

FACTORS RELATED TO THE LIKELIHOOD OF GRADE INFLATION AT
COMMUNITY COLLEGES

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DEDICATION

I dedicate this effort to my father, Vaughn Talmadge Heulett for inspiring me to do my best work and for being the best role model a son could have. It is also dedicated to my grandfather, Charles Talmadge Heulett who, along with my father, taught me to appreciate the art of the argument and that I would be taken seriously if I could make a case to support my positions. Finally, I dedicate this effort to my grandmother, Alma Irene Heulett, who taught me to be my own person and who made sausage biscuits for me for breakfast.

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ABSTRACT

FACTORS RELATED TO THE LIKELIHOOD OF GRADE INFLATION AT
COMMUNITY COLLEGES

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A number of studies have documented a trend of higher grades awarded by postsecondary institutions in both the United States and Canada over the last two decades. Grade inflation in higher education is a potentially costly problem for a variety of reasons, but little empirical research about the causes of grade inflation has been conducted. This study investigated multiple potential factors related to the likelihood of grade inflation by faculty members at community colleges. These factors included perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students. Additionally, the possibility that factors related to the likelihood of grade inflation influence adjunct and full-time instructors differently was tested. An electronically-distributed survey was employed to measure the perspectives of 336 instructors at seven community colleges in three states. Complex models did not predict likelihood of grade inflation, but differences were found between some factors for instructors in high and low likelihood of grade inflation groups.

Instructors in the low likelihood group perceived higher levels of both student complaints and student nuisance than instructors in the high likelihood group. Faculty status was found to affect the influence of perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, and experience with grading practices on likelihood of grade inflation. The results of this study suggest that additional research should elucidate the potential connections between instructors' perceptions of student nuisance and student complaints and the phenomenon of grade inflation. Furthermore, additional work is needed to determine what effects SETs have on instructors' careers and the perceptions of instructors regarding those effects. The results of this study potentially inform the practice of using faculty professional development to educate instructors about the process of grading. Specifically, institutions should explicitly define the intended functions of grades prior to establishing a system for determining grades. These institutions should also provide guidance to instructors so that all agents in the grading process are using these symbols of student performance in a consistent manner. Faculty should engage in the conversation about appropriate functions of grades and more consistent methods for determining grades. Finally, administrators should exercise caution in the interpretation of feedback from students in the forms of student evaluations of teaching and student complaints, particularly as used in the supervision of adjunct instructors.

CHAPTER ONE: INTRODUCTION

Grades have traditionally functioned as a symbolic form of communication about students' performance relative to some concept of academic standards (V.E. Johnson, 2003). If the relationship between the symbol and the level of performance changes over time, the ability of grades to accurately communicate information about students' academic performance may become compromised (Anglin & Meng, 2000). The phenomenon of grade inflation has received much attention in both the scholarly literature and the mainstream media (Oleinik, 2009), yet measures to counteract the trend remain elusive. The purpose of this study was to elucidate multiple potential influences on instructors' likelihood of inflating grades.

Significance of the Problem

Evidence of Grade Inflation

A number of studies have documented a trend of higher grades awarded by postsecondary institutions in both the United States and Canada over the last two decades (Anglin & Meng, 2000; Eiszler, 2002; Kezim, Pariseau, & Quinn, 2005; Kuh & Hu, 1999; Sabot & Wakeman-Linn, 1991). Furthermore, the National Center for Education Statistics (n.d.) reports that the grade point average (GPA) of all postsecondary students in the United States rose from 2.80 in 1987 to 2.84 in 1996 and 2.94 in 2008. These increases in grades over time have occurred across institution type and major course of study and persist even when student background variables are statistically controlled (Kuh & Hu, 1999).

Despite the attention given to this rise in grades over time, the proposition that such increases represent grade inflation is disputed by some. Zirkel (1999) defined grade inflation as "...a rise in academic grades not accompanied by a commensurate increase in academic achievement..." (p. 247). Boretz (2004) argued that the pattern of higher grades awarded by postsecondary institutions over the last few decades does not constitute grade inflation since those higher grades potentially reflect true increases in students' academic abilities. However, the interpretation that the observed increase in grades over the last few decades represents true grade inflation is supported by the observation that study time by college students has declined over the same time period (Babcock, 2010; Babcock & Marks, 2011; Franke, Ruiz, Sharkness, DeAngelo, & Pryor, 2010; Kuh & Hu, 1999). Specifically, Babcock & Marks (2011) found that full time college students at four-year institutions spent an average of 40 hours per week on academic activities in 1961, but that time investment decreased consistently to an average of 27 hours per week spent on academic activities by 2004. Conversely, evidence of increases in students' academic abilities over this time period is lacking (Arum & Roksa, 2011; Babcock, 2010; Zirkel, 1999). In fact, evidence from standardized test scores indicates a decline in students' academic abilities over much of the same time period during which grades have risen (Birnbaum, 1977; Zirkel, 1999).

Costs of Grade Inflation

Grade inflation in higher education is a potentially costly problem for a variety of reasons with implications for students, employers, and institutions of higher education. First, inflated grades provide inaccurate information to students (Anglin & Meng, 2000; Hassel & Lourey, 2005). Without accurate feedback about individual abilities, students

potentially become confused about best choices for their respective careers (Anglin & Meng, 2000; Langbein, 2008; Sabot & Wakeman-Linn, 1991; Wongsurawat, 2009).

Students pursuing career paths that do not fit their abilities are encouraged by short-term success at the potential expense of eventual failure (Hendrick, Hightower, & Gregory, 2006). In addition to the consequences to individual students, this problem may negatively impact society if career choice is disproportionately steered away from vital areas such as science and mathematics (Sabot & Wakeman-Linn, 1991) where grade inflation is observed to be less prevalent (Kuh & Hu, 1999). Ironically, grade inflation may also decrease student satisfaction and motivation (Singleton Jr., 1978). As grades become compressed near the top of the grade range, high-achieving students realize less relative benefit to their efforts (Babcock, 2010; Iris Franz, 2010; Singleton Jr., 1978). Under these conditions, motivation to invest more effort into studying suffers (Babcock, 2010; Iris Franz, 2010; Kuh & Hu, 1999; Moore & Trahan, 1998; Singleton Jr., 1978).

Inflated grades also misinform prospective employers about how well graduates will perform the jobs for which they are being considered (Anglin & Meng, 2000; Arum & Roksa, 2011; Birnbaum, 1977; Crumbley & Reichelt, 2009; Iris Franz, 2010; Langbein, 2008). This degeneration of grades as an effective means of communication between colleges and employers is particularly troublesome at a time when the number of college graduates is increasing because inflated grades do not provide a means for applicants to distinguish themselves from other graduates with similarly inflated grades (Anglin & Meng, 2000). When employers have less accurate information about students' abilities, the mismatch between those abilities and employers' expectations can lead to inefficiencies in the labor market that cause higher unemployment (Langbein, 2008).

Furthermore, as employers lose faith in grades, they may come to rely more on alternate indicators (Edwards, 2000; Langbein, 2008). The advent of extra-academic credentials such as National Career Readiness Certificates, which were launched in 2006 (National Career Readiness Certificate [NCRC], 2010) may be the most tangible evidence to date of employers' disenchantment with grades. In the labor market, grade inflation provides short-term benefits to students and perhaps to schools at the expense of employers (Oleinik, 2009).

Grade inflation also compromises the admissions processes of graduate and professional schools as these institutions also receive less valid information about college graduates who receive inflated grades (Birnbaum, 1977; Fedler, Counts, & Stoner, 1989; Iris Franz, 2010). For example, Wongsurawat (2009) found that from 2000 to 2007, the influence of grades on law school admissions decisions declined significantly, while grades of applicants rose over the same time period. This problem is also exacerbated when the number of college graduates is growing, increasing the applicant pool while decreasing graduate and professional schools' abilities to distinguish between those applicants (Anglin & Meng, 2000).

Another consequence of grade inflation is damage to the educational system itself. From the perspective of policy makers, inflated grades complicate the ability to accurately assess the cost and benefit of resources dedicated to education (Langbein, 2008). Furthermore, grade inflation damages the reputation of the particular school which awards the grades (Crumbley & Reichelt, 2009; Edwards, 2000; Hassel & Lourey, 2005; Moore & Trahan, 1998), and diminishes the value of college degrees in general (Hassel & Lourey, 2005). On a finer scale, grade inflation by some teachers harms other

teachers who adhere to more rigorous grading standards because grade inflation skews students' grade expectations and thus creates greater pressure on all instructors to inflate grades (Crumbley & Reichelt, 2009; Germain & Scandura, 2005; Sonner, 2000).

Gap in the Literature

Grade inflation has received a lot of attention in both the mainstream media and the academic literature, but little empirical research about the causes of grade inflation has been conducted (Anglin & Meng, 2000; Oleinik, 2009). Many causes have been proposed, but grade inflation is likely the result of multiple causes (Oleinik, 2009). The current study investigated multiple potential causes simultaneously allowing the strengths of the different influences to be assessed in a way that no other study has done to date.

While much of the research related to grade inflation has focused on university settings, this study investigated the causes of grade inflation in community colleges. An estimated 7.4 million undergraduate students in the United States (approximately 44% of the total undergraduate population) sought their education at community colleges in 2010 (American Association of Community Colleges [AACCC], 2011). Grade inflation at these colleges should be understood within the contexts of these institutions. One such aspect of the community college context is that faculty at community colleges are typically composed of a higher percentage of adjunct instructors than faculty at 4-year institutions (Jacoby, 2006; I. Y. Johnson, 2006). Specifically, in 2004 an estimated 67% of faculty members at public associates degree granting colleges were classified as adjunct instructors whereas an estimated 44% of faculty members at all U.S. postsecondary institutions were classified as adjunct instructors (National Center for Education Statistics [NCES], n.d.). This difference is relevant to grade inflation given that Sonner (2000)

found evidence that adjunct instructors award higher grades on average than their full-time counterparts. Therefore, a higher percentage of adjunct instructors at community colleges may result in substantial grade inflation at these schools.

Furthermore, some of the factors that have been proposed to influence the likelihood of grade inflation such as student evaluations of teaching may affect grading practices of adjunct instructors differently than full-time instructors. Specifically, SETs potentially influence the likelihood of future employment more strongly for adjunct instructors than they do for full-time instructors (Christensen, 2008). Also, adjunct instructors are generally less experienced than full-time instructors (Landrum, 2009; Lei, 2007), and have been observed to employ different grading practices than full-time instructors at community colleges (BoarerPitchford, 2010). If either the effect of SETs on perceptions of job security or inexperience with grading practices affect the likelihood of grade inflation by adjunct instructors more than full-time instructors, then those influences may be greater at community colleges than the university settings in which grade inflation has been studied thus far. The current study explicitly investigated these possible differences in the influences on the likelihood of grade inflation by adjunct instructors as compared to their full-time counterparts at community colleges in a way that no other study has done to date.

Theoretical Framework

Despite the attention that grade inflation has received in the scholarly literature and mainstream media, the phenomenon of grade inflation itself as well as potential causes of grade inflation have not been the subject of much empirical work (Anglin & Meng, 2000; Oleinik, 2009). The causes of grade inflation that have been proposed

include the influence of student evaluations of teaching (Hassel & Lourey, 2005; Langbein, 2008; Martinson, 2004; Oleinik, 2009; Zirkel, 1999), student nuisance (Iris Franz, 2010), institutional grading practices (Eiszler, 2002; Hassel & Lourey, 2005; Kuh & Hu, 1999; Langbein, 2008; Oleinik, 2009; Zirkel, 1999), and instructor empathy (Birnbaum, 1977; V.E. Johnson, 2003; Kezim et al., 2005; Kuh & Hu, 1999; Singleton Jr., 1978). Another possible cause of grade inflation results from an increased reliance on adjunct faculty members who may be more likely to inflate grades. These instructors typically have less teaching experience and may have less confidence in their ability to discern between the qualities of students' academic work. If so, they may compensate for their lack of confidence by erring on the side of awarding higher grades (Moore & Trahan, 1998). No one proximate cause is likely sufficient to fully explain the phenomenon of grade inflation (Oleinik, 2009).

Perceptions of Job Security

Market forces have begun to affect academic autonomy of institutions of higher education (Oleinik, 2009). A trend toward reduced state support of public institutions potentially drives a more market-based approach to funding higher education (Williams, 2007). Such a market-based approach increases pressure on public colleges to recruit and retain more students (Anglin & Meng, 2000; Longstreth & Jones, 1976), and those institutions may encourage favorable grading policies to accomplish these goals (Edwards, 2000). Competition amongst schools for students increased greatly following the G.I. Bill, and has intensified during subsequent periods of economic downturns when funding became more limited (Harris, 2006). Grade inflation may be a direct result of this competition (Hassel & Lourey, 2005; Oleinik, 2009; Zirkel, 1999). Essentially,

students exercising their choices in a market environment may preferentially enroll in and remain at institutions that return the most benefit in terms of credentials for their investment of study effort (Arum & Roksa, 2011, page 15). The idea that market forces may be a cause of grade inflation is supported by the observation that private colleges, which have always been more subject to market forces than public colleges, have also historically awarded higher grades (Hu, 2005; Kuh & Hu, 1999). Market forces potentially influence grading practices if administrators view SETs as indicators of students' intention to persist at the institution, and thus influence instructors to inflate grades (Langbein, 2008; Oleinik, 2009).

