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Career Technical Education Adjunct Faculty Teacher Readiness: An Investigation of Teacher Excellence and Variables of Preparedness

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CAREER TECHNICAL EDUCATION ADJUNCT FACULTY TEACHER READINESS: AN INVESTIGATION OF TEACHER EXCELLENCE AND VARIABLES OF PREPAREDNESS

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in

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by

Jorge Guerra

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To: Dean Delia C. Garcia
College of Education

This dissertation, written by Jorge Guerra, and entitled Career Technical Education Adjunct Faculty Teacher Readiness: An Investigation of Teacher Excellence and Variables of Preparedness, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of Jorge Guerra is approved.

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DEDICATION

I dedicate this dissertation to my wife Vivian and my children Nicole, Miguel and Jorge. Without their patience, understanding, support, and most of all love, the completion of this work would not have been possible. To my wife Vivian who always encouraged me to stay with it and complete each section. For her waiting patiently while I stayed home and read or wrote for many days and weeks. To my wonderful children who are the main reason why I dedicate my life to work and scholarship. I hope that by completing this research, they too can be encouraged to complete challenges in their lives. Lastly, to my Savior Jesus Christ, whose grace is always sufficient for me.

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ABSTRACT OF THE DISSERTATION

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by

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Florida International University, 2012

Miami, Florida

Professor Roger Geertz Gonzalez, Major Professor

The purpose of this research was to examine the relationship between teaching readiness and teaching excellence with three variables of preparedness of adjunct professors teaching career technical education courses through student surveys using a correlational design of two statistical techniques; least-squares regression and one-way analysis of variance. That is, the research tested the relationship between teacher readiness and teacher excellence with the number of years teaching, the number of years of experience in the professional field and exposure to teaching related professional development, referred to as variables of preparedness.

The results of the research provided insight to the relationship between the variables of preparedness and student assessment of their adjunct professors. Concerning the years of teaching experience, this research found a negative inverse relationship with how students rated their professors' teaching readiness and excellence. The research also found no relationship between years of professional experience and the students' assessment. Lastly, the research found a significant positive relationship between the

amount of teaching related professional development taken by an adjunct professor and the students' assessment in teaching readiness and excellence.

This research suggests that policies and practices at colleges should address the professional development needs of adjunct professors. Also, to design a model that meets the practices of inclusion for adjunct faculty and to make professional development a priority within the organization. Lastly, implement that model over time to prepare adjuncts in readiness and excellence.

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INTRODUCTION

For many years, researchers have studied the impact of full-time and adjunct or part-time faculty on student learning and achievement. Benjamin (1998), Rowen, Chiang and Miller (1997), Kuh (2003), and later Umbach (2007) examined the involvement factors in terms of time or contact and purposeful activities. Sperling (2003) focused on teaching effectiveness and found that only those teachers exposed to and formally trained in teaching and learning practices and grounded in (pedagogical) learning theory become effective teachers in the classroom. Others (Burgess & Samuels, 1999; Goldhaber & Brewer, 2000) posited that advanced degrees and teacher certification, along with subject knowledge, learned teaching strategies and motivation most influenced student learning and achievement. National studies of professional development revealed that when techniques implemented by teachers after receiving professional development were used in the classroom, student learning and achievement significantly increased (Wilson & Berne, 1999). Indeed, all of these researchers appear to say that teacher effectiveness is somehow linked to teaching preparedness.

Although adjuncts, particularly those hired to teach career technical courses may have the level of education and expertise in their subject area credentialing them to teach at a college, they often don't have the teaching experience or preparation (Forbes, Hickey, & White, 2010). Therefore, for adjunct professors to become involved and to test theories in the classroom, it is this researcher's opinion that a sound educational objective for state colleges (formally known as community colleges) is to seek to improve teaching and to implement as many professional development opportunities as

necessary. Lack of access to professional development for adjunct professors appears to be an additional hindrance or obstacle in delivering necessary training to improve teaching in critical areas.

The literature reveals various studies involving areas considered "critical" for teachers to be effective and impact student learning, retention and achievement (Astin, 1993, 1996; Chickering & Gamson, 1987; Pascarella & Terenzini, 1991; Tinto, 1993, 2000; Umbach & Wawrzynski, 2005). Those critical areas are pedagogical knowledge, classroom management skills, critical thinking skills, assessment, and evaluation.

This dissertation analyzed student evaluations of adjunct professors' teaching excellence using a psychometric instrument on two scales and recorded on seven clusters: (a) preparedness, including items relating to how well the instructor is prepared for teaching; (b) professionalism, including items related to the instructor's knowledge, respect for students, and effectiveness in implementing course objectives; (c) evaluation, which includes items relating to whether the instructor evaluates students appropriately in a timely and objective manner; (d) rapport, which includes items relating to the relationship established between instructor and student; (e) enthusiasm, which includes items relating to eagerness and passion that the instructor displays in teaching; (f) delivery, which includes items relating to how effective the instructor is in conveying knowledge to students; and (g) excellence, which includes items relating to a global assessment of the student's perception of the instructor's teaching excellence. The instrument and scale examined the teaching readiness (TR) defined as an optimal preparedness in which students believe the teacher has mastery of the subject and the learning process. TR is hypothesized as incorporating the first three clusters of

preparedness, professionalism and evaluation. The second scale measured the construct of teaching excellence (TE) and is defined as an optimal teacher-student dyadic relationship in which students believe the teacher is effective in helping them learn. TE is hypothesized as incorporating the last four clusters of rapport, enthusiasm, delivery, and excellence (Barnes et al., 2008). The results, as reported by students completing the survey, were compared to the adjunct professor's years of teaching experience, years of experience in the industry career field, and their teaching related professional development exposure, known for this research and referred to as variables of preparedness in order to determine if there is a correlation between those variables and their teacher readiness and excellence.

This chapter presents the background to the problem, the statement of the problem, the research questions, the significance of the study, assumptions underlying the study, delimitations, definitions, operational terms, and a summary.

Background to the Problem

The overall mission of community colleges, now also known as state colleges in Florida, is to provide for the educational needs of the local community they serve. Historically, this has been accomplished in several ways. First and foremost, state colleges have offered lower division courses leading to an Associates of Arts degree, enabling students to transfer to a 4-year university, while making it more affordable for students (and ultimately their parents) to attend classes close to home at reduced tuition costs. State colleges have provided preparation or remediation to students who are under-prepared to enter college. They have also delivered continuing education or non-credit courses for special interests and local business needs.

Another overarching and important mission of state colleges is to offer technical certificates and degrees of Associate in Science (A.S.) and Associates of Applied Science (A.A.S.) programs. The A.S. and A.A.S. are 2-year degrees that are often terminal, but may also articulate to specific baccalaureate degrees and teach specific skills that prepare students for careers in industries. For example, many state or community colleges around the nation have programs in nursing, automotive technology, graphic design, information technology, office systems technology, aviation and criminal justice, just to name a few. These programs usually address the needs of 16 cluster industries identified by the U.S. Labor Department as essential for economic growth for the country. These programs serve a vital role in the development of jobs for communities and generate economic well-being for businesses.

Industry professionals serving as adjunct professors at state colleges largely teach these programs and courses. Their preparedness for the classroom is essential for student success, as well as the success of the courses and programs for which they teach. Too often, these adjuncts are hired by colleges to deliver course content but have no formal training in teaching methods, pedagogy, assessment of learning outcomes, or classroom management skills (Forbes et al., 2010).

In order to meet the demand for mid-skilled workers generated by these jobs, state colleges will need to hire more qualified instructors in those fields. Reductions in budget, changes in technology and increases in enrollment for these professional and career programs forces colleges to hire more adjunct or part-time instructors at a faster rate to meet the growing needs of a workforce. Part-time or adjunct faculties are employed at state colleges for three main reasons. First, they save institutions money in

both salaries and benefits. Second, the use of part-time faculty increases institutional flexibility in matching the demands of varying enrollments. Third, they bring real-world experience into the classroom (Banachowski, 1997).

Notwithstanding the merits or drawbacks and given the reduced budgets around the country, sustainability of state college programs currently depends on adjunct professors. In 2009-2010, Florida state funding per full-time equivalency (FTE) of community colleges declined 70% from 2006-2007 levels (Holdnak, 2009), from $3,793 per FTE to $2,673, while FTE enrollment has increased 81% over the same period, making it almost impossible to cover the cost of courses. Hiring adjunct professors is one way colleges can continue to offer highly valued courses at reasonable cost to students without substantially raising tuition.

In fact, at most institutions of higher education, adjunct professors comprise the majority of teaching staff. On average, according to the National Center for Educational Statistics (2005), colleges have 67% adjunct faculty to 33% full-time professors. According to the U.S. Department of Education, part-time faculty have steadily increased in the past three decades, while full-time tenured and full-time tenure-track faculties have declined (see Table 1 [NCES, 2005]). Given the steady increase in part-time adjunct faculty, the question of the teaching qualifications of adjunct professors may be raised.

Table 1

Percentage of Full-Time Versus Part-Time Faculty

Year	Full-Time Tenured	Full-Time Tenure Track	Full-Time Non-Track	Part-Time Adjunct
1975	36.5%	20.3%	13%	30.2%
1989	33.1%	13.7%	16.9%	36.4%
2005	21.8%	10.1%	20.1%	48%

Professional Development Defined

According to the thesaurus of the Educational Resources Information Center (ERIC) database, *professional development* refers to "activities to enhance professional career growth." These activities include individual development, continuing education, and in-service education, as well as curriculum writing, peer collaboration, study groups, and peer coaching or mentoring. Fullan and Steigelbauer (1991) expanded the definition to include "the sum total of formal and informal learning experiences throughout one's career from pre-service teacher education to retirement" (p. 326). Considering the meaning of professional development of delivery options in the technological age, Grant (n.d.) suggests a broader definition of professional development that includes the use of technology to foster teacher growth:

> Professional development ... goes beyond the term 'training' with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn new skills but also develop new insights into pedagogy and their own practice, and explore new or advanced understandings of content and resources. This definition of professional development includes support for teachers as

> they encounter the challenges that come with putting into practice their evolving understandings about the use of technology to support inquiry-based learning.... Current technologies offer resources to meet these challenges and provide teachers with a cluster of supports that help them continue to grow in their professional skills, understandings, and interests.

Barnes et al. (2008) conducted a research study to lay the groundwork for the development of a sound measuring instrument for collegiate teaching proficiency that would be composed of two separate dimensions: teaching readiness (TR) and teaching excellence (TE). They identified seven clusters in which professors were being evaluated to determine which generated the most effective teachers. The clusters were: (a) preparedness, including items relating to how well the instructor is prepared for teaching; (b) professionalism, including items related to the instructor's knowledge, respect for students, and effectiveness in implementing course objectives; (c) evaluation, including items relating to whether the instructor evaluates students appropriately in a timely and objective manner; (d) rapport, including items relating to the relationship established between instructor and student; (e) enthusiasm, including items relating to the eagerness and passion the instructor displays in teaching; (f) delivery, including items relating to how effective the instructor is in conveying knowledge to students; and (g) excellence, including items relating to a global assessment of students' perception of instructor's teaching excellence that did not address any specific teacher attributes. They asserted that teaching proficiency incorporated two distinct ideas or dimensions, the instructor's readiness for teaching and the instructor's classroom excellence in imparting knowledge to students. It seemed apparent that the clusters that comprised readiness were antecedent

to the clusters that comprised the excellence dimension. Successful performances in the items comprising readiness were a necessary, but not sufficient condition to achieve success on items in the excellence dimension (p. 201).

Statement of the Problem

There is extensive literature on the topic of teaching preparedness and professional development that lead to student achievement. However, very little research has been performed on adjunct faculty who teach career technical courses. Most of the literature focuses on high school technical teachers or adjuncts in the academic disciplines of English, math, social sciences and humanities. This research attempted to address these gaps in the literature and provide a foundation for further empirical research that will bring clarity to the needs of CTE adjuncts and their preparedness to meet the needs of students.

The combination of greater demand for workforce development programs to meet the needs of industry, the projections of increased enrollment in higher education, and the shrinking budgetary support from the states, colleges will continue to hire more adjunct professors from industry to teach career and technical courses. Adjunct faculty are needed to meet the demand for relevant instruction in workforce development programs. They represent a large cadre of part-time employees that engage large number of students taking courses leading to certificates, A.A.S and A.S. degrees. Adjuncts impact the learning outcomes and student success. It stands to reason that they ought to be exposed to teaching methods and other student success best practices through professional development.

The seven clusters identified by Barnes et al. (2008) that may determine effective teachers is summarized in preparedness for teaching, implementing course objectives, evaluation, student engagement, enthusiasm, pedagogy, and excellence as perceived by students. These seven clusters are teachable through professional development, particularly those in the category of TR, defined as an optimal preparedness in which students believe the teacher has mastery of the subject and the learning process, and are considered antecedent to the relational dimension. If this is probable and colleges hire more industry professionals as adjunct professors to meet the demand of increased enrollment and the need for an educated workforce, it will be necessary to consider the professional development needs of faculty who teach courses to prepare them to be more effective in the classroom.

The Research Questions

The research was undertaken to answer the following six questions:

1. Does student evaluation of instructor teaching readiness (TR) differ significantly by the number of years teaching courses at a state college?
2. Does student evaluation of instructor teaching excellence (TE) differ significantly by the number of years teaching courses at a state college?
3. Does student evaluation of instructor TR differ significantly by number of years of experience in the industry?
4. Does student evaluation of instructor TE differ significantly by number of years of experience in the industry?
5. Does student evaluation of instructor TR differ significantly by teaching related professional development exposure?

6. Does student evaluation of instructor TE differ significantly by teaching related professional development exposure?

Purpose of the Study

Prior research (Alstete, 2000; Diamond, 2002; Graf, Albright & Wheeler, 1992; Sorcinelli, 1988, 2002) in the area of professional development of faculty has focused on tenured and some part-time faculty who teach in the Associate of Arts degree offerings. Very little research has been conducted focusing on adjunct professors who come from industry and teach core courses in technical certificates, A.A.S. and A.S. degree-offerings. Moreover, as career technical areas grow and the need for professional industry involvement increases, colleges may be hiring more adjuncts from their respective professional fields. Hence, it is expected that more part-time adjuncts will be scheduled to teach who have never taught in a classroom setting before and will need the teaching skills and professional development necessary to improve student success.

The purpose of this research was to examine the teaching readiness and teaching excellence of adjunct professors teaching career technical education courses through student surveys. It assessed whether the instructors and students really "connect" making for a fruitful learning process. Instructors with low scores on these scales should work on improving their skills. Moreover, facets of the constructs may also yield guidance for teaching improvement that may be developed through professional development opportunities at colleges.

The research investigated the relationship between student evaluation of adjunct teacher readiness, excellence and selected instructor variables associated with Career and Technical Education (CTE) programs. The research tested the relationship between

teacher readiness (TR) and teacher excellence (TE) with the number of years teaching, the number of years in the professional field, and exposure to teaching related professional development, referred to here as variables of preparedness.

Significance of the Study

This research may have implications that influence policy for colleges to establish a framework to address readiness for adjunct faculty. The results of this research provide relational correlation, and has implications on classroom practices that influence teaching readiness and excellence. Moreover, the research may establish the foundation for further empirical research in this burgeoning area of higher education to discover how best to approach this problem of career technical faculty preparedness and their need for professional development.

As a result of this research, we may find that preparing adjuncts for the classroom and creating incentives to participate in teaching and learning activities, adjunct teachers may have better tools to prepare lessons, assess students, design opportunities for critical thinking, and develop an improved educational atmosphere. As some of the literature suggests, a positive effect may be realized for students in achievement, retention and success in their college experience.

