Potential Relationships of Community College Faculty Credentials and Measures of Instructional Effectiveness: Student Survey of Instruction and Grades

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Potential Relationships of Community College Faculty Credentials and Measures of Instructional Effectiveness: Student Survey of Instruction and Grades

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Education in Higher Education

by

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Abstract

The purpose of this research was to determine what, if any, relationship existed when considering instructor credentials in relation to student surveys of instruction (SSOI), instructor credentials in relation to grade distribution, and the relationship between SSOI and grade distribution. The case study college is a two-year rural institution in Oklahoma employing 53 full-time faculty in Fall 2016. Eighteen of those faculty lack the adequate credentials as required by the Higher Learning Commission, the accrediting body for the college. Very little information was discovered verifying the impact of credentials on effectiveness, and what was located was anecdotal rather than data driven. Four research questions and three hypotheses were developed to determine the extent of the relationships in question. The findings suggested that grade distribution and student survey of instruction (SSOI) results at the case study college exhibited expected relationships between those two variables; however, there was no statistical data to support a relationship between faculty credential level and either SSOI results or grade distribution. The results are useful for institutional leaders for providing professional development activities to increase instructor effectiveness rather than relying on credential level, as well as directing institutional policy, and potentially influencing regional accreditation policy interpretation.
Acknowledgements

To accomplish a grand goal is almost always an intentional act and one of endurance rather than a single concentrated effort. The completion of this degree and this dissertation is certainly marked with scars of lengthy struggle, imbuing the success with meaning and a sense of fulfillment. As is often the case, this is not an individual achievement; the joy of success and the pains of struggle have been shared by many. This opportunity to acknowledge the support and the heartache is bittersweet as I reflect on the contributions and sacrifices.

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Dedication

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Your smile is unforgettable. Your love is ever present. Your lessons I am still learning.

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Chapter I

The Problem and Its Setting

Background of the Study

Two-year colleges face a particularly interesting set of challenges. Aside from frequently cited statistics involving total number of higher education students passing through two-year schools (almost half of undergraduates [American Association of Community Colleges, 2017]), significantly reduced funding two-year colleges receive in comparison to four-year regional and research universities (public research universities outrank community colleges $4000:1 [Campus Logic, 2016]), and the amount of remediation required by many two-year students (more than 50% [National Conference of State Legislatures, 2017]), an often overlooked concern for two-year administrations is importance of hiring quality faculty. Since typical two-year students are often underprepared, first-generation, non-traditional, or in other ways disadvantaged, student support is critical. This support must include the classroom and must begin with faculty: in addition to course content, instructors must understand classroom management, planning, practical theory, and educational psychology. A two-year instructor also must prepare students for rigors of both university classrooms and the workplace, covering a huge span of content, confidence, and preparation.

The subject of this case study was a rural community college in eastern Oklahoma with a full time enrollment of approximately 2,200 students on two physical campuses and an online “virtual campus.” The college employed 53 full-time faculty members during the Fall 2016 semester, teaching 453 sections of courses under eight divisions, including Health Sciences; Business; Environmental & Industrial Technology; Health, Physical Education & Recreation; Communications & Fine Arts; Mathematics; Science; and Social and Behavioral Science (“Case
Study College Policies and Procedures Manual, 2017). Of these faculty at the time of the study, 35 met HLC credentialing requirements, while 18 did not. The mean number of years faculty were employed at the college was 10.7, while the median tenure was 9, with a mode of 1. The longest-serving faculty member was employed for 32 years (Appendix B). A continuing concern for the college was the hiring and credentialing of faculty charged with instruction, especially with the clarification of Assumed Practice B2 of the Higher Learning Commission, and the September 2017 deadline for all institutions to come into compliance.

In two-year colleges nationwide, it was estimated 75% of incoming students were underprepared and require remedial work in English, mathematics, or both (Beyond the Rhetoric, 2010). The case study college was no exception. Faculty often were required to teach both remedial and college-level courses which require instructors with strong practical teaching skills in conjunction with content knowledge.

The case study college’s hiring process was further impeded by declining national trends in faculty compensation, noted by Thornton and Curtis (2012) as stagnant for a number of years and falling below cost-of-living increases in six of the previous eight years at the time of the study; the economy of higher education has grown no better since 2012. This expanded on 2006 numbers which indicate decreasing faculty salaries made faculty positions “less appealing for the next generation of scholars” (The Devaluing of Higher Education, 2006, p. 23). In fact, at the case study college, Fall 2016 salaries for new faculty with a master’s degree ($27,200) fell well below the Oklahoma K-12 state minimum teacher’s salary for those with zero experience and a master’s degree ($32,800) (Oklahoma State Department of Education, 2017).

The Higher Learning Commission (HLC) (2016) indicated a necessity that "Instructors... possess an academic degree relevant to what they are teaching" (Assumed Practice B.2). The
underlying assumption conveyed from HLC to the Oklahoma State Regents for Higher Education (OSRHE) was that 18 graduate hours in the field of instruction indicated a level of adequate credentialing for instructors of higher education. In essence, effective instruction was associated by the Higher Learning Commission and the OSRHE with the number of graduate courses an instructor had taken in the field of instruction. This aspect of instructor effectiveness was so prevalent that it is often taken for granted. This standard is echoed in Comprehensive Standard 3.7.1 of the Principles of Accreditation of the Southern Association of Colleges and Schools Commission on Colleges (2006). Traditionally, measurement and assessment of instructor effectiveness at colleges and universities can occur in multiple manners, but two common measures are student surveys of instruction (SSOI) and grade distributions. These typical measurements were the focus of the study.

Much literature existed concerning a potential relationship between components of this study. Grades and student evaluations were a frequent topic (Weinberg, Hashimoto, & Fleisher, 2009; Phipps, Kidd, & Latif, 2006). Instructor characteristics and student evaluations were discussed in-depth by Bianchini, Lissoni, and Pezzoni (2013), Ali and Ajmi, (2013), and Gorsky and Blau (2009), and faculty perceptions on assessments of effectiveness were the subject of studies by Seok, Kinsell, DaCosta, and Tung (2010), and others which assessed validity of student surveys of instruction as measures of instructor effectiveness (Johnson, Narayanan, & Sawaya, 2013; Turpen, Henderson, & Dancy, 2012; Ali & Ajmi, 2013). There was, however, a lack of data concerning the relationship between academic credentials and instructional effectiveness. No current literature could be located which correlates either academic credentials (or hours of graduate courses in the field of instruction) and effectiveness of instruction or academic credentials and final grades.
Statement of the Problem

At the rural case study community college it had been difficult to hire and to retain instructors possessing the appropriate qualifications to meet regional accrediting standards. This difficulty was due in part to low pay and lifestyle choices involving the rural American communities which a number of two-year colleges serve. The HLC, through Assumed Practice B.2., required that instructors hold a minimum of 18 hours of graduate credit in their teaching discipline. At the subject college, roughly one-third of instructors did not hold a master's degree or appropriate graduate hours in their field of instruction but did hold K-12 teaching certificates in the field in conjunction with master's degrees in other education-related fields (educational technology, secondary administration, library media, counseling, psychology, etc.). Although this did not reflect the current hiring practice or policy of the college, years of inadequate hiring practice and misinterpretation of requirements had placed the college and numerous instructors at an accreditation disadvantage (Case Study College Policies and Procedures Manual, pp. 34-37).

The particular problem facing the college was that many of the longest serving, critically placed, and most popular instructors were, by HLC and OSRHE standards, not qualified to do the job for which they were hired, yet these instructors had previously and continuously been deemed effective by the institution(s) at which they were employed. Measures of evaluation at the institution did not align with assumed credentialing practices resulting in adequate performance appraisals for faculty with inadequate credentials.

Lack of quantitative data indicating impact on instruction of this level of credentialing corresponded with a lack of correlative data regarding impact that completing 18 graduate-level hours in the field had on instructor quality. Without verification, this was a subjective practice based on assumption and tradition. A further problem was determining what represented
instructor quality. If impact of credentials were to be considered, it had to be determined exactly what these credentials affected. This study addressed the relationship of credentials on two areas: student surveys of instruction and final grades.

**Purpose of the Study**

The purpose for conducting the study was to determine the extent to which a relationship existed between instructor credentialing and student surveys of instruction; credentialing and grade distribution; and between student surveys of instruction and grade distribution. The research conducted in the study made use of an ex-post facto design, drawing on pre-existing data at the single case study rural community college. Graduate hours in the field of instruction served as an independent variable and the student survey of instruction (SSOI) results and grade distribution data served as dependent, interval variables. Instructor degree level, or credentialing, was noted in several sources as having a significant impact on effective instruction (Haworth, Carter, Jozwiak, & Wilkin, 2007; A fresh look, 2007; Murray, 2010; Olson & Spidell, 2007; Sprouse, Ebbers, & King, 2008; Alexander, Ulrich, Davis, & Wade, 2012; Anderson, 1996; Keel, 1998). However, no quantitative data demonstrating the effect was found. Of numerous studies relating to instructor effectiveness, the most scrutinized assessment measure was the student survey of instruction (SSOI), also referred to as SET (student evaluation of teaching) and SETE (students’ evaluation of teaching effectiveness). Despite the scrutiny, this was also the most commonly used measure (Parkes, 2015). Both Langen (2011) and Bianchini, et al. (2013) contended students, as those most directly in contact with instructors and affected by instruction, are placed in the best position to evaluate instruction. Stumpf, King, Blendinger, and Davis (2013) placed this measure in the procedural category, meaning that the process is more prescriptive than intended to facilitate development. Langen (2011) further explained this
method of evaluation was originally meant to be formative, yet administration and institutions tend to misuse it in a summative fashion.

This preference by administration stands in contrast to skepticism of faculty concerning SSOI validity (Turpen, Henderson, & Dancy, 2012). Construct validity concerns were also presented by Langen (2011) and Germain and Scandura (2005), who claimed that this, along with ease of manipulation, lead to grade inflation. Gentry (2011) echoed these concerns, adding that heavy reliance by institutions negatively affected course rigor. Turpen, et al. (2012) agreed, stating that faculty were hesitant to increase rigor because of the value administration placed on SSOI. The study by Culver (2010) indicated SSOI results can be moderated by student engagement; however, the inability of students to distinguish between course evaluation and instructor evaluation placed SSOI reliability as “tenuous at best,” (Phipps, et al., 2006, p.242) as students were unable to evaluate the amount they had learned, basing evaluations instead on expected grades (Weinberg, et al., 2009).

Grades also were used frequently to measure instructor effectiveness and student learning; clearly, and in part due to power of SSOI, reliability and validity of grades as a measure of learning were questionable as concerns over grade inflation continue to balloon (Bok, 2013; Delbarco, 2012). Before dismissing grades as a valid measurement altogether, it is worth noting subsequent grades reflected learning more appropriately than current or expected grades (Weinberg, et al., 2009); therefore, commonality of grades as a measurement, despite controversy and variety of findings in studies concerning grades, made this measurement of effectiveness a valid component of this study. Interestingly, this measure was the one preferred by faculty, yet scorned by institutions (Turpen, et al., 2012). This dichotomy characterized the gap between faculty and institutional priorities.
Research Questions

Based on exploratory design and focus on relationships, the study attempted to answer the research questions in a data-driven, quantitative manner. By using data from a completed past semester the study ascertained meaningful correlative data on the following research questions:

Research Question 1: What was the profile of instructional satisfaction and faculty credentials at the rural, case study community college?

Research Question 2: To what extent was there a relationship between instructor credentials and student survey of instruction results?

Research Question 3: To what extent was there a relationship between instructor credentials and grade distributions?

Research Question 4: To what extent was there a relationship between student survey of instruction results and grade distributions?

Definitions of Terms

The following terms and definitions were used in this study:

Cumulative grade mean. The overall grade mean of students enrolled in a specific instructor’s courses based upon grade distribution. This number was determined by averaging all grades, A-F, on a 4.0 scale.

Faculty Credentials. Eighteen graduate hours in the field of instruction indicates a level of adequate credentialing for instructors of higher education based on HLC assumed practice.

Student Survey of Instruction. Student surveys of instruction are used to provide students opportunity to engage in meaningful comments and feedback to faculty with respect to students’ experiences in courses taken. The SSOI is anonymous and completed before final
exams and course grades are received. Furthermore, instructors do not receive results until after
the grading period has closed (Oklahoma State University, 2017).

**SmartEvals Ascend Normative Question Set.** The SSOI instrument used by the case
study college was the “The Ascend™ Normative Question Set, a compilation of the most popular
and reliable questions [from] 70+ clients. With the Ascend™ Question Set… normative and
comparative data [were provided]” (SmartEvals, 2016). The assessment was delivered online to
increase anonymity and access to the survey. The case study college had used the SmartEvals
Ascend Normative Question Set since Fall 2015. Since then SSOI had been administered each
semester to every course offered with 12,216 responses, or a 52% response rate.

