2007):

- 33% of FTF had been teaching 10-19 years compared to 21% for PTF.
- 18% of FTF had PhDs while 11% of PTF held the highest qualification.
- 43% of FTF were tenured while only 3% of PTF had this same protection.

- 64% of FTF spent 1-4 hours per week participating on college committees compared to 17% of PTF.
- 58% of FTF spent 1-4 hours per week mentoring other faculty compared to 13% of PTF.
- 61% of FTF spent time advising students during the academic year compared to 9% of PTF.
- 15% of FTF incorporated service learning into their courses compared to 4% of part-time faculty.
- 12% of FTF participated in a learning community course compared to 7% of PTF.
- 40% of FTF spent 1-4 hours working with students on activities other than course work compared to 14% of PTF.

These statistical differences between part-time and full-time faculty underscore the concerns of many in higher education who have long argued that hiring part-time faculty at community colleges is excessive and generally undermines the total learning environment.

Also in 2007, Paul Umbach completed a large analysis of teaching methods being used by part-timers versus full-timers derived from a 2001 survey gathered by the Higher Education Research Institute of the University of California at Los Angeles. Based on data from 21,000 faculty members at 148 two- and four-year colleges, he found that part-timers advised students less frequently, used fewer active-teaching techniques, spent less time preparing for class, and were less likely to participate in institutional and nationally based teaching workshops. Umbach (2007) stated in his conclusion, “contingent faculty tend to be

less effective than their tenured and tenure-track peers in how they work with undergraduates...this finding seems particularly important given the rapid increases in contingent appointments” (p. 15).

Dan Jacoby (2005) published the first case study on whether part-timers wanted a full-time position at their community college. His study found that a majority of part-timers were not satisfied with their terms of their employment, particularly regarding their employment security. The author determined that most part-time faculty were seeking full-time teaching work. Jacoby (2006) followed with a study on the relationship between the use of part-time faculty at community colleges and graduation rates. One of the most common goals in strategic planning across the country is to increase retention and completion rates at community colleges. Jacoby found that graduation rates at community colleges nationwide “decrease as the proportion of part-time faculty employed increases” (p. 1084). Jacoby suggested that the correlation between graduation rates and the number of part-time faculty has more to do with low wages than degree status of the instructor.

Eagan and Jaeger (Fall 2008) looked at the impact part-time faculty had on students transfer rates to four-year colleges. The researchers analyzed data from 25,000 California community college systems’ first-time students whose course programs suggested that they intended to transfer to four-year institutions. The authors found the likelihood of students continuing on to four-year institutions dropped by 2 percent for every increase of 10 percentage points in their credits earned with part-time faculty members. This result remained consistent after accounting for differences in the community colleges and in

students' backgrounds. The trend translated into an 8 percent drop in likelihood of transferring for average students.

Compensation and Legal Rulings Involving Part-Time Faculty

In the same report mentioned at the start of this literature review section on the history of increased reliance on part-time faculty, Friedlander (1980) was the first to assimilate salary reports of part-time instructors, finding they were paid roughly one-third of what full-time faculty received per credit hour of teaching at community colleges. He also rationalized the subject of compensation with the fact that part-timers were not required to be involved in course-related activities outside the classroom, handle student advising, have office hours, attend department or division meetings, participate on committees, or attend professional development activities like full-time faculty.

Based on this report by Friedlander, many community college administrators argued that, for the work performed, part-timers are paid the same as full-time faculty per hour (Archer, 1974). However, according to Adamowicz (2007),

The average part time faculty salary was \$9,782 about one-fifth the average full-time salary of \$45,636. But those figures are based on part-time faculty classroom teaching 7.3 hours per week for every 11 hours per week that full-time faculty teach. For about two thirds of the teaching load of full-time faculty, part-timers earn about one-fifth the pay. (p. 3)

The National Education Association found that part-time community college faculty spent 91% of their time delivering instruction compared with 61% for full-time faculty (NEA, 2000). Across all institutions of higher education, “part-time faculty generally spend six to nine hours per week teaching credit classes and are paid just over a fourth as much, per course, as their full-time counterparts” (Schmidt, 2008, p. 3). Full-time faculty reported

working an average 48.9 hours per week at community colleges across America. For part-time faculty, it was 35.4 hours (NCES, 2006).

Part-time salaries are so low that it can safely be said that part-timers are not compensated for time spent preparing for class or grading. The salary for part-time faculty, therefore, not only undermines appropriate compensatory arrangements, it undervalues the entire profession. Even under these ascetic conditions, part-timers are expected to provide the same quality of education as full-time and hold the same education credentials as their full-time counterparts. However, in two separate national studies, part-time faculty had less experience, fewer doctoral degrees, spent less time grading and preparing for class, gave higher grades, and rarely participated in professional development opportunities like full-time faculty (CCSSE, 2007; NCES, 2006). On the other hand, studies comparing the effectiveness of part-time to full-time faculty have essentially demonstrated no difference in quality in student evaluations. The counter argument is that undergraduate students in their first two years of academe have little skill in determining the quality of faculty (Leslie & Gappa, 2002). Student evaluation instruments for faculty are not inherently designed to be comparative and are of little use for this type of analysis.

Brewster (2000) has argued that part-time faculty policies at many institutions have created a climate ripe for revolt. He found that part-timers were making an average \$2,000 per three-credit hour course and usually received no benefits or job security. Most institutions were making feeble attempts to integrate part-time faculty into the culture of the institution. Part-timers at community colleges were said to hold “scant loyalty for the institution and an increasing sense of frustration with their circumstances” (p. 68). The

oppressive nature of this problem has long demanded that administration and full-time faculty no longer view the hiring of adjuncts as a “casual departmental affair” (Gappa, 1984, p. iv).

With teaching assistants at various colleges granted the right of collective bargaining, the trend favored similar rights being granted to part-time instructors. A historic decision in 2000 by the regional director of the National Labor Relations Board (NLRB) stated that graduate teaching assistants (TAs) and certain research assistants at New York University were free to unionize (Leatherman, 2000). Previously TAs employed at private colleges and universities were considered student apprentices ineligible for collective bargaining rights. NYU became the first and only private institution in the nation to negotiate a contract with a TA union. Based on this ruling, TAs at many universities have organized for better pay and benefits such as free tuition. However, in 2004, the NLRB ruled that federal labor law does not cover teaching assistants if the university does not recognize students as “employees” (Gravois, 2005). A bitter struggle has developed between universities and representatives of the graduate assistants affiliated with the United Auto Workers.

A few part-time instructors have cited the NLRB 2000 ruling as a precedent for obtaining rights. On March 13, 2000, part-time faculty at Roosevelt University voted to unionize in an attempt to achieve yearly contracts, remuneration for cancelled courses, a more equitable system for the scheduling of classes, and the option of health insurance benefits (Schneider, 2000). Without legal protection, part-time faculty are extremely vulnerable, sometimes being referred to as the “new migrant worker of the education

industry” (Nelson, 1999, p. 31). Contrary to the academic freedom full-time faculty possess, Nelson believes part-time instructors have very little intellectual independence. Most are fired without notice and have little support for staying current in their fields. The “quality of education in many instances has declined and intellectual independence and integrity of the faculty have been seriously undermined” (Nelson, 1999, p. 31). Many part-timers feel marginalized, having no voice in curriculum development, in textbook selection, in the work of their respective divisions, or in the governance of the institution.

As stated in the Fifth and Fourteenth Amendments of the U.S. Constitution, due process clauses ensure that individuals are not deprived of the basic rights of life, liberty and property in an unfair and arbitrary manner. A review of these rights by Biles and Tuckman in 1984 contextualized part-time faculty working conditions in higher education:

- The right to be heard with respect to economic and professional interests in a meaningful and effective way.
- The right to petition for redress of economic and professional grievances in a meaningful and effective way.
- The right to bargain individually or collectively with one’s employer with respect to terms and conditions of employment.
- The right to associate together through a chosen representative for the purpose of negotiating with an institution with respect to economic and professional interests on an equal basis.
- The right to confront one’s accuser, to have an impartial and fair hearing, and to have the right of an appeal to an impartial adjudicator. (p. 37)

Few part-timers know these rights. Due process litigation has resulted from issues of dismissal, non-renewal, and a desire for access to the tenure track by part-time faculty, while compensation issues have resulted in equal protection litigation. The Supreme Court’s *Roth* and *Perry* decisions in 1972 provided most of the controlling precedent for due process decisions. The Court ruled that a college employee must show “a property right or legitimate

claim of entitlement to continued employment” before being afforded due process in the non-renewal of employment (Brewster, 2000, p. 72). The Court also added, however, that the property right need not be “explicitly granted by the college, but may accrue as a matter of law, policy, common practice and acquiescence” (Leslie et al., 1982, p. 48). This ruling would seem to imply that teaching part-time for a certain number of years would constitute a property right and, therefore, legitimate claims to continued employment.

Historically, part-time faculty have found it impossible to establish a property right of entitlement to continued employment because the explicit statutory language most institutions use in their contracts and faculty handbooks establishes them as separate and less privileged than full-time tenure or tenure track professors (Toutkoushian, 2003). Sometimes waivers are written into the employment contracts of part-time instructors, or they may be part of the full-timers’ collective bargaining agreement. In other cases, part-timers are placed in a category unprotected by due process because of the functional difference in their job descriptions. In these cases, “the courts have ruled against the part-time faculty because of their lack of functional similarities with full-time faculty in terms of jobs, rights, and obligations” (Leslie et al., 1982, p. 49). The absence of property rights is normally a matter of institutional policy rather than state statute or regulations as in New York or California. According to Leslie, “Eighty-five percent of all part-time instructors in the United States are ineligible for tenure” (Leslie et al., 1982, p. 48).

In 2000, courts recognized part-time faculty’s due process rights in the state of Washington, where community college part-timers won the right to have the work they do outside the classroom counted toward their retirement benefits (Schneider, 2005). In this

instance, a Washington state court ruled that state institutions must count the hours part-time faculty spend preparing for class, advising students, and grading papers when determining their eligibility for retirement benefits. Part-time instructors won the right to have the same non-contact hours that full-time faculty receive calculated into the number of hours they work, thereby making them eligible for benefits. This ruling is significant because it set a precedent for part-time faculty to receive previously denied benefits.

In *Perry v. Sinderman* in 1972, the Supreme Court established that a series of short-term contracts might, under certain conditions, establish a legitimate expectation of re-employment (Gappa, 1984). Sinderman, who had taught for ten years at a Texas community college, was awarded *de facto* tenure because of his long service and because the college expressed “the spirit of tenure” in its policies. However, the Supreme Court held that proof of such property right only obligated college officials to grant the plaintiff a due process hearing where the plaintiff could be informed of the reasons for his dismissal and be allowed to challenge these grounds. Sinderman was not entitled to re-instatement. It is significant that part-time faculty would have to challenge the institution out of pocket. In the case of full-time faculty, legal expenses accrued from dismissal by the college are covered by Faculty Associations such as the National Education Association or the American Federation of Teachers. Community colleges are fully aware that with low salary and absence of legal protections, the risk of legal action by part-time faculty is slim to none.

In another tenure issue for part-time instructors, California statutory provisions “allowed part-time instructors to be eligible for tenure if they taught at least 60% of a full-time load (9 credit hours) for two semesters in a three-year period” (Head & Kelly, 1978,

p. 41). One college went so far as to avoid granting adjunct instructors tenure by issuing blanket dismissals once per year and then rehiring the same individuals the following semester. In a landmark *Balen* case from 1974, the court ruled that “although the Peralta Community College District routinely dismissed all part-time instructors at the end of the each year, it also routinely re-hired them at the beginning of the next academic year” (Head & Kelly, 1978, p. 42). Thus, the District had created an expectancy of re-employment or job continuity that made them eligible for tenure (Leslie et al., 1982). In the landmark case *Connecticut v State Board of Labor Relations* in 1977, status was created for the due process rights of part-time instructors who taught more than seven and half hours per week. One such protection was the right to belong to a collective bargaining unit (Eliason, 1980). According to Leslie et al. (1982), “Part-timers can establish vested rights to job security and due process; they are not necessarily casual employees who have no rights” (p. 51). They advise institutions of higher education to be sure that policies clearly delineate those faculty members who are eligible for job security and benefits and those who are not. This can be done via state laws, administrative regulations, or institutional policies.

In 1998, the Virginia General Assembly directed the State Council of Higher Education in Virginia to “study policies regarding the use of adjunct faculty at Virginia’s public college and universities” (Naquin, 2001, p. 6). In particular, the Assembly wanted to determine if part-time instructors who taught at two or more state institutions and carried a full-time course load should be eligible for state health and retirement benefits. Despite the potentially litigious situation this created, the Council’s report concluded with a weak recommendation to “pursue with the institutions the possibility of collecting information

from part-time faculty about employment at two or more state or private institutions to allow analysis of ‘full-time’ workload” (p. 6). In order to excuse itself from the need for a stronger response, the Council cited anecdotal evidence suggesting that less than 5% of the state’s part-timers might be teaching a full-time load without appropriate benefits. The lack of a systemic response to the employment of part-time faculty has led to institutional exploitation of part-time instructors.

The American Association of University Professors recommends that part-time faculty be compensated on an equivalent proportional basis to full-time faculty. It also recommends that faculty development opportunities, including advancement and rewards, should be made available to part-time faculty because investing in part-time faculty is just as important as investing in full-time faculty (American Association of University Professors [AAUP], 1997).

Brewster (2000) posits that part-time faculty normally only appear on campus at times when classes are held and have a tendency to be transient to the detriment of students (p. 66). He recommends that part-timers be asked to be included in the decision-making processes of curriculum and college policies. Molly Brand (1998) was the first to highlight this problem stating, “The revolving door of part time faculty prevents students from developing long-term relations with individual faculty members, and faculty from responding to individual student’s needs” (p. vi).

Providing pro-rata benefits and full recognition for the work of part-time faculty could defuse the potential litigious situations created when the institution is unable to rely on the protections of collegiality (Lyons, 2007). Given that part-time faculty numbers often

match or exceed full-time faculty, their opinions should be valued with supplemental pay and welcomed in reference to the governance of the institution. Part-time faculty should have voting status on faculty senates and receive pro-rata compensation. Offering part-time faculty members opportunities for professional development would improve self-esteem and benefit the institution in the long run. In this way the trend of hiring part-time faculty can be reversed and the total campus learning environment improved. At the Coalition of Contingent Academic Labor (COCAL) meeting in San Diego in March 2008, a break away group of part-time activists initially called themselves the National Coalition for Adjunct Equity (Jaschik, 2009). The 18-member founding group wanted a national organization to provide everyday advocacy on behalf of part-time faculty in higher education. By the end of February 2009, the group had decided on “The New Faculty Majority” (Fischman, 2009).

The National Education Association and American Federation of Teachers typically represent full-time faculty at community colleges, while the COCAL only periodically deals with part-time issues during national and regional meetings. A key New Faculty Majority position is that part-time employment status is not temporary, but is operationally permanent. The New Faculty Majority’s mission is to provide a national perspective on part-time issues along with public relations help and research for university, state college, and community college sectors of higher education. Keith Hoeller, co-founder of the Washington Part-Time Faculty Association and one of those involved in New Faculty Majority said, “the two-tiered apartheid system is firmly ensconced in academe. At every turn it advantages the tenure stream faculty, while leaving adjuncts among the seriously disadvantaged” (Fischman, 2009, p. 2).

The strongest criticism of the New Faculty Majority is that they are non-union, and therefore perceived by many to be unable to obtain anything more than professional courtesies. On the other hand, it would be good for part-time faculty in states where unions are not allowed to organize. Co-Chair of the organizing group for The New Faculty Deb Louis wants the help of organized unions, but asserts that there is “too much diversity among the adjuncts across the country to think that a single approach will serve everyone’s needs and situation” (Fischman, 2009, p.1).

The Political Economy of Community Colleges

Political economy has sometimes been defined as the study of economics, politics, and law with the aim of explaining existing relations between different countries. However, it can also be defined as “an interdisciplinary branch of study which combines branches of economics, politics and law in order to understand how political institutions, its environment and capitalism influence each other” (Economy Watch, n.d., p. 1).

Community colleges have sometimes been described as “democracy’s colleges,” largely because they originated in the early 1900s as a proposal by university leaders to serve the burgeoning numbers of high school graduates (Lucey, 2002). The idea for these schools has gradually evolved into multi-purpose institutions for educational achievement ranging from the first two years of the four-year undergraduate degrees, to vocational degrees, certificate programs, developmental courses, and varied continuing education programs. According to the Department of Education, there were more than 1,200 public and private community colleges that were home to 4.9 million credit-seeking students in 1990. By the Fall of 2001 there were 5.9 million students plus an additional 5 million non-

credit-seeking students (NCES, 2004). The credit students encompass 46 percent of all first-year students in community colleges, and 24 percent of these students transfer to four-year colleges and universities. The paradox of this open democratic movement for students in community colleges is that part-time faculty are the largest group of employees on campus, yet they are excluded from the organizational culture and are paid the lowest wages.

The dramatic increase in the use of part-time faculty has created what Gappa and Leslie (1993) refer to as a “false economy.” Community colleges are failing “to account for the burdens that accrue to full-time faculty as more part-timers take on teaching assignments” (p. 13). David Harris (1980) was among the first to highlight “the mythical benefits of the hiring part-time faculty, emphasizing the burden among management for recruitment, evaluation, and retention of active part time faculty” (p. 15). The result is that academic deans and full-time faculty are unable to maintain the institution and also conduct the education process effectively when the number of credit hours taught by part-time faculty reaches a certain percentage. There are many variables that must be taken into consideration, but according to Harris, “it is hard to provide effective management when the total number of credit hours taught by part-time faculty at any given college exceeds 30%” (p. 15).