Assumptions Underlying the Study

Several assumptions underlie this study. First, the researcher assumed that the participants investigated were a representative sample of adjunct faculty teaching CTE courses at state colleges. Second, the researcher also assumed that the majority of adjunct faculty had not received formal education training in the areas of pedagogy, classroom management, assessment and evaluation, collaborative learning, and critical

thinking techniques. Third, the researcher assumed that the student survey measured students' perceptions of teacher readiness and teacher excellence of adjunct professors. Lastly, it was assumed that the demographic data (ethnicity, gender and age) were sufficiently free of error.

Delimitations

This study confined itself to surveying students receiving instruction from part-time adjunct professors teaching core courses in a technical certificate, Associates of Science, or an Associates of Applied Science degree program. Because this group was a convenience sample, the researcher attempted to ensure that it contained adequate range on critically important dimensions within generalized assumptions (Weiss, 1994). Some examples, but not exhaustive of CTE programs, are emergency medical technology, nursing, automotive, aviation, public safety, business, and information technology. Total participant numbers were 58 adjuncts or 12.7% response rate from the total universe of 454 adjuncts eligible in the Fall semester 2012. There were 1,015 career technical education students who completed the survey rating their professors on teaching readiness and excellence. The results should be generalizable to other CTE programs in large urban areas due to the similarities of those colleges. Faculty experience many of the same challenges, characterized by large enrollment, close relationship with business and industry, student diversity issues, and academic under-preparedness (Wallin & Smith, 2005).

Definitions and Operational Terms

For the purposes of this research, the terms adjunct professor, part-time faculty and contingent faculty will be used interchangeably to describe faculty who are not

employed at colleges as permanent faculty members and without long-term contracts. These are faculty who are used "as needed" to meet the demands of the college or the department on a semester-to-semester basis. They are hired based on their expertise and experience in the field or discipline and comply with the Southern Association of Colleges and Schools (2006) credential accrediting criteria. This research only examined adjunct professors who teach Associate in Science and Associate in Applied Science degrees, as well as technical certificate courses. For purposes of this research, the term Associate of Science or A.S. degree also includes Associates of Applied Science, A.A.S. and certificates for post-secondary adult vocational programs. Instructors that teach career technical education courses fall under the same employment criteria in all three categories.

Barnes (2008) defined teaching readiness (TR) as an optimal preparedness in which students believe the teacher has mastery of the subject and learning process. Teaching excellence (TE) was defined as an optimal teacher-student dyadic relationship in which students believe the teacher is effective in helping them learn (p. 201).

Generally, professional development activities are scheduled by colleges as workshops, seminars, courses and online learning activities that are offered to professors to assist in the development of teaching and student learning. For the purpose of this research, the three variables of the number of years teaching at an institutional of higher learning, the number of years in the profession, and the exposure to teaching related professional development combined are known as the variables of preparedness.

Summary

In this chapter we discussed the background issue facing community colleges and their increased need to hire adjunct professors to meet the workforce demand for skilled graduates. We discussed the preparedness of the adjuncts for the classroom and the essential need to deliver content but may not have formal training in teaching methods. We defined the seven clusters in which professors are being evaluated and how they are collected into 2 categories of Teacher Readiness and Teacher Excellence. Finally, we provided the purpose of the research and the 6 questions to determine if there is a relationship between TR and TE to three variables.

In the following chapter, the literature review, several research studies were examined to determine the issues concerning the preparation of adjunct faculty. A few research studies are inconclusive about whether full-time faculty are more effective than adjunct faculty. Regardless, the professional development opportunities should be made available to all faculty so that students receive a qualified, prepared and trained professional teacher. The issue of teacher certification is considered as a factor that influences student learning and achieving student success. Teacher subject knowledge and its effects on students were also researched. The literature outlines the importance of professional development for adjunct faculty and the need to create activities that demonstrate effective teaching methods, classroom management skills, and interactive strategies. Nevertheless, the researcher identifies gaps that exists in the literature; addressing the specific needs of adjuncts teaching career technical courses and whether a correlational relationship exists between independent variables of preparedness as perceived by their students and variables of experience and professional development.

Chapter II

Literature Review

The creation of campus teaching and learning centers, grants from public and private sources specifically focused on teaching initiatives, publications dedicated to teaching-related research, and national conferences and workshops dedicated to improving teaching are all examples of the burgeoning interests in the development of teaching competence in faculty beyond mere subject matter expertise (Major & Palmer, 2006). This chapter provides a review of the literature as it relates to the role of professional faculty development in supporting teaching and learning at the college level with particular emphasis on part-time faculty. Part-time faculty are frequently hired on the basis of their content expertise and industry experience (Banachowski, 1997), yet many part-time instructors have no teaching background or education related to teaching and learning. This chapter demonstrates the critical role that part-time faculty play in many postsecondary institutions, and highlights the lack of attention to professional development and training that has been given to these critical contributors to the college environment.

Since the modern theories and identities of John Dewey, practitioners and academics have struggled with the concept of how to prepare teachers for the classroom. Dewey basically put forth two positions regarding the goals of practical preparation. The apprenticeship approach was designed to present experiences so as to inform and "make real" the components of theoretical work. The laboratory approach allowed for experimentation with new practices and untested proposals. Dewey favored the scientific orientation of the laboratory over the practical and traditional perspectives of

apprenticeship. This view is consistent with the preferred method of research universities and their commitment to scientific experimentation, invention, discovery and progress (Shulman, 1987). Notwithstanding, with the growing number of teachers needed in the classroom and the shortage of teachers graduating from colleges, the apprenticeship approach is prevailing as the method most commonly used to prepare teachers.

Conceptual Framework

The conceptual framework for this research comes from the body of work developed by Dr. Paul Ramsden, one of the leading international authorities on teaching, learning and leadership in higher education. He believes there are three related kinds of learning involved with faculty. The first kind is the constant development of one's own understanding of the subject being taught. It implies professional development, scholarship and research of the subject (Ramsden, 1991). The second form of teacher learning is understanding the ways in which students understand and misunderstand the subject matter being taught, which implies inquiry into how specific subject matter is comprehended, together with a desire and an ability to use the results of tests and assignments to change one's teaching so that it more accurately addresses the errors and misconceptions of students. Third, understanding the ways students interpret requirements. This implies a persistent sensitivity to differences between how students actually perceive teaching and how you would like them to perceive it. Excellence in teaching demands unremitting attention to activities, which increases the probability that students will adopt deep approaches to learning; and it implies being prepared to alter one's behavior in response to new problems and new challenges (p. 149). This research focuses on all three of these factors by first evaluating the professional development that

adjunct faculty have received in preparedness to teach and by determining their excellence as a function of reflective evaluation and responses to student needs.

Ramsden (1991) established several key points that are necessary ingredients for effective teaching in higher education. This research bases itself on these factors to argue for the need of professional development of adjunct faculty:

> - Teachers clearly introduce concepts, stress key ones and make links between them.
> - Use language that most students find comprehensible.
> - Concepts and explanations are demonstrated in examples that are relevant to the experience of most students.
> - Learning is centered on the application of ideas, not the repetition of words.
> - Concepts are introduced in steps, moving from simple to complicated; teachers check at each stage that students understand.
> - Topics are introduced in logical sequence.
> - Classes are well presented and handled.
> - Most students can recognize and use explanations and theories in new cases. (p. 151)

Figure 1 provides an understanding of what is considered as good teaching by Ramsden.

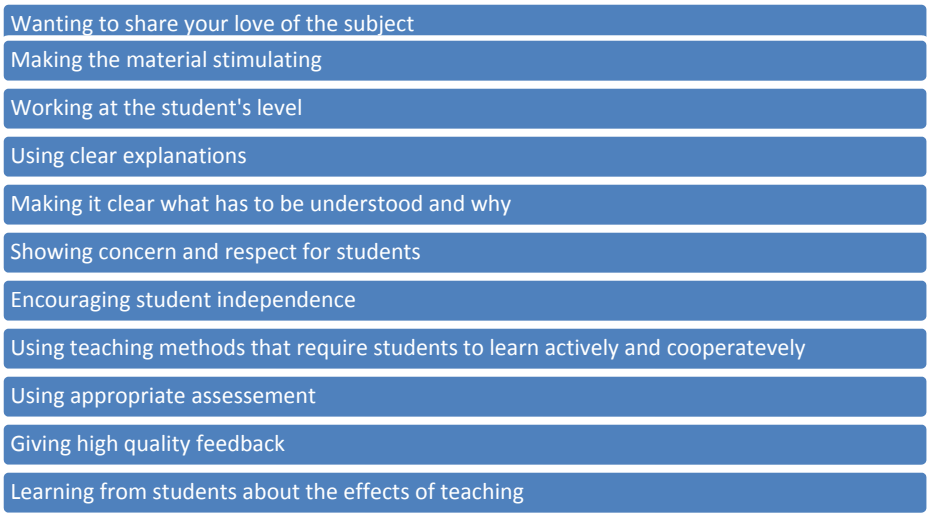

Figure 1. Good teaching practices.

The Need for Adjunct Faculty

In 2001, the U.S. Department of Labor estimated that technical jobs are experiencing high growth and projected that the highest demand will be for careers requiring two years of college. The latest estimates are that 80% of all new, high-demand jobs in the country will require an A.S. degree or a college certificate. According to the 2002 National Center for Educational Statistics, the five highest number of certificates awarded in 1999-2000 were in the areas of health professions and related sciences (31,945), business management and administrative services (19,024), protective services (9,633), computer and information sciences (8,984), and transportation and material moving workers (8,560). Individuals who were awarded these certificates did not complete a degree, but did attain a particular educational goal, achieving mid-skilled proficiency. These figures indicate that two-year colleges have assumed the major responsibility for preparing mid-skilled workers (Cejda & Rhodes, 2004).

While advocating for the better treatment of part-time faculty, Leslie and Gappa (2002) summarized findings from an analysis of two databases: a survey of community college faculty conducted by the Center for the Study of Community Colleges (CSCC) and the National Survey of Post-secondary Faculty (NSOPF) conducted in 1992-1993 by the National Center for Educational Statistics. They found that 51% of all part-time faculty are employed elsewhere in non-teaching jobs and nearly two-thirds of them (61%) work more than 30 hours a week at those jobs. They also concluded that there is little in the data to suggest that the popular image of part-time faculty as under-qualified, nomadic, or inadequately attentive to their responsibilities has any validity. To the contrary, the portrait that emerges shows part-time faculty in community colleges to be stable professionals with substantial experience who are committed to their teaching. The NSOPF survey of part-time faculty reported that adjuncts do not spend a substantially different amount of time on professional development than full-time professors (5.8% adjuncts vs. 4.6% for full-time professors).

On several other measures in a Community College Survey of Student Engagement (CCSSE) (2007), part-time faculty members appear less committed, accomplished, and creative in their teaching than full-time faculty. For example, they are significantly less likely to have received an award for outstanding teaching, taught with someone from outside their department (15% for adjuncts vs. 24% for full-time faculty), revised a course syllabus within the last three years (88% for adjuncts vs. 97% for full-time faculty) prepared a multimedia presentation for class (42%for adjuncts vs. 53% for full-time faculty), or attended a professional conference in the last three years (67% for adjuncts vs. 89% for full-time faculty). It is difficult to interpret these differences and

additional research is needed. Nevertheless, it does raise the question about adjunct professors' exposure to advances in academia.

For the most part, adjunct professors hold a Masters of Science degree in their area of expertise, although in some career areas they may have a lower degree considered terminal in their profession. Bartlett (2002) explored the national certification of career technical teachers in community colleges. He found that half (50%) of the states have no set standards for this group. In some states, they test for occupational competency but not teaching competency. Bartlett suggested that the National Board for Professional Teaching Standards should take the responsibility to develop standards for this group of faculty. That said, community colleges are challenged with acquiring adjunct faculty who possess both the technical knowledge and academic credentials commensurate with tenure-line faculty status.

The Role and Purpose of Faculty Development

High-quality faculty professional development as envisioned by the U.S. Department of Education (2001) refers to rigorous and relevant content, strategies, and organizational supports that ensure the preparation and career-long development of teachers and others whose competence, expectations and actions influence the teaching and learning environment. Both pre- and in-service professional development require partnerships among schools, higher education institutions, and other appropriate entities to promote inclusive learning communities of everyone who impact students and their learning.

Research in the area of teacher preparation and student achievement has intrigued educators for many years. It is perhaps logical that effective teaching requires expertise

in the content one is teaching. Effective instruction is equally dependent upon effective teaching strategies to move that content from the mind of the teacher to the mind of the student (Shavelson, 1973). Content knowledge is a necessary but insufficient requirement to effective instruction. Pedagogical knowledge, expertise in the field of teaching and learning, is critical to student success (Fernandez-Balboa & Stiehl, 1995). The purpose of gaining pedagogical knowledge is to establish a firm base of teaching techniques that produce a learner-oriented environment to support student achievement (Porter & Brophy, 1988).

Colleges routinely provide professional development opportunities to faculty to enhance pedagogical expertise, introduce new technologies, and to integrate student-centered learning strategies (Hannafin & Land, 1997; Johnson, Johnson, & Smith, 1991, 1998). Professional development can play a particularly important role in colleges because college faculties are often selected and hired on the basis of their knowledge of a particular content area and not on the basis of having completed any form of teacher training. Thus, college faculty can benefit greatly from engaging in ongoing professional development activities that are targeted toward increasing instructional skill in the classroom (Strom-Gottfried & Dunlap, 2004). This can be particularly important in a community college setting because most of the faculty are teaching part-time and the majority of students enrolling are developmental (not ready for college) and need strong academic support.

Unfortunately, part-time faculties are often overlooked in the professional development planning that most often centers around the needs of full-time instructors (Smith & Wright, 2000). This gap in support can have negative consequences for both

faculty and student. Part-time instructors may feel unprepared for the challenges of teaching (Sorcinelli, 2000), and students may feel shortchanged by teachers that are not prepared to meet their needs. The failure to provide adequate support to part time faculty can also have implications for accountability. This is particularly the case in Florida community (state) colleges, which are closely examining their community colleges for quality and student outcomes (Calcagno & Long, 2008). These standards are applied to both full- and part-time faculty, and so it is important that part-time faculty are as prepared and supported as their full-time counterparts. The effectiveness of part-time instructors has been examined in multiple studies and discussed in the following section.

How Part-Time Faculty Compare to Full-Time Faculty

Several researchers (Benjamin, 1998; Boyd, Goldhaber, Lankford & Wyckoff, 2007; Burgess & Samuels, 1999; Goldhaber & Brewer, 2000; Kuh, 2003; Rowan, Chiang, & Miller, 1997) studied full-time and adjunct faculty and the impact they have on student learning and achievement. Their findings were inconclusive. Benjamin and Kuh both argued that the primary factor in student achievement was the involvement between faculty and students and not full- or part-time status. Benjamin asserted that because of inadequate compensation and professional support, part-time faculty were less likely to engage with students outside the classroom and tenure track faculty, on average, were more involved with students which therefore affected learning.

Kuh (2003), however, indicated that when the involvement was associated with encouraging greater effort to purposeful activities during college, student interaction became a factor in their achievement and learning, proving that more feedback and interaction lead to greater student success. Casual contact, on the other hand, had little or

no effect on learning gains. Therefore, more quality time contact, such as feedback given through assignments and assessments, resulted in better student achievement. Both Benjamin and Kuh acknowledged that interaction with students affected their achievement. While Benjamin concentrated on the amount of contact, Kuh qualified the contact with purposeful activities. He demonstrated it was the activity itself that caused some increases in student achievement. The activity and the length of activity seemed to be the factors that improved achievement.