Student Evaluations of Teaching (SETs)

In terms of the loss of academic autonomy, SETs serve to shift control of the academy away from teachers and toward students and administrators (Crumbley & Reichelt, 2009; Moore & Trahan, 1998; Oleinik, 2009). The specific proposed mechanism by which SETs cause grade inflation involves a set of transactions whereby faculty exchange higher grades for the expectations of better SETs, presumably in the hopes of realizing some personal or professional benefit from the better student ratings (Eiszler, 2002; Germain & Scandura, 2005; Greenwald & Gillmore, 1997; Langbein, 2008). The dual evaluation system of grades and SETs creates conditions for reciprocal transactions between students and instructors (Oleinik, 2009). Such transactions may be understood within the context of social exchange theory (Cropanzano & Mitchell, 2005). According to this theory, the actions of one party are influenced by some anticipated reaction by another party (Cropanzano & Mitchell, 2005). In the proposed mechanism by which instructors award higher grades with the expectation that students will reciprocate

by returning more favorable ratings on SETs, the exchange is of abstract socioemotional resources without explicit negotiations, which is a typical reciprocity exchange (Cropanzano & Mitchell, 2005). This type of exchange is in contrast to exchange of material resources which often involve explicit negotiations (Cropanzano & Mitchell, 2005).

In the exchange of higher grades for expectation of favorable SETs, the cost to the instructor is low, so even a mild incentive to inflate grades may be a significant influence on the instructor's grading decision. In this case, the potential incentive results from the connection between student enrollment and sources of funding for colleges. Student enrollment mediates state funding allocations, and SETs indicate to administrators potential enrollments based on the assumption that satisfied students are more likely to persist at the institution (Langbein, 2008). Administrators rely on instructors to provide the educational services that will ensure future student enrollments, and in return, administrators offer instructors employment. The potential for this transaction between administrators and instructors to be affected by input from students in the form of SETs creates an incentive for instructors to engage in exchanges with students that can impact grading practices (Langbein, 2008).

Evidence to support this proposed cause includes the observation that the time at which SETs began to be widely used by institutions of higher education to measure teachers' performance coincides with the beginning of the trend toward increased grades (Langbein, 2008; Longstreth & Jones, 1976). Observations of a correlation between grades awarded and SET ratings (Babcock, 2010; Eiszler, 2002; Greenwald & Gillmore, 1997; Langbein, 2008; Marsh & Roche, 2000; Stumpf & Freedman, 1979; Yunker &

Yunker, 2003) are also consistent with the proposed transactional explanation of grade inflation (Oleinik, 2009). Furthermore, some empirical evidence shows that instructors believe that inflating grades is an effective mechanism for motivating students to award higher ratings on SETs and that such transactions are common (Crumbley & Reichelt, 2009). These instructors' perceptions may not be unfounded given that other empirical evidence indicates that some students use SETs to reward or punish instructors for their rigor and grading practices (Felton, Mitchell, & Stinson, 2004; Lin, 2008). Along those same lines, V. E. Johnson (2003) found that students adjusted their ratings of a class to be more favorable to the instructor upon learning that they had received a higher than expected grade for that class. Furthermore, the results of a number of quasi-experiments in which grades or grading practices were manipulated suggest a causal connection between grades and SETs (Nimmer & Stone, 1991; Powell, 1977; Vasta & Sarmiento, 1979). However, Abrami, Dickens, Perry, & Leventhal (1980) found no consistent impact of grade manipulations on SETs. Even if inflating grades is an ineffective mechanism for instructors to motivate students to return higher rankings on SETs, if instructors perceive such a benefit to grade inflation, SETs could motivate such a practice (Moore & Trahan, 1998).

Given the widespread use of SETs by institutions of higher education as the basis for personnel decisions (Abrami, d'Apollonia, & Cohen, 1990; Campbell, Steiner, & Gerdes, 2005; Crumbley & Reichelt, 2009; d'Apollonia & Abrami, 1997; Langbein, 2008; Martinson, 2004; Ware & Williams, 1975), receiving higher ratings for awarding higher grades is a plausible incentive for instructors to inflate grades. At colleges where tenure is not a component of employment, such as many community colleges, SETs may

have an impact on contract renewal decisions in the case of full-time faculty members and subsequent offers of employment for adjunct faculty members (Christensen, 2008). In these cases, job security could be a significant incentive for instructors to receive high ratings on SETs. If instructors and students engage in transactions of higher grades for favorable ratings, the validity of both assessments would be compromised (Crumbley & Reichelt, 2009).

If SETs are creating pressure for instructors to inflate grades, their influence may be increasing over time as students' grade expectations rise. In fact, the phenomenon of grade inflation itself may encourage students to expect higher grades (Singleton Jr., 1978), thus setting up a positive feedback cycle that drives both grades and students' expectations of grades ever higher. Furthermore, grade inflation by some teachers could affect students' expectations creating pressure on other teachers to also inflate grades (Germain & Scandura, 2005; Sonner, 2000). This problem is potentially exacerbated by expectations resulting from grade inflation in high school (Zirkel, 1999) and the pressure created by increased competition among graduates for employment (Martinson, 2004).

Student Complaints

Grade inflation may also result from pressures related to instructors' job security that are unrelated to SETs. Instructors may inflate grades to prevent or reduce student complaints to supervising administrators (Moore & Trahan, 1998). Furthermore, courses with higher average final grades have been observed to have higher enrollments and fewer drops (Babcock, 2010). Since adjunct instructors are typically compensated on a per course basis, they may be motivated to inflate grades in an attempt to insure adequate enrollments in their classes so that the sections that they teach remain viable.

Student Nuisance

Instructors may be motivated to inflate grades due to interactions with students that are less formal than those manifested in SETs. Increased emphasis on grades caused by more competition between students leads to more motivation for students to employ nuisance as a means of obtaining higher grades from instructors (Iris Franz, 2010).

Instructors may capitulate to such pressure from students because those instructors perceive such nuisance as costly to them in terms of time and effort (Iris Franz, 2010).

Given that most student nuisance is found to be unjustified by actual academic concerns (Iris Franz, 2010), instructors who relent to such pressure are inflating grades.

Unfortunately for those instructors, they may be creating conditions for increased future nuisance as students have been found to engage in such behavior more frequently with more lenient instructors (Iris Franz, 2010).

Instructor Empathy

Grade inflation may also result from instructors' empathy for their students. The origin of grade inflation in the United States is often linked historically and causally to the Vietnam War (Birnbaum, 1977; Kezim et al., 2005; Kuh & Hu, 1999). During this time, faculty members may have inflated grades to prevent potentially failing students from becoming eligible for draft into the armed forces (Birnbaum, 1977). Longstreth and Jones (1976) further posited that the related incident at Kent State in 1970 motivated a change in faculty perspectives on student issues and contributed to grade inflation at that time. Instructors may also inflate grades to give their students a competitive edge in the labor market (V. E. Johnson, 2003; Singleton Jr., 1978). These potential causes of grade

inflation are inherently linked to instructors' perspectives on the nature of academic work and the fundamental function of grades.

Lack of Experience with Grading Practices

Little is known about the grading practices of community college instructors (BoarerPitchford, 2010). Furthermore, it is unclear how community college instructors learn to assess student learning. In one of the few studies conducted on the subject, BoarerPitchford (2010) found that 35% of the instructors at two California community colleges indicated that the main way they learned to assess students for the purpose of grading was through personal experience (although it is not entirely clear from the original source if this personal experience is as a student or an instructor or some combination). Another 25 % of these instructors learned assessment techniques primarily from colleagues or former instructors, while only 37% of these instructors learned these techniques in any kind of formal setting (BoarerPitchford, 2010). Lei (2008) similarly found that personal experience was the most commonly reported basis for determining assessment techniques at two community colleges in a western state.

Grading is a complex process (Birnbaum, 1977), and it ultimately relies on the professional judgments of instructors whose personal academic standards are based on knowledge of their respective disciplines, experience having been graded as a student, and experience as a grader (Sadler, 2005). Consequently, instructors who have less experience with grading practices may not be confident that their judgment of student performance is accurate and may compensate by giving higher grades (Moore & Trahan, 1998). If a large number of community college instructors learn about grading practices through their personal experiences, as is suggested by the results of BoarerPitchford

(2010) and Lei (2008), then less experienced instructors may be expected to have less knowledge about grading practices and may be more likely to inflate grades.

Adjunct Faculty

Since adjunct faculty members are typically less experienced than full-time faculty members (Landrum, 2009; Lei, 2007), this phenomenon of grade inflation resulting from a lack of experience with the process of grading may be exacerbated by the observed trend toward increased reliance on adjunct instructors (Burgess & Samuels, 1999; Gappa, 2008; Jacobs, 1998; Jacoby, 2006; Kezim et al., 2005; Landrum, 2009; Valadez & Anthony, 2001; Wallin, 2004; Wallin, 2007), particularly at community colleges (Jacoby, 2006). In fact, some studies have revealed that adjunct instructors awarded higher grades than their full time counterparts (Fedler et al., 1989; Kezim et al., 2005; Sonner, 2000). In contrast, Iris Franz (2010) found grades awarded by adjunct instructors to be lower than those awarded by full time instructors, but this study was restricted to a single academic department in a single university and may not be fully representative of the influence of employment status on the likelihood of grade inflation. Furthermore, adjunct faculty members at community colleges have been found to employ different assessment strategies than did their full time counterparts (BoarerPitchford, 2010; Lei, 2008). For example, adjunct instructors were found to award significantly more credit for participation and homework than full time instructors, while full time instructors were found to use research papers and portfolios as a basis for course grade to a greater extent than adjunct instructors (BoarerPitchford, 2010). Lei (2008) also found that adjunct instructors learned assessment techniques primarily through informal mechanisms such as from colleagues or former instructors or through personal

experience, whereas full-time instructors learned assessment techniques from those sources as well as through formal training such as coursework, seminars, and from institutional teaching and learning centers. Adjunct instructors also have less job security than full time instructors making them more subject to the influence of factors such as SETs (Burgess & Samuels, 1999; Christensen, 2008; Green, 2007; Jacobs, 1998; Moore & Trahan, 1998; Oleinik, 2009). Since lack of knowledge about grading practices and perceptions of job insecurity are two proposed causes of grade inflation, the increased susceptibility of adjunct instructors to these influences combined with the increase in the proportion of courses taught by adjuncts may exacerbate the problem.

Purpose of Study

The factors that potentially influence the likelihood of grade inflation by community college instructors include perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students. The purpose of this study is to estimate the potential relationship amongst these factors and the likelihood of grade inflation by instructors at community colleges. The proposed mechanism by which these factors influence the likelihood of grade inflation is summarized by the following structural model:

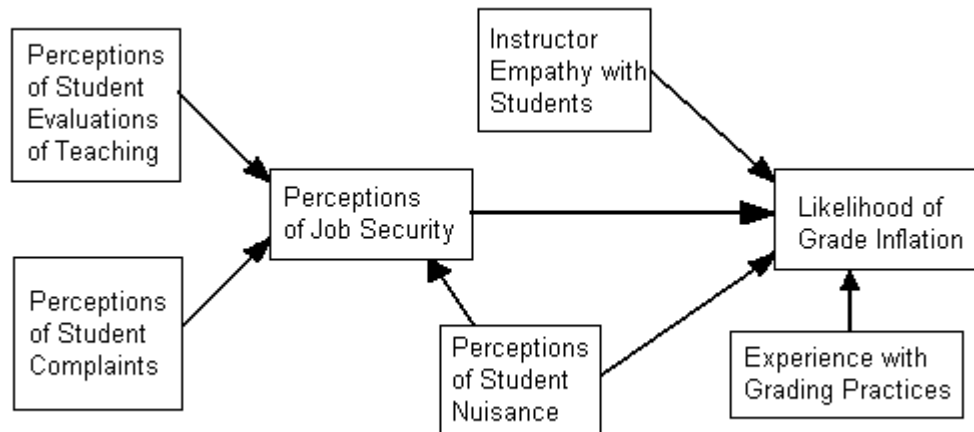


Figure 1. Proposed relationship amongst factors and the likelihood of grade inflation

Research Questions

This study will address the following research questions:

- 1) What is the relationship between instructors' experience with grading practices and the likelihood of grade inflation?
- 2) What is the relationship between instructors' perceptions of their own job security and the likelihood of grade inflation?
- 3) What is the influence of instructors' perceptions of student evaluations of teaching on perceived job security?
- 4) What is the influence of instructors' perceptions of student complaints on perceived job security?
- 5) What is the relationship between instructor empathy and the likelihood of grade inflation?