Levin and colleagues (2006) have carefully analyzed pressures on faculty work that originates outside the institution. The authors frame the subject as the political economy of community colleges: “the impact of the economy, politics, and society on the institution” (p. vii). Levin and his colleagues find the impetus for using part-time faculty opened in the 1980s when the United States and other developed countries moved from an industrial

manufacturing-based, wealth-producing economy towards a service-sector, asset-based economy.

According to Levin and colleagues (2006), “community colleges have especially modeled the rise of part-time workers in business, causing faculty to lose their professionalized role, their identity, and governance roles that qualify their actions” (p. viii). First of all, faculty, whether part-time or full-time, are viewed by the college as “core operators” in a highly interdependent system where faculty work is an extension of institutional goals, power, and identity with county, metropolis, state, and global economic development. Second, faculty who teach in vocational programs at community colleges are especially tied to the political economy. In these two ways, community college faculty are viewed by community college administrations as different from university professors, and therefore, not qualified for the same collective regard as the university professors because they often sponsor capitalistic behaviors, and their roles are defined by those behaviors.

The service sector economy features market globalization and is often referred to as the “post-industrialist age” or the “new economy.” For Aronowitz and DiFazio (1994), the new economy holds benefits in terms of corporate profits, and is defined by the amplified practice of business process outsourcing and heightened reliance on the use of part-time workers. At community colleges, part-time workers have become like “building trades workers, who labor for a month or year at one construction site, only without ever being organized by unions” (p. 75).

Vicki Smith (2001) has found, “the rise in temporary workers in the new economy favors the interests of business, industry, and government” (p. 15). She compared the nature

of temporary workers at three different corporations in the context of labor market reforms, their dynamics of uncertainty, and their risk and opportunity as they combine and play off one another. For Smith, there are two distinct types of part-time labor. One group of temporary laborers, with plenty of options, is valued by the companies and institutions that hire them because of their skill and expertise, as well as their personal networks. The other group comprises those who are without the same skills and abilities. These part-timers have few options, causing them to seek, sometimes in desperation, full-time stable employment with the institution where they are employed. Their predicament is exacerbated by conditions of surplus labor since many can perform their duties.

Part-time faculty have been described by Jacobs (1998) as having the same two-tier groups: one that brings special skills not possessed by regular faculty and who usually work elsewhere full time or are retired, and the other group, who do not have valued skills. Jacobs suggests it is not the traditional use of part-time faculty that is the problem. It is the use of the less skilled group as a convenient and expedient means to lower costs and increase flexibility for community colleges that has grown over the last 40 years.

According to Levin and his colleagues (2006), the problem with using part-time faculty is primarily related to hiring too many of those who teach general education courses, which are principally college transfer courses, such as in the humanities and fine arts, and social and behavioral sciences. Part-time faculty is too often hired without the qualifications of full-time faculty in academic transfer courses as a means to efficiency, flexibility, and control. According to Levin, “those part-timers who possess rare valued skills equal to, or sometimes beyond full-time faculty, teach in the vocational technology areas” (p. 85).

Levin et al. (2006) examined the mean gross salary of full-time faculty compared with the mean gross of part-time faculty inside and outside the college in relation to specific labor markets. The authors found that

part-time faculty made less money than full-time on average, and that teaching transfer subjects in humanities, social sciences, and to a lesser degree those in the physical and natural sciences, had lower combined salaries inside and outside the college than vocational program part timers. (p. 91)

The lower stratum of part-time faculty resembled the “New Economy” temporary labor that Jacobs (1998) predicted. Their argument is that part-time faculty who teach academic transfer courses do not possess highly valued skills, which causes them to be employed as a means for the institution to achieve increased managerial control through economic efficiency and labor force flexibility. Levin and his colleagues (2006) highlight the fact that Vo-tech part-timers are less dependent on the income from colleges because of well paying employment outside of academe. They also had greater job satisfaction than academic transfer part-timers who require college employment to fulfill their need for income and an active professional life. The general trends in employment opportunities since the 1980s favor graduates in vocational technologies and those who have business classes in order to fulfill requirements for entry-level sales and marketing. This has led to a glut of less valued and less skilled workers available to teach part-time in the humanities and social sciences.

Finally, according to Levin and his colleagues, “the push toward academia becoming more bureaucratic is correlative with the increased use of part-time faculty” (2006, p. 47). The interplay between the increased use of part-time faculty, the culture and prerogatives of faculty, and the role of deans in administration represents a key nexus in determining

organizational culture. Shared governance, and where practiced, unionization, make up a key part of faculty professionalization at community colleges. Both would require faculty to develop responses to changes in fiscal status, requirements for accountability, and changes in the organization.

Rhoades (2000) reported significant growth in managerial discretion in a survey of union contracts in place in higher education organizations. Hutcheson (2000) finds that bureaucratization has increased throughout the twentieth century in higher education, and faculty governance and unionization have contributed to the bureaucratic nature of academic organizations. The inexorable shift towards the commodification of higher education represents a distinct external pressure steeped in a capitalist system that systematically reinforces bureaucratization (Barrow, 1990). Little has been written that considers part-time faculty in the overall scheme of organizational culture.

Jencks and Riesman's work in 1968, *The Academic Revolution*, described the trend of full-time faculty orientation away from the institution (faculty and college governance) and more toward the professional discipline. If full-time faculty do not participate in faculty and college governance, it is unlikely they will carry this "message of meaning" for faculty to part-time faculty. This "meaning" of a faculty culture (i.e., faculty and college governance) must be learned. If it is rarely present, it has a tendency to be transient in nature. The ultimate outcome is that part-time faculty will not, or cannot, carry this "meaning" of higher education to their colleagues and students.

Grace Banachowski (1996) notes, "Part-time faculty operate in state of ambiguity because they have no clear perception of their situation" (p. 51). If part-time faculty fail to

develop organizational loyalty, several conditions are likely to occur. First, their presence on campus will occur only in times when they are compensated, which is during class time. Second, they will have a strong tendency to be transient. These two conditions lead to other problems, which Gappa and Leslie (1997) call the “false economies” of using part-time faculty (p. 102). “False economies” are the result of part-time faculty not being on campus to keep office hours, advise students, counsel students, or participate in committee work with their colleagues. While the institution saves dollars on salaries, benefits, offices, phones, and computers, it is losing time and money by having faculty and deans become more responsible for recruiting, hiring, filling out added paperwork, mentoring, supervising, and counseling part-time faculty and their students. This tends to create a full-time faculty that is remiss when it comes to participating in traditional forms of faculty and college governance. According to Gappa and Leslie (1997), full-time faculty and academic deans cannot maintain the institution and also conduct the education process effectively. There is a need to bring the consequences of such unplanned staffing of part-time faculty out in the open in order to more clearly define strategies and operating policies.

In light of Gappa and Leslie’s (1997) assessment, it is important to know if administration believes part-time faculty should have more input into faculty and college governance, if the deans are willing to recommend paying part-timers for their office hours or certain specific expanded duties, and if they are aware that vital college committees are sometimes understaffed or meet less regularly than before. From the perspective of part-time faculty, the organizational culture of the college is seriously impacted by whether or not

part-time faculty feel excluded and marginalized, or satisfied with their positions on campuses and the relative lack of demands for the time their temporary positions bring.

Normally only full-time faculty work with administration when designing curriculum, developing or altering college policies, and undertaking strategic initiatives (Leslie & Gappa, 2002). Administration and faculty at universities and colleges do not expect part-time faculty to perform the same amount and type of service as full-timers because they are few in number, not consistently available, and because institutions were unwilling to pay for expanded faculty governance roles.

Three nationwide studies conducted by the Center of Study for Community Colleges as early as the 1970s recommended part-time faculty be included in the fabric of the institution for the benefit of students (Friedlander, 1980). Since teaching and learning form the core mission of community colleges, and part-timers comprise the majority of teachers on campus, it is detrimental to student learning if administration and full-time faculty fail to solicit part-timers for participation in all aspects of the teaching-learning cycle of the working environment (Burnstad, 2002). The crux of the argument is that part-time faculty as a whole could be offering students the same quality of education as full-time faculty if they received comparable remuneration when volunteering for opportunities to participate in faculty governance: attending conferences, assisting in updating current courses, designing new courses, and attending teaching/learning based in-services.

Friedlander's (1980) review of studies comparing full-time and part-time faculty concluded that the way part-time faculty were being used detracted from the overall quality of the institution. He and others who have analyzed this debate were quick not to denigrate

the contributions of part-time faculty in helping the quality of educational programs. Instead, they accused institutions of both ignoring and exploiting part-timers' needs and interests in the spirit of shared governance.

James J. Duderstadt (2004), the former President of Michigan University, asserts that the most outspoken critics of faculty governance come from within the faculty.

Those elected to faculty governance often seem interested in asserting power and influence only on matters of personal interests such as compensation...it has been difficult to get faculty to focus on those areas clearly within their unique competence such as curriculum development, student learning, academic values, and ethics. Little wonder that most active faculty members are reluctant to become involved in the tedious committees and commission generated by shared governance. (2004, p. 145)

While Duderstadt (2004) is referring to conditions at universities, the same may be said for community colleges. It should not be surprising that Duderstadt perceives a lack of regard by faculty for their traditional areas of expertise. In order for faculty to protect their substantive voice in matters pertaining to knowledge production, some must choose to have a sustained voice to preserve the internal status quo of tenure and academic freedom and the economic standards of their livelihood, while the majority focus on the classroom or research. What has been overlooked as educators speed up our revolution around forces favoring the commodification of higher education is that fewer full-time faculty means less capacity for accomplishing goals of protecting traditional faculty governance, upgrading curriculum, and maintaining the responsibilities of teaching or research. The juggling act of rotating faculty into the roles of faculty governance has been made more difficult by the increasing ratio of part-time to full-time and the fact that the former do not participate in faculty governance or college governance.

All stakeholders believe they deserve more power, but the notion that power is shared more or less equally among all potential decision makers, is misleading. Most members of the university understand that the principle of shared governance rests upon the delegation of authority to the faculty in academic matters and to the administration in operational management, but the devil is in the details of these roles and responsibilities, and the impact of fewer and fewer full-time faculty to offset traditional power relations.

Duderstadt (2004) acknowledges where power imbalances threaten faculty quality but divert the root of the problem.

When the faculty senate loses the capacity to attract the participation of distinguished faculty members, or when a series of poor appointments at the levels of deans or executive officers weakens the administration, a governing board with a strong political agenda can move into the power vacuum. Of course, there also have been numerous examples of the other extreme, in which a weakened governing board caved into unrealistic faculty demands, for example, replacing merit salary programs with cost of living adjustments or extending faculty voting privilege to part-time teaching staff in such a way as to threaten faculty quality. (Duderstadt, 2004, p. 153)

Duderstadt's assertion is that extending part-time faculty voting privilege threatens "faculty quality" in terms of the university affording more "higher quality" full-time faculty.

However, it can be argued that it is not increasing the voting power or input of part-time faculty that threatens learning, but rather a matter of administrative decision-making about budget prioritization that recognizes the significance of a collectively larger and more stable work force of full-timers that has the greatest facility for moving an institution forward.

There is at best a dual authority in higher education: Faculty are said to control curriculum and academic policy, but faculty governance has been undermined by roughly half of all courses being taught by part-timers. It is administration that has the "final say" in hiring of full-time faculty, and the dominant argument posited is that more full-timers are

unaffordable. Duderstadt warns full-timers about the dangers of including part-timers in decision making while at the same time wanting to maintain a high percentage of part-timers. Duderstadt's (2004) interpretation reflects conditions on many community college campuses where part-timers are precluded by administration from participation in decision-making processes.

The most ignored sphere of the triumvirate of education, that includes teaching, research, and collegiality, is shared governance. Colleges are perhaps the last bastions of important "face to face" self-governing communities that now find half the professoriate left behind. The chambers of self-governance are departmental committees, senates, and faculty associations that comprise the essential arenas of faculty work outside teaching. Participation in these is a natural extension of the professors' responsibilities in the classroom and laboratory, for only faculty know how to do the institution's core task of teaching and only they can provide for proper conditions and evaluation. Faculty governance is at the heart of academic freedom.

Stanley Aronowitz (2000) has said that an essential part of the work of faculty is retaining "as a collectivity...sovereignty over the educational process" by participating in these governance bodies (p. 65). Faculty is the last in a society with only a modicum of what can be called "workers' control." It is antithetical to the historical tradition of higher education to become dominated by an educational ideology that proffers the exclusion of part-time faculty.

According to Hastings Rashdall (1936), the university originated as a community of masters and scholars, and this was part of its genius as an institution. It was recognized as a

community that made every attempt to include all faculty, part-time or not, in order to precipitate vital ongoing debates associated with collective inquiry, respecting evidence, admitting error, and being able to reexamine one's own assumptions. With C. Wright Mills' (1956) keen insight, "It is a precondition for learning the skills of controversy with oneself, which we call thinking; and with others, which we call debate" (p. 318).

David Bollier (2003) has found, "The university was a knowledge commons, a realm entrusted to citizens and scholars by previous generations in which the discoveries of the ages were accessible to all, and knowledge was shared...this practice was a gift economy, not a market economy" (p. 147). Collegiality is the distinctive historical trait of higher education still with us when an immunologist makes discoveries regarding the mechanisms of T-cell interactions, or a sociologist clarifies a new dimension of racism, or a student resolves a classroom controversy. Everyone wins with collegiality in contrast to how things work in the zero sum game marketplace of a two-tier faculty system. Faculty is held accountable to the standards of a profession developed over the centuries, to their peers, especially during the tenure process, and to the larger world of scholarship. It is not a complete autonomy but rather a professional autonomy within specialized standards and traditions that must move to once again involve the entire profession, and in this way, improve education as a whole.

The National Education Association has been a vociferous critic of community college use of part-time faculty. Researchers at the NEA contend that adverse practices and patterns at community colleges across the United States include "excessive use of part time faculty, misuses of temporary contracts and renewable rolling contracts, overly long

probationary periods, and tenure quotas” (NEA, 2007). These practices are seen as a threat to the faculty profession as a whole and therefore undermine academic and intellectual freedom, tenure, governance, and educational quality. From their NEA Policy Statement on this subject, “Academic and Intellectual Freedom and Tenure in Higher Education,” “Faculty who are subjected to lengthy or continuous probationary status are less likely than ever to exercise freely their rights as citizens.” The NEA has issued a challenge to administration to remove arbitrary limits on the percentage of tenured faculty in order to seek and maintain academic excellence.

Since 2004 there has been a concerted legislative attack on intellectual freedom in higher education. Versions of an “Academic Bill of Rights” have been proposed in 28 states in order to require colleges and universities to report their steps in promoting intellectual diversity. These bills have failed in large measure due to Free Exchange on Campus (FEOC), a coalition of vigilant higher education labor representatives working assiduously to educate state and federal legislatures about the improprieties of the Academic Bill of Rights. These “bill of rights” contain language that “requires curricula and reading lists” in the humanities and social sciences to provide dissenting sources and viewpoints. They also called for academic institutions and professional societies to “maintain a posture of organizational neutrality with respect to the substantive disagreements” that divide researchers on questions within, or outside, their field of inquiry. What has often been left out of the equation is that community college education would suffer irrevocably were this type of legislation to be imposed, since the “teaching majority” would be untenured part-time faculty left incapable of contesting this form of government thought control.

The National Education Association supports a position articulated by Robert Post (2009): “Any policy, legislation, or group within an institution that imposes any standard that does not reflect the professional judgment of scholars, but instead advances a specifically political principle of neutrality, is in violation of academic freedom” (p. 90). The concept of academic freedom, according to Joan Scott (1996), is not seen as static, but one in which the faculty both limit and make possible, by articulating, contesting, and revising the rules of such pursuits, the standards by which intellectual debate and outcomes will be judged. The NEA has called for a renewed commitment to the foundations of academic freedom grounded in the professional standards of the disciplines. They emphasize the 1940 *Statement of Principles on Academic Freedom and Tenure*, formulated by the Association of American Colleges and Universities and the American Association of University Professors, which says that all members of the faculty, which includes part-timers, are entitled to protection against discrimination on a basis not demonstrably related to the faculty member’s professional performance (AAUP, 2006).

It is, therefore, a paradox for administration to advocate the importance of faculty commitment to professional development, community service, assisting with student advising, or working toward optimizing student learning, while continuing to hire part-time faculty at often excessive levels. The administration of community colleges, which traditionally managed college facilities and financial aid, have in some cases tended to control decisions surrounding course curriculum and academic policies in no small measure based on the number and manner in which they control the hiring of part-time faculty. Faculty governance is in a pinch flanked by an administration on one side moving toward a

more bureaucratic form of domination over faculty governance and the increasing presence of part-timers unfamiliar or blocked from the process of governance. This leaves fewer and fewer full-time faculty to keep the pace of faculty and college governance responsibilities.

The Impact of Part-Time Faculty on Student Retention

As stated in Chapter 1, there have been two published studies on the impact of part-time faculty on student retention, and neither of the published studies involve community colleges. A statistical model for institutions that includes the impact of part-time faculty on student retention has not been established. The impact of part-time faculty on student retention falls under the heading of institutional experiences of the student: academic integration and social interaction as found in previous studies on retention at community colleges (Bean & Metzner 1985; Pascarella & Chapman 1983; Stahl & Pavel, 1992).

National data provide information about how the student interprets their experience with the college in terms of their satisfaction with the faculty's ability to teach, campus diversity, advising, how often they are available, remediation, group study, social interaction with faculty, and frequency of attending lectures. The literature clearly reveals differences between part-time and full-time faculty that could indeed weigh on these observations by students. Traditional national studies on student success or retention unfortunately do not customarily incorporate differences in exposure by students to part-time and full-time faculty.