While quantitatively researching over 46,000 students enrolled in Math and English courses at Maricopa County Community College in Phoenix, Burgess and Samuels (1999) revealed that students taking courses from part-time faculty were under-prepared when taking a second sequential course with a full-time faculty member. They found that in the academic, liberal arts areas of Math and English, being assigned a part-time faculty member was a significant factor in student achievement. However, their research did not include part-time faculty who teach in the applied sciences and are hired based on their recent knowledge and experience.

National studies of professional development programs for two-year college faculty revealed that part-timers who experience professional development activities use the same methods of teaching as full-timers (Kelly, 1992). Umbach (2007) showed that contingent status, particularly part-time status, was negatively associated with faculty job performance related to undergraduate education. How faculty members structured their courses and time spent preparing for class differed by appointment type. Part-time faculty used active and collaborative techniques less frequently and spent less time preparing for class than their more permanent peers. Umbach did not address the amount

of professional development the contingent faculty received or the effects of professional development in active and collaborative techniques.

What Constitutes Good Teaching for Full- and Part-Time Faculty

Good teaching is frequently associated with supporting student learning. Good teaching, then, is evident when students achieve the outcomes that are desired; knowledge is gained and applied. Eble (1988) and then Ramsden (1991) stated that research findings on good teaching mirror with singular accuracy what students would say if they were asked to describe what a good teacher does. Good teaching involves being at home with one's subject and with others. Good teaching usually includes the application of methods that we know beyond reasonable doubt are more effective than a diet of straight lectures and tutorials, in particular methods that demand student activity, problem solving and cooperative learning. Good teaching is not just a series of methods, recipes and attitudes, but a subtle combination of technique and way of thinking with the skills and attitudes taking their proper place as vital but subordinate partners alongside an understanding of teaching as the facilitation of learning. Understanding what techniques achieve strong student learning outcomes can aid practitioners in shaping professional development activities. Effective teaching is often considered achieved when students accomplish “deep learning.” Kember and Gow (1994) administered the Biggs Study Process Questionnaire to detect whether students were using a "deep approach," "surface approach," or "achieving approach” to study. They found “the methods of teaching adopted, the learning tasks set, the assessment demands made and the workload specified are strongly influenced by the orientation to teaching” (p. 59). Thus, they recommended that staff development be directed toward changing lecturers' strategies from knowledge

transmission to learning facilitation to promote deep learning. They noted that such a change in conceptions would need the adoption of an alternative model of the teaching-learning process. "It is likely that such a shift in paradigmatic beliefs would have to be accompanied by a change in teaching style-away from a unidirectional lecturing format and toward a more interactive style" (p. 70).

Shulman (1987) developed a model for instruction that focused on the increasing sophistication of students as they gained knowledge and understanding through the teaching and learning process.

> Comprehension provides the foundation subject matter structures, ideas within and outside the discipline. From comprehension, transformation emerges through its own four stage process of (a) preparation: critical interpretation and analysis of texts, structuring and segmenting, development of a curricular repertoire, and clarification of purposes; (b) representation: use of a representational repertoire which includes analogies, metaphors, examples, demonstrations, explanations, and so forth; (c) selection: choice from among instructional repertoire which includes modes of teaching, organizing, managing, and arranging; and (d) adaptation and tailoring to student characteristics: consideration of conceptions, preconceptions, misconceptions, and difficulties, language, culture, and motivations, social class, gender, age, aptitude, interests, self-concepts, and attention.
>
> Comprehension and transformation, then, support the third phase; instruction. Instruction is characterized through presentations,

> interactions, group work, discipline, humor, questioning, and other aspects of active teaching, discovery or inquiry instruction, and the observable forms of classroom teaching. Instruction must then be evaluated and reflected upon. These provide the next two stages of the model. The final phase is the development of new comprehension of purposes, subject matter, students, teaching, and self. Consolidation of new understandings, and learning from experience also take place during this phase. (p. 15)

Shulman (1986) indicated that teaching consists of many layers of knowledge, including subject or content knowledge, pedagogical knowledge and curricular knowledge. Content in the discipline consists of theories, principles and concepts, while pedagogical knowledge focuses on teaching itself. Curricular knowledge, on the other hand, involves all that encompasses the body of knowledge available in the subject. Shulman indicated that Pedagogical Content Knowledge (PCK) was the way of representing and formulating the subject to make it comprehensible to others. Since there is no single most powerful form of representation, the teacher must have at hand a veritable armamentarium of forms of representation.

PCK is of special interest because it identifies the distinctive bodies of knowledge for teaching (Shulman, 1987). Schulman argued that teaching was a learned profession and structures of subject matter, the principles of conceptual organization, and the principles of inquiry answer two kinds of questions in each field: Namely, (a) What are the important ideas and skills in this domain?, and (b) How are new ideas added and deficient ones dropped by those who produce knowledge in this area? Further, Mishra and Koehler (2006) defined the concept of pedagogical content knowledge as:

> PCK is deep knowledge about the processes and practices or methods of teaching and learning and how it encompasses, among other things, overall educational purposes, values, and aims. This is a generic form of knowledge that is involved in all issues of student learning, classroom management, lesson plan development and implementation, and student evaluation. It includes knowledge about techniques or methods to be used in the classroom; the nature of the target audience; and strategies for evaluating student understanding. A teacher with deep pedagogical knowledge understands how students construct knowledge, acquire skills, and develop habits of mind and positive dispositions toward learning. As such, pedagogical knowledge requires an understanding of cognitive, social, and developmental theories of learning and how they apply to students in their classroom. It also involves knowledge of teaching strategies that incorporate appropriate conceptual representations in order to address learner difficulties and misconceptions and foster meaningful understanding. (pp. 1026-1027)

Cox (2003) and Banachowski (1997) warned that the typical portrayal of college teaching as a set of teaching techniques is short-sighted. Both argued that teaching various techniques was easy, but understanding how to use them took constant practice and reflection. This is where comprehensive professional development programs become critical to the success of such aspirations.

The Need for Faculty Professional Development

Student thinking was often considered to be evidenced by their ability to memorize, recall, and apply content knowledge to solve problems. Thus, memorization of course content was the prevailing method of teaching used by adjunct professors lacking proper training. Without exposure to other frameworks, adjuncts may be at a disadvantage to prepare lessons that could mature, build, and improve student learning. Teachers often use strategies to reinforce student attention to particular content and mnemonic devices to assist in memorization to get through a quiz or test, and call it "evidence of learning" (Staib, 2003). Professional development programs designed to teach new pedagogies could shift attention away from memorization toward critical thinking which would improve the overall learning outcomes and produce far more engaging and interesting lessons thus enhancing student success.

Other studies like Fernandez-Balboa and Stiehl (1995) drew data obtained from phenomenological interviews with 10 university professors, all experienced teachers recognized by their peers and administrators. Their data indicated that professors not only construct and use generic PCK with insights of good teaching, but have argued that to help students learn, all faculty need to understand who their learners are, being responsive to differences that may arise from culture, family experiences, learning styles, and processes. The study suggested a need for professors to think about how students learn different kinds of materials for different purposes. Also, faculty members needed to be able to identify the strengths and weaknesses of different learners and develop knowledge to work with a specific student's needs.

Knowledge about learning would guide faculty members toward making pedagogical decisions that have an effect on student learning. Teacher knowledge and beliefs about what to do, how to do it, and under which circumstances to do it could affect the way students learn a particular subject matter. In a study conducted by Major & Palmer (2002), faculty expressed that being able to change, grow, respond, and learn about learning did have an important influence on student learning and the experience-integrated student learning and teaching into a seamless whole.

What instructors need to know in order to be the centerpiece of both a liberal and teacher lead educational expert is the subject of great interest and concern. In 1991 at a conference in East Lansing, Michigan, Schulman stated "Aristotle judged that teaching was the highest form of understanding…that no test of human understanding was more demanding than the test of whether you could take something you thought you knew and teach it to someone else." Schulman's question was: "How does how well you know something relate to how you teach it to someone else?" In his lecture, he posited that teachers begin to appreciate the complexity of pedagogical performance and the complexity of pedagogical understanding that lies behind good teaching when reflection and improvement take form. He explained that teachers begin to understand that teaching is much more than just managing a classroom or "knowing your subject," but rather that there is a process of development necessary for reflection and improvement.

Feldman's (1997) research suggests that student course achievement has an average correlation of .57 with teacher preparation-organization, .56 with teacher clarity and understandability, and .49 on the extent to which course objectives are met. If there is a correlation between student achievement and teacher preparedness, more research is

necessary to determine what areas of technology usage, student support services and guidance, instructional or pedagogical and curricular professional development may be useful for student success.

D'Apollonia and Abrami (1997) reduced the dimensions of teacher behavior to three skill areas: delivering instruction, facilitating interaction, and evaluating students, or as they named "general instructional skill." Pascarella and Terenzini (2005) commented about improving teaching effectiveness, stating that clarity, expressiveness, and organization are learnable behaviors by college teachers and suggests that we may be able to improve faculty teaching effectiveness through purposeful interventions. They further commented that faculty who exhibited a greater use of learning facilitation were significantly more likely to have students who took a deep approach to learning. In other words, adjunct professors may be able to improve their effectiveness and their excellence through purposeful interventions of professional development.

The tendency by most teachers, both full-time and part-time, is to concentrate on the areas they feel most comfortable teaching using methods they were most likely exposed to while students themselves (Thompson et al., 2002). Therefore, without exposure to new methods and techniques, teachers will mimic what they have seen in the past and teach areas they know well. For example, lecturing is by far the instructional approach most often used in postsecondary education. Yet, lecturing may not be a particularly effective approach for students to learn. Students have different learning styles and learn through cooperative and collaborative activities. They develop critical thinking skills by using inquiry designs that cause them to research and approach knowledge building through problem solving (Ironside, 2005). Thus, adjunct professors

should be exposed to these and other teaching designs to change their paradigm about effective teaching.

Elements and Models of Effective Professional Development

In the last two decades, research has developed a new paradigm for professional faculty development (Stein, Smith & Silver, 1999). Research has begun to create a consensus about the context, content and design of high-quality professional development (Hawley & Valli, 1999). The most useful professional development emphasizes active teaching, assessment, observation, and reflection rather than abstract discussions (Darling-Hammond & McLaughlin, 1995). Professional development that focuses on student learning and helps teachers develop pedagogical skills to teach specific kinds of content has strong positive effects on practice (Blank, De Las Alas, & Smith, 2007; Wenglinsky, 2000).

Research on effective professional development also highlights the importance of collaborative and collegial learning environments that help develop communities of practice with the ability to promote change (Darling-Hammond & McLaughlin, 1995; Hord, 1997; Knapp, 2003; Louis, Marks, & Kruse, 1996; Perez et al., 2007). Although time is not the only variable that matters, Yoon, Duncan, Lee, Scarloss and Shapley (2007) found that sustained and intensive professional development was related to student achievement and programs offering between 30 and 100 hours spread over six to 12 months had the greatest effects.

Ho, Watkins and Kelly (2001) developed a program that assisted college faculty participants in "reflecting on their espoused conceptions of teaching and their actual teaching practices" (p. 147). The program involved four processes: self-awareness,

confrontation, exposure to alternative conceptions, and a commitment building process wherein the participants moved from understanding their current teaching conceptions and practices to planning future practice. The study found that the teachers who showed positive changes in their conceptions of teaching also demonstrated "significant improvement in their teaching practices as perceived by their students," and three of these teachers were able to "induce a positive change in their students' studying habits" (p. 164). Ho et al. (2001) concluded that their study "provides evidence that a development in teaching conceptions can lead to improvements in teaching practices and student learning" (p. 165).

This type of program holds a great deal of promise in effecting long-term change in the teaching practices of university academics by assisting them to become aware of their implicit beliefs, directly examining their teaching practices, and supporting their efforts to improve. Wallin (2004) posed that well planned and executed professional development activities should strike a balance to meet individual and organizational needs. In that study, faculty consistently ranked activities in the instructional cluster as very important. Faculty were very interested in developing skills that would assist their effectiveness with student learning, as well as integrating the curriculum to help bridge the gap between disciplines and their application to industry standards and trends. Faculty development activities that addressed those needs were perceived to be very beneficial and appreciated.

Ennis-Cole and Lawhon (2004) examined beneficial information for beginning teachers (full-time and part-time) and the areas that would help them integrate successful classroom techniques. They claimed that instructors were flexible and aware of students'

concerns and incomplete knowledge, and able to redirect questions as well as reword and restructure content to match the needs of individual learners. They noted that incidental learning, humor, hands-on experiences, and connections between current information and newly formed knowledge were often found in the classrooms of good instructors. They concluded that new community college teachers needed to become familiar with technology and the mission of the institution and seek support from mentors and the backing of others within and outside the immediate work environment.

While Ennis-Cole and Lawhon (2004) may be conceptually correct and this may occur occasionally, in practice, community colleges must make it their responsibility, as part of their professional development plan to train teachers in the skills of teaching and provide mentors to assist in converting training to practice. Specifically, the skills needed are knowledge of pedagogy or andragogy (learning strategies focused on adults); lesson plan development; classroom management; development of critical thinking; and assessment and evaluation.

Eisenman, Hill, Bailey and Dickison (2003) created the School-to-Work Professional Development Institute to assist interdisciplinary teams of academic, vocational, and special education secondary teachers to design, implement, and evaluate integrated academic and occupational learning activities. Building on recommended practices for quality professional development efforts, the Institute provided teachers with extended year-long learning opportunities in school, university, and business contexts and supported their collaboration with other professionals. The participating schools' student enrollments ranged from 1,200 to 1,500 and drew primarily from urban and suburban areas.

Teachers representing academic, vocational, and special education disciplines were included in the research. Eisenman et al. (2003) surmised that the primary focus of all professional development activities should be on student learning and strengthening teachers' instructional practice and content knowledge. Further, professional development activities should extend over time to permit systematic teacher inquiry, unlike the more common and infamous "one shot workshop" approach that provides little opportunity for teachers to develop and reflect on their work. Also, professional development should be responsive to teacher-identified needs and support collaboration within a broader professional community. Teacher-identified needs are likely to vary by role and institution, so professional development programs must be thoughtfully planned to best meet the needs of the instructor audience that these programs are attempting to serve.

College adjunct professors teaching in Associate of Science degree programs may be at an advantage concerning the content knowledge since they are frequently drawing from industry experience and can demonstrate years of experience and/or expertise with licensing or industry certifications. It is important to recognize the significance of assuring that even those with experience have achieved deep subject matter knowledge (Stotko, Beaty-O'Ferrall, & Yerkes, 2005). It is also important to consider their needs with regard to pedagogical and curricular knowledge, as many of those who selected a career path that focused on industry may not have much, if any, background in educational theory or practice. To maximize the inherent potential that comes with hiring faculty with substantial professional experiences, these faculty members need to be supported in gaining and refining pedagogical knowledge (Scriber & Akiba, 2010).

Kreber and Cranton (2000) provided examples of pedagogical knowledge that included knowing how to facilitate collaboration among students, thinking critically and using techniques for fostering learning among others. These are critical elements for teachers to master. In the absence of training and support, faculty members who do not have instructional experience and do not elect to engage in their own personal professional development may over-rely upon methods they observed while in school or are accustomed to, or focusing only on conservative pedagogies (Mishra & Koehler, 2006). These conventional pedagogies often rely on learning behaviors where memorization of content is a central focus of cognitive gain.