**Scope and Delimitations of the Study**

The following delimitations are presented for this study:

1. The study concerned only full-time instructors during the Fall 2016 semester.
2. No demographic data or years of experience were considered in measures of
effectiveness.
3. The only factors addressed were dichotomous nominal factors of acceptable
credentials, interval data from the SmartEvals Ascend Normative Question Set
student survey of instruction results, and interval data from cumulative grade
means for instructors based upon course grade distributions.
4. Ethical issues faced were mainly from the data collection aspect: small population
may lead to higher levels of error variance.
5. Data analysis did not regulate or correct for variances in scores for different
departments (math surveys may not be statistically equivalent to art surveys, etc.)
6. Motivation for grading was not considered in the study.
Limitations of the Study

The following limitations were accepted during the study:

1. The study consisted of a single case study institution.
2. There is questionable validity of both grades and SSOI as measures of instructional effectiveness.
3. The study consisted of multidisciplinary data from a wide range of student demographics during only one semester.
4. The study did not address assessment of student learning outcomes as measures of effective instruction.
5. Withdrawals, or grades of “W” were not figured into data.
6. Factors differentiating rural from urban schools, or even distinctions between rural institutions, were not statistically addressed.

Assumptions

The following assumptions were accepted for the study:

1. The United States Department of Education entrusts the accreditation of higher education institutions to regional accrediting agencies.
2. Adherence to HLC policy and practice is required for accreditation. Failure by the institution to meet or address shortcomings can result in punitive action.
3. OSRHE policy aligns with practices dictated through the HLC for accreditation purposes.
4. The college policy reinforces preferential hiring practices for faculty applicants in possession of a master’s degree with at least 18 hours in the field of instruction. Faculty hired without 18 hours of graduate credit in the field of instruction are
required to pursue that goal, with opportunities to receive financial assistance from the college (“Case Study College Policies and Procedures Manual,” 2017).

**Significance of the Study**

Because of the rural environment, lower pay scale, and dependency of community colleges on adjunct instructors, hiring quality faculty meeting the required HLC and OSRHE standards was often difficult (Oklahoma State Department of Education, 2017). Two-year colleges are charged with delivering developmental, introductory, and basic courses (freshman and sophomore level) in preparation for either transfer to a four-year institution or job placement. The faculty, however, are held to the same credentialing standards as bachelor’s-degree-granting, four-year schools which do teach higher level (junior and senior level) courses (Higher Learning Commission, 2016). The two-year instructors are not responsible for the same level of specific content mastery as their four-year counterparts, but are required to possess the same credential. This not only placed a significant strain on the two-year college, but also affected the continuity of instruction and employment, and possibly the overall quality of instruction.

Student population was also strikingly different from those of four-year regional and, especially, research universities. Two-year colleges serve a more at-risk population of students, including first-generation students, non-traditional students, students from low socio-economic environments, and those who need academic remediation. The open-door admissions policies of two-year institutions complicated the academic mission and required a great deal of student support services. Often overlooked in the support aspect is the need for faculty who were experts in both content and in the practice of teaching and planning. This perception has long been held, as Barnsley (1992) wrote that community college instructors are often required or perceived to not love the “subject less, but [to love] the effective imparting of it more” (p.37). This was
certainly true of many rural two-year college faculty members and is a potential hiring point administrators consider at these institutions.

While study data were limited to the case study college, results and findings may be applicable to other rural two-year colleges facing similar hiring and faculty decisions, providing them with benefit from the study; furthermore, the data revealed in the study could potentially inform policy decisions and changes by state and accreditation agencies regarding two-year faculty qualifications. Academic administrators in similar situations are likely to see value in the study as well.

Additionally, universities offering curriculum intended for faculty in two-year colleges would benefit from the perspective gained through this study. Although many graduate programs offer degrees in college teaching, too few offer a balance of content and practical teaching courses (Walden University, 2016).

**Conceptual Framework**

The study was centered on the concept of establishing a quantitative method of assessing potential relationships between instructional effectiveness measures. Influence of instructor credentials, grade distributions, and student survey of instruction results were the focus. While literature revealed several studies conducted to determine potential relationships between grades and student surveys of instruction, preliminary searches revealed no statistical data relating any correlation between instructor credentials and standard effectiveness measures. At best, credentials were included in lists of qualities effective instructors possess; however, no direct correlation appeared.

The idea of graduate degree, or graduate hours in conjunction with a degree, affecting instructional effectiveness is long standing and established. Successful graduate study is a
representation of content-area expertise. The answer sought by the study was whether or not
content-area expertise relates to effective teaching.

Based on past studies, the study was expected to provide evidence of a statistically
significant correlation between grades and student surveys of instruction. If relationships existed
between instructor credentials and grades, and instructor credentials and results of student
surveys of instruction, the study should provide statistical proof of the relationship. The study
analyzed grade distributions and student survey of instruction results of both credentialed and
non-credentialed faculty at the case study college. If there was a correlation between numbers of
graduate hours completed and established measures of grades and SSOI results, then the study
would reveal higher correlations for credentialed faculty than for those lacking appropriate levels
of post-graduate education.

Using established correlation formulas to analyze the relationships revealed results that
are both interesting and useful not only to the case study school, but also to other two-year
colleges and potentially policymakers in higher education.

Summary

The subject college of the case study was a rural, two-year college that faces challenges
in hiring members of the faculty who meet the standards of the HLC’s Assumed Practice B2 as
well as bringing to that standard existing faculty who do not meet that assumed practice. This
study assessed the value of academic credentials as required by the HLC in relation to
effectiveness of instruction as measured through student survey of instruction (SSOI) results and
cumulative grade means.

Four research questions provide a framework to determine the relationships between
effectiveness indicators of faculty credentials, SSOI results, and cumulative grade means:
Research Question 1: What was the profile of instructional satisfaction and faculty credentials at the rural, case study community college?

Research Question 2: To what extent was there a relationship between instructor credentials and student survey of instruction results?

Research Question 3: To what extent was there a relationship between instructor credentials and grade distributions?

Research Question 4: To what extent was there a relationship between student survey of instruction results and grade distributions?
Chapter II

Review of Related Literature

Introduction

The literature associated with effective instruction in higher education was plentiful, complex, and scattered in focus. The majority of research was centered on assessment practices and validity of measures, including the student survey of instruction (SSOI). SSOI is also known as student evaluation of teaching (SET) and students’ evaluation of teaching effectiveness (SETE). Although the effects of SSOI on course rigor and grade inflation were heavily researched other aspects relating to the research problem statement of the study could be mined from the literature.

An analysis of the literature provided a clear model for assessing SSOI in relation to grades, and methods for equating both grades and SSOI to effective instruction emerge; no literature was found that produced evidence that instructor credentials influenced or correlated with either SSOI or grading. Located literature regarding instructor credentials was qualitative and subjective. There was an apparent underlying belief credentials are vital to effective instruction, yet no quantitative, data-driven studies were identified. The study sought to deepen understanding of possible relationships that exist between instructor credentials and effective instruction as measured by SSOI and grades.

Effective instruction, the result of which is distilled into student learning and student success, should be a top priority of every higher education instructor and institution. This notion, while critical, proved difficult to assess despite the overwhelming body of work concerning measurement of instructional effectiveness. Effective instruction clearly depends heavily on effective instructors, and numerous characteristics of both effective instruction and instructors
were readily identified in the literature (Anderson, 1996; Keel, 1998; Barnsley, 1992). The literature, however, revealed incredibly complex, contradictory, and diverse perspectives concerning the definition of effective instruction, its components, and the instruments by which it was measured. To categorize and to organize the density of data, this review structured the study around seven emergent themes: faculty preparation and credentials; evaluation measure validity; lack of a universal measurement instrument; relationship between grades and evaluation results; influence of student, instructor, and course characteristics on evaluation results; lack of a ubiquitous definition; and lack of research relating credentials and evaluation results.

Due in part to the complexity of the context associated with higher education instruction, no universal definition of effective instruction was found in the literature (Ali & Ajmi, 2013). As a result, defining, assessing, and even recognizing effective instruction was a daunting task. Variation in the processes of instructor assessment was as widespread and complex as instructional fields, institutional missions, demographic contexts, and the intended outcomes of the institutions and instructors themselves. Keeping in mind the complexity of the broad topic, it is important to acknowledge many tangents and distractions that arise, tempting the line of research away from the original intent. Intentional brevity was applied to these important, yet non-research-critical areas, as a means of backgrounding and for suggestions of potential future studies, rather than as solutions for the research questions at hand.

This review was intended to provide background knowledge pertaining to contributing components in the possible relationships that existed between instructor credentialing, student evaluations, and grade distribution. The purpose was to examine the concepts and contexts potentially associated with effective college instruction. Focus was applied primarily to common concepts of effective instruction within the two-year college realm and related methods of
assessment, rather than a historical overview of accepted definitions of effective instruction such as that provided by Barnsley (1992). Exploration of the literature was meant to determine what, if any, relationship existed when considering instructor credentials in relation to student surveys of instruction, instructor credentials in relation to grade distribution, and the potential relationship between SSOI results and grade distribution. Secondary attention was given to the contexts associated with assessment and measurement of instructor effectiveness, especially in the community college setting as well as the validity of the measures and instruments themselves.

Literature for the review was obtained using both the Carl Albert State College Library Database system and the University of Arkansas Library Database system and research assistance. Using the EBSCOhost Academic Libraries databases, specifically Academic Search Complete, ERIC, and ProQuest, full-text, peer-reviewed articles were accessed using a variety of search parameters. Articles were initially limited to a window of publication between 2000 and 2016.

Initial searches for articles relating directly to the relationship between faculty credentials and instructor effectiveness yielded no results, so the scope was widened. The following terms were used to search for peer-reviewed, full-text articles: Faculty Credentials, Faculty Evaluation, Community College Faculty, Two-Year College, Instructor Effectiveness/Teacher Effectiveness, Instructor Evaluation. The literature revealed definitions of effective instruction are as varied and convoluted as measurement instruments proposed to assess instructor competency, requiring in many cases a multiple-measure approach to assessment. The two-year college setting complicates the definition and measure of instructional effectiveness due to the various contexts and purposes within which instruction falls at these institutions. Specific terms were used to
narrow the search and to increase relevancy. Initial articles were used to further increase scope of review by identifying sources referenced multiple times within articles identified. This practice expanded the established time frame to include historically relevant studies. Dissertations were obtained through the University of Arkansas Library Database.

**Faculty Preparation and Effectiveness (Credentials)**

The literature revealed the most frequently cited characteristic vital to faculty preparation as degree level, or credential level, required. This broad theme pertained to the effectiveness of instructors based upon preparation. Haworth and Whitin (2004) addressed a movement for specialized degrees for community college instructors, recognizing differences in needs and requirements of two-year faculty in comparison to faculty at four-year and research-based institutions; as the mission of community colleges vary, so do requirements, depending on degree intent (transfer, applied degree, or technical). Haworth, et al. (2007) further initiated the claim lack of academic preparation for instructors leads to poor quality teaching, and in turn, poor quality students. Murray (2010) resonated the same note, stating “mere possession of minimal requirements hardly suffices to ensure success as a faculty member” (p. 9). Olson & Spidell (2007) followed suit by noting poor quality instruction in subject-matter-expert-classes is a common two-year college complaint (p. 44). Sprouse, et al. (2008) referred to these minimum standards as a “commandment” to hire and to retain faculty who are designated experts in their area. Decades ago, Haworth (1999) expressed concerns that PhDs, while clearly experts in content, may not be prepared for rigors of a community college teaching load. Not much has changed in the past 18 years.

This was the simplest way for colleges to gauge expertise; a quick reference to the academic transcripts faculty carry provides an easy means of quantifying qualifications of an
effective instructor. Alexander et al. (2012) indicated minimum requirements for faculty qualifications for community colleges often are set by regional accrediting bodies at either a doctoral or master’s degree in the field of instruction, or a master’s degree with at least 18 hours of concentrated subject areas in the field of instruction. Anderson (1996) previously confirmed this, also stating that 18-25 graduate hours in the field of instruction are sufficient minimum qualifications. Olson and Spidell (2007) explained faculty in fields where degrees are intended for transfer expect at least 18 hours of graduate level coursework in the field (p. 46). Long established expectations for hiring purposes are presented by Keel (1998), who found that 64% of surveyed community college division chairs prefer new faculty hires possess a master’s degree in the field, 14% prefer to hire faculty with a doctorate, and 6% seek faculty with a master’s degree with a concentration of at least 15 hours of graduate level courses in the field of instruction.