The introduction of Tinto's (1975, 1993) theoretical model to explain student attrition from the university prior to graduation involved creation of the first comprehensive set of demographic, cognitive, psycho-social, and institutional factors drawn from previous

social science and persistence research. The most well known set of variables designed for studying retention in community colleges were developed by Pascarella and Chapman (1983), Bean and Metzner (1985), and Stahl and Pavel (1992). These studies compared student social and academic integration in community colleges with first-time degree-seeking students using regression analysis but did not include part-time as opposed to full-time faculty.

One argument playing out in the literature is that increasing levels of first semester exposure to part-time faculty decreases the chance for retention in later semesters of college. Charles Harrington and Timothy Schibik (2001) were the first to examine student retention in the context of faculty status at a comprehensive Midwestern university. In order to determine the degree to which 7,174 first-time full-time freshman were exposed to part-time faculty, the authors created six part-time exposure groups based on the percentage number of courses to which first-time full-time students were exposed during the first semester. These exposure groups were then used to make Pearson correlations with retention. The authors found that when academic preparation and gender variables were held constant, students who took 76-100% of their courses from part-time faculty were 1.47 times more likely not to be retained than the 0-25% part-time faculty exposure group. The authors concluded that exposure to part-time faculty at levels above 50% held “a direct and significant negative impact on student retention into the second semester.” While one-to-one comparisons were made with gender, ethnicity, age, credit hours enrolled, student residency status, and several different high school skill measures scores, modern methods of statistical

analysis between and within categorical variables using logistic regression analysis were not employed.

Sharron Ronco and John Cahill (2004) similarly studied the linkage between faculty status and retention at a public research-intensive university. Their study examined 3,787 students at a public research-intensive university. Ronco and Cahill utilized all degree-seeking first-time students which included part-time students. The authors found a 14% point drop in retention in the second-year Fall semester for students with more than 75% of their credit hours from adjuncts or graduate teaching assistants. They found that including part-time student exposure to credit hours created a statistical artifact in the six percentage exposure part-time faculty groups. Studies by Harrington and Schibik (2001) and Ronco and Cahill (2004) recommended monitoring and limiting the number of courses taken with part-time faculty in order to ensure adequate exposure to full-time faculty members.

The American Association of Community Colleges completed a study in 2000 indicating that over 65% of faculty teaching developmental courses were part-time (Shults, 2000). To date there have not been any national studies conducted showing differences in overall student learning outcomes at community colleges depending on percentage use of part-time faculty. Differences in learning outcomes did, however, appear in a study conducted at Texas colleges and universities. Boylan and Saxon (1998) found that in institutions where 70%, or more of the developmental courses were taught by adjunct faculty, unacceptably low pass rates in developmental courses were commonly exhibited. They also discovered that institutions with the highest percentages of adjuncts teaching developmental courses had the lowest post-developmental education pass rates on the state-

mandated outcomes test. The authors showed that the best programs in the state for developmental education resisted over-reliance on adjuncts and that colleges having fewer than 50% of part-time faculty teaching developmental courses had the highest pass rates on the state-mandated outcomes test. These same institutions employed best practice programs for adjuncts. The key to best practices for adjuncts was complete immersion and integration into the department and with other faculty teaching developmental courses (Boylan, 2002).

This study made every attempt to look at some of the key variables suited to the institution being investigated and employed logistic regression analysis to determine effects between and within all independent variables in relation to student exposure to part-time faculty.

CHAPTER 3

METHODOLOGY

As mentioned in Chapter 1, this study examined the impact of using part-time faculty on full-time first-time student (FTFTS) retention at a typical middle-sized urban community college, Kansas City Kansas Community College. This chapter provides several sections to familiarize the reader with the specific research questions and hypotheses that guided the analysis and interpretation of results, the construction of variables, and descriptions of the procedures used to test hypotheses in order to answer the research questions. This study used a similar methodological approach and purpose as Harrington and Schibik (2001) and Ronco and Cahill's (2004) examination of student retention in terms of correlations between six percentage exposure groups to part-time faculty.

The starting point for all FTFTS in this study was Fall semesters of 2003, 2004, 2005, and 2006 at KCKCC. The percentage exposure to part-time faculty for all FTFTS in all starting Fall semesters was determined. A total of 1,831 FTFTS were examined in the final statistical analysis of this study for all four academic years. The following were key differences from previous studies on retention:

1. The study took place at a community college;
2. Graduation rates were not used;
3. A new independent variable highly pertinent to background characteristics of the student was added in the form of developmental versus non-developmental learner status, and

4. The formation of six percentage groups of part-time faculty and individual percentage groups of exposure were assessed for statistical significance and incorporation into model building.

Setting

The setting for this study was a medium-sized urban community college, Kansas City Kansas Community College. The college is a member of the North Central Association and is accredited by the Higher Learning Commission. The college was established nearly 80 years ago within the heart of the downtown area. In the 1960s KCKCC moved to the western edge of city housing developments. The college is still surrounded by a heavy concentration of housing with some business development. It is located a short bus ride from the downtown area of Kansas City, Kansas. The campus serves Wyandotte County, which encompasses Kansas City, Kansas and the additional surrounding rural areas. KCKCC has a small satellite campus serving Leavenworth County. The community college serves nearly 210,000 residents. Sixty-five percent of college funding comes from the local Wyandotte County tax base (KCKCC, 2009a).

According to the *KCKCC 2004-2009 College Fact Book*, the student head count was 5,757 for the 2006-07 academic year. Many students at KCKCC are seeking Associate Degrees in General Studies, Applied Science, Humanities, or Science in order to improve their chances for employment. Roughly 30% of all students indicate they are transferring to a college or university to continue their education. The FTFTS in this study comprise 8.8% of the entire student body at KCKCC during all the fall semesters from 2003 to 2006 (KCKCC, 2009a).

Among all students at KCKCC, students classified themselves as White (60%), Black (24%), and Hispanic (6.4%) (KCKCC, 2009a). Another 9.6% classified themselves as Asian/Pacific, Native American, Multiracial, or Unknown. Most of the students are between the ages of 19-24; however, the average age is 26 years. Sixty-two percent of all students at KCKCC are female. Roughly 90 percent of all students require enrollment in developmental math classes, and nearly 45 percent require development reading based on Accuplacer placement test scores (KCKCC, 2009a).

The graduation rates of students at KCKCC have dropped precipitously during the four years being examined in this study. A change in the Associate of Science degree requirements in 2000 negatively affected the two-year FTFTS graduation rate from 14.5% in 2001-02 to 4.08% in 2005-06 (KCKCC, 2009a). The problem was corrected in the summer of 2007. Based on the formula of the Community College Faculty Survey of Student Engagement Benchmark Project (CCSSE, 2007), student retention is “the percentage of all students retained who return and enroll for the following spring or next fall semester minus the number of graduates.” Since students do not graduate from KCKCC in one or even two semesters, retention rate assessed by the method used in this study is not affected by graduation rate.

The majority of students are in vocational technology degree programs designed to enter the work force at the assistantship level in fields such as Forensic Science, Mortuary Science, Nursing, Respiratory Therapy, Physical Therapy, Emergency Medical Training Program, Computer Information Systems, Music Technology, Drafting, Addiction Counseling, Early Childhood, Paralegal, Journalism, Fire Science, and Hazardous Materials.

The mission and purpose of the college is to provide a versatile educational approach for all students, continuing education programs, and wellness programs in order to fit the diverse needs of the community population. According to the college administration, this means all faculty need to be up to date, versatile, and well educated in their field to keep up with the many changes in careers and society.

KCKCC has participated over the past four years in the National Community College Benchmark Project. The benchmarks incorporate results from the Noel Levitz Inventory and the Community College Faculty Survey of Student Engagement (CCSSE, 2007). According to the *KCKCC Center for Research and Community Development Executive Report* from November of 2007, the project “collects and compiles information from 176 community colleges using uniform definition to measure a wide variety of characteristics” (KCKCC, 2007, p. 2). One of the great strengths of the college in 2007, compared to nine other peer schools, was a “14.3 ratio of students to faculty and an average section size of 14.9” (p. 2). According to the report, its greatest weakness compared to its peer institutions was an online withdrawal rate of 28% and an overall withdrawal rate of 20%. According to the student survey portion of the benchmark project, KCKCC was slightly above its cohort group of 136 medium-sized colleges in active and collaborative learning, student-faculty interaction, and support for learners. KCKCC was slightly lower than their cohort group in student effort and academic challenge (KCKCC, 2007).

KCKCC was well above average, and not in a good way, in terms of total credit hours being taught by part-time faculty in 2007. The college finished higher than 73% of the 176 participating community colleges in the National Benchmark Project (KCKCC, 2007).

The percentage of credit hours taught by part-time faculty was 53.76% in 2007. When compared to nine other urban peer institutions in the benchmark study, KCKCC had the second highest percentage of part-time faculty (personal communication).

Table 2 contains data from the KCKCC-CRCD Report (October 2008) comparing part-time and full-time faculty employment statistics over five decades. (Permission to obtain this data is shown in Appendix A). The data reveal a dramatic increase in the percentage of part-time faculty from 1966 (11.2%) to 2006 (70.9%). It also shows that the percentage and number of credit hours taught by part-timers has held steady at nearly 49% during the four years of retention data used to complete this study (2003-2006).

Table 2

History of Part-Time and Full-Time Faculty Employment and Credit Hour Percentages at KCKCC

AY	FTF	PTF	% FT	% PT	% FT-CrHrs	% PT-CrHrs
1966-67	43	6	87.8%	11.2%	na	na
1980-81	84	69	54.9%	45.1%	76%	24%
1990-91	109	216	33.5%	66.5%	59.51%	40.49%
2000-01	117	262	30.8%	69.2%	55.13%	44.87%
2003-04	121	320	27.4%	72.6%	51.09%	48.91%
2004-05	119	311	27.6%	72.4%	50.14%	49.86%
2005-06	121	298	28.9%	71.1%	51.14%	48.86%
2006-07	124	302	29.1%	70.9%	51.82%	48.18%

(KCKCC, 2008)

There are extraordinary differences in benefits for full-time versus part-time faculty status at KCKCC. The average salary of a full-time teaching position at the college, not

including overload or summer pay, was \$56,800 for academic year 2006-2007. This figure represents one of the highest average faculty salaries at any community college in the state in 2007. The starting salary in 2006-07 for part-time faculty was also in the upper echelon in the state, averaging \$750 per credit hour for a total annual salary of \$15,000 per year if teaching the maximum of ten credit hours per semester excluding summer. Full-time faculty receive many financial and working condition benefits compared to part-time faculty: their preference of course selections before part-time faculty for teaching overload and summer credit hours, health and retirement plan benefits, community affairs leave, emergency leave, professional leave, maternity leave, sabbatical leave, grievance procedure, early retirement, and the legal protections of tenure after three years of full-time teaching. None of these options exist under the auspices of part-time teaching status.

A new policy governing part-time teachers was mutually agreed upon by full-time faculty and administration in 2005.

For program and curriculum needs the ten credit hour limit for adjuncts is waived once per semester for each instructional division and once per semester for the Provost. If these exceptions occur in the same area for three semesters within two academic years, the position shall convert automatically to a full-time position covered under the Master Contract. (KCKCC, 2009b, p. 25)

Since there are five instructional deans and one provost, a total of six part-time faculty per semester may be designated “Interim Employee” if they teach 11 and 12 credit hours and they receive a rate of pay one-third the appropriate step and class in the 9 months salary schedule. If teaching 13 credit hours or more, the “Interim Employee” rate of pay is one-half the appropriate class and step. This unique “Interim Employee” status does not guarantee continuing contract compensatory benefits or the promise of tenure after any three

semester period of full-time employment. Since the inception of this agreement, no new faculty positions have been converted into full-time positions. After skipping one semester, the clause then can be used again with the same or a different instructor in the same position. The “Interim Employee” is most likely to be the type of faculty most desirous of seeing their position converted to a full-time faculty position. This contractual agreement between administration and full-time faculty represents a new trend in the use of part-time faculty. In this study, the “Interim Employee” is counted as part-time faculty.

At KCKCC, like most other community colleges, part-time faculty rarely have input for determining salary and working conditions and have never been eligible for health, dental, or insurance benefits. It is suspected that part-timers are interested in having more input into decisions about these issues, but the two faculty groups rarely discuss inclusion in the full-time bargaining unit. The paradox is that when full-time faculty negotiate working conditions, compensation, and benefits with the college, the administration and staff historically have received the same, or nearly the same, pro rata increases to the benefits package, but not the part-time faculty who are engaged in the same teaching responsibilities. The lowest class employee group, then, in terms of salary and benefits in relation to work responsibility, are part-time faculty.

As stated previously, community colleges in Kansas receive the majority of their funding from local taxes (65%), based on a local mill levy. It is important to note that community colleges are not as susceptible financially to cuts in state funding as primary and secondary public schools or universities. The taxpayers of the county have provided a tremendous boost to KCKCC’s revenues derived from the boom in local economy since

2000 (KCKCC, 2009a). For this reason, an argument can be made that continuing the widespread use of part-time faculty is unjustifiable.

The entire population of first-time full-time students (FTFTS) was selected for this study in part due to the fact that they are already a distinctly categorized statistical group by the Center for Research and Community Development at KCKCC. Since full-time students are more likely to be retained than part-time students (O'Toole, 2003), factors leading to retention in this group produce preferential indication of student success. Furthermore, use of full-time students provides less chance for skewing statistical data and creating statistical artifact when it comes to examining the six percentage exposure groups to part-time faculty. Previous studies developed percentage student exposure groups to faculty type based on the number of courses in which a student was enrolled. This study used percentage credit hours in order to create a more statistically accurate index for student exposure. The first semester gatekeeper courses are the most impressionable for college students in terms of setting the foundational appreciation and success for higher education teaching and learning.

The ultimate goal of this study was to find a parsimonious method for calculating specifically the impact of part-time teachers on student retention. Most colleges scrutinize the number of part-time faculty compared to full-time faculty and the number of credit hours taught by these two faculty types. However, it would be tremendously beneficial if these institutions would examine the mean average exposure of students to part-time faculty in each academic year, and correlate this with retention. The most appropriate group of students for such a litmus test would be the first-time full-time students since the literature suggests they are the most affected by exposure to faculty type on a variety of levels. On an

even more meaningful level, it would be useful for colleges to control for a range of other parameters that influence student retention found in the literature and determine if increasing exposure to part-time faculty decreases the likelihood of retention to the Spring and next Fall semesters of one academic year, and over a period of several years using logistic regression analysis.

Research Questions

This investigation focused upon five research questions to be answered using five stepwise conditional logistic regression analysis models:

1. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semesters for Academic Year 2003?
2. What independent variables predict the likelihood of students not being retained to the Spring and next Fall semesters for Academic Year 2004?
3. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semester for Academic Year 2005?
4. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semesters in the Academic Year 2006?
5. What independent variables predict the likelihood of FTFTS not being retained to the Spring and next Fall semesters in all four academic years combined?

Research Design

This study was retrospective, as archival data were collected and each student coded in cooperation with the Center for Research and Community Development at KCKCC on all

FTFTS who attended the college from the Fall of 2003 to the first day of Spring semester 2007. The dependent variable was retention of FTFTS from Fall to Spring, and Fall to next Fall, for each academic year and for all four years combined.

The Statistical Package for Social Science (SPSS-17) was used to conduct all the statistical analysis of this study. The first step of this multi-step research method for model building was a univariable analysis of six independent variables for first-time full-time students: (a) exposure to part-time faculty, (b) ethnicity, (c) gender, (d) degree seeking status, (e) developmental or non-developmental learner status, and (f) number of credit hours enrolled during the first semester. In this step, descriptive data were obtained consisting of frequency and percentage analysis. A Pearson correlation was performed to determine significance of each of the independent variables. The results of *t*-tests and ANOVA were also used to obtain means, standard deviations, and significance statistics for each independent variable.

The second step in the process of model building used binary logistic regression of each academic year in order to assess the six independent variables with the dichotomous dependent variable, retention, to the respective Spring, and next Fall semester. Four models, one for each academic year, were used to answer Research Questions 1-4. The final step involved checking for interactions and assessing the fit of four models for each year. Model 5 answered Research Question 5 using logistic regression. Two logistic regressions were used to determine what independent variables predicted the likelihood of student retention to the Spring and next Fall semester for all academic years combined.

Data Collection: Variables and their Measurement

Raw data were gathered in cooperation with the Dean of Institutional Services at the Center for Research and Community Development at KCKCC and the University of Missouri at Kansas City Office for Human Research Protections. The initial database held 2,030 student records based on Fall enrollment from 2003-2006 on Microsoft Excel spreadsheets. All student names were protected with a numerical code not decipherable by the investigator. Next to the name code were the courses and semester in which the student was enrolled, whether the course was developmental or not, the total credit hours for that semester, whether the student was seeking a degree, ethnicity, gender, retention in the Spring, retention to the next Fall, and whether the instructor was part-time or full-time. The investigator accessed each of the student's individual electronic records to retrieve the data and then downloaded the data file for use in SPSS.

A total of 56 students were eliminated from the initial total 2,030 FTFTS sample available in the college records, leaving a total of 1,974 students. In this "data cleaning step," it was observed that 24 students did not list their gender, 31 students were listed as "professor undetermined" for at least one of their classes, and one student somehow managed to enroll in 30 credit hours in violation of college policy.

With SPSS-17, oversampling can lead to distortion without proper consideration of sample design in terms of underestimating standard error. Therefore, 143 more statistical outliers were next removed from this 1,974 FTFTS sample by virtue of being more than two standard deviations away from the mean for logistic regression models. The statistical outliers consisted of odd mixtures of statistical deviations located in each of the six

independent variables. In this way, noise was reduced from the regressions and measures of effect size were optimized (Nagelkerke R^2). The final sample was 1,831 FTFTS to be used all three steps of model building for this study.