Effective professional development, then, should maximize existing strengths that an instructor brings to the classroom while working to enhance areas of weakness or inexperience (Barnes et al., 2008). Examinations of professional development programs suggest that there are some typical components of most programs, including emphasis on promoting critical thinking, strategies for effective classroom management, assessment, and evaluation. These have been identified as areas that are considered critical elements for promoting student learning outcomes (Calcagno & Long, 2008).

Meeting the Needs of Part-Time Faculty

Despite the critical nature of professional development for all faculties, from those tenured, seasoned full-time faculty to the first time adjunct instructor, many colleges struggle to provide robust professional development programs that address the diverse needs of faculty (Darling-Hammond & Long, 2009). This can be particularly difficult with adjunct faculty who often have only an infrequent contact with the college and may spend their time on campus during times when campus offices are closed, such

as evenings and weekends. Adjunct professors are often not required by most institutions to have professional development prior to entering the classroom (Rice, 2002). Professional development courses in the areas of pedagogy/andragogy, lesson plan development, classroom management strategies, critical thinking skills, assessment, and evaluation may offer substantial benefit for adjuncts both prior to teaching and throughout their teaching tenure (Wallin, 2004).

Summary

Colleges could impact the quality of teaching by providing access to professional development for teachers and providing instruction on teaching methods and techniques (Calcagno & Long, 2008; Elbe, 1988; Kember & Gow, 1994; Major & Palmer 2006; Mishra & Koehler, 2006; Shulman, 1987; Sorcinelli, 2000; Staib, 2003). Furthermore, a systematic approach to the professional development of adjuncts has been shown to enhance instruction and the morale of part-time faculty (Banachowski, 1997; Darling-Hammond & Richardson, 2009; Leslie & Gappa, 2002). Despite this, attention to adjunct professional development is frequently overlooked and this oversight may be particularly problematic for adjunct professors teaching career technical courses.

Indeed, at community colleges, where the ratio of adjunct to full-time teachers is reaching record numbers and adjuncts are increasingly relied upon, professional development can provide a forum for addressing the concerns of part-time faculty and promoting a culture of instructional excellence. In a perfect world, colleges would have enough time and resources to provide an adjunct professor with all of the pedagogical training they desire or need. This might include an opportunity to be mentored by a veteran professor to conduct observation of instruction by others, as well as for them to

be observed themselves. Unfortunately, in an environment of budget cuts, limited resources and growing enrollment, this luxury is unlikely to occur any time soon, if ever. Consequently, professional development models that are less comprehensive are increasingly employed, relying upon the motivation and independent learning of the adjunct to fill in gaps the formal program might not be able to offer. Good teaching includes a variety of factors that when employed effectively may affect student learning. The conceptual framework to support this research is based on Ramsden's (1991) body of research in teaching effectiveness in higher education. Good teaching includes mastery of the subject matter, which adjuncts hired from industry with proper credentials should have achieved; application of methods that promote activities, problem solving and cooperative learning leading to deep approaches to learning; and effective student assessment and evaluation with reflective practices for the teacher. Through professional development activities, the latter two may be enhanced to improve the effectiveness of adjunct professors teaching in career technical courses.

In the following chapter, the researcher will discuss the methods that will be used to administer a psychometrically sound measure of collegiate teaching proficiency to students taking career technical education core courses. This survey instrument measured adjunct professors' teaching readiness and teaching excellence, and was compared to the adjuncts' years of teaching experience, years in the industry and their exposure to professional development.

Chapter III

Methodology

This research examined the correlation between students' assessment of adjunct faculty's preparedness in teaching readiness (TR) and teaching excellence (TE) with the adjuncts' years of teaching, their years of industry experience, and their exposure to teaching related professional development. The adjuncts researched were teaching career technical education courses at a large urban state college in Florida and findings may be used to establish a comprehensive professional development program at the college. This chapter begins with a description of the research design and approach, then the setting and sample, which will explain the population used and the sample size. The chapter will describe the instrumentation and materials, and will be followed by a description of the data collection and analysis procedures. The research questions and hypotheses are readdressed and a discussion of the measures taken for the protection of the participants involved in this study is presented. Finally, a summary will review the methods chapter with a brief discussion about what to expect in Chapters 4 and 5.

Research Design

The methodological approach for this study is a correlational research design. Creswell (2003) asserts quantitative research is viewed as confirmatory and deductive in nature. The philosophical foundation behind quantitative research is derived from a positivist perspective as put forth by Auguste Comte in the middle of the 19th century. Positivism maintains that reality should be shaped by empirical data derived from the senses rather than interpreted from metaphysical constructs that cannot be measured (e.g., the existence of metaphysical beings). Thus, the assumption for quantitative research

assumes that reality exists, is fixed, and measurable (Creswell, 2003). Within the positivist paradigm, this study assumes that information gathered through our senses (feel, smell, hear, taste, and sight) is reality that can be measured and quantified.

This study employs a correlational research design wherein two statistical techniques—least-squares regression and one-way analysis of variance (ANOVA) were utilized. According to Onwuegbuzie and Johnson (2004), "The major characteristics of traditional quantitative research are a focus on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardized data collection, and statistical analysis" (p. 18). The basic design of a comparative study is to identify a difference between groups as a function of the identified dependent variable. Since the researcher does not have complete control over the variables of interest (participants or groups are not randomly assigned), the study is suggestive rather than rigorously causative (Neuman & McCormick, 1995).

Appropriateness of Design

A correlational research design was determined appropriate for the research project since it allows the researcher to examine relationships between variables. For this study, relationships between various faculty demographics and student ratings of teaching readiness and teaching excellence were examined. In addition, this design enables the collection of data from a large number of human participants fitting a specific demographic/attitudinal profile. Furthermore, a broad number of participants (e.g., greater than 50) are necessary to ensure differences and commonalities are appropriately represented within a sample as reflected by the power analyses. An experimental design that includes surveys or structured interviews for data collection with the intent of

generalizing from a sample to a population (Babbie, 1990) allows the researcher to observe difference in participants' performance and infer (if any) quasi-causal differences. This research approach enables a single researcher with limited resources the ability to collect and analyze data from a sample in a comparatively short time period. Data can be collected within days and analyzed within weeks rather than weeks or months, respectively, as in other types of designs. This is relevant to this research both in terms of collecting survey data as well as the section of my research that focuses on regression.

Research Hypotheses

The research questions were developed based on the literature review and the gaps that exist with adjunct professors' teaching preparedness and by using the instrument developed by Barnes et al. (2008). The instrument has been tested for validity and reliability. In the literature review, it was noted that little research had been devoted to part-time faculty teaching career technical education courses and their teaching readiness and excellence. The purpose of this research was to examine the teaching readiness (TR) and teaching excellence (TE) of adjuncts through student surveys. The survey was designed to provide insight to whether students considered adjuncts ready to teach and displayed characteristics of excellence in teaching. Using the results of the survey, an ex post facto research design determined if a relationship exists between adjunct scores in TR and TE and selected independent variables. The dependent variables were the scores that students assessed of their adjunct professors' TR and TE, while the independent variables were the years of teaching experience; the years of industry (discipline) experience; and the number of professional development the adjuncts have

taken in teaching related courses. The general null-hypotheses were that there is no relationship between the dependent variables of TR and TE and the three independent variables. The following three null hypotheses were:

1. There is no relationship between students' evaluation of adjunct professors' TR and TE and the adjunct professors' number of years teaching at a college.
2. There is no relationship between students' evaluation of adjunct professors' TR and TE and the adjunct professors' number of years in industry experience.
3. There is no relationship between students' evaluation of adjunct professors' TR and TE and the adjunct professors' number of professional development activities.

Setting and Sample

Demographics

The research was conducted at an urban state college located in South Florida. The College is a Level II institution, conferring Bachelor of Science degrees in specialized areas, Associate in Arts, Associate in Science and Associate in Applied Science degrees as well as technical certificates to its graduates. In 2010, approximately 5,400 students graduated from the college, with 3,650 of those graduating with an A.A. degree and the remaining 1,750 or 32% graduating with an A.S., A.A.S. degree or certificate. About 75% of those graduates hail from only five career professional programs; Emergency Medical Technology (EMT); Criminal Justice/Law Enforcement; Nursing; the Business-related programs; and the Transportation programs. In the Fall term of 2011, there were 39,941 (unduplicated headcount) students enrolled throughout the college of whom 13,580 students enrolled in occupational/postsecondary vocational

courses or 34% of total enrollment (Business Intelligence portal of institutional research office). There were 454 adjunct instructors teaching 970 total sections in 24 career technical programs at all college locations (Appendix C). The final usable questionnaires by adjuncts were 58 or 12.7% of the total and 1015 student surveys or 7.5% were collected from all the students that were possible in the entire sample. The student demographics are listed in Table 2.

Table 2

Demographics of Students

Category	Percent
Gender	
Female	62
Male	38
Age	
<18	8.2
19-24	47.5
25-29	15.9
30-34	9.2
35-39	6.4
40 <	12.8
Race and Ethnicity	
White	39.1
Black	32.8
Not Reported	23.4
Asian	3.8
American Indian	.4
Other	.5
Hispanic (any race)	45.4

Sample

A sample of 454 adjunct professors was selected from 970 CTE sections to be analyzed for the students to take the survey instrument during the end of the Fall semester of 2011. The students were those who took career technical education core courses taught

by adjunct professors. The programs associated with the U.S. Department of Labor 16 career industry clusters and have related programs at the college were:

- Accounting
- Air Traffic Control
- Architectural Technology
- Aviation Technology
- Business Administration
- Cardio Respiratory
- Computer Science
- Contract and Civil Engineering
- Criminal Justice
- Data Processing Technology
- Dental Assisting Technology
- Dental Hygiene
- Electronic Engineering Technology
- Emergency Medical Technology
- Health Information Management
- Legal Assisting
- Marine Engineering Management
- Marketing and Management
- Nuclear Medicine
- Nursing
- Office System Technology
- Radiation Therapy Technology
- Radiography

Processes

Power Analysis

A priori sample determination is assessed by conducting a formal power analysis. Three factors are taken into consideration when conducting the analysis including the intended power of the study, the effect size of the phenomena under study, and level of significance to be used in rejecting the null hypotheses (alpha). Statistical power is the probability of rejecting a false null hypothesis. As a matter of convention, adequate

power to reject a false null hypothesis is .80 when alpha = .05 (Keuhl, 2000). Effect size is an estimate measurement of the strength of the relationship between variables in the study (Cohen, 1988). The effect size was characterized by Cohen (1988) as Cohen's f^2 small, medium, and large where each level is associated with a specified effect size. Thus, a small effect = .01, medium = .06 and large = .14; the effect size of .06 selected is consistent with prior research conducted in the literature. Alpha is defined as the probability of making a Type I error when rejecting the null hypothesis. Social science research convention suggests that alpha should be set at .05 when the consequences of making a Type II error are more serious than for making a Type I error. The sample size was all adjunct professors who participated in the study and were teaching career technical courses during the Fall semester of 2011.

Instrument

This research used the instrument developed by Barnes et al. (2008) for collegiate teaching proficiency. They laid the groundwork for the development of an improved psychometrically sound measure of teaching proficiency that can be used in a college setting. Their proposition is that teaching proficiency is composed of two separate dimensions, teaching readiness (TR) and teaching excellence (TE). Scales for each dimension were developed and assessments were conducted for dimensionality, reliability, discriminant validity, and nomological validity. The survey (Appendix A) was comprised of questions relating to the teacher's teaching readiness and teaching excellence and measured on a Likert scale (Babbie, 1990). A Likert scale is used because it lends itself to a straightforward method of index construction. Because identical

response categories will have been used for several items intended to measure a given variable, each such item can be scored in a uniform manner (p.164).

Items Comprising Proposed Scales

Teaching Readiness (TR):

1. The instructor's presentations are well organized.
2. The instructor defines the course expectation clearly.
3. The instructor implements the stated course objectives.
4. The instructor has appropriate control of the class.
5. The instructor evaluates all students objectively.
6. The instructor expects academic excellence from students.

Note: Items 1-2 are in the preparation cluster. Items 3-4 are in the professionalism cluster. Items 5-6 are in the evaluation cluster.

Teaching Excellence:

1. The instructor seems to care whether students learn the material.
2. The instructor is a good listener.
3. The instructor makes the course interesting.
4. The instructor motivates students to learn.
5. The instructor conveys class material in a way that is easy to understand.
6. The instructor presents course material in a manner that makes sense.
7. This instructor is an excellent teacher.
8. I really like how this instructor teaches the course.

Note: Items 1-2 are in the rapport cluster. Items 3-4 are in the enthusiasm cluster. Items 5-6 are in the delivery cluster. Items 7-8 are in the excellence cluster.

Reliability

Barnes et al. (2008) conducted a reliability analysis on both item sets. For the TR item set, Cronbach's alpha was .859 and mean inter-item correlation was .505. For the TE item set, Cronbach's alpha was .933 and mean inter-item correlation was .641. Thus, the score from each of these scales appear to have high internal consistency reliability (e.g., Clark & Watson, 1995, p. 207; Nunnally 1978).

External Validity

The concept of external validity is defined as the extent to which the study can be generalized to the greater population. Generally, studies that employ randomization to select participants from the study population have more external validity than those that do not. For this study, convenience sampling of participants was used to sample the study population, which weakened external validity. This strategy was used because random sampling of the study population was outside the scope of the researcher's resources. Thus, results may not necessarily reflect study population attitudes. In this case, where convenience sampling is being used, repeating the test to compare results may be advised. Barnes et al. (2008) conducted several test hypotheses related to the TR and TE scales and found the results to perform as theoretically expected (p. 209). They warned that validation of these scales might require more thorough testing of these constructs in regard to their performance within nomological nets.

Data Collection

Toward the completion of the Fall semester 2011 (November and December), career technical courses being taught by adjunct professors were identified for students to participate in the paper/pencil survey. Information on the adjunct professors were

gathered relative to the discipline they each taught, length of time teaching as an adjunct, other teaching experience, industry field experience, professional development activities in teaching and general demographics (see Appendix B). The student surveys were attached to the adjunct demographics but the information was kept anonymous. A survey was proposed in order to test complex propositions involving several variables in simultaneous interaction. The fact that the survey format permits a clear and rigorous elaboration of a logical model clarifies the deterministic system of cause and effect (Babbie, 1990). Moreover, the availability of variables permitted the analyst to document more elaborate causal processes. The professional development department of Human Resources (HR) at the institution has administered survey questionnaires of this nature in the past. Associate Deans responsible for career technical courses delivered the surveys to the classroom. Adjunct professors were requested to leave the classroom while students participated in the survey. The adjuncts completed the demographic sheet. Once both students and adjunct completed the instruments, they were joined and placed inside an envelope and delivered back to the researcher.

Statistical Treatment

The analysis procedure was conducted using the Statistical Package for the Social Sciences (SPSS) software program, Student Version 17.0 (SPSS, 2009). This data analysis included descriptive statistics, means, standard deviations, and frequencies where applicable. In addition, histograms are presented, as well as z-scores and Normal Q-Q plots to support assumptions of normality. Further, a regression and ANOVA table, and supporting figures are displayed providing the relationships found. For this analysis, alpha is set at $p = .05$ provided assumptions of normality are met.

Outliers

A test for univariate outliers was conducted to determine if any cases may not statistically be part of the sample collected. To detect outliers, case scores were converted into z-scores and compared to the critical value of +/- 3.29, $p < .001$. Cases that exceed this value were removed, provided they warranted removal (Boniface, 1995).

Missing Data

Cases with missing data were detected by running frequency counts in SPSS 17.0. Cases with missing data on more than 5 percent of the items were summarily removed from further analysis. Those cases with missing data in less than 5 percent of the items were kept by imputing field means into empty cells (Boniface, 1995).