**Competencies, or the Scholarship of Teaching.** Building on the established comments of Haworth (1999) that PhDs may not be prepared for the rigors of a heavy teaching load, the concept of assessing the difficult-to-measure teaching competencies, or the practice of the scholarship of teaching, raises an interesting point. While most sources acknowledged there is more to effective teaching than accumulation of graduate hours in the area of instruction, requirements of accrediting bodies disregard this. It was explained that traditionally community college faculty were assumed to be more focused instructors and were more committed to teaching than their university counterparts (A fresh look, 2007). Barnsley (1992) claimed the reason for the perceived community college instructor’s teaching competency is “not that he loves his subject less, but that he loves the effective imparting of it more” (p. 37). Gibson-Harmon, Rodriguez, and Haworth (2002), however, explained that despite this portrayal,
graduate schools often fail to provide training for future faculty to succeed (p. 79). Some of these instructional tools were identified by Hirst and Bailey (1983) as being student-oriented, as well as competent at planning course content, evaluation, and classroom management (p. 8). In context, a clarifying example of the problem was that Walden University (2016), like many others, provides master's degrees in Higher Education with a specialization in College Teaching and Learning. In the fine print of the website Walden (2016) made the following admission:

> [the degree] focuses on the development of scholarly teaching knowledge and skills. It does not necessarily provide individuals with all of the course credits required to teach in a particular academic discipline; therefore, additional subject-specific graduate credits may be needed. Individuals are responsible for ensuring that they meet the credentialing requirements of the institution where they want to teach. Walden makes no representation or guarantee that completion of this coursework will permit an individual to teach at a higher education institution.

This statement recognizes aspects of effective college teaching that lie outside the degree in the field of instruction and simultaneously admits that it does not meet minimum faculty requirements.

**Conclusion.** Instructor preparation was associated mainly with training and development in content areas and the practice of teaching. Concerned in part with answering Research Questions 2 and 4, this theme addressed the objective, measurable means of assessing instructor preparation through degree level and credentials as well as demonstrating knowledge in the scholarship of teaching.

**Validity of Evaluation Measures**

There was no argument concerning necessity of producing effective instruction; conflict, however, arises when discussing how to evaluate and assess that effectiveness. Much literature existed concerning validity of measures of instructor effectiveness, particularly student surveys of instruction. Acceptance of the SSOI, however, was far from universal. Turpen, et al. (2012)
indicated instructors placed more value on formative and in-class assessment than on numerical 
ratings from student surveys. Administrators, however, valued the SSOI results above what may 
be viewed as subjective, instructor-manipulated assessment. Furthermore, Johnson, et al. (2013) 
recommended that administrators and faculty alike be aware of the multitude of factors other 
than teaching which bear a statistically significant impact on evaluations. These non-instructional 
factors were highlighted by Ali and Ajmi (2013), illustrating the influence of gender, language, 
age, and other factors on evaluation results, thus bringing the validity of such metrics into 
question.

The perceptions of students toward their learning may not always align with the actual 
effectiveness of instruction or the amount they learned. Bianchini, et al., (2013) presented 
interesting findings relating to non-instructional characteristics of instructors and results of SSOI, 
focusing heavily on the relationships between perceptions of students toward a class or toward 
non-instructional characteristics such as age or academic rank. Likewise, Ali and Ajmi (2013) 
reported that gender, nationality of the instructor, and other factors such as timing of the 
evaluation and expected grades can influence student perceptions and evaluations. Seok, et al. 
(2010) studied the relationships between student perceptions of flexibility, course management, 
communication, content, and navigation of online courses in relation to validity of evaluation 
results.

Johnson, et al. (2013, April) reported gender, academic rank, and other faculty 
demographics can statistically affect evaluations of instruction. The same study further 
student perceptions or expectations of grades bear a strong influence in evaluation results. 
Weinberg, et al. (2009) concluded student evaluations were positively correlated to current
grades but unrelated to learning when subsequent courses were used to evaluate that metric. Phipps, et al. (2006) found expected and actual grades were strong influences on evaluation, and students were generally not capable of distinguishing between course evaluations and instructor evaluations. This multitude of non-instructional factors, shown clearly to influence student surveys of instruction, created a dilemma for those seeking to provide a valid measure of instructor effectiveness through SSOI.

A significant issue in the assessment of student learning was grade inflation. Gentry (2011) made a case against the validity of SSOI as long as faculty and students give one another “mutual praise” while actual achievement declines (p. 59). The Gentry (2011) study placed the blame primarily on use of SSOI in “retention, tenure, and promotion decisions” which discourage faculty from increasing or implementing necessary rigor (p. 59). This discouragement of faculty based upon fear of student retaliation via evaluation has led to “student consumerism” as noted by Germain and Scandura (2005, p. 58). Ironically, pandering to students for SSOI results reportedly diluted the educational experience and necessary rigor of college-level instruction which the evaluation measure was intended to assess.

Stumpf, et al. (2013) indicated that institutions may be fully aware of the questionable validity of the SSOI, yet because of ease of administration and preponderance of quantifiable data, they settle, or “satisfice” on the familiar instrument (p. 170). Langen (2011) took the notion a step further, indicating faculty may be reappointed based on their availability rather than their ability as instructors, thus reducing the need for reliable, valid evaluation. Langen (2011) argued summative use of this intended formative assessment creates validity concerns (p. 187). This theme was the caveat to Research Questions 2, 3, and 4, bringing into question measurements and assessments commonly used. Despite the number of studies concerning validity of
evaluation measures, the spectrum of results led Germain and Scandura (2005) to declare “there is no clear consensus regarding the construct validity and usefulness of faculty evaluations” (p. 60).

**Assessment Instruments for Effective Instruction**

A third theme revealed in the literature centered on assessment instruments intended to identify levels of effectiveness in teaching. This theme was directly tied to Research Questions 2, 3, and 4. While most literature concluded that, when used alone, these assessments were lacking, they were much more effective when combined and used in a multiple-measure approach. Ali and Ajmi (2013) indicated several important characteristics necessary for proper teacher evaluation: clarity of purpose and criteria, perceived fairness and accuracy, teacher satisfaction, and useful feedback. In most cases, a single type of evaluation instrument could not accomplish everything required; therefore, using multiple measures and balancing the benefits and costs, while complicated, was most effective. Langen (2011) indicated that multiple-source evaluations “most often include peer evaluation, self-appraisals, student appraisals, department chairpersons or supervisor appraisals, and teaching portfolios” (p.189). This multiple-perspective approach, rather than a single facet, provided much more dynamic insight into the total effectiveness of instruction.

When analyzing measurement instruments separately, the most scrutinized assessment measure was SSOI. Despite the scrutiny, this was also the most commonly used measure (Parkes, 2015). Stumpf, et al. (2013) placed this measure in the procedural category (p. 169). As such, this measure was often used in a more summative fashion at the conclusion of a cycle to meet compliance requirements or as part of a process. Another consideration made by Bianchini, et al. (2013) and Langen (2011) who contended that students, as those most directly in contact
with instructors and affected by instruction, were placed in the best position to evaluate instruction; therefore, despite evidence that students were unable to separate grades from learning, they were the ones most directly impacted by quality instruction. Students should be able to provide highly meaningful feedback if properly trained on evaluation reasoning and methodology. Langen (2011) explained SSOI was originally meant to be formative; yet administration and institutions tended to use it in a summative fashion. This preference by administration stands in contrast to the skepticism of faculty concerning SSOI validity (Turpen, et al., 2012).

Construct validity concerns have also been presented by Langen (2011) and Germain and Scandura (2005) who claimed this, along with ease of manipulation, led to grade inflation. Gentry echoed these concerns, adding heavy reliance by institutions negatively affects course rigor. Turpen, et al. (2012) agreed, stating faculty are hesitant to increase rigor because of value administration places on SSOI. Culver (2010) somewhat optimistically reported SSOI results were moderated by student engagement with the course; however, the inability of students to distinguish between course and instructor evaluation places SSOI reliance as “tenuous at best,” (p. 334) as students were further unable to evaluate the amount they have learned, basing evaluations instead on expected grades (Phipps, et al., 2006; Weinberg, et al., 2009). There was value in the process of students assessing their own learning; however, equally clear were many faults and pitfalls associated with relying solely on this measurement.

Grades also were used frequently to attempt to measure instructor effectiveness and student learning; the issues concerning this measure will be addressed more fully in the next section of this review. In part due to the influence of SSOI, the reliability and validity of grades as a measure of learning were questionable as grade inflation continued to balloon. Interestingly,
and in direct contrast to the SSOI, grades were the measure most preferred by faculty yet scorned by institutions and administrations (Turpen, et al., 2012). It is worth mention that subsequent grades were capable of reflecting learning more appropriately than current or expected grades (Weinberg, et al., 2009). Again, this single measure, while preferred by one group and scorned by another, has been shown to have strengths and faults.

Stumpf, et al. (2013) also placed peer observation in the procedural evaluation realm, rather than a meaningful method of developing effectiveness. Ranging from narrative observation, evaluation forms, reference letters, and questionnaires, this method can be adapted in many ways (Parkes, 2015). The analyses of peer evaluation as a measure of effective instruction varied. Turpen, et al. (2012) claimed institutions, rather than faculty, preferred this measurement technique. Faculty preferred more individualized measures, while institutions preferred the more standardized, easy-to-apply treatment. This attitude contributed in part to classroom observation being considered highly reliable by institutions but less used than SSOI (Langen, 2011). It takes time to properly schedule, conduct, and record peer observations. Another contributing factor was ease and speed of delivery and analysis of SSOI as compared to peer evaluation (Stumpf, et al., 2013). Lastly, Johnson, et al. (2013) found peer evaluation, which tends to be highly subjective, did not correlate well with itself or with other measures, thus bringing its validity into question. Clearly, peer observation could be a valuable form of analysis for effective instruction, but presented too many subjective variables and forms for consistent reliability.

Another form of analysis was self-evaluation, which, according to Stumpf, et al. (2013), was normally procedural; however, if focused on teaching strengths and weaknesses or on accomplishments made based on professional development, self-evaluation can be a more
formative measure and placed in the developmental category. It can range from narratives of classroom experiences to supporting documentation (Parkes, 2015). While self-evaluation was the least reliable form of evaluation from the administrative perspective, the literature found its validity is at least comparable to other measures (Langen, 2011). One significant and long-standing problem was that while self-evaluation was often proposed, very rarely are specific competencies or instructions given for evaluation (Hirst & Bailey, 1983). This has not changed. Again, the problem of consistency of implementation and method presented reliability and validity concerns for the subjective self-evaluation.

Other methods of evaluating effective instruction included evaluations performed by content experts as a possible method of evaluation (Parkes, 2015), as well as chair or supervisor evaluations. The supervisor observation was further emphasized by Langen (2011) and should be included in a viable multiple-measure approach. Observation by supervisors was placed by Stumpf, et al. (2013) in the procedural category.

Finally, portfolio-based evaluation was another method of evaluation. According to Langen (2011), this form of evaluation could consist of syllabi, narratives, activities, assignments, and self-reflection. Because of the reflective nature of the portfolio-based evaluation and the ability for faculty to grow based on their own observation, this evaluation method fell in the developmental category as stated by Stumpf, et al. (2013). These methods provided further examples of variability of options for evaluation of effective instruction, increasing the gap in consistency from measure to measure.

**Conclusion.** Literature concerning evaluation measures centered primarily on student surveys of instruction; however, other measures were available and common. Langen (2011) submitted a report distinguishing between administrative and faculty preferences and levels of
trust in these various measures. Categorization of measures as procedural and developmental by Stumpf, et al. (2013) offered further insight into the means of evaluating learning.

This theme addressed Research Questions 2, 3, and 4 in that methods used to evaluate student learning within the classroom were an important part of creating meaningful, effective instruction. Both formative and summative evaluations are feedback which can result in grades, and while grades were not necessarily tied to learning, they were critical indicators of student progress. This was especially true from a faculty standpoint.

From this data, it was clear no single measure is capable of validly measuring the complex intricacies of instruction; it was also clear an institutionally-relevant combination of evaluation methods was capable of providing a more complete, well-rounded analysis. Following this strand of logic, it was further evident institutions must first assess their learning goals to assess the achieved learning more efficiently and in a customized, individualized manner.

**Relationships between Grades and Evaluation Results**

The most heavily-researched component of effective instruction was the relationship between results of SSOI and grades, particularly grade inflation. Despite the overwhelming number of studies linking SSOI with grade inflation, numerous studies stood in contrast to the majority of the findings. Clearly, the situational contexts of the individual studies influenced the results; however, the heavy majority of the studies indicated that grades, whether real or expected, influenced student answers on surveys of effective instruction.

While all sources agreed that learning--and the assessment of student learning--was vital to effective instruction, what was controversial was the role grades play in that measurement. Evidence showed student surveys of instruction, and their role in hiring and tenure practices, were at least partially responsible for grade inflation and reduced viability of grades as indicators
of student learning. This was clarified in the works of Johnson, et al. (2013) who concluded that course grades strongly influenced evaluation results. Likewise, Bianchini, et al. (2013) indicated student perceptions, or expectations, of grades bore a strong influence on evaluation results. While arguments concerning grade inflation distorted value and validity of this type of measure, in-class assessment remained a crucial point of feedback; evaluating learning through grades in subsequent courses was also a reasonable approach to assessing learning in prior courses. Despite the noisy, contradictory arguments concerning grades, it was clear faculty’s high expectations of students, and prompt, meaningful feedback (including grades) contributed strongly to student learning and instructor effectiveness. Phipps, et al. (2006) also found expected and actual grades were strong influences on evaluation, and students were not generally capable of distinguishing between course evaluations and instructor evaluations.