- 6) What is the relationship between perceived student nuisance and the likelihood of grade inflation?
- 7) What is the influence of instructors' perceptions of student nuisance on perceived job security?
- 8) Are the influences on the likelihood of grade inflation different for adjunct faculty members than full time faculty members?

Overview of Methods

This study employed a multivariate correlational research design. The purpose of this study was to estimate the potential relationship amongst a number of factors and the likelihood of grade inflation by instructors at community colleges. The factors that potentially influence the likelihood of grade inflation by community college instructors include perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students.

The theoretical population of interest was all curriculum instructors at publicly-funded community colleges in the United States. This population includes approximately 240,000 adjunct faculty members and 120,000 full time faculty members at 993 institutions (NCES, n.d.). From this population, a stratified sample was chosen based on school size and geographic location. The total sampling frame included all full-time and adjunct faculty members at each of these schools.

Data were collected using a cross sectional survey design with surveys distributed electronically. The instrument utilized in this study was an amalgamation of six instruments used previously by researchers to measure the constructs proposed to

influence likelihood of grade inflation (Baker, 1992; BoarerPitchford, 2010; Gerdes, Lietz, & Segal, 2011; Gordon & Fay, 2010; Iris Franz, 2010; Schmelkin, Spencer, & Gellman, 1997) as well as items written without antecedent (see Appendix A).

Development of the instrument included think aloud interviews, review by a panel of experts, and a pilot test conducted at a college which was not part of the final sample.

Methods for ensuring an adequate response rate included a pre-notification communication, a reminder communication, and an incentive (Creswell, 2008).

Data were analyzed using both a multivariate correlation technique and a univariate approach. Initially, a test of the theoretically derived model using structural equation modeling was planned. However, the data that were collected did not meet the assumptions required for this analysis technique, and logistic regression was employed instead. A detailed explanation of the change in analysis methods is provided in chapter three. Finally, independent *t*-tests were used to test for differences in the factors that potentially influence grade inflation between instructors categorized as either highly likely or less likely to inflate grades. Analysis of variance was used to test for an effect of faculty status on the strength of influence of factors that influence likelihood of grade inflation.

Significance of Study

Grade inflation has received a lot of attention in both the mainstream media and the academic literature, but little empirical research about the causes of grade inflation has been conducted (Anglin & Meng, 2000; Oleinik, 2009). Many potential causes of grade inflation have been proposed, including the influence of student evaluations of teaching (Hassel & Lourey, 2005; Langbein, 2008; Martinson, 2004; Oleinik, 2009;

Zirkel, 1999), student nuisance (Iris Franz, 2010), student complaints (Moore & Trahan, 1998), institutional grading practices (Eiszler, 2002; Hassel & Lourey, 2005; Kuh & Hu, 1999; Langbein, 2008; Oleinik, 2009; Zirkel, 1999), instructor empathy (Birnbaum, 1977; V. E. Johnson, 2003; Kezim et al., 2005; Kuh & Hu, 1999; Singleton Jr., 1978), and increased reliance on adjunct faculty members who may have less knowledge about grading practices and thus less confidence in their ability to discern between the qualities of students' academic work (Moore & Trahan, 1998).

With regard to the first proposed cause, influence of SETs, some studies have investigated the link between faculty status and grade inflation (Fedler et al., 1989; Iris Franz, 2010; Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000), the results of which suggest that concern over job security may influence grading practices. However, for concern over job security to motivate grade inflation, instructors must perceive that SETs affect job security, and they must simultaneously perceive that their grading practices potentially influence these types of student communication to administration. The lack of empirical research on instructors' perceptions of these relationships prompted Moore & Trahan (1998) to suggest such work for future research, and those relationships are ones that this study investigated.

Furthermore, while much of the research related to grade inflation has focused on university settings, this study investigated the causes of grade inflation in community colleges. Additionally, with the increased reliance on adjunct instructors at community colleges outpacing these instructors' presence at other institutions of higher education (Jacoby, 2006), the specific factors related to the likelihood of grade inflation by adjunct instructors at community colleges required investigation. The current study explicitly

investigated the potential differences in the relationship between those factors and the likelihood of grade inflation by adjunct instructors as compared to their full time counterparts in a way that no other study to date has. Finally, grade inflation is likely the result of multiple proximate causes (Oleinik, 2009), and this study investigated multiple potential causes simultaneously in a way that allowed the strengths of the different relationships to be assessed. A greater understanding of the factors related to the likelihood of grade inflation may allow educators to mitigate any potential influence of these factors on the grading decisions of instructors.

Delimitations

This study examined the phenomenon of grade inflation as it may occur at community colleges due to individual faculty members' grading decisions. Institutional grading practices such as grade replacement policies have been suggested as a potential cause of the trend toward higher GPAs over time (Kuh & Hu, 1999), but that potential cause does not result from individual faculty members' grading decisions and was therefore not addressed by this study. For similar reasons, this study did address the potential that trends in elevated grades are the result of demographic changes in the population of college-going students (Kuh & Hu, 1999). While the bulk of the literature on grade inflation addresses the phenomenon as it occurs at four-year colleges, the current study sought to fill a gap in the literature by examining grade inflation at community colleges. Consequently, this study did not address the phenomenon at four-year institutions, private colleges, or for-profit institutions. Additionally, this study focused on institutions whose primary location is within the United States. The study investigated instructors' perspectives on job security, student evaluations of teaching, and

grading practices rather than actual data from student evaluations, actual employment data, or actual grade data. Also, while many studies have focused on grade inflation as a function of academic discipline (Anglin & Meng, 2000; Kuh & Hu, 1999; Oleinik, 2009; Sabot & Wakeman-Linn, 1991; Zirkel, 1999), this study did not distinguish between disciplines, but focused on factors that affect individual faculty members' grading decisions across disciplines. Finally, because this study employed a correlational rather than experimental research design, causation cannot be established for any of the factors that were studied.

Definitions

1. Grade Inflation: "...a rise in academic grades not accompanied by a commensurate increase in academic achievement..." (Zirkel, 1999, page 247)
2. Perceptions of Job Security: The sense by an instructor that a current employment arrangement is likely to continue into the next academic year.
3. Student Evaluation of Teaching (SET): An institutionally-administered survey of students' opinions about their experiences with a particular course including performance of the instructor.
4. Student Nuisance: "...students' pestering the professors for better grades." (Iris Franz, 2010, p. 412)
5. Instructor Empathy: The ability to understand the challenges a student faces in an educational context (Gerdes et al., 2011).
6. Grading Practices: Methods by which instructors evaluate students and assign grades.

7. Adjunct Faculty: “Non-tenure track faculty serving in a temporary or auxiliary capacity to teach specific courses on a course by course basis...” (NCES, n.d.)
8. Full-Time Instructional Faculty: “Those members of the instruction/research staff who are employed full time and whose major regular assignment is instruction, including those with released time for research...” (NCES, n.d.)
9. Community College: A publicly funded post-secondary institution which grants associates degrees as the primary academic credential.

Summary and Remaining Chapters of this Dissertation

This chapter has identified grade inflation at community colleges as a problem that warrants better understanding through additional research. The evidence for grade inflation, the costs of grade inflation, and the potential causes of grade inflation were presented as justification for the present study. A theoretical model of the various proposed factors that potentially influence grade inflation was included with discussion of support for this model in existing literature. Specific research questions for this study were listed, and the methods that were employed to address these questions in this study were outlined.

Chapter two presents a comprehensive review of the literature. The major theoretical and empirical literature addressing the phenomenon of grade inflation is synthesized into a collection of the scholarly work that has been conducted on this topic. Specifically, the pattern of grade inflation and the potential causes of grade inflation are discussed. Finally, the changing role of adjunct faculty members in community colleges and how the trend toward increased reliance on these instructors might affect the phenomenon of grade inflation is considered.

Chapter three presents the methods that were employed in this study. The setting and participants of the study are described. The survey instrument and the methods that were used to develop that instrument are explained. Finally, data collection methods and data analysis techniques are described. An explanation of the measurement of each construct in the tested model is provided along with a description of the tests used to answer the research questions.

Chapter four presents the results of the study. Demographic information about the participants of the study is presented. Descriptions of both the predictor variables and the outcome groups are provided including frequency distributions and descriptive statistics of all survey items used in the data analysis. The results of the logistic regression analysis are described including both a test of the fit of the overall model as well as an analysis of the influence of the various predictor variables on placement of cases into each outcome group.

Chapter five discusses the implications of this research. This discussion includes recommendations for how the results of the study can be used to inform practice as well as suggestions for direction of future research.

CHAPTER TWO: REVIEW OF THE LITERATURE

The purpose of this study is to understand the influence of multiple factors on the likelihood of grade inflation in community colleges. Consequently, this literature review will address current understanding of a number of topics. First, the pattern of grade elevation as reported in the literature will be reviewed. Particular attention will be paid to evidence that the pattern of grade elevation reflects actual grade inflation as defined in chapter one. Second, the proposed causes of grade inflation as they are understood in the literature will be reviewed. These proposed causes include student evaluations of teaching (SETs) and their potential impact on faculty members' perceptions of job security, faculty members' inexperience with grading practices, student nuisance, and instructor empathy. Finally, the trend toward an increase in the percentage of community college faculty that are employed as adjuncts is an important component of the proposed causal mechanism of grade inflation, and so the relevant literature on the changing roles of adjunct faculty in higher education, particularly community colleges, will be reviewed. Given that market forces as they are increasingly applied in higher education may drive both the trend toward an increase in the percentage of community college faculty that is employed as adjunct instructors and grade inflation, the discussion will explicitly consider these forces.

Grade Inflation

Grade inflation can be understood in the context of either individual grades or aggregate grades. Zirkel (1999) defined grade inflation as "...a rise in academic grades not accompanied by a commensurate increase in academic achievement..." (p. 247).

Gardin (2007) conceives of grade inflation in terms of GPA rather than individual grades and defines it as "...an increase in grade point average without an associated increase in overall student ability." (page 32). Gardin's (2007) definition is broader in that it incorporates the effects of institutional grading policies such as grade replacement and late drop dates on the average grade earned by students over the course of their academic careers (Kuh & Hu, 1999), whereas Zirkel's (1999) definition focuses on individual grades awarded by instructors. While most studies of grade inflation have used data derived from students' GPAs, the focus of this study is on grade inflation as it results from individual instructors' grading decisions, and is thus more aligned with Zirkel's (1999) definition.

Pattern of Grade Elevation

Grade elevation is an increase in grades over time that may or may not be associated with an increase in academic achievement. Grade elevation is a broader concept than grade inflation and includes grade inflation. The pattern of institutions of higher education awarding higher grades over the past few decades has been well documented (Eiszler, 2002; Germain & Scandura, 2005; Hu, 2005; Kezim et al., 2005; Kuh & Hu, 1999; Sonner, 2000). Estimates of the magnitude of this phenomenon range from 5% (Hu, 2005) to 10% grade elevation (Eiszler, 2002) over the decade of the 1990s and approximately 3.75% grade elevation over the two decades of the 1980s and 1990s (Kezim et al., 2005). Such increases in grades may represent a threat to higher education at a time when institutions are striving to demonstrate greater accountability for the education that they provide (Hu, 2005).

Kuh & Hu (1999) observed grade elevation across institution type and student major from the mid-1980s to the mid-1990s. This elevation in grades persisted even when the effects of student background variables were statistically removed (Kuh & Hu, 1999). The observation of a significant decrease in study time and a significant decrease in student interactions with faculty found to coincide with the increase in GPAs is consistent with the interpretation that the higher grades were not in fact reflections of increased student performance (Kuh & Hu, 1999). Nonetheless, grades were correlated with individual student effort such that, at any given time, the students exerting more effort earned higher grades, even if that relationship varied over time (Kuh & Hu, 1999).

However, the pattern of grade elevation and the degree to which these researchers attributed it to grade inflation differed by institution type (Kuh & Hu, 1999). Overall, grades received by students at private schools were found to be higher than grades received by students at public institutions (Kuh & Hu, 1999). Investigating finer distinctions in institution types, Kuh and Hu (1999) used multiple regression techniques to control for student background and institutional variables and attributed increases in grades to grade inflation for that institution type only when the *time* factor was significant in the regression analysis. Research institutions and selective liberal arts colleges exhibited significant grade inflation whereas doctoral universities and comprehensive colleges and universities did not (Kuh & Hu, 1999). Conversely, the analysis indicated a possibility of grade deflation at general liberal arts colleges (Kuh & Hu, 1999).