Parametric Assumptions

Assumptions of normality, linearity, and homoscedasticity were evaluated to detect any violation of parametric assumptions. A graphical device was created to aid the researcher in determining degree of normality. Specifically, histograms are presented to provide visual evidence of degree of normality for each dependent variable. Non-normality was detected by running Shapiro-Wilks' test and creating z-scores for skewness and kurtosis. If the distributions are found to be non-normal, variable transformation may be attempted to improve distribution parameters (Boniface, 1995).

Order of Analyses

Demographic data were presented first to construct a profile of the sample population tested. Next, missing data and outliers were evaluated and dealt with according to the prescription presented. Further, normality was evaluated to ensure

parametric assumptions were met. Finally, ANOVA and Regression were run to determine if mean differences or relationships existed (Boniface, 1995).

Multiple Least-squares Regression

Multiple least-squares regression was used to test the null hypothesis for each of the research questions. The basic statistics behind the statistical technique is described herein. A simple linear least-squares regression analysis is comprised of a criterion variable and a predictor variable(s). It is used to measure a linear relationship between two variables and the criterion variable. The equation of interest is written in the following manner:

$$y = \beta_0 + \beta_1 x + \epsilon$$

Where y is the criterion variable, x is the predictor variable, and ϵ is the random error component. β_0 and β_1 are, respectively, the y-intercept (the value of y when x is zero) and the slope of the line that is estimated as a quantitative relationship between the two variables (Boniface, 1995).

Multiple regression simply adds additional predictor variables to the equation and is represented by the following equations, in terms of Research Question 1:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_k X_k + \epsilon$$

Measures of the validity of a linear regression are the R-square value, which measures the goodness-of-fit of the estimated line (or relationship), and the standard error, which is the estimated standard deviation of the error-term. The researcher is mainly interested in the *slope* of the regression or the regression coefficient β_1 which can be simplified and called "beta". A low standard error and a positive beta indicate a

positive relationship between the predictor and criterion variables. Conversely, a negative beta and a low standard error indicate a negative relationship between variables.

To provide further validity to this analysis, the researcher computed the Spearman's Rho correlation coefficient, which is another measure of the direction and strength of a relationship. Correlation refers to the departure of two variables from independence. Spearman's correlation is a non-parametric statistic and is used when the data have violated parametric assumptions. It ranks the data and then the Pearson's equation to those ranks (Field, 2005).

Analysis of Variance

A one-way Analysis of Variance was used to compare means differences across adjunct faculty's responses to their demographic information. Analysis of Variance (ANOVA) is used to compare means across two or more independent groups to determine if they differ significantly. ANOVA was developed by the statistician and geneticist R. A. Fisher in the 1920s and 1930s (Lindman, 1974) and is sometimes referred to as Fisher's ANOVA. ANOVA uses the equation:

$$F = \text{Between Mean Squares} \div \text{Within Mean Squares}$$

The ANOVA equation is simply the sum of squared differences between groups divided by the sum of squared differences within groups. The basic calculation assesses the variation in scores found between groups and divides that by the variation in scores found within groups. The resulting ratio (designated by *F*) is a measure of the strength of independence. *F* is always positive and always greater than 0. Eta squared is also a measure of the strength of independence and is calculated using the following equation:

$$\textit{Eta squared} = \text{Sum of squares between groups} \div \text{Total sum of squares}$$

Eta squared is also referred to as an effect size and is characterized by the following scale developed by Cohen (1988):

.01 = Small

.06 = Medium

.14 = Large

Thus, the two measures of validity, *F* and *Eta squared*, were used to determine if mean scores differ between factors of years of teaching, number of years in the industry, and exposure to professional development interventions.

Summary

This chapter describes the instrumentation, sampling and methods used to test the hypotheses between the dependent variables of TR and TE and the independent variables of years of experience teaching; years of industry experience; and number of professional development in teaching related activities. In the following chapter, the researcher will present the findings of the research and the results of the analysis conducted.

Chapter IV

RESULTS OF THE STUDY

Analysis of the Data and Findings

As indicated in the previous chapter, the type of research design selected for this research employed a correlational research design wherein two statistical techniques, least-squares regression and one-way analysis of variance (ANOVA) were utilized. According to Onwuegbuzie and Johnson (2004), "The major characteristics of traditional quantitative research are a focus on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardized data collection, and statistical analysis" (p. 18). The basic design of a comparative study is to identify a difference between groups as a function of the identified dependent variable. Since the researcher does not have complete control over the variables of interest (participants or groups are not randomly assigned), the study is suggestive rather than rigorously causative (Neuman & McCormick, 1995).

The data were gathered with self-reported survey items originating from Barnes et al. (2008). A list of the survey items selected can be found in Appendix A. The purpose of this study was to determine if adjunct faculty total years teaching at a state college, total years of experience in field, and total professional development exposure relate to teaching readiness and teaching excellence as rated by their students.

The specific research questions are as follows:

The research will attempt to answer the following six questions:

1. Does student evaluation of instructor teaching readiness (TR) differ significantly by the number of years teaching courses at a state college?

2. Does student evaluation of instructor teaching excellence (TE) differ significantly by the number of years teaching courses at a state college?

3. Does student evaluation of instructor TR differ significantly by number of years of experience in the industry?

4. Does student evaluation of instructor TE differ significantly by number of years of experience in the industry?

5. Does student evaluation of instructor TR differ significantly by teaching related professional development exposure?

6. Does student evaluation of instructor TE differ significantly by teaching related professional development exposure?

This chapter presents data gathered to address the aforementioned research questions. First, histograms for the dependent variables were examined for outliers. Second, z scores for the readiness and excellence were compared to the critical value of +/- 3.29, $p < .001$. One case had scores of -5.56 for excellence and -6.30 for readiness. The case was examined and was corrected for data entry error. In addition, histograms were examined for the independent variables (see Appendix D).

The survey response rate is presented and followed by an overview of the demographic characteristics of the adjunct professor respondents. Secondly, ANOVA findings are presented for selected adjunct demographics to participation in professional development activities. Finally, correlation, regression analyses, and ANOVAs are presented for the independent variables total years teaching, experience in the field they are teaching, and professional development in relation to the dependent variables, teaching readiness and teaching excellence.

Survey Response Rate

This research study identified 454 adjunct professors and the students in the courses those professors teach. Of those, 74 were returned for a response rate of 16.3%. In some instances the demographic cases were not completed and therefore excluded from the analyses in order improve the reliability of the study. Table 3 displays the survey responses. A post-hoc power analysis for regression with a medium effect size, alpha .05, and 1015 cases indicated a high power with a coefficient of 1.0.

Table 3

Survey Responses

Type of Response	Number	Percent
Surveys distributed	454	100.0
Surveys returned	74	16.3
Surveys excluded	16	3.5
Usable surveys	58	12.7

Adjunct Faculty Demographics

Faculty participants were required to fill out a demographic sheet. Tables 4 through 14 display the demographic characteristics. As shown in Table 4, there was a higher proportion of male respondents (62.1%) than female respondents.

Table 4

Gender of the Respondents

Gender	Number	Percent
Male	36	62.1
Female	22	37.9
Total	58	100.0

Table 5 shows that the respondents' ages of the usable sample of adjunct professors. More than half (59.6%) were between 41 and 60 years of age.

Table 5

Age of the Respondents

Age Category	Number	Percent
21-30	6	10.4
31-40	8	13.8
41-50	17	29.3
51-60	17	29.3
60+	10	17.2
Total	58	100.0

Table 6 presents the respondent data with respect to the discipline in which they teach. A total of 74 responses were checked due to several adjunct faculty members

teaching more than one discipline. The largest numbers of disciplines represented were EMT (12) and Nursing (10). There was no representation for nuclear medicine, radiation therapy or radiography. Seven adjunct faculty indicated that they taught in other disciplines, which were lab/clinicals, business management, paramedic (2), pediatric advanced life support, advanced cardiac life support and basic arrhythmia.

Table 6

Discipline of the Respondents

Discipline	Number
Accounting	6
Architecture and/or Civil Engineering	2
Business Administration	5
Computer Science	7
Criminal Justice	5
Data Processing Technology	2
Dental Assisting or Hygiene	2
Electronic Engineering	2
EMT	12
Health Information Management	1
Legal Assisting	3
Marketing and Management	1
Nuclear Medicine	0
Nursing	10
Office System Technology	1
Radiation Therapy	0
Radiography	0
Transportation and Logistics (ATC, Aviation, Marine, GTL)	2
Other	7
Total	74

Table 7 shows the number of years teaching of the respondents. The greatest percentage of adjunct faculty (25.9%) indicated that they had been teaching for six to ten years, however, the majority (38%) have taught five or less years.

Table 7

Number of Years Teaching at the College

Years	Number	Percent
<1	11	19.0
1-5	11	19.0
6-10	15	25.9
>10-15	10	17.2
>15	11	19.0
Total	58	100.0

Table 8 presents the total number of years teaching at any state college. Forty-eight percent of respondents indicated that they were teaching for more than ten years.

Table 8

Number of Years Teaching at a State College

Years	Number	Percent
<1	8	13.8
1-5	12	20.7
6-10	10	17.2
>10-15	12	20.7
>15	16	27.6
Total	58	100.0

Table 9 presents other teaching experiences that respondents had other than at a college. Approximately 60% indicated that they were teaching in other areas such as at a high school, work, or church. Only 5.7% had been doing that for more than 15 years.

Table 9

Years Teaching Non-College Experiences

Years	Number	Percent
<1	4	11.4
1-5	18	51.4
6-10	7	20.1
>10-15	4	11.4
>15	2	5.7
Total	35	100.0

Table 10 presents the number of adjunct faculty responses indicating whether they have participated in "teaching" related faculty professional development at the college or any other college. Two-third (65.5%) of the adjunct faculty responded yes. Of those, the number of times adjunct faculty participated in professional development activities ranged from one to 14. Almost one-third of the adjuncts participated in one to three professional development activities. Over one-quarter (27.8%) had participated in four to eight activities and 11.2% indicated that they had participated in nine to 14 activities. Table 11 indicates the total number of responses to the various types of professional development. Four respondents indicated "other" types of professional development.

The responses were building an online course, training, online delivery, and quality improvement instructor.

Table 10

Participation in Professional Development

Response	Number	Percent
Yes	38	65.5
No	20	34.5
Total	58	100.0

Table 11

Number of Responses to Type of Professional Development

Type	Number
Course Preparation	23
Course Delivery Methods	23
Assessment and Evaluation	16
Management	15
Critical Thinking	12
Diversity/Multiculturalism	10
Pedagogy (Teaching Methods)	9
Learning	5
Service Learning	5
Other	4

Respondents were asked if they were employed outside of their adjunct position.

All but 4 of the 58 adjunct indicated that they were employed for a total of 93.1% employed outside of teaching. Table 12 displays the number of years that they have been working outside of the college. A little under two-thirds (63.0%) indicated that they had been working more than 15 years while no respondents indicated they were working less than one year.

Table 12

Number of Years Employed

Years	Number	Percent
<1	0	0.0
1-5	2	3.7
6-10	7	13.0
>10-15	11	20.4
>15	34	63.0
Total	54	100.0

In addition to being employed outside of the college, adjunct faculty were asked how many total years of experience they had working in the field in which they were teaching. This question was essential because although they could be employed, it may not be specific to what is being taught. Table 13 displays the responses. The smallest percentage of adjuncts had been working in their field for five or fewer years (7.9%) while the largest percentage had been working for more than fifteen years (65.5%).

Table 13

Total Years of Experience

Years	Number	Percent
<1	1	1.7
1-5	3	5.2
6-10	6	10.3
>10-15	10	17.2
>15	38	65.5
Total	58	100.0

Table 14 indicates the highest level of education attained by the respondents. The majority of respondents, slightly under half (42.9%) indicated that they had a Master's degree. One-third (33.9%) of the adjunct faculty had a Doctorate or Specialist degree.

Table 14

Education Level

Degree	Number	Percent
Associates Degree	10	17.9
Bachelor's Degree	3	5.4
Master's Degree	24	42.9
Doctorate or Specialist Degree	19	33.9
Total	56	100.0

ANOVA for Select Adjunct Demographics to Participation in Professional Development

A one-way analysis of variance was conducted for each of the previous displayed adjunct demographics to the dependent variable of total number of professional development exposures. The only demographic variable that was significant was the response to, "What other teaching experience(s) have you had other than at a college?" $F(2, 31) = 3.60$, $p = .039$. All other demographic variables were not significant.

Reliability Analyses

To determine level of internal consistency of the student rating of faculty survey items, a Cronbach alpha coefficient was calculated for the survey responses. Results indicated a coefficient of .91 indicating a high level of internal consistency. Inter-Item Correlations indicated that for Readiness the lowest correlation was for question 1 and 6 (r=.259) and the highest correlation with question 2 and 3 (r=.707). The remaining correlations ranged from .321 and .606. The Excellence questions had higher correlations overall. The lowest being for questions 8 and 11 (r=.610) and the highest for questions 13 and 14 (r=.841). The remaining correlations ranged from .618 and .763.

Student Survey Results

Table 15 displays the student responses to the survey items. The readiness item with the highest agreement rating was that instructors expect academic excellence (M = 4.77), while the lowest agreement was with the instructor's presentations being well organized (M = 4.48). The excellence item with the highest agreement was regarding the instructor being a good listener (M = 4.74) and the lowest agreement was that the instructor motivates the students to learn (M = 4.67). While most of the variances

seemed to be close in number, the item regarding if the students liked how the instructors taught the course (*SD* = 0.656) had the lowest variability.

Table 15

Descriptive Statistics for the Student Survey

Item	*n*	*M*	*SD*
Readiness			
The instructor's presentations were well organized.	1015	4.48	0.609
The instructor defines the course expectations expectations clearly.	1015	4.76	0.509
The instructor implements the stated course objectives.	1015	4.74	0.572
The instructor has appropriate control of the class.	1015	4.75	0.569
The instructor evaluates all students objectively.	1014	4.73	0.594
The instructor expects academic excellence from students	1015	4.77	0.508
Excellence			
The instructor seems to care whether students learn the material.	1014	4.75	0.529
The instructor is a good listener.	1015	4.74	0.542
The instructor makes the course interesting.	1012	4.69	1.414
The instructor motivates students to learn.	1015	4.68	0.647
The instructor conveys class material in a way that is easy to understand.	1015	4.72	0.586
The instructor presents course material in a that makes sense.	1015	4.73	0.561
The instructor is an excellent teacher.	1015	4.72	0.581
I really like how this instructor teaches the course.	1015	4.67	0.656

Note: For all items, 1 = Strongly Disagree, 5 = Strongly Agree.

Spearman's Rho Correlation Findings

Table 16 displays the relationship of select adjunct faculty demographics and teaching readiness and excellence. Findings show that there was a significant inverse relationship with total years teaching and teaching readiness and excellence. As years of experience increase, teaching readiness and excellence decrease ($r_{readiness}$ (1013) = -0.094, p = .003, $r_{excellence}$ (1012) = -0.085, p = .007). Total experience in field had no significant relationship to teaching readiness or teaching excellence. However, total professional development had a significant positive relationship to both teaching readiness and excellence ($r_{readiness}$ (1013) = .188, p = .000, $r_{excellence}$ (1012) = .191, p = .007). It was also the highest of the correlations.