In the first step of the study, all 1,831 FTFTS in each academic year from 2003-2006 were analyzed for frequency and percentages within each independent variable and in each academic year. The second part of the first step was then to run Pearson correlations, *t*-tests and ANOVA on all six independent variables with retention to the Spring and next Fall semesters in order to determine significance with retention. ANOVA (The Analysis of Variance Test) was used on the categorical variables, while *t*-tests were used on dichotomous and continuous variables in order to establish means and standard deviations.

Dependent Variable

Student retention. With SPSS the 1,831 students were coded as retained (1 = Yes) if they were enrolled in one class by the first day of class in the Spring or next Fall semester. FTFTS were coded as (0 = No) if they were not enrolled in at least one class. In this study, so-called “stop outs” in the Spring were counted as retained in the next Fall semester if they returned. There were a total of 51 students that did not return in the Spring semester but did return for the next Fall semester.

Independent Variables

Exposure to part-time faculty. Each course for each FTFTS was converted to numerical variables in SPSS: No = 0 taught by full-time faculty, Yes = 1 taught by part-time faculty. Typically FTFTS are enrolled in four or five classes unless a science or math class is

involved, in which case 12 credit hours could be achieved with as few as three classes. Part-time faculty is listed in student records as “adjunct” or “staff.” Designation of full-time faculty status is shown as “full-time” in college records. Ratio level data analysis provided mean number of credit hours, the minimum and maximum number of credit hours, standard deviation, and the percentage of all credit hours for all students enrolled in Fall classes with part-time faculty for starting Fall semesters of academic years 2003, 2004, 2005, and 2006.

Individual percentage exposure to part-time faculty with retention was a continuous variable and analyzed as 0 = no, and 1 = yes. However, in two previous case studies on this topic, all FTFTS were first categorized into six part-time faculty exposure groups based on percentage of credit hour exposure to part-time faculty in the first semester of their first Fall semester at KCKCC: 0%; 1-25%; 26-50%; 51-75%; 76-99% and 100% (Harrington & Schibik, 2001; Ronco & Cahill, 2004). Therefore, part-time faculty were analyzed using individual percentage exposure to part-time faculty, and with percentage groups of part-time faculty. When conducting Pearson correlations, the five percentage groups of part-time faculty were coded one through five and then double classified with retention as 0 = no and 1 = yes.

Developmental or non-developmental learning status. Individual scores on the Accuplacer placement tests with a raw score of 75 or below dictates the student is to be enrolled in developmental reading or writing. Developmental classes in college records are READ 091, READ 092 and ENGL 099. All other classes are assigned non-developmental status (0 = not developmental, 1 = developmental). After obtaining descriptive frequency and percentage statistics for these two groups, means, standard deviation, *t* values were

calculated for all 1,831 students in order to determine if there was any significance between retention (0 = no; 1 = yes) in the Spring or next Fall semester and enrollment in developmental FTFTS in English or reading.

Ethnicity. College records indicate that students checked one of eight possible ethnic groups. These were numerically coded: American Indian/Eskimo (1), Asian/Pacific Islander (2), African-American (3), Hispanic (4), International (5), Multi-Racial (6), Unknown (7), or White (8). A descriptive demographic analysis was made on the ethnicity of all FTFTS. Means, standard deviations, and ANOVA were performed to determine if there was a significant relationship between ethnicity and retention (0 = no; 1 = yes) to the Spring and next Fall semesters for all FTFTS.

Gender. The selected codes for gender were 0 = male, and 1 = female. A descriptive demographic analysis was conducted on gender of all students and then means testing, standard deviation, and *t* values were calculated in order to determine if there was a significant relationship involving gender and retention (0 = no; 1 = yes) in the Spring and next Fall semesters for all FTFTS.

Total credit hours. The difference between FTFTS retained (1 = Yes) and not retained (0 = No) were analyzed in terms of two established means for total credit hours. Descriptive demographic analysis of all FTFTS was performed to determine how many credit hours each student had been enrolled. Means, standard deviations, and *t* values were ascertained in order to obtain the significance of retention with total credit hours in the Spring and Fall semesters.

Degree seeking. The difference between FTFTS seeking a degree (1 = Yes) and not seeking a degree (0 = No) was analyzed in terms of whether students checked plans for seeking an associate's degree in General Studies, Applied Science, Science, or the Arts during their first semester enrollment. A descriptive demographic analysis was performed along with means, standard deviations, and *t* values in order to ascertain the significance of degree seeking status with retention (0 = no, 1 = yes) during the Spring and next Fall semesters with retention.

Data Analysis

The Statistical Package for the Social Sciences (SPSS-17) was employed to perform all descriptive, inferential, and logistic regression analyses. This program was used to describe the samples and identify relationships among independent variables and the dependent variable. Prior to analysis, data were screened for missing data, univariate normality, outliers, and multivariate outliers. These procedures allow the researcher to check for data entry errors and to identify independent variables that were too highly inter-correlated (Yin, 1994).

Statistical Methods

The first step in the multi-step process for model building was to use SPSS is to code no = 0 or yes = 1 retained for all the dichotomous variables and 1, 2, 3 to completion for categorical and continuous variables like ethnicity. Frequency analysis was made in order to obtain vital descriptive statistics of each independent variables, Pearson correlations, *t*-tests, and ANOVA were used to arrive at means, standard deviations, and significance. A total of

Table 3

Variable Coding Summary for All Models

Variable	Name	Retention Coding	Reference Criterion
Individual Percentage		0 = no	Continuous Reference
Part-Time Faculty		1 = yes	
Total Credit Hours		0 = no	Continuous
Reference		1 = yes	
Gender	Male (0)	0 = no 1 = yes	Compared to Female
	Female (1)	0 = no 1 = yes	Compared to Male
Developmental	Developmental	0 = no 1 = yes	Compared to Non-Develop.
	Non-Developmental	0 = no 1 = yes	Compared to Developmental
Degree Seeking	Non-Degree Seeking	0 = no 1 = yes	Compared to degree seeking
	Degree Seeking	0 = no	Compared to non-degree seeking
Ethnicity	American Ind/Alaskan	0 = no 1 = yes	Compared to Other Ethnicities
	Asian/Pacific Isles	0 = no 1 = yes	Compared to Other Ethnicities
	African-American	0 = no 1 = yes	Compared to Other Ethnicities
	Hispanic	0 = no 1 = yes	Compared to Other Ethnicities
	International	0 = no 1 = yes	Compared to Other Ethnicities
	Multiracial	0 = no 1 = yes	Compared to Other Ethnicities
	Unknown	0 = no 1 = yes	Compared to Other Ethnicities
	White	0 = no 1 = yes	Compared to Other Ethnicities

(table continues)

Variable	Name	Retention Coding	Reference Criterion
Percentage Part-Time Groups	0%	0 = no 1 = yes	Compared to Other % Groups
	1-25%	0 = no 1 = yes	Compared to Other % Groups
	26-50%	0 = no 1 = yes	Compared to Other % Groups
	51-75%	0 = no 1 = yes	Compared to Other % Groups
	76-99%	0 = no 1 = yes	Compared to Other % Groups
	100%	0 = no 1 = yes	Compared to Other % Group

1,831 FTFTS were used in the first step of model building to arrive at the univariable one-to-one correlative statistical information with retention.

A critical result in the first step of model building was the observation that ANOVA for the six percentage groups of part-time faculty did not hold statistical significance with retention in the Spring or next Fall semesters. On the other hand, significance was demonstrated when a *t*-test was performed on individual percentages of part-time faculty with retention to the next Fall semester. Therefore, individual percentage of part-time faculty, and not groups, was used in the second and third step of model building.

Binary logistic regression is used when the dependent variable is dichotomous such as retained to the next semester, or not, and when multivariate normality is lacking. Models for estimating probability that an event occurs are developed through logistic regression

(Yin, 1994). Beeson and Kissling (2001) have demonstrated the usefulness of logistic regression for estimating probable occurrence of an event.

Stepwise forward conditional logistic regression identifies and only includes those predictors with the likelihood of either increasing or decreasing the chance of retention. Based on beta weight scores, it is possible to determine the importance of the predictors in the models and thereby compare different independent variables. The five models were compared with each other based on the R^2 score which measures effect size. Nagelkerke's R^2 score is part of the SPSS output in the "Model Summary" used to determine the percent of variance in the dependent variable. Logistic regression explains the independents, ranks the relative importance of independents, assesses interaction effects, and helps explain the impact of covariate control variables (Polit, 1996).

For the categorical variable ethnicity, a default category is automatically created with SPSS stepwise conditional regressions. The coding for ethnicity is in alphabetical order: 1 = American Indian, 2 = Asian, 3= African-American, 4 = Hispanic, 5 = International, 6 = Multiracial, 7 = Unknown, and 8 = White. Therefore, White ethnicity was the default reference category. The so-called "dummy variable" in this case was White ethnicity and the number shown in the β score if positive refers to the change in log odds when White is present and when removed. White is present in all regressions for ethnicity even though 8 = White does not show in the results.

Two stepwise conditional logistic regressions were performed in each Model of investigation, one for retention to the Spring semester, and the other to the next Fall semester for each academic year: Model 1 for 2003; Model 2 for 2004; Model 3 for 2005,

Model 4 for 2006, and Model 5, the final step, for all years combined. In this way, results from the four academic years of the study could be checked for interactions and assessment of fit with the final model. The predictor variable for each of the analyses was any variable found to differentiate between being retained and not retained.

CHAPTER 4

RESULTS

As shown in the literature review, research indicates that hiring part-time faculty at community colleges is excessive and detrimental to the overall learning environment. This study examined the impact of part-time faculty on student retention, specifically, the percentage of exposure to part-time faculty, and the impact on retention of first-time full-time students. These results could be misleading if generalized to other community colleges.

A working definition of who is to be included under the critical variable of part-time and full-time faculty is central to any retention study utilizing this parameter. As highlighted in the definition of terms section of Chapter 1, part-time faculty includes all adjuncts, all staff, all administration, and all teachers designated as “interim employees,” who are teaching ten or less credit hours per semester, and otherwise not governed in any way by the full-time faculty Master Contract. Across the range of community colleges in the United States the definition of faculty status is uniquely interpreted depending on each institution’s own set of employment criteria. For this reason making use of National Center for Educational Statistics incorporating the impact of part-time faculty on retention could be misleading. The results of this study are most applicable to average-sized urban community colleges using similar definitions involving faculty status.

Five research questions provided the structure for reporting the results of this study. Logistic regression analysis led to a prediction about the likelihood of part-time faculty decreasing, increasing, or having no impact on retention. Results show how all the independent variables interact in each academic year and all years combined.

A key finding in the first step of the study was that grouping FTFTS into six part-time faculty exposure groups failed to exhibit appreciable significance with retention in the Spring or next Fall semesters. However, when FTFTS were analyzed using individual percentages of exposure to part-time faculty, significant correlation was observed with retention to the next Fall semester. Therefore, the impact of part-time faculty was analyzed in all logistic regressions in terms of individual percentages and not the six groups of exposure to part-time faculty. The final (best) model of this study (Model 5) utilized all 1,831 FTFTS over four years of the study.

The hypotheses of this study, that there would not be a decrease in the likelihood of FTFTS retention with increasing exposure to part-time faculty, was disproven with respect to the next Fall semester in all years combined, and for academic year 2004. The statistical evidence of this study supports literature suggestive of increasing percentages of part-time faculty producing a negative impact on student learning in the form of increasing the likelihood of student dropouts.

The first step of the study is shown in Tables 4-12. These tables provide the descriptive elements of FTFTS within each independent variable. Table 4 shows comparative results for the number of FTFTS in each academic year with the number of all students at KCKCC in the four years of this study. Table 5 provides the demographics of FTFTS: the frequencies and percentages of all 1,831 FTFTS that were analyzed in relation to each independent variable.

Tables 6-9 provide the retention rates for FTFTS in relation to each independent variable. Table 6 shows univariable Pearson correlations, Chi Square, and statistical

significance scores for each independent variable with retention to the Spring semester in all academic years combined. Table 7 demonstrates the mean, standard deviation, *t* values, and significance for dichotomous and continuous variables to the Spring semester in all academic years combined. Table 8 utilizes Analysis of Variance (ANOVA) for the categorical variables in order to obtain mean, standard deviation, and significance scores to the Spring semester in all academic years combined. Table 9 shows the exposure rate to part-time faculty for each academic year with retention rates for those years. Tables 10-13 reflect the data sequence and process of univariable analysis with retention to the next Fall semester in analogous fashion to the Spring semester for all 1,831 FTFTS in all years combined.

The second step of model building is shown in Tables 14-21. These eight tables contain the stepwise forward conditional logistic regression analyses used to answer Research Questions 1-4. There are two logistic regressions for each academic year: one for the Spring semester and one for the next Fall semester. There is one model for each academic year or four models.

The third and final step of the model building is shown in Tables 22 and 23 (Model 5). These two regression tables contain regression analyses used to answer Research Question 5: What variables predict the likelihood of retention for all 1,831 FTFTS to the Spring and next Fall semesters in all academic years combined?

Step 1: Descriptive Statistics

As shown in Table 4, the first two lefthand columns represent the total number of FTFTS and their percentages for each academic year. The lowest number of FTFTS was in

2005. The largest followed in 2006. There are 1,831 FTFTS used in this study based on the Fall semesters of four academic years 2003-2006. Data provided in the far right column is taken from the *College Fact Book*, where the total student head count for each academic year of this study is listed. The total 1,831 FTFTS represents 7.94% of the total head count of 23,043 students at KCKCC from 2003-2006. The remaining 92.06% of students were either not enrolled in at least 12 credit hours, or had been previously enrolled. This study is entirely based on the characteristics and retention rates of full-time students enrolling for the first time in Fall semester 2003, 2004, 2005, or 2006. The first faculty to whom a student is exposed will have a formative impact on student perceptions about higher education.

Table 4

Academic Year: Frequency and Percentage of FTFTS versus Total Head Count at KCKCC

Academic Year	FTFTS		Total Head Count*
	Frequency	Percent	
2003	448	24.4	5,838
2004	474	25.8	5,800
2005	426	23.2	5,648
2006	483	26.3	5,757
Totals	1,831	25.0	23,043

*(KCKCC, 2009a)

Table 5 shows the demographics of all 1,831 FTFTS frequency and percentage in relation to the six independent variables. Six part-time faculty exposure groups were developed similar to studies conducted by Ronco and Cahill in 2004, and Harrington and Schibik in 2001. The majority of the 1,831 students are in the 26-50% exposure to part-time

faculty group (n = 561). A total of 231 FTFTS failed to experience at least one class with full-time faculty. On the other end of the spectrum, only 118 had none of their classes from part-time faculty. These data suggest that full-time faculty tend to proportionally teach second semester freshman, sophomore, or upper level associate degree program courses.

Table 5 also lists each race or ethnic group in the study in the order of frequency among the 1,831 FTFTS. The three largest ethnic groups are White (56%), African-American (23.9%), and Hispanic (8.3%). A surprisingly large number of students marked unknown race or ethnicity. Not shown in the table is the fact that a total of 21.5% of all people living in Wyandotte County are Hispanic, while only 8.3% of FTFTS listed themselves as Hispanic (KCKCC, 2009a). The low percentage of Hispanics at KCKCC compared to all of Wyandotte County perhaps signifies a weakness in marketing and recruitment in this particular ethnic group.

The majority of FTFTS are female (54.7%). A large majority of students are ambitious when they start college, marking their plan to obtain a college degree (85.6%). There are four available degrees at KCKCC: Associate of Applied Science, Associate of Science, Associate of Arts, and Associate of General Studies. In order for FTFTS to be considered full-time they must be enrolled in at least 12 credit hours. Most of the FTFTS are enrolled in 12 credit hours (41.9%) but the total number of credit hours ranges up to 23. A majority of FTFTS enrolling at KCKC are classified as developmental students by virtue of enrolling in at least one reading or writing course that is preparatory for college credit classes in English composition (54.3%).

Table 5

Frequency and Percentage of Demographic Variables for All FTFTS

(N = 1,831)	Frequency	Percent
Percentage Exposure Groups to Part-Time Faculty		
	118	6.4
	310	16.9
	561	30.6
	452	24.7
	159	8.7
	231	12.6
Race/Ethnicity	1026	56.0
	438	23.9
	152	8.3
	60	3.3
	58	3.3
	46	2.5
	30	1.6
	21	1.1
Gender	831	45.3
	1,000	54.7
Degree Seeking	263	14.4
	1,568	85.6
Credit Hours Enrolled		
	768	41.9
	244	13.3
	336	18.4
	215	11.7
	132	7.2
	78	4.3
	38	2.1
	11	.6
	4	.2
	3	.2
	1	.1
	1	.1
Developmental Learning Status		
	837	45.7
	994	54.3

Spring Semester Retention Pearson Correlations, t-Tests, and ANOVA

In Table 6 each independent variable was analyzed for correlation with retention to the Spring semester for all 1,831 students in all years combined. The number of students not returning is shown in the first column (No), followed by the number of students returning in the second column (Yes), the total number of students in the variable in the third column, and the retention rate (percentage retained) in the fourth column. The Chi Square score, degrees of freedom, and significance for each variable is shown on the far right of the table. Variables with the highest significance with retention are indicated with three asterisks ($p < .001$); next highest correlation with two asterisks ($p < .01$), and the next level of significance with one asterisk ($p < .05$). Independent variables with significance values greater than .05 demonstrated no significance with retention assuming the null hypothesis.

The first line of Table 6 shows that 86.07% of all FTFTS were retained into the Spring semester of their respective academic year. The first variable listed is percentage exposure to part-time faculty. Breaking the FTFTS out into six part-time percentage groups demonstrated no statistical significance between any of the exposure groups ($X^2 (5) = 7.855$; $p = .164$). Two other variables also failed to demonstrate significance with retention to the Spring semester: Degree seeking and non-degree seeking students were retained at nearly the same rate ($X^2 = .793 (1)$; $p = .441$) as was developmental learning status ($X^2 = .109 (1)$; $p = .742$).