In their study of course choice by students as influenced by discipline-specific grading practices, Sabot and Wakeman-Linn (1991) found significant increases in GPAs at seven of the eight schools studied between the 1962-63 academic year and the 1985-86

academic year. Over this time, overall GPA for all students at these institutions rose from 2.38 in 1962-63 to 2.91 in 1985-86 (Sabot & Wakeman-Linn, 1991). Furthermore, these researchers found evidence that increases in GPA over time at these schools have occurred differently for different academic disciplines with chemistry, economics, and mathematics grades remaining relatively stable and art, English, music, philosophy, psychology, and political science grades increasing significantly (Sabot & Wakeman-Linn, 1991). These discrepancies in grading practices were also found to significantly influence student course choice (Sabot & Wakeman-Linn, 1991). Based on their findings, Sabot and Wakeman-Linn (1991) predicted an 80.2% increase in the number of students who would take subsequent math courses if math grades in introductory courses were distributed similarly to grades for introductory English classes.

Grade elevation has also been documented in Canada. Anglin and Meng (2000) studied the grades received by first year students in 12 core courses at 7 universities in Ontario. The grades awarded in the 1973-74 academic year were compared to the grades awarded in the 1993-94 academic year. Comparing aggregate GPAs across all institutions, higher grades were observed in the 1993-94 academic year for 11 of the 12 disciplines (Anglin & Meng, 2000). The only discipline that did not show a significant increase in GPA over this comparison was Sociology, for which students received high grades during both time periods (Anglin & Meng, 2000). Similar to the Sabot and Wakeman-Linn (1991) study, grade increases were found to vary with discipline (Anglin & Meng, 2000). However, in the case of Anglin and Meng's (2000) study, the largest increases occurred in disciplines that awarded the lowest grades at the earlier time so that

rather than creating grading discrepancies between departments, the effect of the grade increases was to reduce such discrepancies.

Causes of Grade Inflation

Grade inflation is a more specific phenomenon than grade elevation in that grade inflation implies a rise in grades over time that does not correspond to an increase in students' academic abilities (Zirkel, 1999). A variety of causes for the observed trend of higher grades has been proposed (Boretz, 2004; Eiszler, 2002; Germain & Scandura, 2005; Greenwald & Gillmore, 1997; Kezim et al., 2005; Martinson, 2004; Sonner, 2000; Stumpf & Freedman, 1979). Boretz (2004) suggested that the trend toward higher grades reflects improvements in student achievement through better teaching practices. To support that assertion, the author indicated that the trend toward higher grades has occurred concurrently with increases in opportunities for faculty professional development (Boretz, 2004). However, Boretz (2004) does not offer direct evidence of increased student learning over time, and this assertion is at odds with the observation that study time by college students has declined over the same time period (Babcock & Marks, 2011; Babcock, 2010; Franke, et al., 2010; Kuh & Hu, 1999). Furthermore, evidence from standardized test scores indicates a decline in students' academic abilities over much of the same time period during which grades have risen (Birnbaum, 1977; Zirkel, 1999).

Student evaluations of teaching (SETs). An alternative causal explanation for grade inflation is that faculty award higher grades in the hopes of influencing the results of SETs (Eiszler, 2002; Germain & Scandura, 2005; Greenwald & Gillmore, 1997; Kezim et al., 2005; Martinson, 2004; Sonner, 2000). The possibility of SETs

incentivizing lenient grading by faculty members seeking more favorable SETs was suggested as early as 1930 by Remmers (1930) in an investigation of a potential correlation between grades and SETs. In this very early study, grades were not found to be significantly correlated with ratings on SETs. Since then, the validity of SETs has been questioned by a number of researchers (Cranton & Smith, 1990; Crumbley & Reichelt, 2009; Germain & Scandura, 2005; Oleinik, 2009; Ware & Williams, 1975; Yunker & Yunker, 2003). Teaching effectiveness is difficult to measure (Cranton & Smith, 1990; Green, 2007; Langbein, 2008), and the continued use of SETs to assess teaching performance may be due more to their convenience and low cost than their effectiveness (Germain & Scandura, 2005; Langbein, 2008; Moore & Trahan, 1998).

In their classic experiment to assess the effect of instructor expressiveness on SETs, Ware and Williams (1975) found that students rated more expressive instructors higher than less expressive instructors, even when the less expressive instructors presented lessons with more content. Both content and expressiveness significantly influenced student learning (Ware & Williams, 1975), and students who learned more also gave higher SETs (Ware & Williams, 1975). With regard to effect on SETs, expressiveness had a stronger effect on ratings than content (Ware & Williams, 1975). While the effect of expressiveness on SETs may indicate a threat to the validity of these surveys, the observation that students learned as much from low content/highly expressive lectures as they did from high content/less expressive lectures indicates the complexity of measuring quality of teaching using SETs.

Cohen (1982) argued that SETs are good measures of teaching performance as long as they significantly correlate with student learning. To assess this aspect of SET

validity, the author performed a meta-analysis of 16 studies encompassing 21 multi-section psychology courses, all of which investigated the relationship of SETs to student achievement on objective exams. Of the 21 courses analyzed, 12 returned a significant positive correlation between student achievement and SETs. While the author concludes that these results support the validity of SETs as a measure of teaching performance, this conclusion is puzzling since almost half of the courses did not show the desired correlation. In a similar study, Yunker and Yunker (2003) actually found a negative relationship between student achievement and SETs once the effect of prior student achievement had been statistically removed. The authors investigated assigned grades and SETs for 283 students in a sequence of two accounting courses, and the measure of student achievement was success in the subsequent course. Students whose first course was taught by a highly rated instructor actually performed worse in the second course (Yunker & Yunker, 2003).

Even if SETs are shown to correlate with student learning, the potential for biasing factors such as instructor's age, minority status, and gender threaten the validity of SETs when used to make personnel decisions. In fact, such biasing factors have been found to significantly influence SETs (Campbell et al., 2005; Yunker & Yunker, 2003). Campbell et al. (2005) investigated the influence of instructors' age, minority status, and gender on SETs in both a small college and a large university. The study included over 5,000 students in 130 classes taught by 100 instructors. Age and gender were found to have significant effects on SETs (Campbell et al., 2005). The researchers also noted that minority status also appeared to affect SETs ($r = 0.28$), but the lack of statistical

significance of this factor may be due to the small number of instructors of color included in the study (Campbell et al., 2005).

The proposed causal relationship between grades and SETs predicts a positive correlation between the two variables, and a number of studies have documented such a relationship (Eiszler, 2002; Greenwald & Gillmore, 1997; Stumpf & Freedman, 1979). In a review of the literature, Feldman (1976) found that fourteen of eighteen reviewed studies reported a significant positive correlation between individual students' grades and SETs, with grades explaining between 2% and 7% of the total variance in SETs across all reviewed studies. Furthermore, in a later meta-analysis of nearly 1,000,000 student evaluations of 37,000 courses, Eiszler (2002) reported a statistically significant correlation between grades and teaching evaluations with $r = 0.95$ and $p < 0.0001$. While the extremely low p value may have resulted from the unusually large sample size, the strong, positive correlation is consistent with the predicted relationship.

Stumpf and Freedman (1979) studied the relationship between student evaluations and expected grades. The study included data from 5893 New York University business students in 197 undergraduate classes and 21,648 New York University business students in 747 graduate classes (Stumpf & Freedman, 1979). Important findings in the study were that evaluations were positively correlated with expected grades when analyzed at the level of the individual student ($r = 0.22$) and at the level of the class ($r = 0.39$). The authors suggested that the stronger correlation at the class level may reflect differences between instructors' grading policies as they would be applied to entire classes rather than specific grades assigned to individual students (Stumpf & Freedman, 1979).

Greenwald and Gillmore (1997) also documented a significant positive correlation between student evaluations and expected grades, and sought to gain greater understanding of that relationship by testing five hypotheses proposed to explain the correlation. This study used data collected from 594 undergraduate classes at the University of Washington in 1993 and 1994 to test the following hypotheses (Greenwald & Gillmore, 1997, p. 1210):

- Better teachers will produce students who both earn better grades with better work and return higher ratings on teaching evaluations.
- Students with greater general interest in academic work will both earn better grades and appreciate the work of their teachers to a greater extent.
- Students with greater specific interest in a particular course will both earn better grades in that course and award higher evaluations to the teacher of that course.
- Students who earn lower grades in a course will tend to attribute their lack of success to deficiencies on the part of the teacher.
- Students give higher evaluations to teachers who give higher grades.

The researchers examined five correlations within the data set to evaluate these five hypotheses. All of the hypotheses were consistent with the observed positive correlation between grades and evaluations, but only the hypothesis that students give higher evaluations to teachers who give higher grades was consistent with all five observed correlations (Greenwald & Gillmore, 1997).

In a response to Greenwald and Gillmore (1997), Marsh and Roche (2000) asserted that the appropriate unit of analysis for studies of the relationship between grades and SETs is individual classes rather than individual students. These authors

pointed out that classes with higher workloads also receive higher SETs, which they claimed contradicts Greenwald and Gillmore's (1997) conclusions. However, a confounding variable in the Marsh and Roche (2000) study is potential differences in the composition of classes with higher workloads. If higher level classes are disproportionately associated with higher work loads, these same classes may be populated with more advanced students who have a higher interest in the course-specific subject matter. These students may return higher evaluations due to their positive orientation to the material and corresponding inherent motivation to learn it. In fact, their own results confirm that student prior subject interest was significantly correlated with SETs (Marsh & Roche, 2000).

Felton et al. (2004) presented a study that provides further support to the idea that students give higher evaluations to teachers who award higher grades. In this study, the authors analyzed data collected from the web site RateMyProfessors.com and found a significant positive correlation between students' ratings of teachers' leniency and students' ratings of teachers' quality. While the authors recognized that a weakness of their study was potential bias in the source of their data, they emphasized the strength of a dataset based on a nation-wide population responding to a consistent set of questions (Felton et al., 2004).

Langbein (2008) addressed a potential complication in much of the research that had previously been performed looking at the relationship between grades and SETs. Specifically, previous studies had relied on students' self-reported expected grades rather than actual assigned grades when investigating potential relationships with SETs (Greenwald & Gillmore, 1997; Stumpf & Freedman, 1979). This approach is consistent

with the idea that students' SET decisions are based on the expected grade. However, grade inflation is a phenomenon associated with *assigned* grades rather than *expected* grades. Consequently, the proposal that SETs drive grade inflation would not be supported by an observed lack of correlation between expected grades and assigned grades. In a study of 7,686 courses at both the undergraduate and graduate levels, Langbein (2008) found that expected grades and assigned grades were related with a regression coefficient of 0.9. Furthermore, SETs were found to be significantly positively correlated with both students' reported expected grades and actual assigned grades, which is consistent with similar results found by Greenwald and Gillmore (1997) and Stumpf and Freedman (1979).

Correlational studies such as the ones discussed above have provided evidence for a relationship between grades and SETs, but such methods provide insufficient evidence to fully support the proposed causal mechanism of a transaction of higher grades for SETs (Creswell, 2008; Vasta & Sarmiento, 1979). However, a number of experimental studies have provided such evidence (Abrami et al. , 1980; V. E. Johnson, 2003; Nimmer & Stone, 1991; Powell, 1977; Vasta & Sarmiento, 1979). While some of these studies are more than 30 years old, all were conducted at a time encompassed by the current observed trend of grade elevation which began in the 1960s (Sabot & Wakeman-Linn, 1991), and the time span over which these studies were conducted provides support to the enduring influence of the proposed mechanism on grade inflation.

Johnson (2003) conducted a time series study involving course evaluations from individual students at Duke University. In this study, students were asked to evaluate the courses they had taken the previous semester as well as the courses that they were

currently taking. Since the procedure was repeated in the subsequent semester, courses were eventually evaluated twice by the students. In this study, grades were not manipulated, but the effect of grade on SET could be assessed by comparing evaluations returned by students before their final grades were known to the evaluations returned by these same students after their final grades were known. Based on these data, Johnson (2003) found a significant effect of the difference between expected grade and received grade on the differences in SETs before and after grades were known to the student respondents. Overall, students who received a higher grade than expected increased their ratings of the course, while students who received a lower grade than expected decreased their ratings of the course. Due to the time series design of the experiment, student background variables which may confound correlations of grades and SETs were unlikely to have affected these results. Therefore, these results support the proposed causal mechanism that involves students adjusting their ratings of a course based on the grade that they receive (Johnson, 2003).