Table 16

Relationship of Adjunct Demographic Variables and Student Perceptions of Readiness and Excellence

Demographic	Readiness	Excellence
Total Years Teaching	-0.061	-0.082**
Total Experience in Field	0.009	0.064
Total Professional Development	0.116**	0.164**

**p < .01

Regression Analysis and ANOVA Findings

To further analyze the data regarding the research, bivariate regression and analysis of variance was conducted for each research question. Three independent variables (total years teaching, total years of experience in field, and total number of

professional development activities) were examined regarding two dependent variables (teaching readiness and teaching excellence). The total scores for the dependent variables (ratings of teaching readiness and excellence) were normalized using SPSS due to the skewness of the survey total data. Histograms and scatterplots were examined to determine normality of the data to ensure that the assumptions for regression would not be violated. In addition, variance inflation factor (VIF) values were examined for multicollinearity. Assumptions to conduct regression were met.

For the ANOVA, Levene's tests were conducted to examine the variances for two of the independent variables (total years teaching and total years of experience in field). In the case of variances not being equal, the Welch *F* statistic was used. Last, post hoc tests were examined to determine differences between the means of the dependent variable for each group.

1. Does student evaluation of instructor teaching readiness (TR) differ significantly by the number of years teaching courses at a state college?

Regression results indicate that the overall model significantly predicts TR, R^2=0.027, R^2_{adj}=0.034, $F(4,1008)=6.91$, p=<.001. This model accounts for 2.7% of the variance in teaching readiness. A summary of the regression coefficients is displayed in Table 17 and indicates that one category of years of teaching (>10-15) significantly contributed to the model. This suggests that there is a negative inverse relationship between the number of years teaching in this particular category and an adjuncts' teaching readiness.

Table 17

Coefficients for Model Variables for the Number of Years Teaching on TR

Years	*B*	β	*t*	*p*	Bivariate *r*	Partial *r*
1-5	0.067	0.023	0.576	.565	0.080	0.018
6-10	-0.039	-0.015	-0.356	.722	0.044	-0.011
>10-15	-0.395	-0.170	-3.892	<.001**	0.150	-0.122
>15	-0.133	-0.060	-1.347	.178	0.000	-0.042

**$p < .01$

Next, ANOVA findings examined the differences between the teaching year categories and teaching readiness for significant differences. Findings indicated that there is a significant difference between the total number of years teaching and TR, $F(4, 463.10) = 6.47$, $p = <.001$ (significant $p < .05$). Table 18 displays the standardized means for total teaching years. Post-hoc Scheffe tests were conducted to examine the differences between means.

Table 18
Standardized Mean for Total Years Teaching

Total Years Teaching	*n* (1013)	*M*	*SD*
<1	153	0.133	0.875
1-5	140	0.200	0.814
6-10	180	0.094	0.835
>10-15	250	-0.262	1.135
>15	290	<.001	1.070

For teaching readiness, the >10-15 group had significantly lower student ratings for TR than <1, 1-5 and 6-10 groups but not the >15.

2. Does student evaluation of instructor teaching excellence (TE) differ significantly by the number of years teaching courses at a state college?

Regression results indicate that the overall model significantly predicts TE, R^2=0.022, R^2_{adj}=0.018, $F(4,1007)=5.59$, p=<.001. This model accounts for 2.2% of the variance in teaching readiness. A summary of the regression coefficients and VIF statistics are displayed in Table 19 and indicates that one (>10-15) of the total teaching years categories significantly contributed to the model.

Table 19

Coefficients for Model Variables for Number of Years Teaching on TE

Years	*B*	β	*t*	*p*	Bivariate *r*	Partial *r*	*VIF*
1-5	0.031	0.011	0.268	.789	0.062	0.008	2.23
6-10	-0.014	-0.005	-0.126	.899	0.051	-0.004	5.90
>10-15	-0.361	-0.156	-3.547	<.001**	-0.136	-0.111	9.68
>15	-0.128	-0.058	-1.290	.197	-0.002	-0.041	12.80

**$p < .01$

Next, ANOVA were conducted to examine the differences between the teaching year categories for teaching excellence. Findings indicated that there is a significant difference between the total number of years teaching on TE, $F(4, 467.44) = 6.13$, p = <.001 (significant $p < .05$). Table 20 displays the standardized means for total teaching years. Post-hoc Scheffe tests were conducted to examine the differences between means.

Table 20

Standardized Mean for Total Years Teaching on TE

Total Years Teaching	*n* (1012)	*M*	*SD*
<1	153	0.124	0.785
1-5	140	0.155	0.805
6-10	179	0.110	0.776
>10-15	251	-0.236	1.026
>15	289	0.004	1.228

The >10-15 group had significant lower student ratings for TE than <1, 1-5 and 6-10 groups but not the >15.

3. Does student evaluation of instructor TR differ significantly by number of years of experience in the industry?

Regression results indicate that the overall model significantly predicts TR, R^2=0.024, R^2_{adj}=0.020, $F(4,1008)=6.26$, p=<.001. This model accounts for 2.4% of the variance in teaching readiness. A summary of the regression coefficients and VIF statistics are displayed in Table 21 and indicate that three (1-5, 5-10 and >10-15) of total years experience in the field significantly contributed to the model.

Table 21

Coefficients for Model Variables of Total Years of Experience on TR

Years	*B*	β	t	p	Bivariate *r*	Partial *r*	*VIF*
1-5	1.020	0.152	3.274	.001**	0.077	0.103	1.65
6-10	0.726	0.217	2.866	.004**	0.069	0.090	1.79
>10-15	0.305	0.121	1.251	.211	-0.105	0.039	1.99
>15	0.546	0.258	2.310	.021*	0.400	0.073	2.06

**$p < .01$, *$p < .05$

Next, ANOVA findings examined the differences between the total years experience in field categories for teaching readiness for significant differences. Findings indicated that there is a significant difference between the total years experience in field on TR, $F(4, 463.10) = 6.47$, $p = <.001$ (significant $p < .05$). Table 22 displays the standardized means for total teaching years. Post-hoc Scheffe tests were conducted to examine the differences between means.

Table 22

Standardized Mean for Total Years of Experience on TR

Years	*n* (1013)	*M*	*SD*
<1	18	-0.517	1.234
1-5	23	0.502	0.653
6-10	100	0.208	0.824
>10-15	199	-0.213	1.068
>15	673	0.029	0.990

The Scheffe post-hoc test was conducted to determine which total experience categories were significantly different for teaching readiness. The <1 group had lower rating scores than the 1-5, 6-10 and >15 groups. The 10-15 group also had lower rating scores than 1-5 and 6-10 groups.

4. Does student evaluation of instructor TE differ significantly by number of years of experience in the industry?

Regression results indicate that the overall model significantly predicts TE, R^2=0.030, R^2_{adj}=0.026, $F(4,1007)$=7.719, p=<.001. This model accounts for 3.0% of the variance in teaching excellence. A summary of the regression coefficients and VIF statistics are displayed in Table 23 and indicates that all of the total experience in field categories significantly contributed to the model.

Table 23

Coefficients for Model Variables for Number of Years Experience on TE

Years	*B*	β	*t*	*p*	Bivariate *r*	Partial *r*	*VIF*
1-5	1.240	0.185	3.993	<.001**	0.067	0.125	2.23
6-10	1.015	0.303	4.017	<.001**	0.072	0.126	5.91
>10-15	0.591	0.236	2.434	.015*	-0.103	0.076	9.72
>15	0.834	0.394	3.537	<.001**	0.050	0.111	12.90

**p < .01, *p < .05

Next, ANOVA was conducted to examine the differences between the teaching years of experience categories for teaching excellence for significant differences. Findings indicated that there is a significant difference between the total number of years

teaching on TE, $F(4, 78.14) = 13.24$, $p = <.001$ (significant $p < .05$). Table 24 displays the standardized means for total years of experience. Post-hoc Scheffe tests were conducted to examine the differences between means.

Table 24

Standardized Mean for Total Number of Years Teaching on TE

Years	*n*	*M*	*SD*
<1	18	-0.798	1.303
1-5	23	0.442	0.371
6-10	100	0.217	0.585
>10-15	200	-0.206	0.969
>15	671	0.036	1.042

The <1 group had lower rating scores for teaching excellence than the 1-5 group. The 10-15 group had lower rating scores for teaching excellence than 1-5 and 6-10 groups.

5. Does student evaluation of instructor TR differ significantly by teaching related professional development exposure?

Regression results indicate that the overall model significantly predicts TR, R^2=0.035, R^2_{adj}=, $F(1,1011)$=37.12, p=<.001. This model accounts for 3.5% of the variance in teaching readiness. A summary of the regression coefficients and VIF statistics are displayed in Table 25 and indicates that professional development exposure significantly contributed to the model.

Table 25

Coefficients for Model Variables for Professional Development on TR

	B	β	*t*	*p*	Bivariate *r*	Partial *r*	*VIF*
PD Exposure	0.062	0.188	6.093	<.001**	0.188	0.188	1.0

**$p < .01$

6. Does student evaluation of instructor TE differ significantly by teaching related professional development exposure?

Regression results indicate that the overall model significantly predicts TE, R^2=0.036, R^2_{adj}=0.035, $F(1,1010)$=38.08, p=<.001. A summary of the regression coefficients and VIF statistic is displayed in Table 26 and indicates that professional development exposure significantly contributed to the model. This model accounts for 3.5% of the variance in teaching excellence.

Table 26

Coefficients for Model Variables for Professional Development on TE

	B	β	*t*	*p*	Bivariate *r*	Partial *r*	*VIF*
PD Exposure	0.063	0.191	6.171	<.001**	0.191	0.191	1.0

**$p < .01$

ANOVA findings were not conducted since the number of professional development exposures was not a categorical value.

Last, a multiple regression using the stepwise method was conducted with all three of the dependent variables and teaching readiness. Results indicate that the overall

model significantly predicts TR, R^2=0.069, R^2_{adj}=0.064, F(6,1006)=12.52, p=<.001). This model accounts for 6.5% of the variance in teaching readiness. A summary of the regression coefficients is displayed in Table 27 and indicates that four (PD exposure, total experience 1-5 years, total years teaching 11-15, years and total years teaching 15 or more years) categories significantly contributed to the model. Thus, the equation for readiness would be $Y_{readiness}$ = 061X_1+.536X_2+.169X_3+.111X_4+-.360X_5+-.205X_6.

Table 27

Teaching Readiness Final Results

	B	β	t	p	Bivariate *r*	Partial *r*	*VIF*
PD Exposure	0.061	0.183	5.813	<.001**	0.188	0.180	1.13
TE 1-5	0.536	0.080	2.502	.013*	0.077	0.079	2.53
TE 5-10	0.169	0.051	1.339	.181	0.069	0.042	6.20
TE >15	0.111	0.052	1.287	.198	0.040	0.041	15.37
TY 11-15	-0.360	-0.155	-4.415	<.001**	-0.150	-0.138	2.58
TY>15	-0.205	-0.093	-2.561	.011*	0.000	-0.080	3.09

**p < .01, *p < .05

Based on previous findings, a multiple regression using the stepwise method was conducted with all three of the independent variables and teaching excellence. Results indicate that the overall model significantly predicts TE, R^2=0.077, R^2_{adj}=0.071, F(7,1004)=12.03, p=<.001. This model accounts for 7.7% of the variance in teaching excellence scores. A summary of the regression coefficients is displayed in Table 28 and indicates that six categories significantly contributed to the model. Therefore the weights

for the equation for predicting excellence is $Y_{excellence}$ =

$061X_1+.938X_2+1.238X_3+.889X_4+-.816X_5+-.369X_6+-227X_7$.

Table 28

Teaching Excellence Final Results

	B	β	t	p	Bivariate *r*	Partial *r*	VIF
PD Exposure	0.061	0.184	5.868	<.001**	0.191	0.182	1.12
TE 1-5	1.238	0.185	4.055	<.001**	0.067	0.127	2.52
TE 5-10	0.938	0.280	3.796	<.001**	0.072	0.119	6.20
TE >15	0.889	0.421	3.795	<.001**	0.040	0.119	15.38
TE 11-15	-0.816	-0.325	3.362	.001**	-0.103	0.106	10.87
TY 11-15	-0.369	-0.159	-4.432	<.001**	-0.136	- 0.139	2.58
TY>15	-0.227	-0.102	-2.830	.005**	0.002	-0.089	3.09

**$p < .01$

Summary

A quantitative correlational design analysis using two statistical techniques, least-squares regression and one-way analysis of variance (ANOVA) was conducted to determine if the variables of total years of teaching experience, total years of industry experience and total exposure to teacher professional development activities had a relationship with students' evaluation of an adjunct professor's teaching readiness and teaching excellence. In Chapter 5 the researcher discusses the conclusions, implications and suggestions for further research.

Chapter V

Discussion

This chapter is divided into four major sections: the first, summary of the study; the second, conclusions; third, implications; and fourth, suggestions for further research. The summary of the study will include a brief restatement of the problem, a review of the procedures engaged in conducting the research, and the hypothesis tested. The second section, the conclusion, includes highpoints of the major findings and the thorough presentation of each of the general and specific research questions. The third section discusses the implications of the findings and how it may affect policies and procedures at college moving forward. The fourth section will discuss what further research needs to be done in the area of professional development for adjunct professors teaching in the career technical education disciplines at a college.

Summary of the Study

Statement of the Problem

The research investigated the relationship between student evaluations of adjunct teacher readiness, excellence, and selected instructor variables associated with Career and Technical Education (CTE) programs. The research tested the relationship between teacher readiness (TR) and teacher excellence (TE) with the number of years teaching, the number of years in the professional field, and exposure to teaching related professional development, referred to here as variables of preparedness.

Statement of the Procedures.

At the completion of the Fall semester 2011, students enrolled in CTE programs were given a survey instrument with good validity and reliability estimates addressing the

teaching readiness and teaching excellence variables of adjunct professors. The adjunct professors completed questionnaires providing demographic information relative to their teaching experience, experience in the field, and teaching related professional development. An ANOVA and multiple least-squares regressions analysis were conducted to determine if factors in number of years of teaching, number of years experience in the industry, and exposure to professional development interventions had any correlation to the preparedness of teaching as assessed by the student surveys. The student assessment survey was divided into two major parts: teacher readiness, which measured a teacher's preparation, professionalism and evaluative practices; the second part measured teacher excellence, which measured the rapport, enthusiasm and delivery used by the teacher.

The Research Questions.

The research questions were:

1. Does student evaluation of instructor teaching readiness (TR) differ significantly by the number of years teaching courses at a state college?
2. Does student evaluation of instructor teaching excellence (TE) differ significantly by the number of years teaching courses at a state college?
3. Does student evaluation of instructor TR differ significantly by number of years of experience in the industry?
4. Does student evaluation of instructor TE differ significantly by number of years of experience in the industry?
5. Does student evaluation of instructor TR differ significantly by teaching related professional development exposure?

6. Does student evaluation of instructor TE differ significantly by teaching related professional development exposure?

Conclusions

Demographics

Adjunct faculty participated in the research by completing a questionnaire that provided information concerning their gender, age, number of years teaching at the college, total number of years teaching, their years of experience in their career field, their professional development exposure in teaching, and their educational level. Moreover, students enrolled in various career technical courses offered at the college were given a survey to rate their professors on teaching readiness (TR) and teaching excellence (TE).