Three variables indicated one-to-one significance with retention to the Spring semester: Ethnicity ($X^2 = 15.099 (7)$; $p = .035$), gender ($X^2 = 28.343 (1)$; $p = .000$), and credit hours ($X^2 = 151.945 (11)$; $p = .000$). Hispanic and Multiracial students had the lowest

Table 6

Spring Semester Retention: Pearson Correlations, Observed Counts, X^2 and Significance

	Come Back Spring			Percentage Retained	X^2	df	p
	No	Yes	Total				
All Students	255	1576	1831	86.07			
Percentage Exposure Groups to Part-Time Faculty					7.855	5	.164
0%	18	100	118	84.75			
1-25%	54	256	310	82.58			
26- 50%	67	494	561	88.05			
51-75%	61	391	452	86.50			
76-99%	17	142	159	89.30			
100%	38	193	231	83.55			
Ethnicity					15.099	7	.035*
Am. Indian/Al.	2	19	21	90.47			
Asian/Pac. Isle.	8	38	46	82.60			
African-Am.	59	379	438	86.52			
Hispanic	33	119	152	78.28			
International	2	28	30	93.33			
Multiracial	13	45	58	77.58			
Unknown	6	54	60	90.00			
White	132	894	1026	87.13			
Gender					28.343	1	.000***
Female	100	900	1000	90.00			
Male	155	676	831	81.34			
Degree Seeking					.793	1	.441
No	32	231	263	87.83			
Yes	223	1345	1568	85.78			
Credit Hours Enrolled					151.945	11	.000***
12	187	581	768	75.65			
13	23	221	244	90.57			
14	45	291	336	86.61			
15	0	215	215	100.00			
16	0	132	132	100.00			
17	0	78	78	100.00			
18	0	38	38	100.00			
19	0	11	11	100.00			
20	0	4	4	100.00			
21	0	3	3	100.00			
22	0	1	1	100.00			
23	0	1	1	100.00			
Developmental Learning Status					.109	1	.742
No	119	718	837	85.78			
Yes	136	858	994	86.32			

Significance of correlation* $p < .05$, *** $p < .001$

retention rates at 78.28% and 77.58% respectively, while International students were retained 93.33% of the time. Females were retained to the Spring semester exactly 90% of the time, while men were retained 81.34%. Students enrolling in 12 credit hours held the lowest retention rate to the Spring (76%), while students enrolling in 15 or more credit hours were always retained.

Table 7 shows *t*-test results for all variables with retention to the Spring semester. The *t*-test offers a one-to-one confirmation of significance statistic between two groups (*p* statistic) in the same manner as Pearson correlations, and also provides the means and standard deviations for all dichotomous and continuous variables (Henkel, 1976). The *t*-test results reveal the equality of two variances for each variable with the 2-tailed significance scores of the measure reported in the far right column (*p*). If the *p* value in the Levene's test was less than .05, then equal variance was not assumed (Henkel, 1976).

Percentage exposure to part-time faculty is the first variable analyzed in Table 6. Due to the failure of reaching statistical significance between part-time faculty exposure groups and retention to the Spring semester, an alternative approach to the analysis was undertaken. All FTFTS were analyzed in terms of individual percentage exposure to part-time faculty (0-100%). This lengthy descriptive analysis, showing frequency and percentage exposure to part-time faculty for all 1,831 FTFTS in all of their respective percentage exposure groups, is seen in Appendix B. The *t*-test for percentage exposure to part-time faculty was not statistically significant $t(1829) = .739$, $p = .460$, with retention to the Spring semester for all students in all years combined using individual percentages. The mean

exposure of students to part-time faculty that were not retained was one percent higher (53%) than students who were retained (52%) to the Spring semester.

The *t*-test results for the gender variable was highly significant: $t_{gender}(343,640) = -5.409$, $p = .000$; among the 255 FTFTS not retained to the Spring semester, 61% were males and 39% were females. The *t*-test for the continuous variable of total credit hours was also significant with Spring semester retention, $t(803,550) = -19.505$, $p = .000$). Students enrolling in a mean 12.44 credit hours were statistically different from students with a mean retention of 13.75 credit hours.

The *t*-test for students listing themselves as degree-seeking had no significance with retention: $t(1829) = .890$, $p = .372$. Likewise the *t*-test for determining the effect of developmental learner status on retention in the Spring Semester also demonstrated no significance with retention: $t(1829) = -.329$, $p = .742$.

Table 8 shows the results of analysis of variance (ANOVA) testing for Spring semester retention for the two categorical variables of this study. ANOVA provides the same one-to-one correlative information about retention as with *t*-tests except its utility is for making comparisons between three groups or more, as in the case of the two categorical variables of this study, ethnicity, and the six part-time percentage groups.

Table 7

Spring Semester Retention: Means, Standard Deviations, t-Values, and Significance for Dichotomous and Continuous Variables

	N	Mean	Std. Dev.	t	df	p
Percent Part-Time				.739	1829	.460
No	255	53.00	.301			
Yes	1,576	52.00	.285			
Gender						
Male				5.409	343.64	.000***(-)
No	255	61.00	.489			
Yes	1576	43.00	.495			
Female				5.409	343.64	.000***
No	255	39.00	.489			
Yes	1576	57.00	.495			
Degree Seeking				.890	1829	.373
No	255	87.00	.331			
Yes	1576	85.00	.353			
Credit Hours				19.505	803.55	.000***
No	255	12.44	.776			
Yes	1576	13.75	1.818			
Developmental				-.329	1829	.742
No	255	53.00	.500			
Yes	1576	54.00	.498			

Significance of correlation *** $p < .001$

The direction of correlation is positive unless otherwise indicated negative (-).

The ANOVA was performed on the six part-time faculty exposure groups as a double confirmation for the lack of significance found in the Pearson correlation. Once again, grouping part-time faculty proved no significance with retention of FTFTS to the Spring semester, $F(5,1825) = 1.573$, $p = .165$, since p was greater than $\alpha = .05$ cut off assuming the null hypothesis is correct. The significance results of both the Pearson correlations and ANOVA are in contrast to studies by Harrington and Schibik in 2001, and

Table 8

Spring Semester Retention: Means, Standard Deviations, and ANOVA for All Categorical Variables

	N	Mean	Std. Dev.		df	ANOVA F	p
Percent Part-Time				Between Grps	5	1.573	165
0%	118	85.0	.361	Within Groups	1825		
1-25%	310	83.0	.379				
26-50%	561	88.0	.324				
51-75%	452	87.0	.342				
76-99%	159	89.0	.309				
100%	231	84.0	.411				
Totals	1831	86.0	.346				
Ethnicity				Between Grps	7	2.165	.035*
Am. I/Alaska	21	90.0	.300	Within Groups	1966		
Asian/P.I.	46	83.0	.383				
African-Am.	438	87.0	.341				
Hispanic	152	78.0	.413				
International	30	93.0	.253				
Multiracial	58	78.0	.420				
Unknown	60	90.0	.302				
White	1026	87.0	.334				
Totals	1831	86.0	.346				

Significance of correlation * $p < .05$

Ronco and Cahill in 2004, who demonstrated the usefulness of creating percentage groups of part-time faculty in order to determine their impact on retention. The ANOVA revealed that there is a statistically significant difference by ethnicity for FTFTS in the Spring semester, $F(7,1966) = 2.165$, $p = .035$.

Table 9 shows a descriptive comparison of the mean exposure to part-time faculty and FTFTS retention rate to the Spring semester for each academic year. The highest FTFTS mean rate of exposure to part-time faculty was in 2005 (54.00), and this was the same year for the lowest retention rate (84.5%). In contrast, 2006 had the highest retention rate (87.2%)

and the lowest mean exposure to part-time faculty. Academic year 2005 FTFTS had a 2.7% lower retention rate to the Spring semester coupled with a 6% higher exposure rate to part-time faculty compared to 2006 FTFTS.

Table 9

Academic Year Mean Exposure to Part-Time Faculty with Spring Semester Retention Rates

Year	N	Mean	Std. Dev.	Retention Rates	
				No (%)	Yes (%)
2003	448	53.00	.2828	65 (14.5%)	383 (85.5%)
2004	474	52.00	.2987	61 (12.9%)	413 (87.1%)
2005	426	54.00	.2825	66 (15.5%)	360 (84.5%)
2006	483	48.00	.2843	63 (13.0%)	420 (87.2%)
Totals	1,831	51.58	.2882	255 (13.9%)	576 (86.1%)

A summary of the first step of model analysis for the Spring semester follows the results shown in Tables 6-9. Pearson correlations, *t*-tests, and ANOVA reveal that only gender, total credit hours, and ethnicity held univariable significance with retention to the Spring semester. Findings related to part-time faculty retention were that group percentage and individual percentage exposure to part-time faculty were not statistically significant with retention to the Spring semester for all students in all years combined.

Next Fall Semester Retention Pearson Correlations, t-Tests, and ANOVA

Similar to the analysis for Spring, each independent variable was analyzed for correlative capacities with retention to the next Fall semester for all 1,831 students in all academic years. Pearson correlations are reported for all independent variables with

retention to the next Fall semester for all FTFTS in Table 10. The first line of the table shows that 58.2%, or 1,084 of the 1,831 FTFTS, were retained to the Spring semester of their respective academic year.

The first variable indicated in Table 10 is percentage exposure to part-time faculty. In contrast to the Spring semester, breaking FTFTS out into six part-time percentage groups demonstrated statistical significance between groups ($X^2 (5) = 13,355$; $p = .020$). In this case the retention rate in the 0% percent exposure group to part-time faculty was 67%, while in the 100% exposure group the retention rate was 51%.

Three other variables indicated statistical significance with retention to the Spring semester: ethnicity ($X^2 = 20,955 (7)$; $p = .004$), gender ($X^2 = 5,690 (1)$; $p = .017$), and credit hours enrolled ($X^2 = 62,572 (11)$; $p = .000$). African-American and American Indian/Alaskan students had the lowest retention rates at 54.56% and 42.95% respectively, while International students were retained 90% of the time. Females were retained to the Spring semester at a 61.70 % rate while men were retained 56.19% of the time.

Degree-seeking and non-degree-seeking students were retained at nearly the same rate ($X^2 = .826 (1)$; $p = .363$). There was no significant variance between developmental and non-developmental students ($X^2 = 3.456 (1)$; $p = .063$).

Table 11 shows *t*-test results for all dichotomous and continuous variables with retention to the next Fall semester. Percentage exposure to part-time faculty is the first variable shown in Table 10 as a continuous variable, not grouped (categorical) like it was in the Chi Square test results of Table 9. Although significance was obtained in the Chi Square

Table 10

Next Fall Semester Retention: Pearson Correlations, Observed Counts, X^2 and Significance

	Come Back Fall			Retention Rate	X^2	df	p
	No	Yes	Total				
All Students	747	1084	1831	59.20			
Percentage Exposure Groups to Part-Time Faculty					13.355	5	.020*
0%	39	79	118	66.94			
1-25%	136	174	310	56.12			
26- 50%	210	351	561	62.56			
51-75%	187	265	452	58.62			
76-99%	62	97	159	61.01			
100%	113	118	231	51.08			
Ethnicity					20.955	7	.004**
Am. Indian/Al.	12	9	21	42.85			
Asian/Pac. Isle.	16	30	46	65.21			
African-Am.	199	239	438	54.56			
Hispanic	60	92	152	61.52			
International	3	27	30	90.00			
Multiracial	23	35	58	60.34			
Unknown	19	41	60	68.33			
White	415	611	1026	59.55			
Gender					5.690	1	.017*
Female	383	617	1000	61.70			
Male	264	467	831	56.19			
Degree Seeking					.826	1	.363
No	114	149	263	56.65			
Yes	633	935	1568	59.63			
Credit Hours Enrolled					62.572	11	.000***
12	379	389	768	50.65			
13	85	159	244	65.16			
14	143	193	336	57.44			
15	62	153	215	71.16			
16	40	92	132	69.69			
17	19	59	78	75.64			
18	9	29	38	76.31			
19	6	5	11	45.45			
20	2	2	4	50.00			
21	1	2	3	67.00			
22	1	0	1	00.00			
23	0	1	1	100.00			
Developmental Learning Status					3.456	1	.063
No	322	515	837	61.52			
Yes	425	569	994	57.24			

Significance of correlation* p < .05, ** p < .01, *** p < .001

test with group exposure to part-time faculty ($p = .020$) it was deemed necessary to continue the two track approach to analyzing part-time faculty in order to determine the best approach for modeling in the logistic regression analysis. The results of individual percentage exposure to part-time faculty shown in Table 10 demonstrate greater significance with retention to the next Fall semester $t(1587) = 2.965, p = .003$, than with the Pearson correlation with the groups of part-time faculty. In addition, with this t -test there is now evidence for a negative correlation with retention, since the mean exposure to part-time faculty among all FTFTS not retained is 54%, while for those who were retained it was 50%.

Table 11 also shows significant correlation with two other variables and next Fall semester retention, corroborating results of the Pearson correlation Chi Square tests in Table 10. The t -test results for gender were: $t_{gender}(1593) = -2384, p = .017$. Among the 1,084 FTFTS retained to the next Fall semester, 57% were female and 43% were males. The t -test for the continuous variable, total credit hours, was significant with next Fall semester retention: $t(1686) = -6.212, p < .000$). There was also significance between the two means of 13.77 credit hours and 13.26 credit hours.

The t -test for students listing themselves as degree-seeking had no significance with retention as seen in Table 10 $t(1829) = .909, p = .364$. Likewise, the t -test for determining the effect of developmental learner status on retention in the Spring Semester also demonstrated no significant effect $t(1829) = 1.862, p = .063$.

Table 11

Next Fall Semester Retention: Means, Standard Deviations, t-Values, and Significance for Dichotomous and Continuous Variables

	N	Mean	Std. Dev.	t	df	p
Percent Part-Time				2.965	1587	.003**(-)
No	747	54.00	.290			
Yes	1084	50.00	.285			
Gender						
Male				2.384	1593	.017*(-)
No	747	49.00	.500			
Yes	1084	43.00	.495			
Female				-2.384	1593	.017*
No	747	51.00	.500			
Yes	1084	57.00	.495			
Degree Seeking				-.909	1829	.364
No	747	85.00	.359			
Yes	1084	86.00	.344			
Credit Hours				-6.212	1686	.000***
No	747	13.26	1.664			
Yes	1084	13.77	1.811			
Developmental				1.862	1829	.063
No	747	57.00	.496			
Yes	1084	52.00	.500			

Significance of correlation * $p < .05$, ** $p < .01$, *** $p < .001$

The direction of correlation is positive unless otherwise indicated negative (-).

Table 12 shows the results of ANOVA tests for next Fall semester retention for two categorical variables. ANOVA was performed on the six part-time faculty exposure groups, only this time it was as a double confirmation for the presence of significance found in the Pearson correlation. Grouping part-time faculty provided the same significance score with retention of FTFTS to the Spring semester, $F(5,1825) = 2.682$, $p = .020$, as with the Chi Square results for significance shown in Table 9. However, since the t -test score was more significant using individual percentages of exposure to part-time faculty ($p = .003$)

compared to grouped percentages ($p = .020$), the former was used for modeling in the logistic regressions.

Table 12 also shows that ethnicity demonstrated significant correlation with retention of FTFTS to the next Fall semester, $F(7,1823) = 3.015$, $p = .004$, also proving identical to Pearson correlation Chi Square results.

Table 12

Next Fall Semester Retention: Means, Standard Deviations, and ANOVA for All Categorical Variables

	N	Mean	Std. Dev.		df	ANOVA F	p
Percent Part-Time				Between Groups	5	2.682	.020*
0%	118	67.0	.472	Within Groups	1825		
1-25%	310	56.0	.497				
26-50%	561	63.0	.484				
51-75%	452	59.0	.493				
76-99%	159	61.0	.489				
100%	231	51.0	.500				
Totals	1,831	59.0	.491				
Ethnicity				Between Groups	7	3.015	.004**
Am. I/Alaska	21	43.0	.507	Within Groups	1823		
Asian/P.I.	65	65.0	.481				
African-Am.	438	55.0	.498				
Hispanic	152	61.0	.490				
International	30	90.0	.305				
Multiracial	58	60.0	.493				
Unknown	60	68.0	.469				
White	1026	60.0	.491				
Totals	1831	59.0	.491				

Significance of correlation * $p < .05$, ** $p < .01$

Table 13 shows a comparison between years of enrollment in terms of exposure to part-time faculty and Fall semester retention rate. Academic year 2006 stands out with the highest retention rate of 63.1% but the lowest mean exposure (54.00) to part-time faculty in the four years of the study. In 2006 KCKCC added three full-time faculty, which led to the lowest percentage of part-time credit hours being taught in the four years of this study (see Table 2).

Table 13

Academic Year Mean Exposure to Part-Time Faculty with Next Fall Semester Retention Rates

Year	N	Mean	Std. Dev.	Retention Rates	
				No (%)	Yes (%)
2003	448	53.00	.2828	199 (44.4%)	249 (55.6%)
2004	474	52.00	.2987	184 (38.8%)	290 (61.2%)
2005	426	54.00	.2825	186 (43.7%)	240 (56.3%)
2006	483	48.00	.2843	178 (36.9%)	305 (63.1%)
Totals	1,831	51.58	.2882	747 (44.1%)	1084 (55.9%)

A summary of the first step of model analysis for the next Fall semester follows from Tables 10-13; Pearson correlations, *t*-tests, and ANOVA show that gender, total credit hours, ethnicity, and part-time faculty held univariable significance with retention. The key difference, then, between the Spring semester and next Fall semester retention data is that both group percentage and individual percentage exposure to part-time faculty proved statistically significant with retention to the next Fall semester for all 1,831 FTFTS. Since

the results of individual percentage exposure to part-time faculty demonstrated greater significance with retention to the next Fall semester ($p = .003$) than with Chi Square and ANOVA scores with the six exposure groups of part-time faculty ($p = .02$), individual percentages was used to model this key variable in logistic regression analysis. In addition, with this t -test there is now evidence for a negative correlation with retention to the next Fall semester, since the mean exposure to part-time faculty among all FTFTS not retained is 54%, while with those who were retained it was 50%.