Weinberg, et al. (2009) concluded student evaluations were positively correlated to current grades but were unrelated to learning when subsequent courses are used to evaluate that metric. Weinberg, et al. (2009) directly disputed the correlation of grades to learning, indicating high grades due to leniency contributed directly to elevated student surveys of instruction and grade inflation. This study further indicated students often were aware of their grades in a course but were unaware of the amount they have learned, making them unable to truly evaluate effective teaching.

The mutual impact of SSOI and grades were further demonstrated by Germain and Scandura (2005) who exposed a link between course grades and grade inflation. Gentry (2011) also claimed that high grades equate to high evaluation results by students, which made grades, in isolation, ineffective to measure both student and instructor performance. Johnson, et al. (2013) claimed that neither actual nor expected grades measured instructor effectiveness due to
interference from student surveys of instruction. Ali and Ajmi (2013) reported even timing of evaluation, as well as students’ expected grades, could impact student perceptions and evaluations.

Related to discussion of grades as measures of student learning, one study presented assessment of learning as a quality control measure, countering the arguments of grade inflation; the study further asserted assessment of student learning outcomes was capable of assessing teaching effectiveness (Caudle, 2014). Ghedin and Aquario (2008) claimed consideration of learning was critical in evaluating instructor efficacy. If grades were considered relative to learning, then Haworth, et al. (2007) echoed student learning must be assessed, while Turpen, et al. (2012), in a mixed method study, indicated methods preferred by faculty to judge their own effectiveness are through grades via exam, quiz, and homework results as well as informal formative assessments. Parkes (2015) presented standardized tests, pre- and post-testing, departmental exams, grade distribution data, and informal assessments, all of which focused on student learning outcomes and student progress, as viable measures of learning.

Despite this overwhelming amount of research, Langen (2011) interestingly contradicted other studies and explained expected grades, clear grading criteria, and clear grading requirements were all positively correlated to learning. The controversy of grades, SSOI, and assessment of learning existed outside of the classroom as well, cropping up in research throughout the field.

**Relationships of non-instructional characteristics and evaluation results**

Perceptions of students toward their learning did not always align with actual effectiveness of instruction or how much students had learned. Studies previously mentioned related that students were often unable to distinguish not only course and instructor evaluation,
but also grades and learning. Often, results were influenced by non-instructional characteristics of the instructor, the student, or the course itself. Typically demographic in nature, these characteristics have been the subject of numerous studies.

The findings and methods of these studies vary; however, it was clear characteristics of the instructor, student, course, and measurement instrument itself did impact results of evaluations and assessments intended to measure effectiveness of instructors.

**Student Characteristics.** Characteristics of individual students could influence perceived instructor effect as measured through SSOI. Student age, residence, and academic ability were known to negatively influence SSOI results. Germain and Scandura (2005) explained the relationships between measured instructional effectiveness and students’ prior subject interest, gender, race, age, socioeconomic status, cultural beliefs, reason for attending college and course, and major field of study. Seok, et al. (2010) addressed gender but brought in native language, student level (classification), and technological skills. In the study, gender and education level produced statistically significant differences in perception and expectations, and non-English speakers held lower perceptions of instructors.

A study by Gorsky and Blau (2009) emphasized perceptions of students in online courses, and instructional evaluation results; the authors offered suggestions for best and worst practices for instructors concerning evaluation of online courses based on this study. Essentially, instructor presence, participation, and engagement (management of the class) equated to significantly higher levels of satisfaction. Seok, et al. (2010) measured student perceptions of flexibility, course management, communication, content, and navigation of online courses in relation to evaluations. Culver (2010) identified student engagement, expected grades, and hours spent studying as having a statistically significant impact on perceived instructor effectiveness.
Clearly, these characteristics--shown to affect SSOI results--are non-instructional, and are furthermore out of control of the instructor to a large extent. Students bring these characteristics into the classroom, and in many cases these characteristics were reflected in the student responses to SSOI.

**Instructor Characteristics.** Instructor characteristics influencing SSOI not only included primarily demographic attributes but also traits which proved to be more indirect and difficult to measure. Bianchini, et al. (2013) presented interesting findings using a regression model to relate non-instructional characteristics of instructors such as age, gender, academic rank, and research productivity to results of teaching effectiveness measurements. Characteristics shown to negatively influence effectiveness were gender for female instructors, age for older instructors, and rank for higher ranked instructors (perhaps perceived as less committed to teaching). Positive effects on instruction were displayed for instructors who contributed heavily to their body of research.

Johnson, et al. (2013, April) also reported gender and academic rank can statistically affect evaluations of instruction. Seok, et al. (2010) expounded on effects of evaluation results related to instructor gender (in this study females were perceived to be more highly effective), native language (non-native speakers of English were perceived as less effective), education level (instructors with higher degree levels were perceived as more effective), and technological skill (better delivery methods due to technological skill created better perceptions of effectiveness).

Hirst and Bailey (1983) long ago related correlations between measured effectiveness and respect for students, interest in the subject, making eye contact, verbal skill, and empathy.

Germain & Scandura (2005) provided studies on such characteristics as likeability,
leniency/stringency, instructor rank, reputation, fashion, enthusiasm, rapport, and gender. Langen (2011) reported instructors who are courteous and perceived as prepared and accessible to students receive higher scores on effectiveness evaluations.

The findings of Bianchini, et al. (2013) presented varied results relating to non-instructional characteristics of instructors and student evaluation results, focusing heavily on the manner in which relationships between perceptions of students toward a class influence evaluation results and how non-instructional characteristics such as age or academic rank of the instructor could influence the results of evaluations of instruction. Likewise, Ali and Ajmi (2013) reported that gender, nationality of the instructor, and other factors could shape evaluation results. Johnson, et al. (2013) also reported that gender, academic rank, and other faculty demographics could statistically affect evaluations of instruction.

Similar to student characteristics, instructors brought many of these traits with them into the classroom, and for the most part, the characteristics were beyond control of faculty; however, there was evidence these non-instructional traits did affect SSOI results. Several characteristics, both demographic and behavioral, are discussed in detail in the following:

**High Expectations.** One classroom practice which can influence teacher effectiveness evaluation results was level of expectation the instructor placed on the students. Gorsky & Blau (2009, June) indicated when instructors communicated high expectations to students, effectiveness of instruction rose to meet stated goals. Ghedin & Aquario (2008) explained increased workload or difficulty in a course equated to increased student engagement and thus produced higher levels of perceived learning and instructor effectiveness. Roueche, Milliron, and Roueche (2003) summarized the point by indicating all students performed better when placed under high expectations.
Prompt Feedback. Another practice, prompt feedback to students regarding assignments, exams, and progress, was highly correlated to instructor effectiveness. Gorsky and Blau (2009, June) indicated this trait was expected of effective instructors, and Langen (2011) echoed the sentiment. While grades themselves were questionable as measures of learning, it was clear assessment of learning, high expectations, and prompt feedback and reporting of grades contributed to effective instruction.

Respect for Students and Diversity. A third characteristic which was shown to have an impact on instructional effectiveness was demonstrating respect for students and for diversity. Gorsky and Blau (2009, June) posited good teachers “respect diverse talents and ways of learning” (p.2). This included not only diversity of character and personality but also diversity of learning styles and ability. Keel (1998) also indicated faculty should be “skilled at teaching students of diverse backgrounds” (p.119). The effects of diversity awareness have only become more pronounced since that study. Alexander et al., (2012) included as a core competency of effective instruction that faculty must “respect diversity of learners” (p.859). Gibson-Harmon, et al. (2002) noted that faculty must be prepared to “address the needs of an increasingly diverse student population” (p.78). Ghedin and Aquario (2008) indicated good instruction includes a “breadth of coverage” which presented different perspectives and implications (p.585). Langen (2011) implored the necessity of treating “students in a courteous manner” (p.187). The acknowledgement of and respect for diverse student populations led to increased feelings of support and perceived instructional effectiveness.

Technological Capability. Roueche, et al. (2003) stated technology must “be used in some ways because communication and information technology [has] become a basic skill that students [need]” (p.38). Gibson-Harmon, et al. (2002) said “community college faculty will
require new skills” regarding preparation for this technology (p.82), and Haworth, et al. (2007) listed using technology to increase learning at number three on their list of desirable teaching characteristics (p.64). In the fast-paced, technology-driven modern world, students have become immersed in technological advances, expecting regular updates, new experiences, and increased convenience. While the debate continues concerning technology’s actual effect on learning, use of technology in the classroom was clearly perceived by students as associated with effective instruction.

**Good Communication Skills.** Effective instructors must be capable of communicating both content knowledge and instructional processes. In an early, thorough study, Barnsley (1992) listed communication skills in the top ten preferred traits of effective instructors (p.126). Anderson (1996), building off of that study, claimed possession of “good communication skills” was among eight essential characteristics of effective instruction (p.200). Keel (1998) continued to develop the studies of Barnsley (1992) and Anderson (1996), and identified good communication skill as a characteristic of faculty preferred by division chairs (Keel, 1998, p.128). The ability to “communicate clearly” was the top-rated skill listed by Alexander et al., (2012, p.857). Roueche, et al. (2003) echoed the need for instructors to communicate effectively (p.38). Clear presentation of materials was the first component of effective teaching as proposed by Langen (2011), while clarity of grading processes was the sixth (p.187). Instructors-- no matter how brilliant-- who were unable to communicate and to transfer knowledge to students were likely to be deemed ineffective, especially by students unable to realize or grasp the complex concepts associated with higher education instruction.

It was apparent characteristics of the instructor, much like those of the student, were reflected in the results of SSOI. These characteristics, however, were non-instructional and did
not reflect the amount of learning taking place or the effectiveness of the instruction in a direct manner, resulting in validity concerns for SSOI.

**Course Characteristics.** Certain course characteristics also had significant impact on effective instruction; these included class size, course level, essential difficulty, course type, and the time and semester in which the course was offered (Bianchini, et al., 2013; Johnson, et al., 2013, April). Textbook and reading material selection, time sequence, course topics, and having well-organized materials have long been known to have a statistical impact on course satisfaction (Hirst & Bailey, 1983). Gorsky & Blau (2009, June), in their ranking of characteristics, placed the course characteristic of student cooperation as the second most important characteristic of effective teaching and encouraging active learning as the third (p.2). Ghedin & Aquario (2008) rounded out the topic of course characteristics with organization and clarity, breadth of coverage, and workload or difficulty. These numerous characteristics of courses, many beyond control of student or instructor, were shown to have an impact on SSOI results.

Other variables which influenced results of surveys were as simple as the timing of the survey itself or the instructions provided (Ali and Ajmi, 2013). Bianchini, et al. (2013) presented data related to measured instructional effectiveness and methods under which the instrument was applied, including the declared purpose of the evaluation, the ensured anonymity of the students, and whether or not the instructor being evaluated was present during the evaluation (this was more likely due to fear of punitive repercussions for negative comments); all of which resulted in higher evaluation results.

Delivery of content and ability to connect with students effectively in an engaging manner were known to increase SSOI results. A well-managed course and classroom required skills critical to effective teaching. Langen (2011) offered four dimensions of course
management which affected instruction: content expertise, instructional delivery skill, instructional design skill, and course management skill. To be effective, instructors should be familiar with these dimensions, and to be accurate, surveys of instruction should assess the same measures.

Along the same line, Gibson-Harman, et al. (2002) claimed faculty must evolve from being teachers to “designers of learning experiences, processes, and environments” (p.83). Importance of the classroom and management of content was further explained by Haworth, et al. (2007) who encouraged designing engaging learning environments. The essential act of classroom interaction was heralded in Ghedin & Aquario (2008).

Gorsky & Blau (2009, June) claimed that time on task, prompt feedback, and active learning were positive characteristics in the classroom. Additionally, Hirst & Bailey (1983) noted eye contact, questioning techniques, hand gestures, and verbal skills were among classroom techniques which influenced effectiveness of instruction. Langen (2011) also added assignments “reported within a reasonable amount of time” were hallmarks of an effective teacher (p.192). Langen (2011) further contributed class sessions must be relevant to subject matter and end on time. Ghedin & Aquario (2008) stressed lesson organization and clarity. While unrelated to content knowledge, simple classroom management and delivery techniques dramatically affect the results of SSOI.

That instructors should be student-oriented or display interest in students has long been cited, and was frequently ranked either number one (Barnsley, 1992; Anderson, 1996) or number two (Haworth, et al., 2007) in desired importance for effective teaching. Keel (1998) indicated effective instructors should “make students’ needs their primary consideration” (p.118). Clarifying course requirements also contributed to instructor success. Anderson (1996) and Keel
(1998) both listed as essential the need to establish clear goals and objectives for courses. Ghedin & Aquario (2008) emphasized the need for lesson organization and clarity, and Langen (2011) reported clear course requirements were a predictor of instructional success.