Fifty-eight total adjunct professors participated in the research out of a possible 454 adjuncts teaching career technical courses during the Fall semester of 2012. Thirty-six of the participants were male or 62% of the sample while 22 were female or 38% of the sample. This is not uncommon within career technical education given that many of the career programs are male dominated. The vast majority of the participants were over the age of 41, accounting for 76% of the sample. Thirty-eight percent of the adjuncts had five years or less teaching at the college while 62% of the participants had taught at the college for over six years. The group with the highest percentage was those between six to 10 years teaching as adjuncts at the college or 25.9 percent. Over 48% of the adjuncts had over 10 years of overall teaching experience to include years at another college or within industry. When asked how many years of in-field career experience, 20 participants or 34.5% did not respond. Of the remaining who did respond, 31% had

between one to five years of experience in the field followed by 12% who had six to 10 years of experience. However, when combining total years of experience teaching and years in the field, the majority or 65% of the respondents had more than 15 years total experience, followed by the group with 10 to 15 years of experience at 17.2%. The majority of the adjuncts who responded had a Master's degree or higher or 74.2%; however, 17.2% had an Associate's degree and only 5.2% had a Bachelor's degree in field. Therefore, the common profile of the adjunct professor is a 41+ year-old male with at least a Master's degree, who has six to 10 years of teaching experience and less than six years of experience in the field.

Analysis

On the first two research questions, which examines the number of years teaching in relation to the teaching readiness (TR) and teaching excellence (TE) of professors as rated by students, the ANOVA produced a significant inverse negative relationship on TR. In other words, the longer professors taught, the lower students rated their readiness to teach. Similarly, an inverse relationship on teaching excellence (TE) was also revealed by the analysis. The effect sizes were low for years teaching on TR (.027) and TE (.022), showing very little proportion of variance in readiness and excellence explained by the number of years teaching. Again, the longer adjunct professors taught, the lower their rating on teaching excellence. On this variable alone without professional development, it supports prior research conducted by Sperling (2003) as well as Strom-Gottfried & Dunlap (2004) who posed that only those teachers exposed and formally trained and grounded in learning theory become effective teachers in the classroom.

On research questions 3 and 4, which analyzed the adjuncts professors' professional in-field experience in relation to TR and TE, both ANOVAs produced no significant relationship. In other words, whether the adjunct professor has only a few years working in the industry or has extensive experience in the field, it has no relationship to student evaluations of their teaching readiness and teaching excellence. Further, the effect sizes were also low for years teaching on TR (.024) and TE (.030), showing very little proportion of variance in readiness and excellence explained by the years of experience in field. This finding was unexpected since common sense may promote that the experiences on the job would result in opportunities to provide insights to the material and give the students a sense that the teacher has good anecdotal information and provides additional value to the classroom and learning environment. As a stand-alone variable, it seems that it makes no difference at all.

Finally, on research questions 5 and 6, which analyzed the relationship between professional development exposure and students' rating of the adjunct professor, the ANOVA produced the largest statistically significant positive relationship on TR and TE. While still small, the effect sizes were larger for number of professional development activities on TR (.035) and TE (.036), showing 4% of the variance in readiness and excellence explained by the number of professional development activities taken. When combined with the other variables, the number of professional development activities alone doubles the effect size and represents 6.5 and 7.7 percent respectively affecting TR and TE. Psychologists calculating R^2 for their own data for the first time are often disappointed by the size of the effect that they are studying. A manipulation with an R^2 of .04 accounts for only 4% of the total variability in the dependent variable – an amount

that may seem trivial, especially when compared to values seen in correlational research. It may be easier to deal with small values in terms of Cohen's (1988, pp. 283-287) description of large (.14), medium (.06), and small (.01) effects, but obviously it is the practical or theoretical importance of the effect that determines what size qualifies the outcome as substantively significant (Fritz et al. (2012) p. 10). Effect sizes can inform practical significance, but they are not inherently meaningful. The importance and meaning of an effect size depend on multiple factors, such as the context of the study, the importance of the outcomes, and the size and nature of effect obtained in prior studies (Henson, 2006). On a practical level, the almost 8% variance is significant particularly over time, given that over 60% of faculty teaching these courses are adjuncts and affect thousands of students each term.

It is because of this reasoning that adopting new policies and changing existing practices to give adjuncts more robust "on-boarding" procedures is a recommendation from this researcher. Adjuncts should undergo initial professional development early upon receiving approval to teach at a college. The activity may be simply to provide teaching methods to assist first-time faculty to deliver content. Future activities may include assessment and evaluation methods, how to teach critical thinking skills or how to develop problem-solving skills in students, among others. The idea is to create an environment where adjuncts are intentionally targeted for professional development and are given the tools to affect the way they teach in the classroom. Activities are not necessarily exclusive to workshops, seminars or courses; other forms of professional development include mentoring, peer teaching, team teaching or other creative and

innovative activities that will enhance adjuncts' exposure to new methods of teaching and learning.

The more professional development activities taken by the professors, the more highly students rated them on TR and TE. These results align with the research discussed in Chapter 2 (Fernandez-Balboa & Stiehl, 1995; Porter & Brophy, 1988; Strom-Gottfried & Dunlap, 2004), where professional development in pedagogical knowledge, instructional skill in the classroom and teaching techniques produced a learner-oriented environment and supports student achievement. Ho et al. (2001) concluded that teaching preparation does lead to improvements in practices as perceived by their students, as did Yoon et al. (2007), who also found that professional development had significant effects on student achievement. Moreover, pedagogical skills to teach specific kinds of content have strong positive effects on practice (Blank et al., 2007). Because this research has unveiled in this sample that experience in the field is not an indicator of readiness or excellence in teaching, the content presented under the right pedagogical framework, and learned under professional development may improve teaching and learning.

Implications

This section contains the implications of the research based on the analysis of the professors' answers on the questionnaire and the students' rating of their teaching readiness and excellence. The questions that the research addressed were variables of effectiveness or factors related to the abilities for adjunct professors to teach. In other words, do professors develop sound teaching practices through the number of years of experience teaching, or years of experience in their professional field, or through exposure to professional development activities specifically geared toward the refinement

of the craft of teaching? These three variables were chosen specifically as possible major factors that influence the readiness and excellence of teachers.

Although there are no certain prescriptions for good teaching and no foolproof techniques for guaranteeing quality, there are three areas to improve the quality of college adjunct professors. First, helping the novice lecturer to become more expert; second, providing appropriate leadership; and thirdly, using methods of evaluating teaching and courses which combine the need to assure quality with the principal purpose of enhancing it. College students' experience of teaching and assessment matter more than particular teaching methods in determining the effectiveness of their learning (Ramsden, 1995). Enhancing the professional development opportunities for adjunct professors in these areas may be effective for improving learning outcomes and the overall educational achievement of students enrolled in workforce programs.

Interestingly, within this group of participants, the number of years teaching had a statistically significant inverse negative relationship on their teaching readiness and excellence if they did not participate in professional development activities. The longer adjunct professors teach, the lower the students' ratings if not combined with another variable. This is disconcerting in the sense that "more" teaching does not necessarily mean "better" teaching, rather readiness and excellence diminishes over time if not take with professional development activities. There can be numerous factors that come into play with this variable and caution should be used before inferring conclusions. Younger, less experienced teachers may make a different kind of connection with the student that may cause students to rate them higher in readiness and excellence. We also know that what academic grade the students expects to earn from the course may

influence the rating they give their professors. This research did not take that factor into consideration but future research may want to ask that question to determine if it plays a role on how they rate their professor in readiness and excellence. It may also mean that students have different expectations on delivery methods that experienced teachers have not learned or are reluctant to use. Nevertheless, more research of this phenomenon should be considered. For example, does it mean that as adjuncts continue to teach over time, complacency occurs in their preparation for a course or how they deliver the material? Could it also mean that with time adjuncts become tired or bored with what they teach? This research did not evaluate whether the adjunct had taught the course for the first time or many times over; this may be a variable factor, particularly in the readiness aspect of the survey. What this research has uncovered for this sample population within workforce education, where adjuncts receive lower student evaluative scores in readiness and particularly excellence over time deserves a closer look. Department chairs tend to rehire adjuncts to teach courses over and over again for a variety of reasons; one of which is the difficulty of finding credentialed individuals to teach a large number of sections each term. However, when combined with professional development activities, their ratings improve. As we have seen with research focusing on faculty engagement and efficacy (Findlay-Brooks & Bryson, 2004; Knight et al, 2007), part-time teachers need to feel part of the department or team and not marginalized and neglected as a group within higher education. Because professional development activities motivate teachers and provide a sense of value from the organization, failure to provide these opportunities may have a negative effect on attitude toward teaching. If faculty are ignored and do not feel that they are valued at the college, their passion to

become excellent in their teaching may be stifled over time, possibly explaining this phenomenon.

The professional in-field experience variable did not result as a factor of any significance on their readiness and excellence. Inasmuch as the perception may be that the more experience within the field will yield greater teaching ability, the reality is that without professional development activities and learning "how to teach", experience alone will not prepare professors for the classroom. It is only when combined with professional development that we see significant positive impact on teaching readiness and excellence. However, this may be a positive result since it gives confidence to college administrators when hiring an adjunct professor with only a few years of experience in the field. With the proper educational credentials, the amount of time spent in the field may be inconsequential in order to teach as long as a commitment to provide professional development early on after hiring is made.

Professional development exposure yielded the highest correlation to readiness and excellence, particularly when combined with the other two variables. This makes a lot of sense since teaching is a learned pursuit and does not happen solely due to expertise, experience in the field or time in the classroom, but rather learning how to teach effectively. As we see with the prolonged years of teaching producing lower rated professors, faculty need professional development to learn new techniques and engage students differently and to provide teachers with the tools needed to be effective in the classroom.

Therefore, in keeping with the framework established by Ramsden (1991), institutions should support professional development activities that promote subject

matter expertise and scholarship as well as in student assessment and evaluation to determine comprehension of the subject matter. Moreover, these evaluations provide the basis to change teaching to accurately address the errors and misconceptions of students. Finally, provide professional development for faculty to become sensitive to the differences in perception of their teaching and how students perceive the information to develop a deep approach to learning. Hence, it would serve colleges well to design models that meet the needs of adjunct faculty to make professional development a priority within the academy. Implementation of the model to include existing adjuncts as well as all new adjuncts is necessary to ensure that everyone has a foundation in teaching readiness that should lead to excellence.

Survey Results Examined

It is interesting to note that looking within the student survey, the lowest mean score for teacher readiness was "the instructor's presentations were well organized." Students found that organizational abilities when presenting lessons were the area of least preparedness. This is consistent with results obtained by Ambrosino and Peel (2011) from the University of Texas Health Science Center at San Antonio. Their research set out to assess the changes in instructor behavior/practice and the result/impact on student learning and motivation. They too found that after participating in professional development activities the greatest improvement in teacher evaluation was in the area of presenting materials or organizational preparedness.

Conversely, the lowest mean scores for teacher excellence were the statements that "I really like how this instructor teaches the course," followed by "the instructor makes the course interesting." Students perceive that adjunct faculty are not interesting

when presenting the material and may not find the course enjoyable. Similar results were found by Ambrosino and Peel (2011) during a qualitative study on professional development. Student comments included statements such as, "Eager to teach," and "She's very enthusiastic about the material she presents. It definitely keeps me interested!"(p. 37). These instructors implemented elements of their professional development to increase their effectiveness.

Following an organized systematic curriculum and making a course interesting are essential for learning and fundamental for teachers. Professional development activities that address these areas may influence the readiness and excellence of teachers and may impact student learning. This researcher submits that this study helps to build an evidence-based case for continued support for faculty development activities for adjuncts.

Policies and Practices

There are six points that arise from the research and data that may address policies and practices for colleges moving forward. First, colleges need to formally recognize the roles that adjunct professors play in the success of the college. These include but are not limited to appreciation of their experience, insight to the "real world" application of the discipline, and their desire to share that information with students. Adjuncts represent in most cases over 60% of the teaching faculty at community colleges. This means that the majority of students are exposed to faculty that may not have the proper resources at their disposal to be great teachers. Adjuncts should be recognized as an instrumental group that affects the agenda of academic progress and graduation. All the best strategic plans will fail if the majority of the faculty are excluded from the formula.

Second, to implement a more comprehensive induction plan that is considerate of adjuncts' working practices and includes them in the decisions pertaining to curriculum, textbook selection and instructional design. Adjunct schedules are compromised by their lives outside the academy; they have professional, social and family obligations that collide with demands of time to participate in professional development activities or to be part of committees that decide on textbook selection or curriculum design. Nevertheless, a purposeful environment that is flexible, mobile and inclusive of their participation is crucial. Colleges need to find ways to reach out and have adjuncts participate more in these areas. Recommendations of webinars, computer based training programs, team teaching opportunities with full-time faculty, activities during evenings or weekends may all contribute to being more flexible with schedules and delivery modes.

Third, professional development must be a priority at the highest level of the organization and filtered through to the departmental level where the departments become responsible for and develop events and activities that include adjunct professors. College leaders must drive this initiative and insist that adjuncts are participants in all activities at all levels. Policy should include the requirement of consistent, regular professional development as part of the fulfillment for adjuncts to be rehired each term.

Fourth, train mid-level managers or department heads on how to include adjuncts in the professional development process. Generally the department heads or chairs are the hiring managers for their disciplines and will need professional development themselves to create the opportunities necessary to have adjunct participation. This includes hiring and rehiring criteria, developing flexible schedules, "on-boarding" procedures and evaluation of adjunct teaching.

Fifth, develop purposeful design and adaptable courses including accreditation of adjuncts' experiential learning as teachers, thereby leading to qualifications appropriate to their role with commensurate compensation. Adjuncts are usually compensated by the credit hour and their educational credential. At the institution where this research was conducted, adjuncts were compensated at the rate of $600 per credit hour or $1,800 for a 3-credit course. If the adjunct has a terminal degree in the discipline, the compensation increases by $100 per credit. Furthermore, they are restricted to a total of no more than 18 credits per academic year. Needless to say, adjuncts do not teach for the money; mainly they teach because on an intrinsic desire to share their knowledge and expertise to a younger generation of upcoming professionals. Nevertheless, as adjuncts refine their craft of teaching and participate in more professional development activities, their compensation should reflect a difference. Moreover, a title difference that recognizes their commitment to teaching may provide an incentive to participate in more activities. Associate Adjunct Professor, Assistant Adjunct Professor, Senior Adjunct Professor based on a combination of years of service and professional development points may be another opportunity to recognize their dedication to the profession.

Sixth, develop formal and non-formal learning opportunities working together with Human Resource departments. As mentioned before, flexibility is essential to provide access to the adjuncts who have other commitments for their time and structure. Formal courses, workshops, seminars and conferences are only one way to provide activities to this complex population and often not ideal to meet their needs. More purposeful spaces must be created to deliver professional development activities, such as

webinars; streaming video that can be viewed at any time; on-line courses; team teaching, mentoring opportunities with full-time faculty, etc. are all possible.

Suggested Further Research

This research has contributed to the body of knowledge relative to adjunct professors and the efficacy of professional development, specifically for those who teach career technical courses leading to certificates and/or Associate of Science degrees. More research is necessary in this area due to the increasing size of the population and future development of workforce programs. This section contains four suggestions for further research in the area of CTE adjunct professors and their preparedness to teach at a college. First, to conduct a follow-up qualitative research study to gain greater understanding of students' perceptions of teacher readiness and excellence in order to understand more about the "whys" of their ratings. Also, by interviewing adjuncts and codifying their responses to readiness and excellence, research may gain a greater understanding of their needs. Second, research the best opportunities for the delivery of professional development for this unique group of adjuncts and the barriers that exists hindering greater participation. Third, conduct a longitudinal research study quantifying changes in teacher readiness and excellence after receiving professional development treatments. Last, exploring the strengths and limitations of currently used practices and providing alternative methods of advancing professional development goals.