Step 2: Models for Retention in Academic Years

Tables 14-21 show the results of stepwise conditional logistic regression analyses used to answer Research Questions 1-4. Logistic regression is used to understand how the typical value of the dependent variable, FTFTS retention, changes when any one of the independent variables is varied and the other independent variables are held fixed. With stepwise conditional regressions, the only variables added to the equation are those that explain why students are either being retained or not being retained. A negative beta value (β), which predicts the dependent variable from the independent variable, signifies a negative impact on retention while a positive number signifies a positive impact (Menard, 2002). In this way, it is possible to demonstrate what individual variable predicts the likelihood of being retained to either the Spring or next Fall semester and helps to answer the research questions. In each of the logistic regressions, if the variable was not selected, removal testing occurred as a result of the failed probability of a likelihood-ratio statistic found in conditional parameter estimates.

In order to answer the first four research questions, two logistic regressions for retention were performed using SPSS-17 for the Spring and Fall semesters for each academic year. Each year is referred to as one model; therefore a total of four models was used, one for each of the four academic years with their respective group of full-time first-time students. They were 2003 (448 FTFTS); 2004 (474 FTFTS); 2005 (426 FTFTS); and 2006 (483 FTFTS). A final model, Model 5, exhibits the Spring and next Fall regressions involving all 1,831 FTFTS in all four years of the study combined.

Predicting Retention for FTFTS Enrolling in AY 2003

Model 1: AY 2003. The two logistic regressions are shown in Tables 14 and 15 for academic year 2003. For retention to the Spring semester, three separate independent variables predicted an increased likelihood for retention: higher enrollment in total credit hours, developmental learning status, or female. The highest effect size was shown in Step 3 of the Spring semester (Nagelkerke $R^2 = .184$). The Chi Square test was also the highest with a high level of statistical significance: Step 3: $X^2 (3) 49,121, p < .001$.

For the next Fall semester, only enrolling in a larger number of credit hours increased the likelihood of being retained as shown in Table 15 (Step 1: $X^2 (1) 15,529, p < .01$) with a smaller effect size Nagelkerke R^2 of .046. The confidence index (CI) of this result is small, lending credence to this parameters odds ratio result: 1.23 times more likely to be retained if enrolled in more total credit hours. All other parameters were found not to be predictive for retention for FTFTS in academic year 2003 by virtue of none of them being entered by SPSS in the stepwise conditional regression equation.

Model 1 logistic regression for 2003 explains retention better in the Spring because the Chi Square at Step 3 indicated that the addition of the three variables yielded a significantly higher Nagelkerke R^2 than in Step 1 of the next Fall semester (18% versus 4%). The odds ratios (OR) are used to compare different independent variables. The coding in Step 3 for gender in the Spring indicates that females were 1.97 times more likely to be retained than males. Developmental students were 1.81 times more likely to be retained than non-developmental students.

Table 14

Independent Variables Predicting AY 2003 Spring Retention Using Logistic Regression

Model 1

Step	Predictor	β	Standard Error	OR	CI (95%) Lower-Upper
1	Total Credit Hours	.664	.138	1.943***	1.483-2.545
	Constant	-6.853	1.735	.001	
2	Gender (1)	.701	.286	2.016*	1.151-3.530
	Total Credit Hours	.705	.143	2.023***	1.527-2.679
	Constant	-7.357	1.803	.001	
3	Gender (1)	.680	.288	1.974*	1.123-3.471
	Total Credit Hours	.725	.144	2.065***	1.552-2.740
	Developmental (1)	.593	.285	1.810*	1.032-3.167
	Constant	-7.915	1.833	.000	

(N = 448)

-2 Log Likelihood 321.909

Cox & Snell R^2 .104

Step 1. Nagelkerke $R^2 = .147$, Step 1 $X^2 (1) = 38,593$, $p < .001$

Step 2. Nagelkerke $R^2 = .169$, Step 2 $X^2 (2) = 44,743$, $p < .001$

Step 3. Nagelkerke $R^2 = .184$, Step 3 $X^2 (3) = 49,121$, $p < .001$

* $p < .05$; ** $p < .001$

Table 15

*Independent Variables Predicting AY 2003 Next Fall Retention Using Logistic Regression**Model 1*

Step	Predictor	β	Standard Error	OR	CI (95%) Lower-Upper
1	Total Credit Hours	.211	.055	1.2535***	1.108-1.377
	Constant	-2.633	.754	.072	

(N = 448)

-2 Log Likelihood 599.939

Cox & Snell R^2 .034Step 1. Nagelkerke $R^2 = .046$, Step 1 $X^2 (1) = 15,529$, $p < .001$ *** $p < .001$ **Predicting Retention for FTFTS Enrolling in AY 2004**

Model 2: AY 2004. The two logistic regressions for the 474 FTFTS in academic year 2004 were performed for the Spring and next Fall semesters. Table 16 shows that total credit hours and gender were parameters predicting retention. The highest Chi Square result for the Spring semester is in Step 2, $X^2 (2) = 54,234$, $p < .001$, which contains the best set of predictors explaining retention (Nagelkerke $R^2 = .202$). Females were 2.51 times more likely than males to be retained, and enrollment in a greater number of credit hours increases rate of retention by 2.37 times.

For the next Fall semester shown in Table 17, three steps were needed (Step 3 $X^2 (9) = 49,670$, $p < .001$) to elucidate parameters predicting retention. Three significance scores emerged predicting a decreasing likelihood for retention with individual percentage part-time faculty ($p < .01$) and African-American ($p < .01$). International FTFTS ($p < .05$) and enrollment in more credit hours ($p < .01$) were predictive for increased likelihood to be

retained. The “dummy variable” White is the default reference category. African-Americans were .52 times less likely to be retained to the next Fall than White and International students 8.07 times more likely to be retained than White.

The most important result pertinent to this study is found in Step 3 of Table 17. In this regression, the odds ratio for percentage part-time faculty finds that FTFTS were .35 times more likely not to be retained to the next Fall semester if they had enrolled with full-time faculty. This significance of this result was $p = .002$ ($p < .01$).

Step 3 of Table 17 explained 13 percent of all the variance for predicting retention in the next Fall semester of 2004 (Nagelkerke $R^2 = .135$). The results of all other parameters (variables) were found not to be predictive by virtue of not being retained in the regression equation.

Table 16

Independent Variables Predicting AY 2004 Spring Retention Using Logistic Regression

Model 2

Step	Predictor	β	Standard Error	OR	CI (95%)
					Lower-Upper
1	Total Credit Hours	.815	.164	2.260***	1.638-3.120
	Constant	-8.589	2.050	.000	
2	Gender (1)	.921	.297	2.513**	1.404-4.496
	Total Credit Hours	.865	.170	2.374***	1.701-3.315
	Constant	-9.188	2.122	.000	

(N = 474)

Step 1. Nagelkerke $R^2 = .166$, Step 1 X^2 (1) = 44,225, $p < .001$

Step 2. Nagelkerke $R^2 = .202$, Step 2 X^2 (2) = 54,234, $p < .001$

** $p < .01$; *** $p < .001$

Table 17

*Independent Variables Predicting AY 2004 Next Fall Retention Using Logistic Regression**Model 2*

Step	Predictor	β	Standard	OR	CI (95%)
			Error		Lower-Upper
1	Total Credit Hours	.211	.058	1.235***	1.102-1.385
	Constant	-2.392	.786	.091	
2	Part-Time Faculty	-1.067	.327	.344**	.181-.654
	Total Credit Hours	.202	.059	1.224**	1.091-1.374
3	Constant	-1.701	.819	.182	
	American Indian/Alaskan (1)	-1.362	.761	.256	.058-1.138
	Asian/Pacific Islander (2)	.476	.717	1.610	.395-6.560
	African/American (3)	-.648	.236	.523**(-)	.330-.830
	Hispanic (4)	-.064	.352	.938	.471-1.868
	International (5)	2.089	1.046	8.073*	1.038-62.759
	Multiracial (6)	-.344	.669	.709	.191-2.629
	Unknown (7)	1.023	.661	2.783	.762-10.162
	Part-Time Faculty	-1.049	.338	.350**	.180-.680
	Total Credit Hours	.208	.061	1.232**	1.093-1.387
Constant	-1.525	.869	.218		

(N = 474)

-2 Log Likelihood 583.528

Cox & Snell R² .099Step 1. Nagelkerke R² = .040, Step 1 X² (1) = 14,321, p <.001Step 2. Nagelkerke R² = .070, Step 2 X² (2) = 25,201, p <.001Step 3. Nagelkerke R² = .135, Step 3 X² (9) = 49,670, p <.001

* p < .05; **p<.01;***p < .001

Predicting Retention for FTFTS Enrolling in AY 2005

Model 3. The two logistic regressions for the 426 FTFTS in academic year 2005 are shown for the Spring and next Fall semesters. The Spring semester results in Table 18 indicate two parameters influencing the likelihood of retention in the second step: female gender and enrollment in a higher number of credit hours (Step 2 X² (2) = 58.115, p < .001). The model explains 22.1% of the chance for retention (Nagelkerke R² = .221).

In the next Fall semester of 2005 shown in Table 19, Developmental FTFTS (Step 2 $X^2(2) = 18,571, p < .001$) decreased the likelihood of retention by .608 times that of non-developmental students. This contrasts with Academic Year 2003 Spring semester, in which developmental students increased the likelihood of retention by 1.180 times. Enrolling in a larger number of credit hours again increased the likelihood of retention. All other variables were found not to be predictive of retention and therefore were not entered in the conditional regression equation.

Table 18

Independent Variables Predicting AY 2005 Spring Retention Using Logistic Regression

Model 3

Step	Predictor	β	Standard Error	OR	CI (95%) Lower-Upper
1	Total Credit Hours	.737	.142	2.090***	1.582-2.762
	Constant	-7.895	1.795	.000	
2	Gender (1)	1.145	.294	3.143***	1.766-5.596
	Total Credit Hours	.815	.149	2.260***	1.687-3.027
	Constant	-9.479	1.914	.000	

(N = 426)

Step 1. Nagelkerke $R^2 = .164$, Step 1 $X^2(1) = 42,324, p < .001$

Step 2. Nagelkerke $R^2 = .221$, Step 2 $X^2(2) = 58,115, p < .001$

*** $p < .001$

Table 19

*Independent Variables Predicting AY 2005 Next Fall Retention Using Logistic Regression**Model 3*

Step	Predictor	β	Standard	OR	CI (95%)
			Error		Lower-Upper
1	Total Credit Hours	.208	.061	1.231**	1.091-1.388
	Constant	-2.560	.831	.077	
2	Total Credit Hours	.187	.062	1.205**	1.068-1.361
	Developmental (1)	-.498	.203	.608*	.408-.904
	Constant	-1.999	.862	.136	

(N = 426)

-2 Log Likelihood 565.127

Cox & Snell R^2 .043Step 1. Nagelkerke $R^2 = .039$, Step 1 $X^2 (1) = 12,491$, $p < .001$ Step 2. Nagelkerke $R^2 = .057$, Step 2 $X^2 (2) = 18,571$, $p < .001$ * $p < .05$; ** $p < .01$ **Predicting Retention for FTFTS Enrolling in AY 2006**

Model 4. The two logistic regressions were again performed for the 483 FTFTS in academic year 2006 for the Spring and next Fall semesters. Table 20 shows two parameters predicting retention for the Spring semester (Step 3 $X^2 (8) = 72,083$, $p < .001$): female gender, and enrolling in more credit hours increased the likelihood of retention, while African-American decreased the chance for retention compared to White. There were no FTFTS listing themselves as Multiracial or American Indian/Alaskan in academic year 2006. The third step of the Spring regression explained 25% of the variance for retention (Nagelkerke $R^2 = .257$).

In the next Fall semester shown in Table 21 (Step 1 $X^2(1) = 14.793$, $p < .001$) gender was predictive for retention. For academic year 2006 female FTFTS were 2.079 times more likely to be retained than males to their next Fall semester.

Table 20

Independent Variables Predicting AY 2006 Spring Retention Using Logistic Regression

Model 4

Step	Predictor	β	Standard Error	OR	CI (95%) Lower-Upper
1	Total Credit Hours	.802	.161	2.230***	1.626-3.057
	Constant	-8.437	2.015	.000	
2	American Indian/Alaskan	-3.053	1.521	.047*	.002-.930
	Asian/Pacific Islander	.164	.796	1.178	.247-5.606
	African/American	-.082	.355	.921	.459-1.846
	Hispanic	-1.723	.442	.179***	.075-.425
	International	-.721	.618	.486	.145-1.632
	Multiracial	.000	.000	.000	.000-.000
	Unknown	.000	.000	.000	.000-.000
	Total Credit Hours	.902	.174	2.465***	1.752-3.467
	Constant	-7.515	1635.998	.001	
	3	American Indian/Alaskan	-2.733	1.572	.065
Asian/Pacific Islander		.506	.809	1.659	.340-8.095
African/American		-.133	.359	.876	.433-1.769
Hispanic		-1.653	.451	.191***	.079-.463
International		-.794	.640	.452	.129-1.582
Multiracial		.000	.000	.000	.000-.000
Unknown		.000	.000	.000	.000-.000
Gender (1)		.870	.304	2.386**	1.316-4.329
Total Credit Hours		.927	.177	2.528***	1.785-3.579
Constant		-8.189	1639.120	.000	

(N = 483)

Step 1. Nagelkerke $R^2 = .156$, Step 1 $X^2(1) = 42,533$, $p < .001$

Step 2. Nagelkerke $R^2 = .229$, Step 2 $X^2(2) = 63,675$, $p < .001$

Step 3. Nagelkerke $R^2 = .257$, Step 3 $X^2(9) = 72,083$, $p < .001$

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 21

Independent Variables Predicting AY 2006 Next Fall Retention Using Logistic Regression

Model 4

Step	Predictor	β	Standard Error	OR	CI (95%) Lower-Upper
1	Gender	.732	.192	2.079***	1.428-3.026
	Constant	.156	.136	1.168	

(N = 483)

-2 Log Likelihood 620.998

Cox & Snell R^2 .030

Step 1. Nagelkerke $R^2 = .041$, Step 1 $X^2 (1) = 14,793$, $p < .001$

*** $p < .01$

Step 3: Predicting Retention for all FTFTS Enrolling in All Academic Years

Model 5. The final model predicted the likelihood of retention for all 1,831 FTFTS over four years of this investigation. Two logistic regressions were again performed for the Spring and next Fall semesters. Table 22 shows two parameters predicting retention for the Spring semester (Step 2 $X^2 (2) = 206,136$, $p < .001$): Female gender was 2.47 times more likely to be retained than males, and FTFTS enrolling in more credit hours in their first semester of classes were 2.21 times more likely to be retained than their counterparts with fewer credit hours. The Spring model for retention found in Step 2 of the regression analysis predicts 19% of the effects of retention over the four years.

In the next Fall semester four steps were necessary to arrive at the final model results shown in Table 23 (Step 4 $X^2 (10) = 76,767$, $p < .001$). International FTFTS distinguished themselves with 6.28 times better chance for retention compared to White. Total credit hours

and female gender again demonstrated an increased likelihood for retention as it did in the majority of the academic year models to the next Fall semester.

The negative β value in Step 4 of the next Fall semester for part-time faculty (-.451) indicates that this independent variable decreases the likelihood of retention compared to all FTFTS enrollment with full-time faculty over the four years combined of this investigation ($p < .01$). The odds ratio value for percentage exposure to part-time faculty means that first-time students were .63 times less likely to be retained than if they had enrolled with full-time faculty in their first semester at KCKCC.