In an experiment to test the influence of grading practice on SETs, Nimmer and Stone (1991) conducted a 2 x 3 factorial design with 123 undergraduate students randomly assigned to one of six groups. The first treatment variable was strict versus lenient grading practice, and the second treatment variable was time at which SET was completed: 1) immediately following a lesson, 2) immediately following an examination based on the lesson, and 3) immediately after receiving feedback about performance on the examination. These researchers tested the hypothesis that the influence of grading practice (strict vs. lenient) would be stronger in situations where students had more information about their grades, which corresponded to a later time of SET completion. In

this study, SETs returned by students subjected to lenient grading were significantly higher than SETs returned by students subjected to strict grading, but only for the third time treatment, which was after the students received information about their grades. No significant difference between SETs returned by students subjected to lenient grading and SETs returned by students subjected to strict grading was found for students completing SETs immediately after the lesson or immediately after the examination (Nimmer & Stone, 1991). Therefore, the effect of grade on SET was strongest when students had the most information about their grades (Nimmer & Stone, 1991). These results lend evidence to the proposed causal mechanism that awarding higher grades can motivate students to return higher SETs.

Abrami et al. (1980) conducted a 2 x 2 x 3 factorial design to test the effects of instructor expressiveness, lecture content, and grading practice on SET ratings of an instructor. In this experiment, 136 students self-selected into treatment groups based on two characteristics of the lessons to be viewed: instructor expressiveness (high versus low) and lecture content (high versus low). These students viewed a videotaped lesson with the prescribed characteristics and subsequently completed an assessment of learning and an SET. Two weeks later, students returned to view a second lesson with the same level of instructor expressiveness and lecture content as they had viewed in the first lesson, but prior to viewing the second lesson, the students were given feedback on their performance on the assessment of learning. This feedback was manipulated for three levels of grading standard. The scores were standardized with means set at one of three grade levels: C, C+, or B. After receiving this feedback, students viewed the second lesson and then completed another assessment of learning and another SET. The main

effect of grading standards on the second round of SETs was found to not be statistically significant. However, the interaction between instructor expressiveness and grading practices was found to be statistically significant. Specifically, highly expressive instructors were rated significantly lower by the students receiving the lowest grades. Conversely, low-expressiveness instructors were rated significantly lower by the students who received the highest grades. These results indicate the complexity of the relationship between grades and SETs (Abrami et al., 1980).

Vasta and Sarmiento (1979) performed a quasi-experiment to determine how grade manipulations exerted over the course of an entire semester in actual courses might affect SETs. In this case, 250 students in four undergraduate classes received information about their grades, but this information had been systematically inflated or deflated compared to an empirically determined typical grade distribution based on prior classes. The students believed that they were receiving accurate information about their grades in a course for which they were earning credit (after the experiment, all students involved were awarded the inflated grades). A chi-square analysis comparing the strictly graded class to the leniently graded class revealed that both SET items related to instructor and SET items related to the course were significantly higher for the leniently graded classes (Vasta & Sarmiento, 1979). The results of this study suggest that grade manipulations have a similar effect on SETs in a semester-long natural setting as they do in shorter-term experiments in artificial settings such as those of Abrami et al. (1980) and Nimmer and Stone (1991).

In a similar quasi-experiment, Powell (1977) manipulated undergraduate students' grades over the course of an entire semester in five classes. Three levels of grading

criteria were applied such that three of the classes were graded stringently, one class was graded leniently, and one class was graded at an intermediate level. While no inferential statistics were reported, median ratings of every SET item were highest for the leniently graded class and lowest for the stringently graded class (Powell, 1977). This study is important because, in addition to the investigation on the effect of grades on the quantitative aspects of SETs, the author also provided a qualitative analysis of the student comments that accompanied the numerical ratings of the survey. Based on this analysis, Powell (1977) concluded that grades also have a strong influence on the content of student comments in SETs with students receiving lower grades contributing more critical statements about the course and instructor.

If indeed student generated evaluations of teaching are influenced by the grades that the students completing those evaluations expect to receive, then instructors may be motivated to inflate grades to boost their ratings (Eiszler, 2002; Germain & Scandura, 2005; Greenwald & Gillmore, 1997; Kezim et al., 2005; Martinson, 2004; Sonner, 2000). In a survey of 447 accounting instructors teaching in four-year colleges and universities throughout the United States, Crumbley and Reichelt (2009) found evidence that instructors intentionally alter grading practices to influence SETs. Respondents indicated their perceptions that grading practices affect SETs. Furthermore, when asked about strategies for improving SETs, these instructors indicated that giving easier exams, grading on a curve, reducing the amount of course work required, and inflating grades were 4 of the 5 most effective strategies out of a possible 15 options (not embarrassing students in class was listed as the most effective strategy from these instructors' perspectives). Most respondents (54%) indicated that they were aware of colleagues who

employed such strategies to improve their SETs. These instructors also expressed the feeling that administrators are naïve to the possibility that instructors are employing such tactics (Crumbley & Reichelt, 2009).

Perceptions of job security. According to the proposed causal mechanism, faculty who perceive that they have the most to lose based on the quality of ratings that they receive on student-generated evaluations would be expected to inflate grades more than faculty who perceive that they have less to lose based on those ratings (Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000). Gordon and Fay (2010) speculated that a lack of job security may motivate increased use of particularistic grading practices based on students' needs over meritocratic grading practices based on academic performance. Examples of particularistic grading practices include curving grades, dropping low scores, and grading on the basis of individual improvement (Gordon & Fay, 2010). The researchers suggested that the likelihood of grade inflation increases with the practice of particularistic grading, however they did not explicitly consider faculty status as an influence on the degree to which instructors employ meritocratic or particularistic grading practices. (Gordon & Fay, 2010).

Other studies, however, have examined grades awarded by instructors with different levels of faculty status. Moore and Trahan (1998) compared the grades awarded in 417 introductory level classes taught by faculty members of varying ranks including professor, associate professor, assistant professor, instructor and teaching assistant. Faculty rank was found to have a significant effect on grades awarded with lower ranking instructors awarding higher grades (Moore & Trahan, 1998). Furthermore, a direct

comparison of tenured versus non-tenured instructors revealed a significant difference with non-tenured instructors awarding higher grades (Moore & Trahan, 1998).

Kezim (2005) performed a similar comparison of grades given by adjunct faculty in addition to tenure-track faculty, and tenured faculty over a twenty year period. Unlike the Moore and Trahan (1998) study which collapsed adjunct faculty into the non-tenured category along with tenure-track faculty, Kezim's (2005) study explicitly compared adjuncts to both tenured and tenure-track faculty. The results indicated that while tenure-track and tenured faculty do not differ significantly in the grades that they award, adjunct faculty, who were assumed to have the most to lose by receiving low ratings, gave significantly higher grades than either tenured or tenure-track faculty (Kezim et al., 2005). In a similar study, Sonner (2000) also found that adjunct faculty awarded higher grades than full-time faculty at a 2-year school. The author cautioned that grade inflation may worsen as colleges increase their reliance on adjunct instructors (Sonner, 2000).

Student complaints. Grade inflation may also result from pressures related to instructors' job security that are unrelated to SETs. Instructors may inflate grades to prevent or reduce student complaints to supervising administrators (Moore & Trahan, 1998). Furthermore, courses with higher average final grades have been observed to have higher enrollments and fewer drops (Babcock, 2010). Since adjunct instructors are typically compensated on a per course basis, they may be motivated to inflate grades in an attempt to insure adequate enrollments in their classes so that the sections that they teach remain viable.

Instructor inexperience with grading practices. In addition to the possible pressure to inflate grades that results from the tenuous employment situation for adjunct

instructors, these faculty members typically have less teaching experience and less experience with assessment of student work than full-time instructors (Landrum, 2009; Lei, 2007). They are also generally more isolated from their fellow instructors (Wallin, 2004), and therefore may have fewer opportunities to determine how their own grading practices compare to the rest of the faculty. Despite the findings of Iris Franz (2010), which showed that adjunct instructors awarded lower grades than full-time instructors, a number of studies have found that adjunct instructors award higher grades than their full-time counterparts (Cheng & Chen, 1998; Fedler et al., 1989; Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000). Moore and Trahan (1998) speculated that less experienced instructors may not be confident that their judgment of student performance is accurate and may compensate by giving higher grades. If inexperienced instructors indeed award higher grades than full-time faculty members, then the trend toward increased reliance on adjunct instructors, particularly at community colleges (Jacoby, 2005) could in part explain the elevation of grades over the same time period.

Grading practices in higher education have not been the subject of extensive empirical research (BoarerPitchford, 2010; Gordon & Fay, 2010). In one of the few studies of grading practices employed by instructors at community colleges, BoarerPitchford (2010) surveyed 227 full-time and adjunct instructors at two large community colleges in a western state. Adjunct instructors were found to award significantly more credit for participation and homework than full-time instructors (BoarerPitchford, 2010). Objective exams were also a significantly more important basis of course grade for adjunct instructors than for full-time instructors. Conversely, full-

time instructors were found to use research papers and portfolios as a basis for course grade to a greater extent than adjunct instructors (BoarerPitchford, 2010).

As part of this study, instructors were also asked to indicate their primary source of information about assessment techniques. The top response to this question identified by 35% of participants was personal experience (BoarerPitchford, 2010). It was not clear from the original source whether this personal experience was as an instructor, as a student, or some combination. Nonetheless, if personal experience is such an important source of information about assessment techniques, it is reasonable to assume that less experienced instructors may be less comfortable with this aspect of their teaching responsibility. Furthermore, another 17% of respondents indicated that colleagues were their primary source of information about assessment techniques, and this response was the third most common for this question. If adjunct instructors are more isolated from colleagues than their full-time counterparts as Wallin (2004) suggested, then these instructors will have less opportunity to learn assessment techniques from this important source. Only 40% of these instructors learned assessment techniques through some type of formal training such as education courses or workshops (BoarerPitchford, 2010). If adjunct instructors have less access to or participation in such professional development opportunities, as suggested by Philips and Campbell (2005), then these instructors would be at a further disadvantage in terms of learning assessment techniques and gaining confidence with this function of their work.

In a similar study, Lei (2008) surveyed 104 adjunct instructors and 79 full-time instructors from two community colleges in a western state. Adjunct instructors were found to use objective exams as a basis for course grades to a significantly greater extent

than their full-time counterparts, a result consistent with the findings of BoarerPitchford (2010). Conversely, full-time instructors used participation and attendance, quizzes, laboratory activities, cooperative learning, learning journals, and research projects as a basis for course grades to a significantly greater extent than adjunct instructors (Lei, 2008). The observation that adjunct instructors rely on objective exams more than full-time instructors may suggest that these instructors are employing more rigorous grading practices that are less subject to interpretation and are thus less likely to inflate grades. However, Lei (2008) suggested that the use of objective exams may indicate assessment of recall skills rather than the more cognitively demanding tasks of research and writing. The issue, it would seem, is not whether objective questions are being asked, but rather what objective questions are being asked.

Another finding from Lei's (2008) study was that full-time instructors and adjunct instructors learned assessment techniques from different sources. Full-time instructors listed the main sources of their knowledge about assessment strategies in the following order of importance: a teaching and learning center, seminars and workshops, formal education courses, former instructors, personal experience, and fellow instructors (Lei, 2008). Adjunct instructors listed the main sources of their knowledge about assessment strategies in the following order of importance: colleagues, personal experience, and former instructors (Lei, 2008). Once again, it was not clear from the original source whether personal experience referred to experience as an instructor, experience as a student, or some combination. Notably, a teaching and learning center was not listed as a source of information about assessment techniques by any of the adjunct instructors in Lei's (2008) study. These results indicate that full-time instructors and adjunct

instructors may have different understandings of grading practices. Given the observation that adjunct instructors often award higher grades than full-time instructors (Cheng & Chen, 1998; Fedler et al., 1989; Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000), these differences in grading practices may result in differences in the likelihood of grade inflation by these two groups of instructors.

Student nuisance. Another potential cause of grade inflation is student nuisance (Iris Franz, 2010). By this proposed mechanism, instructors succumb to student pestering for higher grades in an attempt to reduce time and effort spent justifying their grading decisions. Iris Franz (2010) proposed and tested a model to predict how instructors' behavior would affect the degree to which students utilized pestering behavior to influence instructors' grading decisions. The setting for this study was the Department of Economics at the University of California at Irvine, and both faculty members and students were surveyed to determine their respective opinions on this phenomenon. Students reported that most of their pestering behavior was not based on a justification that their work deserved more credit (Iris Franz, 2010), which would indicate that any capitulation to these requests on the part of the instructor would represent grade inflation. Furthermore, students were found to engage in pestering more when it was directed at more lenient instructors. Instructors, for their part, reported that pestering was costly to them in terms of time, which supports the idea that instructors have an incentive to give higher grades to reduce the negative impact on them associated with the pestering. The study revealed that the highest grades were awarded by assistant professors who the authors speculate are under the most pressure to publish and may find the time cost of pestering higher than other faculty members (Iris Franz, 2010). In contrast to Kezim

(2005) and Sonner (2000), Iris Franz (2010) found that adjunct instructors awarded the lowest grades.