Interaction with course materials further increased engagement and students’ perception of effective instruction. Culver (2010) stated engaging students in quality efforts increased both faculty ratings, and student perceptions of academic exercises and learning in general. Haworth, et al. (2007) touted the importance of “engaging learning environments” (p.64). Roueche, et al. (2003) claimed actively involving students in the learning process was the most important key to instructional success. Students and faculty who are not engaged with one another or the course content presented models of ineffective instruction and education. To be efficient and successful in the academic aspects of higher education, it was critical for both student and faculty to be engaged and active in the process.

**Teacher Enthusiasm.** At number eight on Barnsley’s (1992) top ten characteristics of effective instructors was enthusiasm. Ghedin & Aquario (2008) likewise listed teacher enthusiasm as a component of effective instruction. Keel (1998) and Anderson (1996) both reported successful faculty enjoyed teaching, while Keel (1998) added enthusiasm and energy also were important. Caudle (2014) stated “enthusiasm for student success is shared among effective instructors” (p.59). Students were able to identify instructor enthusiasm for content and lessons, reciprocated the enthusiastic approach of the instructor in their own work, or at least perceived the instructor as effective.

**Student-Faculty Contact.** Effective instructors developed individual relationships with students, which was portrayed as being “approachable,” “willing to spend time with students,” and developing “good rapport” (Anderson, 1996, p.199; Keel, 1998, p.128). Sprouse, et al.
(2008) described it as facilitating “faculty-student interaction” (p.986), and Langen (2011) presented the concept as being “accessible to students outside of class:” (p.187). Gorsky & Blau (2009, June) simply stated effective instructors encouraged “student-faculty contact” (p.1). Ghedin & Aquario (2008) included the “individual relationship between students and teachers” in their “Nine Dimensions Defining the Teaching Efficacy Concept” (p.585). Contact between students and instructors, both inside and outside the classroom, created a sense of engagement and a relationship which served as a catalyst for perceptions of success.

**High Expectations.** Roueche, et al. (2003) stated “all students and teachers perform better when held to higher expectations” (p.36). This theme was also apparent as Gorsky & Blau (2009, June) indicated effective instructors “communicate high expectations” (p.2), and Ghedin & Aquario (2008) presented both the workload and difficulty level of a course as contributing positively to effectiveness of instruction (p.585). The expectations placed upon and communicated to students by instructors created an atmosphere of perceived success, or the expectation of learning, which was revealed in student surveys of instruction.

**Conclusion.** Several non-instructional events influenced measured instructional effectiveness. These external variables, often demographic in nature, resulted in statistically significant influences on measurements, especially on the student survey of instruction. Characteristics of the instructor, the student, and the course were known to affect the measure of instructional effectiveness, if not the instruction itself. The common thread of this theme was establishing a relationship and engagement among student, faculty member, and course material. Clearly, these variables--largely out of the control of instructors--affected the measure of effective instruction in some way; to counter this event, institutions should at least be aware of these phenomena in the consideration of instructor evaluation results.
Lack of Ubiquitous Definition of Effective Instruction

The struggle to create a definitive answer to components of effective instruction was compounded by multiple contexts and purposes of education and instruction. Ghedin and Aquario (2008) claimed “studies show[ed] that an absolute definition of ‘good teaching’ doesn’t exist since it varies depending on what kind of teaching conception one has” (p.585). Ali and Ajmi (2013) said effective teaching was difficult to define because of its “multidimensionality, complexity, and variability” (p.82). Likewise, Hirst and Bailey (1983) revealed there were no “uniform conditions common to quality instruction” and “instruction continues to be evaluated as effective or ineffective based on instructor performance while the competencies that make up the performance are not specifically identified” (p. 1). This did not change over time, as Alexander et al. (2012) pointed out despite vast writing on the “characteristics of effective college teachers….skill sets have not yet been defined with any level of specificity” (p. 1).

Other authors posed frustratingly ambiguous definitions, such as that provided by Gorsky and Blau (2009, June), which stated, “Teaching effectiveness may be defined as how an instructor can best direct, facilitate, and support students toward certain academic ends, such as achievement and satisfaction” (p.1). Very few specifics, and fewer consistencies, existed when researching a definition of instructional effectiveness.

Clearly, effective teaching was in many cases subjective and indirect. Cries for accountability and a search for a convenient, one-size-fits-all instrument have led to what may be a fool’s pursuit; one cannot capture or measure what cannot even be defined.

Summary

This review addressed and organized a number of stated components of effective teaching as well as the tools which were intended to assess it, concluding that institutions of
higher education should place careful consideration into their specific definition of effective instruction and the assessment vehicles through which they attempted to measure instruction.

The literature showed while faculty preparedness through degree was clearly an anecdotal requirement, there were no studies definitively relating to other measures which have been heavily researched in their relationship to effective instruction. Types of assessments ranged and varied as much as results, clearly indicating the inexact nature of quantifying level of teaching ability. Individual characteristics of courses, instructors, and students combined with an overwhelmingly complex array of variables to reveal a stunningly varied analysis of findings.

What was clear is both faculty and students who were engaged in meaningful course experiences were more likely to perceive the experience positively. Students, in addition, placed such high value on individual grades they were unable to disconnect the evaluation of the instruction they received from the grades they were earning; instructors, similarly, were placed in a position of inflating grades to keep students happy due to the power of SSOI. This was no easy task to reconcile; as a result, the validity of both measures was called into question.
Chapter III

Methodology

Overview

The purpose of this research was to determine what, if any, relationship existed when considering instructor credentials in relation to student survey of instruction results, instructor credentials in relation to grade distribution, and the relationship between student survey of instruction results and grade distribution.

The population and sample of the study were identical, consisting of the entire population of 53 full-time faculty members at the subject college during the Fall 2016 semester. The research design consisted of completion of an overall instructor profile to conduct three statistical analyses to identify relationships between the variables stated in the hypotheses. Data collection, methodology, and analysis were established to meet an IRB exempt level (Appendix D), using data readily available from different offices and departments at the college. Furthermore, since the literature review revealed no studies of the correlations involving credentials, a simple approach was purposefully developed to avoid complex pitfalls frequent in reviewed studies.

This study was able to determine if there was a correlation between credentials and the results of SSOI measures using SmartEvals Ascend Normative Question Set as a method of evaluating instructional effectiveness based on one specific question, “What is your overall rating of this instructor’s teaching effectiveness compared with other college instructors you have had?” Grade distribution means were determined using all grades from Fall 2016 and converting to a 4-point scale (4=A, 3=B, 2=C, 1=D, 0=F) and averaging for each instructor. Credentials were determined through evaluation of faculty transcripts. Faculty were deemed
credentialed (1) if in possession of a master’s degree in the appropriate field of instruction, or a master’s degree in another field, but transcripts demonstrating at least 18 hours of graduate-level coursework in the appropriate field. Faculty transcripts failing to display these criteria were deemed non-credentialed (2).

**Population and Sample**

The population for this study was the 53 full-time instructors at the subject institution during the Fall 2016 semester. This was a limited but adequate number, and the data were readily available for analysis of the intended relationships of the entire population. The population consisted of 31 female faculty members and 22 male faculty members with a mean tenure of 10.7 years of employment at the college. Of the population, 47 faculty members held master’s degrees and 6 did not. Eighteen of the population faculty did not meet the credential requirements of the HLC, either holding no master’s degree or holding a degree in an area other than the field of instruction yet lacking the eighteen graduate hours in the appropriate field.

**Research Design**

This correlation study was of an explanatory design and required both a Pearson r and the mathematically equivalent point-biserial correlation. Correlational research was conducted “to relate two or more variables to see if they influence[d] each other” (Creswell, 2015, p. 339). Because of the nature of the credential data being categorical and artificially dichotomous, this part of the relationship was analyzed using a point-biserial correlation (Creswell, 2015). T-testing allowed for hypotheses testing of research questions 2 and 3 which involved the credential data. While the artificial dichotomy of the credentialing variable allowed for use of simple t-testing, the range of scores on the SSOI was an interval continuum, as was the range of cumulative grade averages of instructor courses. Therefore, Research Question 4 required the
discovery of a correlation coefficient. The study used an explanatory design, seeking to express the statistics as a linear relationship using the product-moment correlation coefficient, also called the bivariate correlation, zero-order correlation, or the Pearson $r$. This explanatory design allowed for exploration of the extent to which the changes in at least 2 variables were reflected in one another (Glass & Hopkins, 1996).

T-testing allowed confident testing of statistical significance of discovered relationships. The study uses t-testing for independent populations, rather than paired, in order to determine the significance in the difference between their mean scores (O’Rourke, Hatcher, & Stepanski, 2005). The purpose of the two-population t-test was to compare population averages by comparing two independent populations. In this case, the population of credentialed faculty was compared to the population of non-credentialed faculty. The variable to be measured (either SSOI results or grade distribution) was compared between two populations. SAS results show both "Pooled" and "Satterthwaite" sections, which are based on sample variance findings. A one-sided t-test was applied to both Research Question 2 and Research Question 3 to test whether one group (credentialed) is greater than the other (non-credentialed).

The research design allowed for data collection from a single point in time, disregarding past or future instances, analyzed the population as a single group, and then allowed interpretations or conclusions to be drawn statistically from the data. The study was concerned with the single semester of Fall 2016 and the SSOI results and grade distributions from that instance. While correlation does not mean causation, the study was intended to reveal the strength of any possible relationships between three variables.

The study required an interesting blend of data analysis. Descriptive statistics were employed to help organize data and to describe data. This was necessary to describe the
relationships of a specific population, including descriptive measures such as mean, median, and mode (central tendency) concerning the SSOI results for individual instructors as well as for cumulative grade averages of the instructors’ courses. The purpose led to more inferential, or correlation-based, statistical analysis requirements. The study did not attempt to generalize any relationships, but simply to describe them. Also, the study addressed a sample which comprised the entire population, diverging from traditional inferential analysis.

Traditionally inferential approaches addressed a small population’s relationships between credentials, SSOI results, and cumulative grade means in a descriptive manner. The data were analyzed statistically to reduce any researcher bias and to create an objective perspective concerning the research problem.

**Data Collection Methodology**

For the study there was no researcher-developed data collection instrument consisting of questionnaires, surveys, interviews, or other traditional tools. Instead, as a study of relationships between instructor credentials, SSOI results, and cumulative grade averages, associated data collected from the institution for the Fall 2016 semester established a profile of the college.

First, the study obtained instructor transcripts from the Human Resource Department to determine credentials, noting instructors as (1) credentialed, or (2) not credentialed based on the HLC Assumed Practice B2 and the accumulation of graduate hours or degrees. This information was used to establish the faculty credential data necessary for addressing Research Question 1. Next, the Assessment Office provided data results from the SmartEvals Ascend Normative Question Set. Instructor effectiveness was measured on student responses to a single item: “What is your overall rating of this instructor’s teaching effectiveness compared with other college instructors you have had?” Response options ranged from 1 “One of the least effective” to 5
“One of the most effective” (SmartEvals, 2016). Lastly, grade distribution data from the Academic Affairs Office was gathered. Grades from all sections of instructor courses were converted to a 4-point scale: F= 0; D=1; C=2; B=3; A=4. These scores were then averaged for a grade distribution score.

Data were intended to reveal the existence and strength of any relationships that existed between credentials and SSOI results, credentials and cumulative grade means, and SSOI results and cumulative grade means. No demographic information was collected as the research questions were specifically narrowed to delimit the study to be concerned within strategically narrow parameters. Once all data were collected and organized, the appropriate statistical analyses were applied to the research questions.

As the data were readily available and already existed, a member of the Institutional Effectiveness office compiled the required data in a spreadsheet, deleting instructor names, course titles, and other identifiable information before transferring the findings to the researcher. This made the population of the study completely anonymous to the researcher, and eliminated the need for full IRB review; when developed in this manner, the study received an IRB Exempt level of review as the subjects of the study were completely unknown to the researcher and no treatment was applied (Appendix D).

**Data Analysis Methodology**

Once Research Question 1 was addressed and an institutional profile developed, the study sought a 95% confidence interval with an alpha level of .05 for hypothesis testing of Research Questions 2, 3, and 4. The nominal dichotomous instructor credentials ("yes" the instructor has 18 graduate hours in the field, or "no" the instructor doesn't) and quantitative interval data results from student surveys of instruction for the instructors’ courses allowed for the use of t-testing to
determine the existence and strength of any relationship initiated through Research Question 2 (Calkins, 2005). The same measure was used to explore relationships between credentials and quantitative interval data associated with cumulative grade averages initiated in Research Question 3.

Patten (2004) provided a clear explanation of directional and non-directional hypotheses at their most basic as predicting "a relationship between two variables" (p. 15). Based upon examined criteria for measurements of effective instruction, 2 basic directional hypotheses and 1 non-directional hypothesis for the study coincided with the HLC’s Assumed Practice B2.

The 2 directional hypotheses addressed Research Question 2 and Research Question 3 and were appropriately addressed using a point-biserial correlation. Research Question 2 sought to determine the extent of the possible relationship between instructor credentials and SSOI results. The corresponding hypothesis and null-hypothesis follow:

Ha1. Instructors possessing 18 graduate hours in their field of instruction scored higher on student surveys of instruction.