Table 22

*Independent Variables Predicting Spring Retention for All Academic Years Combined Using**Logistic Regression Model 5*

Step	Predictor	β	Standard	OR	CI (95%)
			Error		Lower-Upper
1	Total Credit Hours	.746	.075	2.110***	1.821-2.444
	Constant	-7.839	.941	.000	
2	Gender (1)	.904	.145	2.471***	1.858-3.286
	Total Credit Hours	.794	.078	2.218***	1.904-2.584
3	Constant	-8.918	.989	.000	
	Total Credit Hours	.799	.078	2.471***	1.858-2.444
	Gender	.933	.147	2.542***	1.904-3.394
	American Indian/Alaskan	-.047	.796	.954	.200-4.538
	Asian/Pacific Islander	-.037	.424	.964	.420-2.215
	African/American	-.036	.178	.965	.681-1.367
	Hispanic	-.558	.233	.572*(-)	.361-.903
	International	.851	.763	2.342	.525-10.452
	Multiracial	-.836	.361	1.415*(-)	.573-3.496
	Unknown	.347	.147	2.542	1.904-3.394
	Constant	-8.882	.988	.000	

(N = 1831)

-2 Log Likelihood 1259.247

Cox & Snell R² .113Step 1. Nagelkerke R² = .157, Step 1 X² (1) = 166,193, p <.001Step 2. Nagelkerke R² = .192, Step 2 X² (2) = 206,136, p <.001Step 3. Nagelkerke R² = .203, Step 3 X² (9) = 266,193, p <.001

* p < .05; ***p < .001

Table 23

*Independent Variables Predicting Next Fall Retention for All Academic Years Combined
Using Logistic Regression Model 5*

Step	Predictor	β	Standard Error	OR	CI (95%) Lower-Upper
1	Total Credit Hours	.173	.029	1.188***	1.123-1.258
	Constant	-1.959	.391	.141	
2	American Indian/Alaskan	-.783	.451	.457	.189-1.106
	Asian/Pacific Islander	.282	.319	1.325	.709-2.478
	African/American	-.190	.116	.827	.658-1.039
	Hispanic	.098	.179	1.103	.776-1.568
	International	1.795	.615	6.018**	1.804-20.073
	Multiracial	.067	.278	1.063	.620-1.844
	Unknown	.408	.287	1.504	.856-2.641
	Total Credit Hours	.175	.029	1.191***	1.125-1.261
	Constant	-1.779	.408	.169	
	3	American Indian/Alaskan	-.814	.453	.443
Asian/Pacific Islander		.337	.321	1.401	.747-2.627
African/American		-.208	.117	.813	.646-1.022
Hispanic		.099	.180	1.105	.777-1.561
International		1.818	.616	6.160**	1.842-20.073
Multiracial		.018	.280	1.018	.589-1.761
Unknown		.390	.288	1.477	.840-2.598
Gender (1)		.276	.098	1.318**	1.088-1.597
Total Credit Hours		.179	.029	1.196***	1.129-1.267
Constant		-1.978	.416	.138	
4	American Indian/Alaskan	-.845	.453	.429	.177-1.044
	Asian/Pacific Islander	.331	.321	1.311	.741-2.613
	African/American	-.205	.117	.815	.648-1.025
	Hispanic	.064	.180	1.066	.748-1.518
	International	1.838	.616	6.285**	1.880-21.010
	Multiracial	.028	.280	1.029	.594-1.782
	Unknown	.394	.289	1.483	.841-2.615
	Gender	.296	.098	1.345**	1.109-1.631
	Part-Time Faculty	-.451	.170	.637**(-)	.456-.889
	Total Credit Hours	.172	.029	1.188***	1.121-1.258
5	Constant	-1.661	.433	.190	

(N =1,831)

-2 Log Likelihood 2399.157

Cox & Snell R² .041Step 1. Nagelkerke R² = .028, Step 1 X² (1) = 37,997, p <.001Step 2. Nagelkerke R² = .245, Step 2 X² (8) = 61,734, p <.001Step 3. Nagelkerke R² = .050, Step 3 X² (9) = 69,719, p <.001Step 4. Nagelkerke R² = .055, Step 4 X² (10) = 76,767, p <.001

p<.01;*p < .001

The following is a summary of results for the research questions 1-4, Step 2 of model building:

1. What independent variables predicted the likelihood of Academic Year 2003 FTFTS not being retained to the Spring and next Fall semesters? Model 1 log regressions demonstrate that none of the variables predicted not being retained to the Spring or next Fall semesters. The greater the number of credit hours a student was enrolled in, female gender, and being a developmental student increased the likelihood of retention to the Spring semester. Total credit hours favorably predicted retention to the next Fall semester.

2. What independent variables predict the likelihood of Academic Year 2004 FTFTS not being retained to the Spring and next Fall semesters? Model 2 log regressions predicted that two variables decreased the likelihood of retention to the next fall semester: increasing percentage exposure to part-time faculty, and African-American students. Credit hours enrolled and female gender predicted increased likelihood of retention in the Spring semester. Total credit hours enrolled and International students increased the likelihood of retention to the next Fall semester.

3. What independent variables predicted the likelihood of Academic Year 2005 FTFTS not being retained to the Spring and next Fall semesters? Model 3 log regressions demonstrated that developmental students decreased the likelihood of being retained to the next Fall semester. Total credit hours enrolled increased the likelihood of retention to the Spring and next Fall semesters. Females were more likely to be retained to the Spring semester.

4. What independent variables predicted the likelihood of Academic Year 2006 FTFTS not being retained to the Spring and next Fall semesters? Model 4 regressions found Hispanic students decreased the likelihood of retention to the Spring semester. Total Credit hours enrolled increased the likelihood of retention to the Spring semester. Females were more likely to be retained to the next Fall semester.

Step 3 of model building answered Research Question 5: What independent variables predicted the likelihood of FTFTS not being retained to the Spring and next Fall semesters in all four academic years combined? The final model (Model 5) was the best at explaining the statistical relationship of FTFTS retention and each of the independent variables. Increasing exposure to part-time faculty decreased the likelihood of retention to the next Fall semester. Hispanic and Multiracial students decreased the likelihood of retention to the Spring semester. Total credit hours and female were significant parameters increasing the likelihood of retention to the Spring semester. Total credit hours enrolled, female, and International were the best predictors favoring retention to the next Fall semester based on the relative size of the odds ratios with larger being better.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine the impact of part-time faculty on first-time full-time student retention. The results summarized at the end of Chapter 4 indicate the increased likelihood of FTFTS not being retained with increased exposure to part-time faculty. The literature review most notably emphasized how 1988 was a watershed year for acknowledging overuse of part-time faculty. In that year three seminal events took place:

- 1) The Commission on the Future of Community Colleges in 1988 warned about the impact on student learning by excessively hiring part-time faculty;

- 2) The Carnegie Foundation for the Advancement of Teaching issued a report that said a majority of credits awarded by community colleges should be earned in classes taught by full-time faculty; and

- 3) California's AB1725 required all community colleges to maintain staff ratios of no less than 70% full-time faculty.

At Kansas City Kansas Community College and at most other community colleges in the United States, key recommending bodies in community college education have been largely ignored. At KCKCC the percentage of full-time faculty has precipitously fallen from 87.6% in 1966 to 33.5% in 1990 (see Table 2). At KCKCC the percentage of full-time faculty has remained slightly below 30% since 1990.

This study is about the impact of the whole of part-time faculty compared to the whole of full-time faculty from 2003-2006 at KCKCC. It is in no way meant to be critical of any particular part-time faculty employee at this or any other institution of higher learning. It

is evident, however, from substantial evidence set forth in the literature review, most notably gathered in the 2007 Community College Faculty Survey of Student Engagement involving 223 participating colleges including KCKCC, that overuse of part-time faculty is a widespread systemic problem at many community colleges, not just KCKCC.

The literature establishes the fact that part-time faculty on the whole offer less variety in their instructional practices, are unavailable for extended student learning and advising, and are less connected with colleagues and the institution to work out crucial collaborative details of the instructional curriculum. Part-time faculty, furthermore, in the vast majority of cases, are not available to advise students, learn advanced teaching techniques, spend as much time preparing for class, and are not typically as involved in teaching workshops and professional conferences as full-time faculty.

The hypotheses of this investigation were that increased exposure to part-time faculty would not decrease the rate of retention for first-time full-time students in the Spring Semester and Next Fall Semester in any academic year or in data involving all years combined. However, logistic regressions Model 2 Step 3 for Academic Year 2004 to the next Fall semester (see Table 17), and Model 5 Step 4 for next Fall semester (see Table 23), indicated the likelihood of error in these hypotheses. This study supports findings in the literature review and two previous statistical analyses that increasing exposure to part-time faculty has a negative impact on retention.

The first research question was to predict the likelihood of academic year 2003 students not being retained to the Spring and next Fall semesters. Model 1 log regressions revealed that none of the variables predicted students dropping out in the Spring or next Fall

semesters (see Tables 14 and 15). However, there was an increased likelihood of retention to the Spring semester among those students who averaged enrollment in more credit hours (also to the next Fall semester), if they were female or a developmental student.

The biggest surprise for Academic Year 2003 was that the developmental group of students were more likely to be retained than non-developmental students. The trend was reversed for the FTFTS in Academic Year 2005 when non-developmental students were found more likely to be retained than developmental students to the next Fall semester. In all four years of the study the developmental/non-developmental feature was found not to markedly influence retention while controlling for all other parameters. The fact that there was no difference in retention between these two groups overall is a subject for further qualitative and quantitative analysis.

The second research question was to predict the likelihood of academic year 2004 FTFTS not being retained to the Spring and next Fall semesters. Credit hours enrolled and female gender predicted increased likelihood of retention in the Spring semester, and total credit hours enrolled and International students increased the likelihood of retention to the next Fall semester. However, the key finding for FTFTS enrolling in 2004 was that the log regression for the next Fall semester predicted two variables that decreased the likelihood of retention to the next fall semester: increasing percentage exposure to part-time faculty, and African-American students (see Table 17).

The odds ratios of this regression indicated that FTFTS in AY 2004 were .35 times less likely to be retained to the next fall semester with each unit of increased exposure to part-time faculty. The effect size for Step 3 of this regression (R^2) indicated that 13% of the

explanation for retention was explained by the model. Academic year 2004 posed no unusual characteristics in terms of descriptive characteristics. The FTFTS in this year were second highest of the four in overall retention rate to the Spring and next Fall semesters and second lowest in exposure to part-time faculty.

The fact that being an African-American FTFTS in academic year 2004 meant a decreased likelihood in being retained to the next Fall semester is particularly interesting in light of increased risk for not being retained with increased exposure to part-time faculty. Why those two parameters stood out in this particular academic year would make for an interesting continued investigation on the qualitative and quantitative level.

The third research question in this study was to determine what independent variables predicted a decreased likelihood of retention for academic year 2005 FTFTS to the Spring and next Fall semesters. Model 3 log regressions demonstrated that developmental students decreased the likelihood of being retained to the next Fall semester. Total credit hours enrolled increased the likelihood of retention to the Spring and next Fall semesters. Females were more likely to be retained to the Spring semester.

The results from this academic year were surprising in terms of what they did not indicate, since AY 2005 FTFTS experienced the highest exposure to part-time faculty and the lowest retention rates (see Tables 9 and 14). Further statistical analysis would be necessary to determine if developmental students in this academic year had unusually high frequency exposure to part-time faculty.

The fourth research question was to examine what independent variables predicted a decreased likelihood of retention for AY 2006 FTFTS. Model 4 regressions found that

Hispanic students decreased the likelihood of retention while being female (also in the next Fall semester) or enrolling in more credit hours increased the likelihood of retention to the Spring semester. The Hispanic parameter in this particular academic year was highly significant in the regression analysis ($p < .000$) for retention to the Spring semester. The interrelationship between Hispanic females and males with retention and differences in retention with the Spring as opposed to next Fall semester warrants further analysis.

The final research question was to determine what parameters decreased the likelihood for retention from data involving all FTFTS in all academic year combined. This Final Model 5 proved most useful, explaining 20% of the effect size (Nagelkerke R^2) of the retention question in the Spring semester and 5.5% in the next Fall semester. The effects of using too many part-time faculty over four years highlights the magnitude of the problem, especially because single academic years were not significant when compared to each other for impact on retention to the Spring and next Fall semesters (see Tables 8 and 12). Table 22 shows that two parameters predicted retention for the Spring semester over the four years of the study: Female gender was 2.47 times more likely to be retained than males, and FTFTS enrolling in more credit hours in their first semester of classes were 2.21 times more likely to be retained than their counterparts with less credit hours.

In the next Fall semester of all four years, four regression steps were necessary to arrive at the final model shown in Table 23. The negative β value in Step 4 of the next Fall semester for part-time faculty (-.451) indicates that this independent variable of this study decreases the likelihood of retention compared to all FTFTS enrollment with full-time faculty over the four years combined of this investigation ($p < .01$). The odds ratio value for

percentage exposure to part-time faculty means that first-time students were .63 times less likely to be retained per unit than if they had enrolled with full-time faculty in their first semester at KCKCC.

Hispanic and Multiracial students also trended in the overall picture toward decreasing the likelihood for retention to the next Fall semester among all FTFTS. International FTFTS distinguished themselves with 6.28 times better chance for retention compared to White. Total credit hours and female gender again demonstrated an increased likelihood for retention as it did in the majority of the academic year models to the next Fall semester.

The review literature indicated that males were less likely to enroll, and more likely to leave for technical education certification programs, part-time, or full-time employment, and therefore were less likely to be retained than females. This is in keeping with regression analyses in this study, which strongly indicated that females were a predictor of increased likelihood to be retained compared to males in the Spring and next Fall semesters for all years combined. Another future point of analysis would be to break out gender with the three most common ethnic groups in terms of retention: African-American females versus males; Hispanic females and males; and White females and males.

Also in keeping with previous studies on retention, a strong predictor of increased likelihood for retention was students enrolling in more credit hours. In the univariable analyses there was significance between retention to the Spring semester (see Table 7) and to the next Fall (see Table 11). The significance of these correlations found on *t*-tests were also reflected in logistic regressions for all FTFTS in all years combined for the Spring and

next Fall semesters. It appears probable, then, from these results that more determined students tend to enroll in more credit hours. At small institutions it might prove useful to compromise with a 9 credit hour standard to study retention which would involve enrollment in only one less class in order to obtain a larger data sample number and to a large extent still avoid the statistical artifact of skewing retention downward with even smaller credit hours, as appears to be the case in the Ronco and Cahill (2004) study.

A key finding in conjunction with the literature was that forming six percentage exposure groups of FTFTS to part-time faculty had no significance in Pearson correlations with retention in the Spring semester (see Table 6), or with individual percentage exposure to part-time faculty with the *t*-test (see Table 7). This result was in contrast to previous studies on retention to the Spring semester by Harrington and Schibik (2001), and Ronco and Cahill (2004) at four year institutions supporting use of this analytical method. However, in the next Fall semester significance was found (see Table 10) for the six percentage group approach to analyzing the data, and also with individual percentage exposure to part-time faculty (see Table 11). Due to the higher significance score using individual percentage exposure to part-time faculty, this was the favored approach to investigate the impact of part-time faculty in all logistic regressions.

Although the six part-time percentage groups were not used in logistic regression analyses in this study, the two-track approach of significance testing in Step 1 of modeling for retention provided poignant results utilizing the six percentage groups. One benefit of creating the six exposure groups to part-time faculty is that it makes for easy observation and comparison of 0% and 100% polar exposure groups to part-time faculty. The Pearson

correlations in Table 10 for next Fall semester retention revealed that in the 0% exposure group to part-time faculty, involving 118 students, the retention rate was 66.94%, in stark contrast to the 100% exposure group of 231 students, where the retention rate was a low 51.08%. This represents a 15.86% difference in retention between these extreme part-time faculty exposure groups. It is no surprise, then, to obtain a result with ANOVA testing that statistically highlighted the significance of this finding (see Table 12). While it might prove tedious to micromanage the enrollment process in order to avoid FTFTS enrolling exclusively with part-time faculty, the simplest approach to avoid this calamity would be to hire more full-time faculty.

When a comparison was made between years of enrollment in terms of exposure to part-time faculty and Fall semester retention rate, academic year 2006 stood out with the highest retention rate of 63.1% but the lowest mean exposure (54%) to part-time faculty in the four years of this study (see Table 13). In 2006 KCKCC added three full-time faculty and leading to the lowest percentage of part-time credit hours being taught in the four years of this study (see Table 2).

A descriptive comparison of the mean exposure to part-time faculty and FTFTS retention rate to the Spring semester for each academic year corroborated the next Fall semester data, albeit on a smaller scale without significance in ANOVA. Table 9 shows the highest FTFTS mean rate of exposure to part-time faculty was in 2005 (54%), the same year of the lowest retention rate (84.5%). In contrast, 2006 had the highest retention rate (87.2%) and the lowest mean exposure to part-time faculty. Academic year 2005 FTFTS had a 2.7% lower retention rate to the Spring semester coupled with a 6% higher exposure rate to part-

time faculty compared to 2006 FTFTS. Retention rates in the Spring semester failed to yield significance scores appreciable to those found with retention to the next Fall semester.

Harrington and Schibik (2001) utilized 7,174 students over four years. Ronco and Cahill (2004) used 3,787 students for their investigation over two years. Harrington and Schibik (2001) found that increased exposure to the six part-time faculty groups decreased retention significantly in the Spring semester using Pearson correlations. Ronco and Cahill (2004) failed to find significance with increasing exposure to part-time faculty percentage groups until the next year using logistic regression analysis. This study is more like the Ronco and Cahill (2004) study in terms of using a smaller sample size, performing regression analysis, and in predicting decreased retention to the next Fall semester with increased exposure to part-time faculty. The most substantive difference with Harrington and Schibik (2001), and Ronco and Cahill (2004), is that both of these studies found statistical significance in the rate of retention with six exposure group percentages in the Spring semester, while in this study significance was not detected until the next Fall semester and it was preferable to analyze individual percentage exposure to part-time faculty.

Previous studies have shown that White FTFTS are more likely retained among the three largest ethnic groups in this study: White (56%), African-American (23.9%), and Hispanic (8.3%) (see Table 5). Among these ethnicities descriptive information from the college indicated that 87.1% of White, 86.5% African-American, and 78.28% Hispanic FTFTS were retained to the Spring semester (see Table 6). It is not clear why Hispanic students tend to drop out so frequently in their first semester. This was dramatically

illustrated in Academic Year 2006 logistic regression analysis where Hispanics were highly correlated with the likelihood of not being retained to the Spring semester.

In the next Fall semester retention rates completely flip. In fact, Hispanics end up with a higher retention rate than Whites in the four years of this study. Hispanics were more likely to be retained to the next Fall semester than Whites by a margin of 61.5% to 59.55% (see Table 10). Hispanics comprise 21.5% of the population of Wyandotte County but only 6.4% of all students at KCKCC. Based on this data the next Fall retention rate at KCKCC could be improved by recruiting and enrolling more Hispanic students and also by determining what causes the initial drop out after the first semester at the college.

Retention of African-American FTFTS was statistically reversed from Hispanic students. They were almost as likely to be retained to the Spring semester as White students (African-American 86.52%; White 87.33%) but dropped more by the next Fall semester (African-American 54.46%; White 59.55) . Regression analysis over all years combined found no decrease in likelihood of retention with being African-American. However, there was decreased likelihood for FTFTS in academic year 2004 to the next Fall semester.

Ronco and Cahill (2004) had limited their study on retention to only degree-seeking FTFTS. For this reason it was deemed important to determine if there was difference between FTFTS seeking or not-seeking degrees with retention. In this case study there was no significance in retention rates in degree-seeking status based on *t*-tests for the Spring and next Fall semesters.