Instructor empathy. The current trend of elevated grades appears to have begun in the late 1960s (Kuh & Hu, 1999; Longstreth & Jones, 1976). This time period was one of social and political unrest in the United States, particularly regarding the country's military involvement in the conflict in Vietnam. Since male students who were not enrolled in higher education were, at that time, eligible to be drafted into military service to fight in a deadly war, instructor's grading decisions became more than simply judgments about students' academic abilities, but also decisions that could jeopardize the students' very survival (Birnbaum, 1977; Kezim et al., 2005; Kuh & Hu, 1999). Kezim et al. (2005) further suggested that many instructors inflated grades on the basis of what they believed to be a moral obligation to oppose the war. Longstreth and Jones (1976) asserted that in particular, the tragic events that occurred on the campus of Kent State University in the spring of 1970 further motivated faculty to inflate grades as a means of opposing the war in Southeast Asia. They pointed out that the largest single jump in percentage of A grades awarded at the University of Southern California, 5%, occurred immediately following that incident (Longstreth & Jones, 1976). Given the possibility that past inflated grades increase students' expectations of future high grades which in turn potentially increases pressure on instructors to inflate grades further (Singleton Jr., 1978), it is possible that the pattern of grade inflation that has continued to this day is partially a result of that historical event.

Another source of instructor compassion may contribute to grade inflation for reasons unrelated to the Vietnam War. Singleton (1978) suggested that as more students

entered college, increased competition amongst these students for job opportunities or admission to professional schools motivated instructors to inflate grades to give their students a competitive advantage. Perrin (1998) described how the faculty of Dartmouth University in the late 1960s intentionally initiated a program of grade inflation to increase the competitiveness of their students applying to graduate schools. The rationale for the inflated grades was ostensibly that Dartmouth students should be compared to all other college students in the United States rather than just to each other since the Dartmouth student body was considered to be an exceptional population academically (Perrin, 1998). Johnson (2003) asserted that the inflation of grades at Duke University in the 1990s was justified by a similar rationale. Despite these assertions, empirical study of instructor empathy as a cause of grade inflation is lacking.

Adjunct Faculty

The structure of employment of higher education faculty in America has changed dramatically over the last 150 years (Thedwall, 2008). A simple distinction between full-time faculty and adjunct faculty is no longer possible as it obscures the ever-increasing complexity represented by the diversity of types of employment contracts offered to American higher education faculty (Roueche, Rouche, & Milliron, 1995). However, it is clear that the proportion of faculty whose terms of employment do not include the standard hallmarks of a full-time, permanent employee of the institution (i.e., benefits, competitive salary, and intent to offer future employment) has increased dramatically over the past few decades (Burgess & Samuels, 1999; Christensen, 2008; Gappa, 1984; Gappa, Austin, & Trice, 2005; Haeger, 1998; Jacoby, 2006; Landrum, 2009; Sonner, 2000; Thedwall, 2008). While estimates vary, approximately 60% of community college

faculty is categorized as part time (Gappa, 2008; Jacoby, 2006; I. Y. Johnson, 2006). Furthermore, the percentage of faculty categorized as part time is increasing at an ever faster rate (Gappa et al., 2005; Landrum, 2009). These changes are part of a complex dynamic impacting American institutions of higher education and are factors that are directly related to funding challenges, educational quality, and governance.

Historical Changes in the Roles of Adjunct Faculty

The Morrill Land Grant Act of 1862 coincided with a variety of changes to American institutions of higher education, including the role of faculty and the nature of their employment (Thedwall, 2008). The increase in enrollments that were precipitated by that legislation created a need for more faculty members, many of whom had connections to the German model of higher education and expected the sorts of freedoms in their academic activities assured by that system (Thedwall, 2008). Tenure, as an element of the terms of faculty employment, grew out of that movement (Thedwall, 2008). A second major influx of students into American institutions of higher education occurred following World War II, and the corresponding increase in demand for their services allowed faculty to obtain favorable terms of employment (Jacobs, 1998; Thedwall, 2008).

In recent decades, however, changes in funding of public institutions have precipitated changes in the types of contracts offered to faculty (Haeger, 1998; Ronco & Cahill, 2004; Thedwall, 2008). Economic slowdowns in the 1970s and 1980s increased pressure on administrators to change the budget structure of their institutions (Thedwall, 2008). Faculty compensation, being the largest component of the cost of instruction, was seen as an area that could be re-structured with relatively fewer positions offered as

tenure-track (Christensen, 2008; Jacoby, 2006; Thedwall, 2008). Even after budget crises abated, the trend toward reducing expenditures on faculty compensation did not reverse (Haeger, 1998; Jacoby, 2006). In some cases, this budget strategy has become an institutional norm (Haeger, 1998). The trend is expected to continue (Gappa, 2008).

Increasingly tightening budgets were the original impetus for the shift toward a higher percentage of faculty members employed via part time and/or temporary contracts (Haeger, 1998; Ronco & Cahill, 2004; Thedwall, 2008). Budgetary constraints remain a prime motivating force in perpetuating the trend (Banachowski & ERIC Clearinghouse, 1997; Burgess & Samuels, 1999; Christensen, 2008; Haeger, 1998; Jacobs, 1998; Jacoby, 2006; I. Y. Johnson, 2006; Ronco & Cahill, 2004; Thedwall, 2008). Specifically, Jacoby (2006) asserts that "...the choice to hire on a part-time basis is increasingly the dominant administrative strategy to control costs" (p. 1098). Johnson (2006) echoes that sentiment by stating: "The most important reason for hiring part-time faculty is budgetary constraints" (p. 2).

A shift toward a greater percentage of faculty members hired on an adjunct contract is a particularly enticing strategy for the community college administrator addressing budget concerns for at least four reasons. First, as a component of instructional costs, faculty salaries typically represent the single largest expenditure (Christensen, 2008; Jacoby, 2006). Therefore, that component of the budget represents the greatest potential for cutting costs. Second, given that part-time contracts typically represent a savings of roughly 50% compared to the cost of a full-time contract for an equivalent number of instructional hours (Jacoby, 2006), a shift of faculty composition toward a greater proportion of adjunct instructors is a viable budget reduction strategy.

Third, the process of hiring a full-time instructor requires significant investment in time and resources, whereas the hiring of a part time faculty member is much less involved (Christensen, 2008) and potentially less risky if the faculty member proves to be unsuitable (Thedwall, 2008). Fourth, the option of meeting budget goals through increased tuition is potentially more damaging to a community college than it would be to other institutions of higher education given the community college's mission of increased access to a traditionally underserved population (Christensen, 2008). Not surprisingly, the reliance on adjunct faculty is most pronounced at community colleges (Jacoby, 2006; Johnson, 2006).

Another advantage to the employment of adjunct faculty that is realized by the institution is flexibility in curricular offerings (Banachowski et al., 1997; Christensen, 2008; Jacobs, 1998; Johnson, 2006; Ronco & Cahill, 2004; Thedwall, 2008). When scheduling classes, college administrators must account for the inherent uncertainty associated with enrollments. The ideal of every section being exactly full with no empty seats and no students left on the waiting list will surely never be achieved. However, the hiring of adjunct instructors provides administrators with considerably more latitude to add or cancel sections. The lack of a long hiring process for adjunct instructors means that sections can be added on extremely short notice, even after the semester has begun (Christensen, 2008; Thedwall, 2008). Conversely, if enrollments drop or fail to reach expectations, sections can be canceled along with the contracts of the adjunct faculty members (Banachowski et al., 1997; Christensen, 2008; I. Y. Johnson, 2006; Ronco & Cahill, 2004). In addition to short term flexibility at the beginning of a given semester, the employment of adjunct instructors provides longer term flexibility to administrators

so that they can offer more sections for the typically more well attended fall semesters and cut back for the typically leaner spring semesters (Christensen, 2008). The need for these kinds of flexibility is particularly pronounced at community colleges given the more fluid nature of the student population that they serve (Christensen, 2008).

Likelihood of Grade Inflation by Adjunct Faculty

A concern associated with the trend toward employment of an increasing proportion of faculty as adjuncts is the possibility that the trend is a causative factor in grade inflation (Kezim et al., 2005; Sonner, 2000). A number of studies have found that adjunct instructors award higher grades than their full-time counterparts (Cheng & Chen, 1998; Fedler et al., 1989; Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000). However, Iris Franz (2010) found lower grades awarded by adjuncts. The proposed causal connection between an increasing proportion of faculty hired on an adjunct basis and grade inflation is potentially mediated through the mechanism of student evaluations. A number of studies have documented a positive correlation between grades and student-generated evaluations of teaching (Eiszler, 2002; Greenwald & Gillmore, 1997; Stumpf & Freedman, 1979). Since employment is relatively more tenuous for adjunct faculty than it is for full-time faculty, adjunct faculty may be motivated to award higher grades to influence student evaluations and the probability of future employment (Eiszler, 2002; Germain & Scandura, 2005; Greenwald & Gillmore, 1997; Kezim et al., 2005; Martinson, 2004; Sonner, 2000).

In addition to perceptions of job security, a lack of knowledge about grading practices may influence the likelihood of grade inflation by adjunct instructors differently than full-time instructors. Landrum (2008) found a significant difference in years of

teaching experience between full-time faculty and adjunct faculty. This experience differential may mean that adjunct faculty members are less knowledgeable about effective educational practices ranging from syllabus construction to the use of technology or innovative pedagogy (Banachowski et al., 1997; Christensen, 2008). Additionally, some evidence suggests that adjunct faculty require fewer writing assignments of their students than do full-time faculty (Jacoby, 2006). Furthermore, a lack of teaching experience may leave adjunct faculty less equipped to accurately distinguish between student performances (Kezim et al., 2005).

Summary

A review of the literature reveals substantial interest in the phenomenon of grade inflation. Both the pattern of increasing grades over time and various suggestions about the potential causes of this phenomenon have received much attention. Some of the suggested causes of grade inflation include student evaluations of teaching, student complaints, concerns about job security, lack of experience with grading practices, student nuisance, instructor empathy, and the increase in the percentage of college faculty employed as adjunct instructors. Of these suggested causes of grade inflation, the influence of student evaluations of teaching has been the subject of the most empirical research. The trend toward increased reliance on adjunct instructors has been well-documented, and some studies have shown differences in the grades awarded by full-time and adjunct faculty. If adjunct faculty experience stronger influences from one or more of the proposed causes of grade inflation, then the trend toward higher grades over time can be expected to continue as the role of adjunct faculty expands.

CHAPTER THREE: METHODS

This study employed a correlational research design to estimate the potential influence of a number of factors on the likelihood of grade inflation by instructors at community colleges. The factors that potentially influence the likelihood of grade inflation by community college instructors include perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students. The proposed model includes a path which hypothesizes that instructors' perceptions of SETs, perceptions of student complaints to supervisors, and perceptions of student nuisance may impact those instructors' perceptions of their own job security. Instructors' perceptions of job security could in turn influence them to award higher grades in hopes of influencing student behavior with regard to complaints, SETs, and nuisance. Instructors' perceptions of student nuisance, empathy with students, and lack of experience with grading practices are also hypothesized to influence the likelihood of grade inflation. The proposed mechanism by which these factors influence grading decisions is summarized by the following structural model:

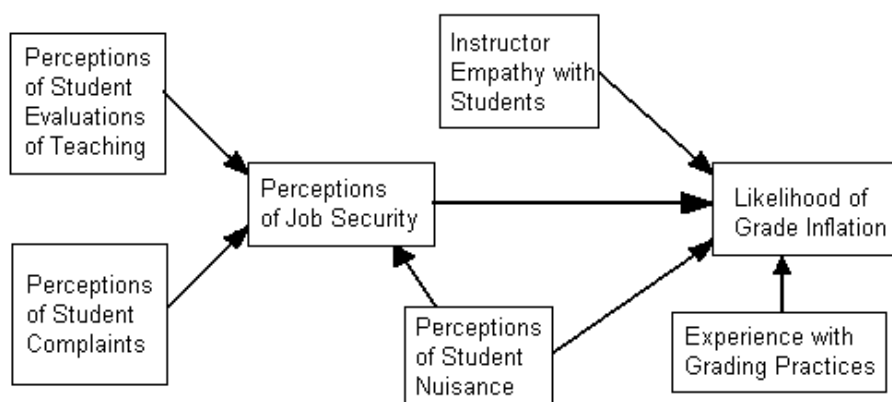


Figure 2. Proposed relationship amongst factors and the likelihood of grade inflation

Correlational designs allow researchers to estimate the relationships between two or more variables (Creswell, 2008). For this study, an explanatory research design was employed because the goal was to investigate existing relationships rather than to predict future events (Creswell, 2008). Initially, structural equation modeling was chosen for data analysis because of its ability to test complex interrelationships when some variables have direct effects on each other and other variables have indirect effects (Jackson, Dezee, Douglas, & Shimeall, 2005). However, the data set did not meet the assumptions required for structural equation modeling, and alternative analysis methods were employed instead. Details of the changes in data analysis methodology will be discussed in the data analysis section of this chapter. This chapter will describe the methods for collecting and analyzing data to test the explanatory power of this model for full-time and adjunct instructors.