Ho1. There was no statistically significant relationship between instructor credentials and student evaluation of instruction results.

Research Question 3 sought the relationship between instructor credentials and grade distributions. The corresponding hypothesis and null hypothesis follow:

Ha2. Instructors possessing 18 graduate hours in their field of instruction produced higher cumulative grade means in their courses.

Ho2. There is no statistically significant relationship between instructor credentials and cumulative grade point means.

Research Question 4 was addressed using a Pearson $r$ correlation to analyze the linear
relationship between cumulative grade means and student surveys of instruction. This question was meant to duplicate research addressed in the literature review, adding legitimacy to the study and establishing consistency between case study faculty and faculty at institutions observed in literature review. A basic non-directional hypothesis was used to address Research Question 4 which concerned the extent of possible relationship between SSOI results and grade distributions:

Ha3. There was a relationship between cumulative grade means and student surveys of instruction results.

The corresponding null-hypothesis is stated below:

Ho3. There was no statistically significant relationship between cumulative grade means and student evaluation of instruction results.

Summary

The research was designed to determine existence and strength of relationships between areas of instructional effectiveness measures and faculty credentials. Two directional hypotheses and one non-directional hypothesis were applied. The first directional hypothesis was that instructors possessing 18 graduate hours in their field of instruction scored higher on student surveys of instruction. The second directional hypothesis was that instructors possessing 18 graduate hours in their field of instruction produced higher cumulative grade means in their courses. The final hypothesis of the study was non-directional and sought to determine a relationship between the two measures of effectiveness, stating there was a relationship between cumulative grade averages and SSOI results.

To increase validity, data from Fall 2016 was used to test the hypotheses. The data collection strategy was designed to keep faculty anonymous, and no treatment or data collection
instrument was applied. The statistical data analysis methodology was standard correlation analysis using statistical correlation procedures for the assumed linear relationships between variables and t-testing for the hypotheses.
Chapter IV
The Data and the Treatment of the Data

Introduction

To study the relationship between instructor credentials and measures of effectiveness the study collected data from Fall 2016 at the case study college. As a two-year rural college the case study institution struggled to hire faculty meeting the credentialing requirements of the Higher Learning Commission. With fully one-third of the faculty during the Fall 2016 semester failing to meet credentialing requirements the study addressed the opportunity to explore the relationship between credentials and student survey of instruction (SSOI) results and grade distributions. The study addressed the possible relationships using 4 research questions and 3 hypotheses.

Study Summary

To determine the answers to the four proposed research questions, Fall 2016 data were gathered from the case study college. A profile of the 53 full-time faculty was established and simple statistics were drawn from the data to address Research Question 1. In addition to credential, SSOI, and grade distribution (GPA) data, additional information was noted pertaining to length of employment and number of surveys received. Similar profiles for the credentialed and non-credentialed populations revealed additional statistical data.

Research Question 2 addressed the hypothesis that credentialed instructors received higher results on student surveys of instruction (SSOI). A t-test was used to test the hypothesis, providing Satterthwaite findings for populations of unequal variance based on SAS results.

Research Question 3 used identical methods to address the hypothesis that credentialed instructors produced higher grade distributions (GPA) than did non-credentialed faculty.
Research Question 4 sought to determine the strength of any possible relationship between SSOI results and grade distribution. The SAS correlation procedure determined the existence and strength of a possible statistically significant relationship between SSOI results and grade distributions.

The study as a whole sought to determine the effect of instructor credentials on instructor effectiveness. SSOI results and grade distributions measured instructor effectiveness based on Fall 2016 data.

**Research Question 1**

Data related to Research Question 1 established a profile of instructional satisfaction and faculty credentials at the rural, case study community college. Of 53 faculty members, 18 were not sufficiently credentialed; 35 faculty members did possess an appropriate degree or number of graduate hours. The mean duration of employment at the case study college was 10.70 years, and the mean grade distribution equated to a 2.57 GPA. A total of 2,935 student surveys were received. The mean number of surveys completed per instructor was 55.37, with mean standard deviation of 0.87.

For total population of instructors (N=53) mean instructor effectiveness score on SmartEvals SSOI was 4.15 on a scale of 1 to 5 with a standard deviation of 0.80. The median and mode for SSOI scores were 4.20 and 4.20, with a minimum of 2.90 and a maximum of 4.80.

Instructor population mean grade distribution (GPA) (N=52) was 2.57 on a scale of 1 to 5 with a standard deviation of 0.65. The median and mode for grade distribution were 2.65 and 3.11, with a minimum of 1.03 and a maximum of 3.60. Table 1 shows the faculty profile standard statistical breakdown for SSOI and grade distribution (GPA) results.
Table 1.
Simple Statistics for Faculty Population

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
<th>Sum</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSOI</td>
<td>53</td>
<td>4.15</td>
<td>4.20</td>
<td>4.20</td>
<td>0.80</td>
<td>219.90</td>
<td>2.90</td>
<td>4.80</td>
</tr>
<tr>
<td>GPA</td>
<td>52</td>
<td>2.57</td>
<td>2.65</td>
<td>3.11</td>
<td>0.65</td>
<td>133.399</td>
<td>1.03</td>
<td>3.60</td>
</tr>
</tbody>
</table>

Credentialed Faculty Statistics for the 35 credentialed faculty members follow: The mean instructor effectiveness score on the SmartEvals SSOI was 4.07 on a scale of 1 to 5. The mean number of surveys completed per instructor was 51.51, and the mean standard deviation was 0.90. A total of 1803 student surveys were received in this population. The median and mode for SSOI instructor effectiveness scores were 4.20 and 3.80, with a minimum of 2.90 and a maximum of 4.60. Mean grade distribution score was 2.50, and the median and mode for grade distribution data were 2.64 and 2.68, with a minimum of 1.03 and a maximum of 3.60. Standard deviation of credentialed faculty grade distribution was 0.69. Mean employment duration for this group was 11.68 years. Table 2 shows the credentialed faculty profile standard statistical breakdown for SSOI and grade distribution (GPA) results.

Table 2.
Simple Statistics for Credentialed Faculty

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSOI</td>
<td>35</td>
<td>4.07</td>
<td>4.20</td>
<td>3.80</td>
<td>.90</td>
<td>2.90</td>
<td>4.60</td>
</tr>
<tr>
<td>GPA</td>
<td>34</td>
<td>2.50</td>
<td>2.64</td>
<td>2.68</td>
<td>.69</td>
<td>1.03</td>
<td>3.60</td>
</tr>
</tbody>
</table>
Non-Credentialed Faculty. Statistics for the 18 non-credentialed faculty members are
follow: The mean instructor effectiveness score on the SmartEvals SSOI was 4.30 on a scale of 1
to 5 with a standard deviation of 0.75. The mean number of surveys completed per instructor
was 62.89, and the mean standard deviation was 0.80. A total of 1132 student surveys were
received from this population. The median and mode for SSOI instructor effectiveness scores
were 4.30 and 4.60, with a minimum of 3.00 and a maximum of 4.80. Mean grade distribution
score was 2.69, and the median and mode for grade distribution data were 2.75 and 3.11, with a
minimum of 1.49 and a maximum of 3.35. Standard deviation of non-credentialed grade
distribution was 0.52. Mean employment duration for this group was 9.22 years. Table 3 shows
the credentialed faculty profile standard statistical breakdown for SSOI and grade distribution
(GPA) results.

Table 3. Simple Statistics for Non-Credentialed Faculty

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSOI</td>
<td>18</td>
<td>4.30</td>
<td>4.30</td>
<td>4.60</td>
<td>.75</td>
<td>3.00</td>
<td>4.80</td>
</tr>
<tr>
<td>GPA</td>
<td>18</td>
<td>2.69</td>
<td>2.75</td>
<td>3.11</td>
<td>.52</td>
<td>1.49</td>
<td>3.35</td>
</tr>
</tbody>
</table>

Result Summary. Credentialed faculty possessed a lower SSOI result mean than
the population, lower mean grade distribution than the population, and accounted for minimum
SSOI value and both minimum and maximum grade distribution value. Conversely, non-
credentialed faculty demonstrated above population mean values for SSOI results and grade
distribution while accounting for the maximum population SSOI result value. Faculty at the case
study college demonstrated high levels of satisfaction as an overall population with a mean SSOI
result of 4.15 (out of 5) and mean grade distribution of 2.57 (out of 4.0). The minimum SSOI
result was 2.90 and the maximum was 4.80. Grade distribution data revealed a minimum of 1.03
and a maximum of 3.60.

Breaking the population into credentialed and non-credentialed segments, the mean SSOI result for credentialed faculty was 4.07 compared to 4.30 for non-credentialed faculty. Minimum SSOI results for credentialed faculty was 2.90 and for non-credentialed the minimum value was 3.00. Maximum SSOI results were 4.80 for credentialed faculty and 4.60 for non-credentialed. Grade distribution data added the following to the profile. Credentialed faculty held a mean GPA statistic of 2.50 compared to 2.69 for non-credentialed faculty. Minimum GPA values for credentialed faculty was 1.03 compared to 1.49 for non-credentialed faculty, and maximum GPA values were 3.60 for credentialed faculty and 3.35 for non-credentialed.

**Research Question 2**

Data related to Research Question 2 solicited the extent of a relationship between instructor credentials and student survey of instruction results. The 35 credentialed faculty showed a mean SSOI result of 4.07 for instructional effectiveness. The 18 non-credentialed faculty showed a mean SSOI result of 4.31 for instructional effectiveness.

SSOI results received treatment in Microsoft Excel of determining sum, mean, median, mode, minimum, and maximum scores. Data were inputted into SAS to produce t-test results, and correlation data from SAS was verified in EXCEL. The correlation coefficient was squared to determine probability of relationship for comparison data as well (Appendix B). These treatments were conducted, as appropriate, for the entire population, as well as for credentialed and non-credentialed populations independently. Tables 4a, 4b, and 4c show the t-test results for the SSOI variable. Table 4a provides statistical analysis for credentialed and non-credentialed faculty concerning SSOI results. Table 4b shows 95% confidence interval means as well as standard deviations. Table 4c provides the results of the Satterthwaite test for unequal variances,
the critical t-value, and the P-value. Table 5 demonstrates the measure for equality of variance for the SSOI variable.

Table 4a.  
*T-test for SSOI Variable*  
<table>
<thead>
<tr>
<th>Credentialed</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>4.069</td>
<td>.4477</td>
<td>.0757</td>
<td>2.90</td>
<td>4.60</td>
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<tr>
<td>No</td>
<td>18</td>
<td>4.306</td>
<td>.4207</td>
<td>.0992</td>
<td>3.00</td>
<td>4.80</td>
</tr>
<tr>
<td>Diff (1-2)</td>
<td></td>
<td>-0.2370</td>
<td>.4389</td>
<td>.1273</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4b.  
*T-test for SSOI Variable*  
<table>
<thead>
<tr>
<th>Credentialed</th>
<th>Method</th>
<th>Mean</th>
<th>95% CL Mean</th>
<th>SD</th>
<th>95% SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>4.069</td>
<td>3.9148/4.2224</td>
<td>.4477</td>
<td>.3621/.5866</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>4.306</td>
<td>4.0963/4.5148</td>
<td>.4207</td>
<td>.3157/.6308</td>
</tr>
<tr>
<td>Diff (1-2)</td>
<td>(Pooled)</td>
<td>-0.2370</td>
<td>-0.4926/.0186</td>
<td>0.4389</td>
<td>.3678/.5443</td>
</tr>
<tr>
<td>Diff (1-2)</td>
<td>(Satterthwaite)</td>
<td>-0.2370</td>
<td>-0.4899/.0159</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4c.  
*T-test for SSOI Variable*  
| Method       | Variances     | DF  | t Value | PR > |t|   |
|--------------|---------------|-----|---------|-------|-----|
| Pooled       | Equal         | 51  | -1.86   | .0684 |
| Satterthwaite| Unequal       | 36.394 | -1.90 | .0654 |

Table 5.  
*Equality of Variance for SSOI Variable*  
<table>
<thead>
<tr>
<th>Method</th>
<th>Num DF</th>
<th>Den DF</th>
<th>F Value</th>
<th>Pr &gt; F</th>
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</thead>
<tbody>
<tr>
<td>Folded F</td>
<td>34</td>
<td>17</td>
<td>1.13</td>
<td>0.8074</td>
</tr>
</tbody>
</table>

**Result Summary.** The independent sample (population) t-test with unequal variance method was used. Satterthwaite results indicate t Value of -1.90 and a PR > |t| of .0654. Findings retain the null hypothesis. The sample does not provide enough evidence to support the claim that there is a statistically significant relationship between instructor credentials and student
survey of instruction results. Here the t-test statistic is insignificant (t = -1.90, P value = 0.0654 > 0.05).