Limitations of the Study

This study was confined to surveying students taking courses in Fall 2011 that were taught by part-time adjunct professors teaching core courses in an Associates of Science, an Associates of Applied Science degree, or technical certificate programs.

Because this group was a convenience sample, located at a single institution of higher education, the researcher attempted to ensure that it contained adequate range on critically important dimensions within generalized assumptions (Weiss, 1994). Some examples, but not exclusive of the programs are EMT, nursing, public safety, aviation, architecture, business and health occupations. Total universe of participants eligible to complete the questionnaire were 454 adjunct instructor and approximately 10,000 students. Of that number, 58 adjuncts completed the instrument for a 12.7% response rate. In addition, 1,015 students completed the survey rating their professors in the areas of teaching readiness and teaching excellence. Although it was determined that a reasonable return of the questionnaire and survey were achieved, a larger sample would have been preferred. The results however, should only be generalized to other 2-year programs in large urban areas due to the similarities of those colleges.

Limitations may include the influences that come from outside the classroom, some from the participants and some can be attributed to the time they have had in other teaching environments (Creswell, 2003). For example, because industry has many of their own "in-house" training departments, some of the adjuncts may be associated with these departments and have training in teaching techniques which can be considered as "previous knowledge". Other influences may be due to the cultural backgrounds of the adjuncts. Other nations may provide different teaching methods that are fundamentally different from the United States. These methods may be influential with the adjunct professor and their teaching methods. Individual likes and dislikes may also influence the methods that professors will employ in their classrooms. Although professional development may be provided in pedagogical techniques associated with collaborative

learning, it does not necessarily translate to the professor using the technique in the classroom. Individual preferences usually affect these outcomes.

Another limitation or bias is related to the researcher. Currently, the researcher is the Dean of the School of Transportation at the institution. The researcher did not administer the student survey or the adjunct demographic instruments. Moreover, the researcher disclosed his role at the college to the participating faculty and that the surveys will be used solely for the purpose of this research and for no other purposes. Their responses remained anonymous and have not been shared with any other administrator at the college. The attempt was to learn and capture the perception of the students concerning adjunct professors' teaching readiness and excellence in a college environment with the hope of understanding their needs in professional development.

Summary

Students enrolled in CTE courses were surveyed to rate their adjunct professors in teaching readiness and excellence (TR and TE). Simultaneously, adjunct professors were requested to complete a demographic questionnaire relating to their years of teaching, years of experience in their field, and their participation in teaching relating professional development activities. The results were then statistically analyzed to determine correlational relationships on the multiple variables considered to be related to preparedness for this research.

The results of this study suggest that the number of years teaching at a college as a variable of preparedness has a negative inverse relationship to how students rate their professors on teacher readiness and excellence. Years of experience in the field had no relationship and only the number of professional development activities taken by adjuncts

had a positive relationship. When combined, the results are consistent with other research conducted in the area on the importance of professional development of faculty. Professional development is essential to the improvement of variables of preparedness for adjunct faculty.

Little research has been conducted that specifically addresses this population of adjunct professors and their preparedness to teach at a college. The sample size and design limits the generalization of the findings, however, further research is necessary to deepen our knowledge of the needs and delivery of professional development to adjunct faculty. This study suggests that policies and practices at colleges should address the professional development needs of adjunct professors to formally recognize their role in the success of the college. Also, colleges need to implement a plan that meets the practices of inclusion for adjunct faculty and make professional development a priority within the organization. Finally, colleges need to train department heads to purposefully design a strategy that implements these practices and compensates participants accordingly.

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Appendix A
Survey Instrument

Rate the instructor on the following questions:	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. The instructor's presentations were well organized.					
2. The instructor defines the course expectations clearly.					
3. The instructor implements the stated course objectives.					
4. The instructor has appropriate control of the class.					
5. The instructor evaluates all students objectively.					
6. The instructor expects academic excellence from students.					
7. The instructor seems to care whether students learn the material.					
8. The instructor is a good listener.					
9. The instructor makes the course interesting.					
10. The instructor motivates students to learn.					
11. The instructor conveys class material in a way that is easy to understand.					
12. The instructor presents course material in a manner that makes sense.					
13. This instructor is an excellent teacher.					
14. I really like how this instructor teaches the course.					

Appendix B

Adjunct Demographic Information

Gender: ____Male ____Female

Age: ___ 21-30 ___31-40 ___41-50 ___51-60 ___ 60+

1. What discipline(s) do you teach (check all that apply)?

☐ Accounting ☐ Architecture and/or Civil Engineering ☐ Business Administration

☐ Computer Science ☐ Criminal Justice ☐ Data Processing Technology

☐ Dental Assisting or Hygiene ☐ Electronic Engineering ☐ EMT

☐ Health Information Mgmt. ☐ Legal Assisting ☐ Marketing and Management

☐ Nuclear Medicine ☐ Nursing ☐ Office System Technology ☐ Radiation Therapy

☐ Radiography ☐ Transportation and Logistics (ATC, Aviation, Marine, GTL)

☐ Other (please specify) _____

2. How many years have you been an adjunct faculty at this institution?

   ☐ less than one year ☐ 1-5 years ☐ 6-10 years ☐ 10-15 years ☐ > 15 years

3. How many total years do you have teaching at a college?

   ☐ less than one year ☐ 1-5 years ☐ 6-10 years ☐ 10-15 years ☐ > 15 years

4. What other teaching experience(s) have you had other than at a college?

   _____ for how long? ☐ less than one year ☐ 1-5 years ☐ 6-10 years ☐ 10-15 years ☐ > 15 years

5. Have you participated in "teaching" related faculty professional development at this or any other college? ___Yes ___No

---

If yes, indicate the number of times that you participated in the following professional development areas. (Indicate all that apply)

___Course Preparation ___Course Delivery Methods

___Assessment and Evaluation ___Classroom Management

___Pedagogy (Teaching Methods) ___Collaborative Learning

___Diversity/Multiculturalism ___Service Learning ___Critical Thinking

___Other(s) (Specify) _____

6. Are you currently employed outside of your BC adjunct position? __Yes __No

If yes, what is your job title and how many years have you been working in this field? Title _____

Years in field: ☐ less than one year ☐ 1-5 years ☐ 6-10 years ☐ 10-15 years ☐ > 15 years

7. How many total years of experience do you have working in the field in which you are teaching?

☐ less than one year ☐ 1-5 years ☐ 6-10 years ☐ 10-15 years ☐ > 15 years

8. What is your highest level of education?

___Associates Degree ___Bachelors Degree ___Masters Degree

___Doctorate or Specialist Degree

Appendix C

Associate in Science Degrees

Accounting Technology
Airport Operations Management
Aviation Maintenance Management
Aviation Operations
Building Construction Technology
Business Administration
Computer Programming and Analysis
Computer Systems Specialist
Crime Scene
Criminal Justice
Culinary Arts Management
Database Technology
Dental Assisting
Dental Hygiene
Diagnostic Medical Sonography
Early Childhood Education
Emergency Management
Emergency Medical Services
Engineering Technology
Environmental Science Technology
Fire Science Technology
Global Trade and Logistics
Graphics Design
Health Info & Informatics Technology
Hospital-Based Nuclear Medical Technology
Hospital-Based Radiation Therapy
Hospital-Based Radiography
Hospitality & Tourism Management
Industrial Management Technology
Internet Services Technology
Legal Assisting
Legal Office
Marine Engineering Management
Marketing Management
Medical Office
Music Technology
Networking Services Technology
Nuclear Medicine Technology
Nursing
Nursing- Lpn To Rn Transition
Office Management
Office Software Specialization

Physical Therapist Assistant
Polygraph
Professional Pilot Technology
Radiography
Respiratory Care
Sports, Fitness, and Recreational Management
Tech Support Specialist Microsoft Specialist
Tech Support Specialist Support Technician
Vision Care Technology/ Opticianry

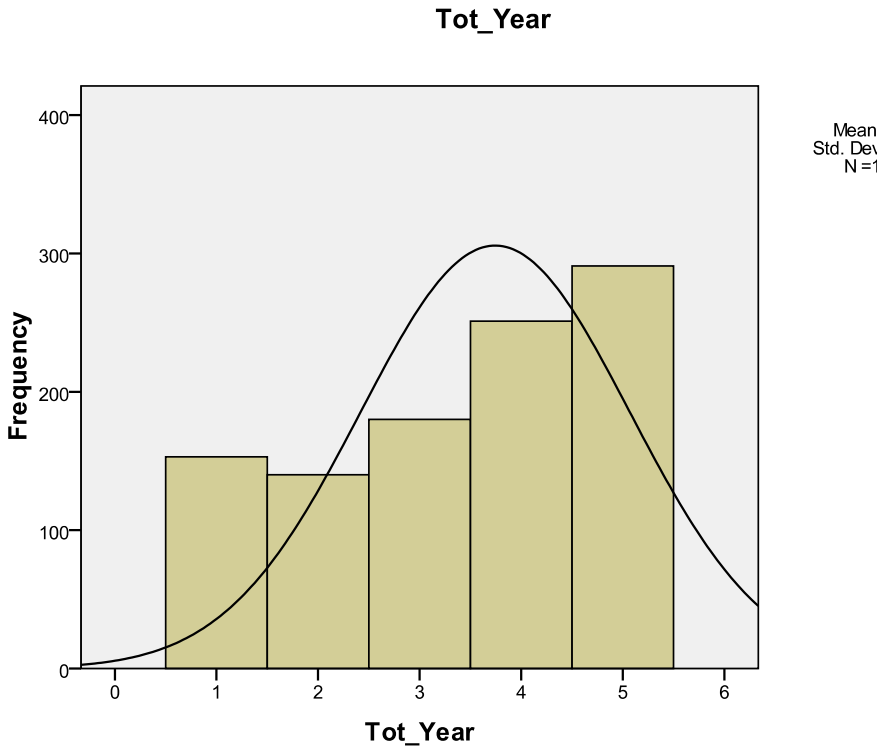
Associate in Applied Science Degrees
Air Traffic Control
Auto Technology Service
Dealer Specific Auto Technology
Digital Media/Multimedia Technology
International Business Management

Appendix D

Histograms for Total Years Teaching Total Years Experience in Field

Tot_Year Teaching

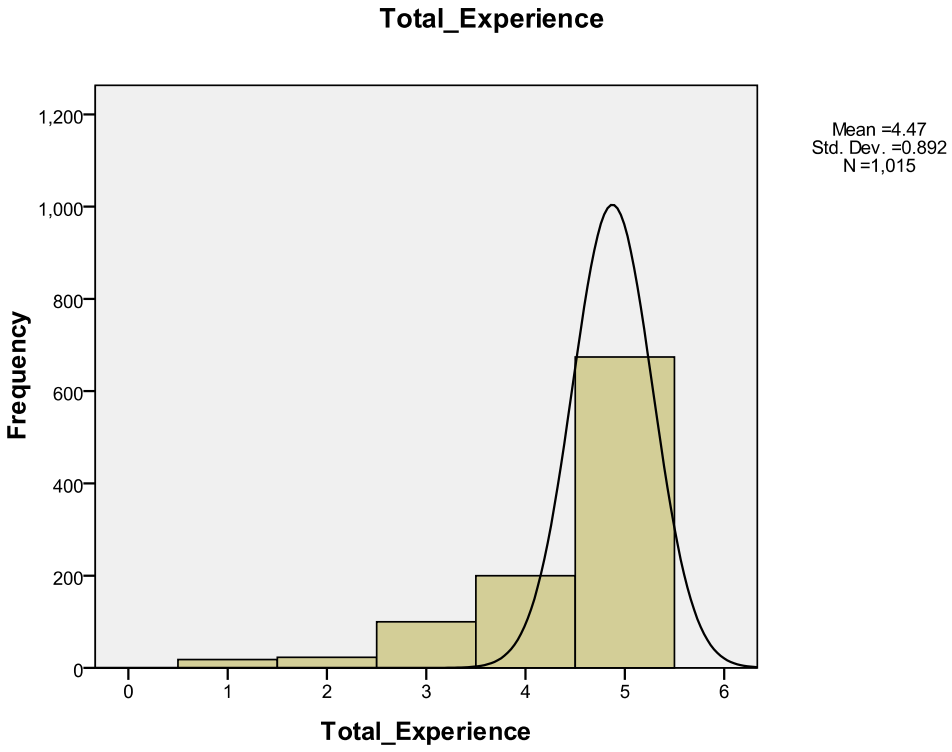
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1	153	15.1	15.1	15.1
	1-5	140	13.8	13.8	28.9
	6-10	180	17.7	17.7	46.6
	>10-15	251	24.7	24.7	71.3
	>15	291	28.7	28.7	100.0
	Total	1015	100.0	100.0	



Histogram Total Years Experience in Field

Total_Experience

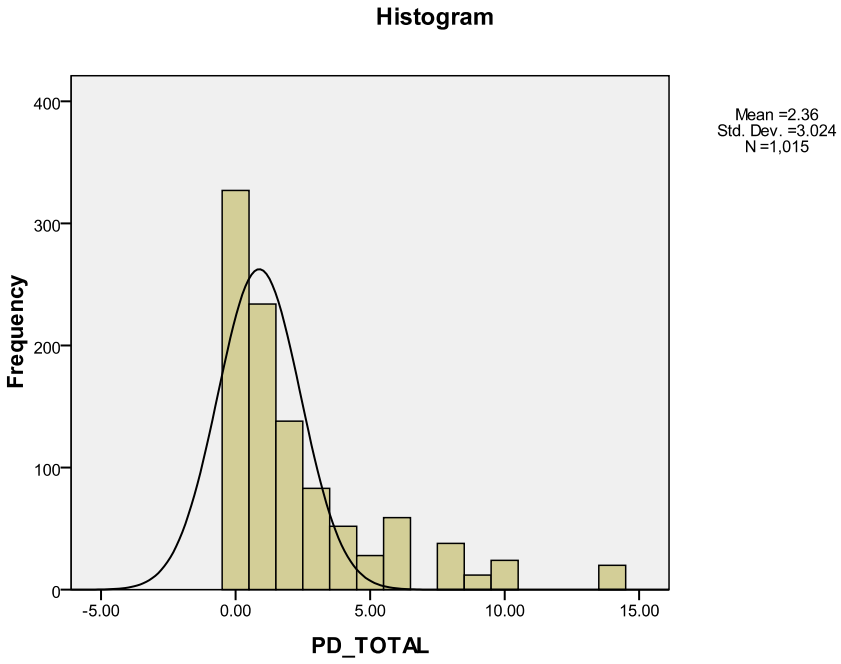
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1	18	1.8	1.8	1.8
	1-5	23	2.3	2.3	4.0
	6-10	100	9.9	9.9	13.9
	>10-15	200	19.7	19.7	33.6
	>15	674	66.4	66.4	100.0
	Total	1015	100.0	100.0	



Histogram Professional Development Total

PD_TOTAL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	327	32.2	32.2	32.2
	1.00	234	23.1	23.1	55.3
	2.00	138	13.6	13.6	68.9
	3.00	83	8.2	8.2	77.0
	4.00	52	5.1	5.1	82.2
	5.00	28	2.8	2.8	84.9
	6.00	59	5.8	5.8	90.7
	8.00	38	3.7	3.7	94.5
	9.00	12	1.2	1.2	95.7
	10.00	24	2.4	2.4	98.0
	14.00	20	2.0	2.0	100.0
	Total	1015	100.0	100.0	



VITA

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1981-1990	United States Air Force
1986	B.S. Professional Aeronautics Embry-Riddle Aeronautical University Daytona Beach, Florida
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1997-2003	Assistant Principal Miami Dade County Public Schools Robert Morgan Technical Education Center Miami, Florida
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