Research Questions

This study addressed the following research questions:

- 1) What is the relationship between instructors' experience with grading practices and the likelihood of grade inflation?
- 2) What is the relationship between instructors' perceptions of their own job security and the likelihood of grade inflation?
- 3) What is the influence of instructors' perceptions of student evaluations of teaching on perceived job security?
- 4) What is the influence of instructors' perceptions of student complaints on perceived job security?
- 5) What is the relationship between instructor empathy and the likelihood of grade inflation?
- 6) What is the relationship between perceived student nuisance and the likelihood of grade inflation?
- 7) What is the influence of instructors' perceptions of student nuisance on perceived job security?
- 8) Are the influences on the likelihood of grade inflation different for adjunct faculty members than full time faculty members?

Settings and Participants

The population of interest is all curriculum instructors at publicly funded community colleges in the United States. This population includes approximately 240,000 adjunct faculty members and 120,000 full time faculty members at 993 institutions (National Center for Educational Statistics [NCES], n.d.). The target population for this study was comprised of faculty members teaching at seven colleges identified by means of a stratified random sample of these institutions. Colleges were

selected through a stratified random sampling method based on school size and geographic location. With one exception described below, the sampling frame for this study was all faculty members teaching at least one course during the fall 2012 semester at each of the colleges identified through the stratified random sampling process.

The rationale for the use of these stratification variables was that the phenomenon of grade inflation is proposed to be related in part to the pressure for resources that results from allocations of funds based on student enrollments. Within any one state's community college system, school size may be associated with various institutional characteristics that relate to types of pressure for resources (Glover, Simpson, & Waller, 2009; Pennington, Williams, & Karvonen, 2006). Furthermore, the mechanism by which funds are distributed to public colleges will vary from state to state and will also affect the pressure for resources. By using a stratified sample based on these institutional characteristics, the potential for these influences to bias the results was reduced.

Colleges were categorized for size based on enrollments, with schools enrolling fewer than 2,500 students classified as *small* (approximately 35% of U.S. community colleges), and schools enrolling more than 5,000 students classified as *large* (approximately 40% of U.S. community colleges; NCES, n.d.). The size range of 2,500 to 5,000 students was purposefully excluded from the sampling frame to prevent selecting colleges similar enough in size such that any bias associated with size would not be distributed adequately. Colleges from three different geographic locations were chosen including the West (California system), Southwest (Texas system), and Southeast (North Carolina system). These systems were chosen due to the relatively large numbers of community colleges of which they are each comprised. During the recruitment

process, invitations were sent in approximately one-week intervals to each successive school in a randomized list until one school in each category responded with permission to conduct the study at that institution. The stratified sample included one large and one small California college, two large colleges and one small college in North Carolina, and one large and one small Texas college, resulting in a total of seven colleges being included in the study. A delay in the response from one large North Carolina college resulted in two institutions meeting those criteria being recruited. The final sampling frame included all full-time and adjunct curriculum instructors at each of these schools, with one exception: the large California college chose to distribute the survey to a random sample of 400 full-time and adjunct instructors rather than distribute to the entire faculty.

The survey was distributed to an estimated 2,514 instructors. This estimate is based on the number of full-time faculty at each school as determined by data collected from the National Center for Education Statistics (NCES, n.d.) and the assumption that 60% of community college faculty consist of adjunct instructors (Gappa, 2008; Jacoby, 2006; I. Y. Johnson, 2006). A total of 336 instructors responded to the survey for an estimated overall response rate of 13.4%. The response rates at the specific colleges ranged from a low of approximately 3% at the large Texas college to approximately 24% at one of the large North Carolina colleges.

Survey Instrument

Data were collected using a cross-sectional survey distributed electronically. Surveys are effective tools for collecting information about attitudes, opinions, or

behaviors of individuals in a population of interest (Creswell, 2008). The instrument used for this study was developed specifically for this research.

Instrument Development

The instrument was based on six instruments used previously by researchers to measure the constructs proposed to influence likelihood of grade inflation (Baker, 1992; BoarerPitchford, 2010; Gerdes et al., 2011; Gordon & Fay, 2010; Iris Franz, 2010; Schmelkin et al., 1997). Selection of items from these six instruments was based on conceptual relationship to each construct the items were intended to measure. Items were added to the instrument in order to collect relevant demographic information about the respondents as well additional, specific information relevant to this study. The draft instrument was modified based on information gained from think-aloud interviews, review by a panel of experts, and a pilot test.

Think-aloud interviews. Think-aloud interviews were conducted with seven instructors at a small North Carolina community college that was not part of the later data collection for this research. These interviews included four full-time instructors and three adjunct instructors and followed a protocol recommended by Dillman (2007). During these sessions, the observer paid particular attention to survey items that caused confusion to the respondents.

Based on the results of these interviews, the instrument was modified to minimize issues with content and clarity. Specifically, a survey item which asked instructors to rank sources of information about grading practices was interpreted by some respondents as requesting a rating of the various sources of information with some items given equal weight. Based on the verbalized thought processes of respondents relating to why some

sources of information about grading practices should receive equal weight, I decided to change the question to allow for that flexibility of response. Additionally, a survey item which asked instructors to indicate the percentage of course grade based on a list of student activities was identified as having excessive cognitive load and was modified to include a more limited list of student activities with less potential for confusing redundancy between categories.

Review by panel of experts. A panel of three experts including a chief academic officer at a community college, a full-time university faculty member with a research interest in the phenomenon of grade inflation, and a doctoral professor of educational leadership reviewed the instrument. Each member of this panel had a different perspective on the phenomenon of grade inflation and the ability of the instrument to measure the intended constructs, but they did not offer contradictory advice. These experts provided feedback on a standardized form (see Appendix B) modeled after one developed by Ulrich (2009). This checklist included prompts for feedback about both the clarity of the questions as well as the effectiveness of the questions in assessing the desired attitudes, opinions, or behaviors. Furthermore, the experts were asked to answer the following questions based on suggestions by Dillman (2007, p. 140-141):

- 1.) "Have I included all of the necessary questions?" Dillman (2007, p. 140-141)
- 2.) Are any of the questions redundant?
- 3.) Were any of the questions worded in a way that was confusing to you?
- 4.) Did you see any terms that might be confusing to others taking this survey?
- 5.) "Do all of the questions have an answer that can be marked by every respondent?" Dillman (2007, p. 140-141)

Based on the information collected through this review, some questions were modified for increased clarity and a question was added to insure that all relevant information would be collected. Specifically, the survey item that asked instructors to indicate their total years of teaching experience was modified to ask instructors to indicate the total number of semesters that they had worked as a community college instructor. This change was recommended to increase the precision of information and reduce potential confusion on the part of instructors who had taught for partial years. Furthermore, a survey item that asked instructors to indicate the type of program in which they primarily teach was modified to include both the terms “vocational” and “career and technical education” to represent a more inclusive terminology. Finally, a Likert-type item was added to the survey based on a suggestion from one of the experts: “I believe that a letter based grading system is an effective way to communicate student performance in a class.”

Pilot test. The pilot test was conducted at a large North Carolina community college that was not part of the later data collection for this research. The pilot survey was administered electronically via an email forwarded by the chief academic officer of that college, and responses were gathered from 135 full-time and adjunct instructors. The data collected from the pilot test were reviewed to verify that display logic and skip logic items functioned as intended. The one item that asked respondents to check all categories that apply was also reviewed to verify that respondents were able to select multiple responses. Frequency distributions for all items were reviewed. Four survey items based on Gerdes et al. (2011) empathy index were removed from the survey because the frequency distributions for these items had limited variability and because these items

may have been answered in a socially desirable manner. Another item that related to the confidentiality of student comments on evaluations of teaching was also eliminated due to a lack of variability in the responses and the likelihood that the response would be determined by institutional policy rather than individual practice. Exploratory factor analysis was employed to investigate the degree to which survey items identified constructs as anticipated in the structural model. The survey item responses clustered into constructs of the model well enough to indicate that the survey was capable of collecting the necessary data to test the hypotheses of the study.

Evidence of reliability and validity. Evidence of reliability of the instrument was based on internal consistency of responses to related items in the final survey (Creswell, 2008). Item analyses of questions used to measure each construct were conducted, and coefficient alpha values were calculated to measure that internal consistency. The results of internal consistency statistics will be presented when the scales are explained in the data analysis section of this chapter. Evidence of validity was based both on review by experts (Creswell, 2008) as well as observations collected from think-aloud sessions where volunteers described their thought processes as they completed the survey.

Survey Contents

Likelihood of grade inflation. The outcome variable of likelihood of grade inflation was a combination of two other variables: the degree to which the instructor indicated a particularistic nature to his or her grading practices and the distribution of anticipated grades assigned by that instructor in a class. The combination of the two variables into the likelihood variable is described in the data analysis section.

Orientation toward particularistic grading. Five Likert-type survey items related to the meritocratic versus particularistic nature of an instructor's grading practices. Four of these items were adapted from Gordon & Fay (2010), and one item was developed without antecedent. Meritocratic grading practices are based on demonstration of academic achievement by a student, but particularistic grading practices are based on characteristics of individual students and are thought to contribute to grade inflation (Gordon & Fay, 2010). Respondents were asked to indicate their level of agreement (strongly disagree, disagree, agree, or strongly agree) with statements about the meritocratic versus particularistic nature of their grading practices. The adapted items were originally part of a survey of student perspectives on grading fairness and were reworded so that they asked about the perspectives of instructors concerning grading practices. For example, the statement "grades reflect what students learn in a class" (Gordon & Fay, 2010, p. 95) was adapted to read: "The grade that I assign to a student reflects what the student learned in the class." Gordon & Fay (2010) offered no evidence of validity or reliability of the instrument used in their study.

Anticipated grade distribution. In addition to the Likert-type survey items relating to meritocratic versus particularistic grading practices, likelihood of grade inflation was measured using anticipated grade distributions. Respondents were asked to consider a single class that he or she was teaching during the fall 2012 semester and to estimate the percent of students in that class who would have each of the following outcomes: "grade of A", "grade of B", "grade of C", "grade of D", "grade of F", or "not complete the class".

Perceptions of SETs. Fifteen Likert-type survey items related to the construct of instructor's perspectives on student evaluations of teaching. Eleven of these items were adapted from a study conducted by Schmelkin et al. (1997), and four of these items were developed without antecedent. As an example of an item that was adapted from Schmelkin et al., respondents were asked to indicate their level of agreement (strongly disagree, disagree, agree, or strongly agree) with the statement: "I believe that some other instructors alter their grading practices in the hopes of receiving better student evaluations." This item was based on an item from Schmelkin et al. (1997): "I have adjusted the requirements in one or more of my classes in order to get more favorable ratings on student evaluations", which was also included in the current survey. The adapted item was added to minimize socially desirable responses. Schmelkin et al. (1997) offered no evidence of reliability or validity for the instrument used in that study. As an example of an item developed without antecedent, respondents were asked to indicate their level of agreement on a four-point scale with the statement: "Receiving more favorable student evaluations of teaching will increase my chances of being offered future opportunities to teach at this institution."

Perceptions of student complaints. The construct of perceptions of student complaints was measured using three Likert-type survey items that were developed without antecedent. Respondents were asked to indicate their level of agreement (strongly disagree, disagree, agree, or strongly agree) with the statements: "I would be concerned if students complained to my supervisor about their grades in my class", "I believe that students have complained to my supervisor about their grades in my class",

and “I believe that students have complained to my supervisor about the academic requirements of my class.”

Perceptions of job security. Two Likert-type survey items measured the construct of job security. Respondents were asked to indicate their level of agreement (strongly disagree, disagree, agree, or strongly agree) with the statement “I am satisfied with my current level of job security,” which was adapted from Baker’s (1992) “Community College Climate Instrument” and was reworded slightly to better fit the logic of other questions in the survey. Baker (1992) offered no evidence of validity or reliability for the instrument. An additional Likert-type item, “I expect to be offered the opportunity to teach at this institution in the future,” was developed specifically for the purpose of the current study. The survey utilized skip logic so that instructors who indicated that they held tenure at their institutions were not asked if they expected to be offered to teach in the future. For these instructors, the job security construct was measured by response to the one Likert-type survey item concerning satisfaction with current level of job security.