**Research Question 3**

Data related to Research Question 3 pursued the extent of a relationship between instructor credentials and grade distributions. The 35 credentialed faculty showed a mean grade distribution GPA equivalent of 2.54. The 18 non-credentialed faculty showed a mean grade distribution GPA equivalent of 2.69.

Grade distribution results received treatment in Microsoft Excel of determining sum, mean, median, mode, minimum, and maximum scores. Data were inputted into SAS to produce t-test results, and correlation data from SAS was verified in EXCEL. The correlation coefficient was squared to determine probability of relationship for comparison data as well (Appendix B). These treatments were conducted, as appropriate, for the entire population, as well as for credentialed and non-credentialed populations independently. Tables 6a, 6b, and 6c show the t-test results for the grade distribution (GPA) variable. Table 6a provides statistical analysis for credentialed and non-credentialed faculty concerning grade distribution results. Table 6b shows 95% confidence interval means as well as standard deviations. Table 6c provides the results of the Satterthwaite test for unequal variances, the critical t-value, and the observed statistic value (PR). Table 7 demonstrates the measure for equality of variance for the SSOI variable.
Table 6a.
_T-test for GPA Variable_

<table>
<thead>
<tr>
<th>Credentialed</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Min</th>
<th>Max</th>
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<tbody>
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<td>34</td>
<td>2.494</td>
<td>.7046</td>
<td>.1208</td>
<td>1.03</td>
<td>3.60</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>2.690</td>
<td>.5335</td>
<td>.1257</td>
<td>1.48</td>
<td>3.53</td>
</tr>
<tr>
<td>Diff (1-2)</td>
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<td>-0.1906</td>
<td>.6515</td>
<td>.1899</td>
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</tr>
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</table>

Table 6b.
_T-test for GPA Variable_

<table>
<thead>
<tr>
<th>Credentialed</th>
<th>Method</th>
<th>Mean</th>
<th>95% CL Mean</th>
<th>SD</th>
<th>95% SD</th>
</tr>
</thead>
<tbody>
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<td>Yes</td>
<td></td>
<td>2.4994</td>
<td>2.2535/2.7452</td>
<td>.7046</td>
<td>.5683/ .9275</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>2.6900</td>
<td>2.4247/2.9553</td>
<td>.5335</td>
<td>.4003/ .7998</td>
</tr>
<tr>
<td>Diff (1-2)</td>
<td>(Pooled)</td>
<td>-0.1906</td>
<td>-0.5721/-.1908</td>
<td>0.6515</td>
<td>.5451/ .8099</td>
</tr>
<tr>
<td>Diff (1-2)</td>
<td>(Satterthwaite)</td>
<td>-0.1906</td>
<td>-0.5422/ .1609</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6c.
_T-test for GPA Variable_

| Method         | Variances | DF    | t Value | PR > |t| |
|----------------|-----------|-------|---------|------|---|
| Pooled         | Equal     | 50    | -1.00   | .3203|   |
| Satterthwaite  | Unequal   | 43.698| -1.09   | .2803|   |

Table 7.
_Equality of Variance for GPA Variable_

<table>
<thead>
<tr>
<th>Method</th>
<th>Num DF</th>
<th>Den DF</th>
<th>F Value</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folded F</td>
<td>33</td>
<td>17</td>
<td>1.74</td>
<td>0.2245</td>
</tr>
</tbody>
</table>

_Result Summary._ Findings retain the null hypothesis. Here independent sample (population) _t_-test with unequal variance method was used. Satterthwaite results indicate a indicate _t_-Value of -1.09 and a _Pr > |t|_ of .2803. The sample does not provide enough evidence to support the claim that there is a statistically significant relationship between instructor credentials and student survey of instruction results. Here the _t_-test statistic is insignificant (_t_ = -1.09, _P_ value = 0.2803 > 0.05).
**Research Question 4**

Data related to Research Question 4 explored the extent of a relationship between student survey of instruction results and grade distributions. Data revealed SSOI results of 4.07 and grade distribution data of 2.54 for credentialed faculty, and 4.30 and 2.69 for non-credentialed faculty.

SSOI and grade distribution results received treatment in Microsoft Excel of determining sum, mean, median, mode, minimum, and maximum scores. Data were inputted into SAS to produce t-test results, and correlation data from SAS was verified in EXCEL. The correlation coefficient was squared to determine probability of relationship for comparison data as well (Appendix B). These treatments were conducted, as appropriate, for the entire population, as well as for credentialed and non-credentialed populations independently. Table 8 illustrates the statistical correlations between SSOI results and grade distributions (GPA).

**Table 8.**
**Correlation Coefficients between SSOI Results and Grade Distribution**

<table>
<thead>
<tr>
<th></th>
<th>SSOI</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSOI</td>
<td>1.00000**53</td>
<td>0.53528*&lt;.0001**52</td>
</tr>
<tr>
<td>GPA</td>
<td>**52</td>
<td>**52</td>
</tr>
</tbody>
</table>

*Probability > |r| under H0: Rho=0
**Number of Observations

**T-tests**

The purpose of the two-population t-test was to compare population averages by comparing two independent populations. In this case, the population of credentialed faculty was compared to the population of non-credentialed faculty. The variable to be measured (either
SSOI results or grade distribution) was compared between two populations in order to test the proposed hypotheses.

**Result Summary.** The estimated value of the correlation coefficient is $r = 0.535$. The correlation is found to be significant with $P$ value $< 0.001$. Findings demonstrate that faculty at the case study college display relationships similar to institutions from the literature concerning SSOI results and grades. Correlation findings concerning SSOI results and grade distribution at the case study college were consistent with the literature.

**Raw Data**

**Population.** Population data from the compiled spreadsheet included instructor identification numbers (INST), nominal credentialing data (1=yes; 2=no) (CRED), student survey of instruction data (SSOI), and grade distribution data (GPA) as seen in Table 1.

**Credentialed.** Data from the population of 35 credentialed instructors (INST=1) included nominal credentialing data (1=yes; 2=no) (CRED), student survey of instruction data (SSOI), and grade distribution data (GPA). Table 9 expresses data for SSOI and grade distribution for credentialed faculty.
Table 9.
Raw Data for Credentialed Faculty

<table>
<thead>
<tr>
<th>SSOI</th>
<th>GPA</th>
<th>SSOI</th>
<th>GPA</th>
<th>SSOI</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.000</td>
<td>1.143</td>
<td>4.600</td>
<td>3.167</td>
<td>4.300</td>
<td>2.638</td>
</tr>
<tr>
<td>3.800</td>
<td>2.044</td>
<td>4.500</td>
<td>3.553</td>
<td>2.900</td>
<td>1.047</td>
</tr>
<tr>
<td>4.000</td>
<td>2.333</td>
<td>4.400</td>
<td>3.473</td>
<td>4.500</td>
<td>2.203</td>
</tr>
<tr>
<td>4.200</td>
<td>1.833</td>
<td>4.500</td>
<td>2.679</td>
<td>3.900</td>
<td>2.413</td>
</tr>
<tr>
<td>3.800</td>
<td>3.602</td>
<td>4.600</td>
<td>3.400</td>
<td>4.800</td>
<td>2.868</td>
</tr>
<tr>
<td>4.600</td>
<td>2.885</td>
<td>4.100</td>
<td>2.750</td>
<td>4.200</td>
<td>2.552</td>
</tr>
<tr>
<td>4.500</td>
<td>3.174</td>
<td>2.900</td>
<td>1.991</td>
<td>3.400</td>
<td>2.214</td>
</tr>
<tr>
<td>4.300</td>
<td>3.111</td>
<td>4.400</td>
<td>3.279</td>
<td>3.800</td>
<td>2.570</td>
</tr>
<tr>
<td>4.300</td>
<td>1.871</td>
<td>4.200</td>
<td>1.488</td>
<td>4.000</td>
<td>3.174</td>
</tr>
<tr>
<td>3.400</td>
<td>1.333</td>
<td>4.600</td>
<td>2.516</td>
<td>4.500</td>
<td>3.111</td>
</tr>
<tr>
<td>4.300</td>
<td>2.947</td>
<td>4.300</td>
<td>2.606</td>
<td>3.800</td>
<td>2.679</td>
</tr>
<tr>
<td>4.300</td>
<td>1.030</td>
<td>4.600</td>
<td>3.138</td>
<td>4.400</td>
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<td>4.400</td>
<td>2.647</td>
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<td>4.100</td>
<td>2.609</td>
</tr>
<tr>
<td>4.300</td>
<td>2.652</td>
<td>4.200</td>
<td>2.227</td>
<td>3.400</td>
<td>2.322</td>
</tr>
<tr>
<td>4.200</td>
<td>2.628</td>
<td>4.600</td>
<td>2.184</td>
<td>4.200</td>
<td>2.662</td>
</tr>
<tr>
<td>3.800</td>
<td>2.842</td>
<td>3.800</td>
<td>2.086</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-Credentialed. Data from the population of 18 non-credentialed instructors (INST=2) included nominal credentialing data (1=yes; 2=no) (CRED), student survey of instruction data (SSOI), and grade distribution data (GPA). Instructor identification numbers were again removed due to insignificance to input. Table 10 expresses data for SSOI and grade distribution for credentialed faculty.

Table 10.
Raw Data for Non-Credentialed Faculty

<table>
<thead>
<tr>
<th>SSOI</th>
<th>GPA</th>
<th>SSOI</th>
<th>GPA</th>
<th>SSOI</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.500</td>
<td>3.174</td>
<td>4.600</td>
<td>2.516</td>
<td>4.300</td>
<td>2.638</td>
</tr>
<tr>
<td>4.300</td>
<td>3.111</td>
<td>4.300</td>
<td>2.606</td>
<td>3.000</td>
<td>1.915</td>
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<tr>
<td>4.600</td>
<td>3.167</td>
<td>4.600</td>
<td>3.138</td>
<td>4.800</td>
<td>2.868</td>
</tr>
<tr>
<td>4.200</td>
<td>3.353</td>
<td>4.200</td>
<td>2.227</td>
<td>4.200</td>
<td>2.552</td>
</tr>
<tr>
<td>4.800</td>
<td>3.111</td>
<td>4.600</td>
<td>2.184</td>
<td>4.000</td>
<td>3.174</td>
</tr>
<tr>
<td>4.200</td>
<td>1.488</td>
<td>3.800</td>
<td>2.086</td>
<td>4.500</td>
<td>3.111</td>
</tr>
</tbody>
</table>
Chapter V
Summary, Findings, Conclusions, and Recommendations

Summary

Case-study-college data related to instructor effectiveness was gathered for Fall 2016 to examine possible relationships between instructor credentials, SSOI results, and grade distributions. Four research questions were explored using 3 pairs of hypotheses and equivalent null-hypotheses. Point-biserial and Pearson $r$ correlation coefficients were discovered from relevant data sets and t-tests were run for hypothesis testing.

Data were drawn from a total population of 53 faculty employed by the case study college during the fall of 2016. Credential data were determined based on employee transcripts and the degree and number of graduate hours in teaching fields. SSOI data were derived from student responses to a single question on the SmartEvals Ascend Normative Question Set. Grade distribution data were derived from reported grades in all sections of all courses (disregarding grades of W) taught by faculty during Fall 2016.

The purpose of the two-population t-test was to compare population averages by comparing two independent populations. In this case, the population of credentialed faculty was compared to the population of non-credentialed faculty. The variable to be measured (either SSOI results or grade distribution) was compared between two populations. Comparison of credentials to both SSOI results and grade distribution used directional hypotheses; comparison of SSOI results to grade distribution data used a non-directional hypothesis. For Research Question 4 SAS performed a two-sided test, meaning the hypothesis compared a significant difference between two groups. Research Question 2 and Research Question 3 performed one-
sided tests to determine if one group was greater than the other, resulting in a smaller p-value (Purdue, 2010).

Directional hypotheses addressed Research Question 2 and Research Question 3 and used an appropriate point-biserial correlation. Research Question 2 sought to determine the extent of the possible relationship between instructor credentials and SSOI results. The corresponding hypothesis and null-hypothesis follow:

Ha1. Instructors possessing 18 graduate hours in their field of instruction scored higher on student surveys of instruction. (Ha: ρ1>ρ2)

Ho1. There was no statistically significant relationship between instructor credentials and student evaluation of instruction results. (Ho: ρ=0)

Critical value: α1= .235

Research Question 3 sought the relationship between instructor credentials and grade distributions. The corresponding hypothesis and null hypothesis follow:

Ha2. Instructors possessing 18 graduate hours in their field of instruction produced higher cumulative grade averages in their courses. (Ha: ρ1>ρ2)

Ho2. There is no statistically significant relationship between instructor credentials and cumulative grade point averages. (Ho: ρ=0)

Critical value: α1= .235

Research Question 4 was addressed using a Pearson $r$ correlation to analyze the linear relationship between cumulative grade means and student surveys of instruction. This question was meant to duplicate research addressed in the literature review, adding legitimacy to the study. A basic non-directional hypothesis was used to address Research Question 4 which concerned the extent of possible relationship between SSOI results and grade distributions:
Ha3. There was a relationship between cumulative grade means and student surveys of instruction results. (Ha: \( \rho_1 \neq \rho_2 \))

The corresponding null-hypothesis is stated below:

Ho3. There was no statistically significant relationship between cumulative grade means and student evaluation of instruction results. (Ho: \( \rho_1 = \rho_2 \))

Critical value: \( \alpha_2 = .276 \)

Findings and Conclusions

Research Question 1 established a faculty profile and the baseline data for the study. SAS results showed both "Pooled" and "Satterthwaite" sections, which were based on sample variance findings. The conclusion was to retain the null hypothesis for Research Questions 2 and 3 and demonstrating that the relationships between credentials and both SSOI results and grade distributions were not statistically different, while rejecting the null hypothesis for Research Question 4 demonstrating that there was a significant relationship between SSOI results and grade distributions.