The literature shows that developmental students are generally less likely to be retained than non-developmental students. This proved true in the next Fall semester of 2005

log regression analysis (see Table 19) but was the opposite in result for the Spring semester of 2003 FTFTS (see Table 16). In the logistic regression analyses for all years of the study, developmental and non-developmental learning status failed to predict increased or decreased likelihood for retention to Spring or next Fall semesters. Further analysis could explore the mean exposure of developmental and non-developmental students to part-time faculty in order to determine if there is any relationship between developmental students and individual percentage exposure to part-time faculty.

One reason why developmental students did not have lower retention rates than non-developmental students over the four years of this study may have to do with the efficacy of provisions for multiple-level developmental courses at KCKCC. This is an important enrollment process for creating successful developmental education programs in community colleges. Multiple-level courses are typically 8-week, three-hour non-college credit courses. Developmental students often complete two levels of developmental reading and math in one 16-week semester at KCKCC. Mandatory evaluation and placement policies were adopted in 2001 at KCKCC. Students scoring below 39 must enroll in the On Track Program offered by Continuing Education. From 40-59 students must enroll in READ 0091, while students scoring 60-74 must enroll in READ 0092. None of the developmental students are allowed to enroll in more than 12 regular semester credit hours. It could be argued that developmental students were found not be any less likely to be retained than non-developmental students because KCKCC has a tradition of utilizing a strong cadre of highly collaborative college developmental education specialists that include mostly part-time faculty.

Performance agreements are strictly defined among faculty who teach developmental students with the goal of improving student outcomes in developmental reading and writing. The part-time and full-time faculty work very closely with college assessment to monitor efforts; design, implement, and evaluate new strategies in classes; assess student learning; and refine tasks accordingly. The goal in developmental reading and writing is to improve student performance to the level where students can transition to college level classes and do so with confidence and success.

Since 2001 there has been a retention plan in place for developmental students that emphasizes pre-enrollment. Unlike college credit classes for non-developmental students, class time is reserved for pre-enrollment with a check off of student advisors in order to be absolutely certain students are being advised by the developmental teaching staff. Enrollment in the next level mid-term course in reading and writing is one of the associated goals if the student is making an A or B at midterm.

A special performance agreement with the Kansas State Board of Regents is part of the tradition of part-time and full-time developmental student teaching faculty in the Division of Humanities and Fine Arts. Developmental teaching faculty use college “connecting” activities such as plays, clubs, forums, read-ins, and lectures. A Title III learning style project contains a number of activities including a video linked student generated panel on personal learning styles as they apply in writing, reading, studying and test taking. Most important is continued support and expansion of in-service opportunities for part-time faculty who teach developmental students. There are also several full-time faculty teaching learning communities for developmental reading and mathematics classes.

Faculty development in-service programs are available for part-time faculty teaching college credit classes; however, based on retention rates comparable to non-developmental students, it appears these part-time and full-time faculty model preferred retention methods better than other academic areas of the college. The key is apparently the collaborative nature of the work being conducted between part-time and full-time faculty in conjunction with students. Faculty often indicate personal satisfaction that comes from helping students to learn how to properly read, write, or learn mathematics as an adult in developmental programs. Part-time faculty sometimes work additional hours at low pay for the opportunity to obtain a full-time position at the community college. For the vast majority of these faculty members, their good work will not result in the fulfillment of the dream of full-time employment.

The results of this study are two-fold. First, the literature review and statistical data demonstrate that if community colleges are sincere about improving student outcomes, the most efficient way to accomplish this goal is to hire more full-time faculty. The increased effort and attention that full-time faculty have for student learning is an important outcome in community college education. Second, best practices for hiring and maintaining a strong cadre of part-time faculty is essential. Gappa and Leslie (1993) were among the first to document that part-time faculty did not feel connected or integrated into campus life. According to the authors, most part-time faculty report that they are “feeling powerless, alienated, invisible, and second class” (p. 180). They emphasize how integrating part-timers into the fabric of the institution ensures their success, values their purpose, and supports what they do (p. 180). Pisani and Stott (1998) were the first to statistically highlight the

importance of integrating part-timers into their academic department as a strong predictor of commitment to students.

In 1994, the Florida State Board of Community Colleges adopted a set of recommendations related to part-time faculty. By 2005 the majority of the 28 colleges had implemented the State Board's recommendations (Windham, 2005). A comprehensive study by the Board of Education found the most successful programs incorporated part-timers into full-time faculty professional development activities and mentoring programs.

The State of Washington offered exemplary government policy for promoting optimal use of part-time faculty in higher education. State Senate Bill 6583, passed in 1996, issued best practices for hiring adjunct faculty personnel. The Bill included ten best practice guidelines (Washington SSB 6583, 1996):

1. The best practice for deciding whether to use full-time or adjunct faculty, is for each college to develop a written policy on the employment of adjunct faculty that is based on the college mission, and individual program objectives.
2. The best practice for recruitment and selection of adjunct faculty is: a) to make vacancy information available to an appropriate pool of candidates, b) to have a structured application screening process within available resources that involves faculty and college administration and that works toward college affirmative action goals.
3. The best practice for contracts/letters of appointment for adjunct faculty is to provide a written notice of employment to as many adjunct faculty as possible as soon as possible and provide multiple-quarter appointments for adjunct faculty consistent with program staffing needs.
4. The best practice for adjunct faculty performance review is: 1) to conduct evaluations using defined standards and multiple indexes of performance, 2) to share performance reviews with the affected faculty member, 3) to conduct continuing adjunct faculty evaluations with a similar frequency to full time faculty evaluations, and 4) to use evaluations in decisions about adjunct faculty employment, retention, and professional development needs.

5. The best practice for professional development is for colleges to assist faculty to identify development needs and to plan to address those needs in ways that are accessible to as many full-time and adjunct faculty as possible.
6. The best practice is to identify adjunct faculty needs for office space, equipment, and support services in consultation with affected individuals and to meet as many identified needs as possible within available resources.
7. The best practice for communication is 1) to use a variety of communication processes to ensure that adjunct faculty receive information available to full-time faculty, and 2) to ensure that adjunct faculty have available means to give feedback to college leadership.
8. The best practice is to provide individual and group recognition for the contributions made by adjunct faculty.
9. The best practice is to develop/bargain a policy that provides some sick leave to adjunct faculty who have a continuing relationship with the college.
10. The best practice is to develop a definition of “academic freedom” applicable to both adjunct and full-time faculty and to apply normal college grievance processes to academic freedom issues that may be raised by adjunct faculty. (Washington State Senate Bill 6583, 1996, n.p.)

Washington State Senate Bill 6583 also strongly advocated negotiation of compensation packages with part-timers, supplemental compensation for office hours, for attending orientations that provide information feedback, when attending faculty departmental and division meetings, and professional development sessions.

At KCKCC and other community colleges, the overuse of part-time faculty creates demonstrable extra work for full-time faculty who facilitate science lab courses. Traditional community college science lab classes such as microbiology, physiology, chemistry, physics, or general biology are especially planning and physical labor intensive. A great deal of equipment and reagents need to be acquired, prepared, maintained, and used properly in class in conjunction with a staff science lab director. It takes several semesters of teaching

experience for anyone new coming into science lab courses to become familiar with the unique aspects of science labs and work as a team. A cycle of inefficacy is telling if a strong cadre of part-time faculty is not maintained. For example, if the part-timer cannot make it to the full-time faculty class period to witness the special procedures of certain experiments, or if a strong mentoring program is not in place, then the quality of teaching and student learning suffers.

Helen Burnstad (2002) spotlighted the value of a comprehensive professional development program for part-time faculty at Johnson County Community College (JCCC) in Overland Park, Kansas. According to Burnstad and her colleague, Joseph Gadberry, the best way to integrate part-time faculty starts with a hiring process involving the dean and full-time faculty members in the interview process. Moreover, part-time faculty should be provided the same amenities as full-time faculty including office space, office materials, books on teaching techniques, business cards, extra pay for attending orientations, department meetings, and serving on committees. As with colleges in Florida and Washington, part-timers at JCCC are assigned to a full-time faculty mentor or adjunct facilitator that provides a valuable system of performance review and feedback. Indeed, the incentives provided to part-time faculty and full-time faculty mentors at some institutions may approach the costs of hiring full-time faculty.

In Richard E. Lyons (2007), *Best Practices for Supporting Adjunct Faculty*, a template is included at the end of the first chapter to help readers develop an effective orientation instrument and to systematize the process for integrating part-time instructors more efficiently and effectively into the institutional culture. The basic idea of the book is to

provide pragmatic support for administration in developing policies concerning part-time faculty. According to Lyons, the best approach is to “first capture data that will prove useful in making improved course section assignments” and then “assimilate new part-timers so they become effective members of the instructional staff” (p. 7). Authors of each chapter describe initiatives that help to achieve one or more of the identified needs of the adjunct instructors and also describe specific measurable outcomes. Each of the researchers gained administrative and full-time faculty support, operated from a small budget, and provided suggestions back into program improvement on a continuous basis. All of the studies found part-time faculty could provide valuable perspectives to students, the latest trends within critical career fields, and a connection to employers within the community. For this reason, “a well developed cohort of part-time faculty has potential for communicating the institution’s message to opinion leaders within the community” (p. 8). His book offers the most authoritative and thorough recommendations for the changes that need to be made at community colleges regarding the employment of part-time faculty.

Using two back-to-back eight-week semesters coinciding with the regular 16-week semester, while also providing advising and enrollment during the last week of regular class meetings, appears to be an important previously unmeasured way of increasing successful retention of community college students. Similar types of special arrangements for part-time faculty are becoming pervasive in other community colleges. This trend in part-time hiring would make for interesting community college policy study.

Recommendations for Future Research

This study reveals some of the challenges of studying the impact of part-time-faculty on student retention. Future studies would require more in-depth analysis to determine conflicting results and tease out instances where different variables are being masked, or offering contingent explanation. For example, the conflicting results for developmental students by retention in 2003 and 2005 could perhaps be better understood by assessing the mean exposure of developmental and non-developmental students to part-time faculty in each academic year and all years.

Expanding the list of independent variables to include females and males in the three largest ethnic groups could also prove valuable in discerning how gender and part-time faculty interact to bring about the decreased likelihood of Hispanic students being retained to the Spring semester, and African-American students to the next Fall semester. Another possible area of future research on retention would be to gather institutional data regarding which academic divisions or departments are using the most part-time faculty and examine subsequent correlations with retention on this level. It also might prove valuable to develop a “turn-over rate” formula for part-time faculty and compare this data between academic divisions. Finally, a qualitative study that involves conducting exit interviews with students regarding their perceptions and knowledge about part-time faculty might be valuable.

Conclusion

This study offers more than statistical data calling for hiring more part-time faculty based on what now appears to be a slow inexorable process of undermining the teaching profession. This study speaks to a core contradiction in the mission, purpose, and values of

many community colleges. Hiring too many part-time faculty suspends the opportunity for scholars and students alike from gaining lucrative jobs with benefits in the community. By not allowing enhanced employability and job mobility, things like home ownership, the ability to potentially prosper from an entrepreneurial vision, and the drive to establish and grow a viable business enterprise, the whole community suffers.

Hiring too many part-time faculty in cornerstone institutions like community colleges slows the drive for minorities and women to reach socio-economic parity in economics, health education, social justice, and civic engagement. Finally, not replacing full-time faculty has a detrimental effect on the professoriate and future of the public employee retirement systems in Kansas that includes firefighters, police, and primary and secondary teachers. If it is true that the key disadvantage of hiring part-time faculty is the potential for eroding the teaching profession, then hiring too many part-time faculty not only would contradict the learning mission of the college, it would subvert financial resources by reducing enrollment numbers (Lustig, 2006). Optimizing student retention in community college is, then, an imperative when it comes to economic opportunity for disadvantaged students. Most community college students plan to obtain a certificate, associate degree, or complete a vocational career program. For many students, the community college is the last stop on the way to earning a decent wage enabling a reasonable standard of living for themselves and their families.

APPENDIX A

RESEARCH AGREEMENT

Research Protections 9-2005

University of Missouri – Kansas City
Agreement for Research Involving - Coded Private Information

This agreement is made effective this 10 day of ^{Feb}~~Jan~~, 2009, ("effective date") by and between Dean of Instt. Services holder of key to decipher the code (link file) (hereafter Holder) and Curtis V. Smith the investigator receiving the coded private information (hereafter Recipient) for the currently proposed research project entitled:

The Impact of Part Time Faculty on Student Retention Rates
at an Urban Community College

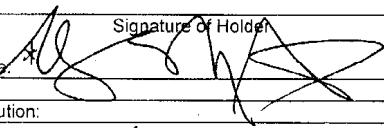
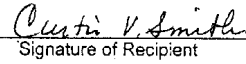
On 10 August 2004, the Office for Human Research Protections issued "Guidance on Research Involving Coded Private Information or Biological Specimens". This agreement is based upon this guidance

The Holder and Recipient hereby certify that:

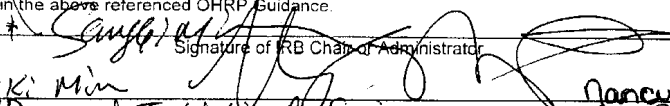
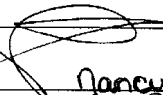
(1) The private information or specimens were not collected specifically for the currently proposed research project through an interaction or intervention with living individuals; or the private information or specimens were collected specifically for the currently proposed research project – however, the recipient was not involved in the interaction or intervention with living individuals; and

(2) The Recipient cannot readily ascertain the identity of the individual(s) to whom the coded private information or specimens pertain because the investigator(s) and the Holder of the key hereby enter into an agreement prohibiting the release of the key to the Recipient under any circumstances, until the individuals are deceased

By signing, both the Holder of the key to decipher the code and the Recipient of coded private information agree to the aforementioned conditions.

 Signature of Holder	 Signature of Recipient
Name: _____	Name: <u>Curtis V. Smith</u>
Title: _____	Title: <u>I Ph.D student</u>
Institution: _____	Institution: <u>Univ Mo Kansas City</u>
Date: _____	Date: <u>2-10-2009</u>

The IRB has determined that the research activity pertaining to this agreement which involves coded private information or specimens does not involve human subjects as outlined by the requirements of HHS regulations at 45 CFR 46 as stated in the above referenced OHRP Guidance.

 Signature of IRB Chair of Administrator	
Name: <u>Sangki Min</u>	Name: <u>Nancy Dow Ph.D</u>
Title: <u>Dean of Institutional Services</u>	Title: <u>SSIRB Chair</u>
Institution: <u>Kansas City Kansas Community College</u>	Institution: <u>umkc</u>
Date: <u>02/06/09</u>	Date: <u>2/17/09</u>

APPENDIX B
INDIVIDUAL FREQUENCY AND PERCENTAGE EXPOSURE
TO PART-TIME FACULTY

FTFTS 2003-2006

Percent Part-Time	Frequency (N = 1831)	Percentage
.00	118	6.4
.06	4	.2
.07	5	.3
.08	17	.9
.11	3	.2
.13	2	.1
.14	18	1.0
.15	8	.5
.16	2	.1
.17	19	1.0
.18	7	.4
.19	6	.3
.20	22	1.2
.21	24	1.3
.22	1	.1
.23	32	1.7
.24	3	.2
.25	127	6.9
.26	1	.1
.27	16	.9
.28	2	.1
.29	18	1.0
.31	41	2.3
.33	44	2.4
.35	6	.3
.36	50	2.7
.38	33	1.8
.39	3	.2
.40	35	1.9
.41	2	.1
.42	39	2.1
.43	41	2.2
.44	13	.7

Percent Part-Time	Frequency (N = 1831)	Percentage
.46	30	1.6
.50	156	8.5
.52	1	.1
.53	13	.7
.54	27	1.5
.56	4	.3
.57	48	2.7
.58	33	1.8
.59	2	.2
.60	33	1.8
.62	16	.9
.63	20	1.1
.64	19	1.0
.65	7	.4
.67	47	2.6
.69	14	.7
.71	10	.6
.72	1	.1
.73	3	.2
.74	1	.1
.75	145	7.9
.77	20	1.1
.78	1	.1
.79	46	2.5
.80	12	.7
.81	16	.9
.82	10	.5
.83	19	1.0
.85	4	.3
.86	10	.5
.88	5	.3
.89	1	.1
.92	12	.7
.93	2	.1
1.00	231	12.6
Totals	1831	100.0

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VITA

Curtis Vinicio Smith was born on June 20, 1953, in Kansas City, Missouri. He was educated in local public schools and graduated from Grandview High School in 1971. He received a Bachelor of Science in Biology from the University of Missouri at Kansas City in 1975, worked toward a Master of Microbiology until 1978, and completed a Master of Arts in the History of Science from the University of Kansas in 1992 with a minor in Renaissance and Medieval History. During that time (1972-1992) Mr. Smith was employed full time as a switchman, brakeman, conductor, or yardmaster for the Union Pacific Railroad.

In 1991 and 1992 Mr. Smith taught microbiology part-time at Johnson County Community College, Maple Woods Community College, and Kansas City Kansas Community College. Since 1992, Mr. Smith has been working full-time at Kansas City Kansas Community College teaching microbiology, nutrition, general biology, and U.S. History. Based on years of teaching experience he has achieved the title, Professor of Biological Sciences.

At KCKCC, from 1996-2001, Professor Smith was President of the College Faculty Association, chaired the Shared Leadership Committee that developed the College Senate model for the college in 1997, and was in the first class trained to teach online in 1998. Professor Smith's *Microbiology: a Laboratory Work Manual*, is used in all microbiology lab classes at the college. He has published seven articles on a broad range of topics in the *KCKCC Ejournal* from 2007-2010. He is a member of the American Society of Microbiology, The American Association for Sustainability in Higher Education, and the Kansas National Education Association.