Research Question 1. What was the profile of instructional satisfaction and faculty credentials at the rural, case study community college?

Answer. Faculty at the case study college demonstrated high levels of satisfaction as a population with a mean SSOI result of 4.15 (out of 5) and mean grade distribution of 2.57 (out of 4.0). The minimum SSOI result was 2.90 and the maximum was 4.80. Grade distribution data revealed a minimum of 1.03 and a maximum of 3.60. Breaking the population into credentialed and non-credentialed segments, the mean SSOI result for credentialed faculty was 4.07 compared to 4.30 for non-credentialed faculty. Minimum SSOI results for credentialed faculty was 2.90 and for non-credentialed the minimum value was 3.00. Maximum SSOI results were 4.80 for
credentialed faculty and 4.60 for non-credentialed. Grade distribution data added the following to the profile. Credentialed faculty held a mean GPA statistic of 2.50 compared to 2.69 for non-credentialed faculty. Minimum GPA values for credentialed faculty was 1.03 compared to 1.49 for non-credentialed faculty, and maximum GPA values were 3.60 for credentialed faculty and 3.35 for non-credentialed.

**Conclusion.** Credentialed faculty possessed a lower SSOI result mean than the population, lower mean grade distribution than the population, and accounted for minimum SSOI value and both minimum and maximum grade distribution value. Conversely, non-credentialed faculty demonstrated above population mean values for SSOI results and grade distribution while accounting for the maximum population SSOI result value.

**Research Question 2.** To what extent was there a relationship between instructor credentials and student survey of instruction results?

The correlation between credentials and SSOI results was 0.252, revealing a less statistically significantly relationship. The r^2 of .063 denotes only a 6% chance that the two sets of variables are related. The following hypothesis was tested using SAS. The test on Equality of Variances is given at the bottom of the SAS output. In this case the p-value = 0.065 so the "Satterthwaite" section is observed (Purdue, 2010).

Ha1. Instructors possessing 18 graduate hours in their field of instruction scored higher on student surveys of instruction.

Ho1. There was no statistically significant relationship between instructor credentials and student evaluation of instruction results.

**Answer.** Here independent sample (population) t-test with unequal variance method was used. Satterthwaite results indicate t Value of -1.90 and a PR > |t| of .0654.
Conclusion. Findings retain the null hypothesis. The sample does not provide enough evidence to support the claim that there is a statistically significant relationship between instructor credentials and student survey of instruction results. Here the t-test statistic is insignificant (t = -1.90, P value = 0.0654 > 0.05).

Research Question 3. To what extent was there a relationship between instructor credentials and grade distributions?

The correlation between credentials and GPA results was 0.141, revealing a less statistically significantly relationship. The r^2 of .02 denotes only a 2% chance that the two sets of variables are related. The following hypothesis was tested using SAS. The test on Equality of Variances is given at the bottom of the SAS output. In this case the p-value = 0.065 so the "Satterthwaite" section is observed (Purdue, 2010).

Ha2. Instructors possessing 18 graduate hours in their field of instruction produced higher cumulative grade means in their courses.

Ho2. There is no statistically significant relationship between instructor credentials and cumulative grade point means.

Answer. Here independent sample (population) t-test with unequal variance method was used. Satterthwaite results indicate a indicate t Value of -1.09 and a PR > |t| of .2803.

Conclusion. Findings retain the null hypothesis. The sample does not provide enough evidence to support the claim that there is a statistically significant relationship between instructor credentials and student survey of instruction results. Here the t-test statistic is insignificant (t = -1.09, P value = 0.2803 > 0.05).

Research Question 4. To what extent was there a relationship between student survey of instruction results and grade distributions?
The correlation between SSOI results and grades results was 0.535, revealing a more statistically significantly relationship. The r^2 of .287 denotes a 29% chance that the two sets of variables are related. The correlation for credentialed faculty was 0.539 with a 29% of relationship, and for non-credentialed faculty 0.480 with a 23% chance of relationship.

Ha3. There was a relationship between cumulative grade means and student surveys of instruction results.

The corresponding null-hypothesis is stated below:

Ho3. There was no statistically significant relationship between cumulative grade means and student evaluation of instruction results.

**Answer.** Correlation analysis and scatter diagram were used to analyze the relationship between cumulative grade means and SSOI results. The scatter diagram suggests that there is a positive correlation between these two variables. The estimated value of correlation coefficient r = 0.535. The correlation is found to be significant with P value < 0.001.

**Conclusion.** Despite traditional reliance on master’s degrees with at least 18 hours in the field of instruction as a bulwark of effective instruction, at the case study college there was no statistically significant relationship between instructor credentials and either SSOI results or grade distribution data. Correlation findings concerning SSOI results and grade distribution at the case study college were consistent with the literature.

Based on these findings faculty at the case study college display relationships similar to institutions in the literature concerning SSOI results and grades; however, there is no statistically significant effect on instructor effectiveness based on credentials.
**Recommendations:**

Based on study conclusions the following practical and research recommendations may be made:

**Practical Recommendations.** The case study institution should not disregard hiring credentialed faculty based upon the findings of this study, especially with the increased emphasis from the Higher Learning Commission; however, it is clear that effective instruction was not a simple outcome of faculty acquiring degrees and graduate hours. The institution must be aware of the much more complex dynamic affecting the classroom.

As a result of the study it is clear that assessment of instructors and instruction should be multifaceted and focus on more than one or two simple variables. An underlying theme is that faculty professional development should not focus solely on content areas, but include broader perspectives and classroom management practices.

**Research Recommendations.** It is recommended that further research be conducted to discover components of effective instruction, or combinations of variables that produce effective instructors.

Further study based on more complex analysis of SSOI questions could reveal relationships remaining hidden in the study. The “drilling down” into the available data could conversely verify that SSOI results and credentials are unrelated.

A follow-through study to track the performance data of the non-credentialed faculty to conduct a paired-sample study may reveal relationship or improvement, or a lack thereof as faculty attain proper credentials.

A more strenuous break-down of the population to discover possible relationships affecting instructor effectiveness measures would be appropriate, especially since demographic data and
years of experience were not factored into this study. Additionally, commonalities between effective instructors may be discovered in transcript analysis. Expansion of the study to include other possible measures of instructor effectiveness is also recommended.

The 53-faculty population could be broken down by division or course for more complete analysis of potential relationships. The same statistical analysis could be conducted across 8 smaller populations to discover potential relationships.

Expansion of the study to include adjunct faculty may increase the population and reveal associations missed in this study.

**Discussion**

The study centered on the concept of establishing a quantitative method of assessing potential relationships between instructional effectiveness measures. SSOI results and grade distribution data revealed no connection to faculty credentials through t-testing. A statistically significant relationship between SSOI results and grade distributions, like those revealed in the literature review included studies by Gentry (2011), Weinberg et al. (2009), Turpen et al. (2012), and Johnson et al. (2013), also appeared at the case study college.

Both the literature and the study revealed no statistical data relating any correlation between instructor credentials and standard effectiveness measures of SSOI and grade distributions. The anecdotal link between credentials and effectiveness remained undiscovered as no direct correlation appeared.

Characteristics of effective instruction, such as those listed by Barnsley (1992), Anderson (1996), and Keel (1998), are longstanding and for the most part well-researched. The concept of graduate degree expressing content knowledge was clear; however, the study failed to conclude that content knowledge based on degree acquisition produced a statistical effect on instructional
effectiveness.

It is also clear from the study that there was no statistical difference between faculty segments related to SSOI results and grade distribution. The validity of these measures of instructor effectiveness is questionable, as demonstrated in the literature review, most notably by Johnson, et al. (2013, April), Bianchini, et al. (2013), Germain and Scandura (2005), and Gentry (2011). Yet, the broad use of these quantitative measures makes them readily available and easily comparable in establishing a possible relationship.

The study did reveal the expected relationship of a statistically significant correlation between grades and student surveys of instruction. Relationships existing between instructor credentials and grades, and instructor credentials and results of SSOI did not appear, and failed to provide statistical proof of the relationship. The study analyzed grade distributions and student survey of instruction results of both credentialed and non-credentialed faculty at the case study college. If there was a correlation between numbers of graduate hours completed and established measures of grades and SSOI results, then the study would have revealed higher correlations for credentialed faculty than for those lacking appropriate levels of post-graduate education. This correlation did not appear.

Other factors revealed in the literature review may have been responsible for higher or lower SSOI results and grade distributions, such as non-instructional characteristics of age, gender, race, socioeconomic status of both instructors and students (Germain & Scandura, 2005; Seok, et al, 2010). Technical capabilities (Roueche, et al, 2003), expectations (Ghedin & Aquario, 2008), communication skills (Langen, 2011), and course characteristics (Gorsky & Blau, 2009, June) are all characteristics which could affect instruction. Some of these non-instructional are static and unable to be manipulated; however, the latter characteristics listed can
be strengthened through well-planned faculty development.

The limitations and delimitations of the study prevent it from being a conclusive determination that content knowledge as demonstrated through graduate degree and credit hour accumulation are irrelevant for community college faculty. The study did, however, provide incentive to consider other characteristics in hiring and evaluation practices, as well as professional development opportunities for faculty.

Summary

The results of the study were interesting to both the case study college and other rural two-year colleges facing faculty credentialing dilemmas. Though unlikely to change policy at either the college level or that of the regional accrediting agencies, the findings did reveal that more than degree level influences instructor effectiveness.

Further study could reveal potential avenues for professional development that relate more closely to best practices of instructional effectiveness, particularly those contributing to higher SSOI results and grade distribution.
References


Appendix A

SmartEvals Survey

The Ascend™ Normative Question Set

ABOUT YOURSELF

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this a required course for you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always (91-100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequently (70-90%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>About Half (30-69%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely (10-29%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (0-9%)</td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>Other</th>
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<tbody>
<tr>
<td>What grade do you expect to receive in this course?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THE COURSE

<table>
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<tr>
<th></th>
<th>An exceptional amount</th>
<th>More than usual</th>
<th>About as much as usual</th>
<th>Less than usual</th>
<th>Almost nothing</th>
</tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------</td>
<td>---------</td>
<td>----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Overall, how much do you feel you have learned in this course?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The workload for this course was:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The course assignments adequately reflected the goals of the course.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The expectations of the class were clearly communicated in the course syllabus.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that this course challenged me intellectually.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would recommend this course to other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The text of assigned reading was used effectively in the course.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test questions accurately reflected course content.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What aspects of the course contributed most to your learning? Please be as specific as possible.

What aspects of this course detracted from your learning?
### The Instructor

<table>
<thead>
<tr>
<th>What is your overall rating of this instructor’s teaching effectiveness compared with other college instructors you have had?</th>
<th>One of the most effective</th>
<th>More effective than average</th>
<th>About average</th>
<th>Worse than average</th>
<th>One of the least effective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The instructor gives assignments that contribute to my understanding of the subject.</th>
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### THE INSTRUCTOR

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<th>The teaching strategies (e.g. lecture, demonstration, group work, peer review, technology) enhanced my learning in the course.</th>
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### The instructor made difficult material understandable.

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### The instructor facilitated class participation.

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### The instructor was well prepared, organized and used class time effectively.

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### I felt the instructor did a great job giving me constructive feedback and communicating with me personally inside and outside of class.

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### What aspects of the instructor contributed most to your learning?

- [ ]

### I would take another course from this instructor

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### I would recommend this course to other students.

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### Appendix B

#### Raw Data

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**Pearson R - creds to SSOI**

| R | 0.2522394934 | less statistically significant | 6% related | 0.06362476202 |

**Pearson R - creds to grades**

| R | 0.1405599649 | least significant, almost 0 | 2% related | 0.01975710373 |

**Correlation SSOI to Grades**

| R | 0.5352832472 | statistically significant | 29% related | 0.2865281548 |
Appendix C

SAS Results

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| Method     | Variances | DF | t Value | Pr > |t| |
|------------|-----------|----|---------|------|---|
| Pooled     | Equal     | 51 | -1.86   | 0.0684 |
| Satterthwaite | Unequal | 36.394 | -1.90 | 0.0654 |

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Q-Q Plots of GPA

Yes

No

GPA

Quantile

Quantile
SSOI
Scatterplot
GPA
The CORR Procedure

2 Variables: SSOI GPA

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Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

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