Perceptions of student nuisance. Four Likert-type survey items measured the construct of student nuisance. Respondents were asked to indicate their level of agreement (strongly disagree, disagree, agree, or strongly agree) with statements that were adapted from two items in a study by Iris Franz (2010):

- “Responding to or acting on students’ complaints about grades or requests for more points is COSTLY in terms of my time, effort, and/or energy.”
(p. 416)

- “Students’ complaints about grades/requests for more points are annoying.” (p. 416).

These survey items were reworded and divided so that each asked a single question. For example, the second of Iris Franz’s (2010) statements above was reworded into two statements: “I am annoyed when students complain to me about their grades” and “I am annoyed when students request better grades from me.” Iris Franz (2010) offered no evidence of reliability or validity for the instrument used in that study.

Instructor empathy with students. Survey items relating to the construct of instructor empathy were taken from an instrument developed by Gerdes et al. (2011) to measure empathy of social workers. Of the 26 items in the full instrument, four were selected based on relevance to college instructors. Gerdes et al. (2011) offered evidence of concurrent criterion-related validity in the form of statistically significant correlations between three different subscales of the instrument ($p < 0.001$ for all three correlations). Evidence of reliability was offered in the form of internal consistency as measured by Cronbach’s alpha, which were 0.810 and 0.809 for the two subscales from which items were selected for the current instrument. However, these survey items intended to measure empathy were removed from the final survey based on evidence from the pilot test that indicated insufficient variability and possible social desirability in responses. Ultimately, one Likert-type survey item that was developed without antecedent was used to measure instructors’ empathy with students. Respondents were asked to indicate their level of agreement (strongly disagree, disagree, agree, or strongly agree) with the statement: “I consider personal challenges that a student may have faced during the semester when assigning that student’s final course grade.”

Experience with grading practices. The construct of experience with grading practices was measured by a survey item that asked respondents to indicate the total number of semesters that they had worked as a community college instructor including both full-time and adjunct appointments. A maximum number of semesters was set at 60 to facilitate collection of this information using a drop-down menu in the survey software.

Demographics. A number of survey items queried respondents regarding demographic information and employment arrangements. Respondents were asked if teaching was their primary responsibility at their college and to indicate their primary area(s) of instruction (career and technical/vocational, college transfer, and/or development education). Instructors were asked to indicate their faculty status as full-time or adjunct. Full-time instructors were asked if they had prior experience as an adjunct instructor and if they currently held tenure at their institution. Finally, instructors were asked to indicate their highest level of education attained. Information concerning faculty status was used to test the research question regarding differential influences of the factors that potentially affect grade inflation for full-time versus adjunct faculty. Additional demographic information did not directly relate to a research question but was gathered to assist in interpretation of the results.

Procedures for determining grades. Two survey items asked respondents to provide information about their procedures for determining grades. Specifically, each instructor was asked to rate the influence of a variety of sources of information on his or her approach to assigning grades as well as indicate the weight of a variety of student activities in the process of assigning grades. While these survey items did not relate to a

construct in the hypothesized model, the information was gathered to facilitate interpretation of the results of planned tests.

A survey item asking instructors to indicate the degree to which information from a variety of sources influence the way that they assign grades was adapted from BoarerPitchford (2010). BoarerPitchford's original list of possible sources of information about grading practices was modified. Response choices "Through a teaching and learning center on campus" and "Through seminars and workshops" were condensed into a single response choice of "Professional development on grading practices provided by college" to reduce confusion through potential redundancy. Also, BoarerPitchford's response choices of "Through personal experience" and "From former instructors" were reworded to "Personal experience as an instructor" and "Personal experience as a student" to reduce confusion about the type of experience that is serving as the basis of knowledge about grading practices. The item was also reworded to ask respondents to rate the importance of each source of information about grading practices rather than simply identify a primary source of information about grading practices.

An additional survey item asking instructors to indicate the extent to which various course activities factored into final grades was also adapted from BoarerPitchford (2010). This survey item was modified to ask instructors to consider a specific course when estimating the percentage of student activities used as a basis for course grade in contrast to BoarerPitchford's survey which requested these percentages "on average." Furthermore, the question was reworded for increased clarity. Also, the list of student activities was amended such that the items that originally appeared in BoarerPitchford's instrument were condensed to the following four categories:

- Participation
- Tests, quizzes, and homework with objective questions where there is one correct answer
- Writing assignments (including papers and essay questions on exams)
- Other kinds of assignments (including presentations, labs, group work, etc.).

This change to the list of activities was made in response to information gained through think-aloud interviews and input from the panel of experts which indicated that the original question was difficult to answer accurately. The condensed list of student activities reduced cognitive load without losing necessary information.

BoarerPitchford's (2010) survey instrument was originally developed by Lei (2008), who provided no evidence of reliability or validity of the instrument. Lei indicated that a pilot study had been conducted with the instrument and that the instrument was subsequently modified based on feedback from respondents in this pilot study. BoarerPitchford (2010) indicated that validity of the instrument was verified by the Cannon Center for Survey Research but provided no evidence.

Data Collection

Surveys were distributed electronically. The instrument was a web-based survey which utilized the software Qualtrics and which was accessed via a link in emails to participants. The chief academic officer at each selected school was contacted via an email (see Appendix C). This communication described the purpose of the study and requested permission to conduct the research at the college. The email also requested permission to contact the college's faculty for the purpose of collecting the necessary

data or to have the chief academic officer forward to faculty communications about the study with a link to the survey. All participating schools with the exception of the small North Carolina college chose to distribute the survey by having the chief academic officer or other school official forward communications with a link to the web-based survey. The small North Carolina college granted permission for faculty members to be contacted by emails available on the college's website. Both full-time and adjunct instructors were listed in this college's online directory. All of these instructors were contacted directly via email, although it is possible that the online directory did not include every instructor teaching at that college in the fall 2012 semester. The survey contained a cover letter (see Appendix C) describing the purpose of the study as well as the benefits to participants and potential costs, which were negligible given that responses were anonymous unless an individual chose to provide an email address to enter the raffle. This cover letter also served as the mechanism for each respondent to provide informed consent to participate in the study.

Methods for ensuring an adequate response rate included a pre-notification communication, a reminder communication, and an incentive (Creswell, 2008). A pre-notification email was sent to participants approximately two weeks prior to distribution of the survey (see Appendix C). This email described the purpose of the study and alerted participants to the impending arrival of the email containing the link to the survey. A reminder email (see Appendix C) with the link to the survey was sent after an additional two weeks. The exception to this procedure was the large California college which declined to send the reminder email.

In addition to pre-notification and reminder communications, participants who completed the survey were given the opportunity to provide an email address which was entered into a drawing for a \$200 gift certificate that was delivered at the conclusion of the data collection process. Participation in the raffle was voluntary so that anonymity of respondents was maintained for those who chose it. This strategy was employed because incentives have been found to boost response rates in survey research (Dillman, 2007; Petrolia & Bhattacharjee, 2009).

The entire survey distribution and data collection process was completed in the second half of the fall 2012 semester. All surveys were distributed on October 22nd and closed on November 19th, with the exception of the survey to the large California college, which was distributed on November 14th and closed on December 17th. The reason for the delay in distribution to the large California college was to comply with that institution's procedures for obtaining permission to conduct research. The second half of a fall semester time frame was chosen specifically so that any first-time instructor who received the survey would have had enough experience with grading through the first half of the semester to respond to all survey items. The fall semester was chosen specifically because of the higher enrollments that typically exist at community colleges during these semesters compared to spring semesters.

Data Analysis

In this study, the model predicted that faculty members' perceptions of SETs, perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and empathy with students would influence faculty members' likelihood of grade inflation. This section describes the process by

which each model construct was defined as well as an explanation of how the approach to data analysis was revised based on failure of the data set to meet the requirements for structural equation modeling. The explanation of the revised methodology includes a revised set of research questions and a description of analyses employed to address these questions.

Definition of Constructs

For each construct, survey items were identified for their potential to measure the construct. Likert-type survey items were reverse coded as necessary such that a higher score on each item indicated a stronger measure of each construct. Frequency distributions and descriptive statistics of responses were analyzed for each item, and items were screened for variability of responses. Most constructs were measured using multiple Likert-type survey items and, for those constructs, Cronbach's alpha was calculated to assess reliability of items within each construct. Alpha with items deleted was assessed to determine whether any items originally designed for a construct did not in fact contribute to a reliable measure of that construct. In cases where multiple Likert-type survey items were used to measure a single construct, once the items that reliably measured that construct were identified, a new scaled predictor variable was calculated as the mean of the responses on the included items.

Predictor variables. Each construct used to predict likelihood of grade inflation was measured using a subset of survey items. The survey items used to measure each construct were chosen based on evidence of reliability in measuring that construct and conceptual relationship to the intended construct.

Perceptions of student evaluations of teaching (SETs). The survey contained 15 items related to the construct of perceptions of SETs. Exploratory factor analysis revealed that these survey items related to multiple conceptual groupings. These conceptual groupings included perspectives on the use by instructors of information gathered from SETs and students' motivations for providing comments on SETs. A subset of the original items was selected based on conceptual relationship to instructors' perceptions of SETs in the context of effect of these evaluations on employment, which was theoretically most related to the proposed mechanism by which SETs may influence the likelihood of grade inflation. These items were assessed for evidence of reliability in measuring the construct. Ultimately, the perceptions of SETs construct was measured by two Likert-type survey items. Respondents were asked to indicate their level of agreement with the statements "Receiving more favorable student evaluations of teaching will increase my chances of being offered future opportunities to teach at this institution" and "I feel that it is important to my career for me to receive favorable ratings on student evaluations." Internal consistency of these items was 0.59.

Perceptions of job security. The perceptions of job security construct was measured by two Likert-type survey items. No items were eliminated from calculation of the scaled variable used to measure this construct. Respondents were asked to indicate their level of agreement with the statements "I am satisfied with my current level of job security" and "I expect to be offered the opportunity to teach at this institution in the future". Internal consistency of these items was 0.59. The survey utilized skip logic so that instructors who indicated that they held tenure at their institutions were not asked if they expected to be offered to teach in the future. For these instructors, the job security

construct was measured by response to the one Likert-type survey item concerning satisfaction with current level of job security.

Perceptions of student complaints. The survey contained three items related to the construct of perceptions of student complaints. Ultimately, this construct was measured by two Likert-type items. Respondents were asked to indicate their level of agreement with the statements “I believe that students have complained to my supervisor about their grades in my class.” and “I believe that students have complained to my supervisor about the academic requirements of my class”. Internal consistency of these items was 0.79.

Experience with grading practices. The experience with grading practices construct was measured by a survey item that asked respondents to indicate the total number of semesters, including the current semester that they had worked as an instructor. Respondents were asked to consider experience as both a full-time instructor and experience as an adjunct instructor when answering this question. Responses to this question were chosen from a drop-down menu in the survey software, and an upper limit of “more than 60 semesters” was set. The resulting data were positively skewed. Therefore, the data were transformed using the square root of the raw numbers to generate a new variable representing experience with grading practices. The new distribution of these data approximated normality, an assumption of the statistical techniques employed for data analysis.

Perceptions of student nuisance. The perceptions of student nuisance construct was measured by four Likert-type survey items. Respondents were asked to indicate their level of agreement with the statements “Responding to students’ requests for better

grades is costly in terms of my time”, “I am annoyed when students complain to me about their grades”, “Responding to students’ requests for better grades is costly in terms of my energy”, and “I am annoyed when students request better grades from me”.

Internal consistency of these items was 0.84.

Instructor empathy with students. The instructor empathy with students construct was measured by one Likert-type survey item. Respondents were asked to indicate their level of agreement with the statement “I consider personal challenges that a student may have faced during the semester when assigning that student’ final course grade.”

Outcome variable. The outcome variable of likelihood of grade inflation was a combination of two other variables: the distribution of anticipated grades assigned by that instructor in a class and the degree to which the instructor indicated a particularistic nature to his or her grading practices. To determine the distribution of anticipated grades, each respondent was asked to consider a single class that he or she was teaching during the fall 2012 semester and to estimate the percent of students in that class who would have each of the following outcomes: “grade of A”, “grade of B”, “grade of C”, “grade of D”, “grade of F”, or “not complete the class”. Based on the anticipated percentage of students earning each grade, a class-level GPA (grade point average) was computed using a 4-point scale. First, the proportion of students expected to earn each grade was calculated with a base of all students expected to complete the class. This step effectively removed the influence of the proportion of students not expected to complete the class from the calculation of a class-level GPA. Anticipated grade proportions were multiplied by their respective point values (A = 4 points, B = 3 points, C = 2 points, D = 1 point, and

F = 0 points) and the results were summed. The result was a single measure of anticipated assigned grades on a four-point scale.

Further analysis was conducted to determine whether the proportion of non-completers might be used in conjunction with weighted class GPA to define the likelihood of grade inflation. It was hypothesized that some rigorous courses may have both high grade distributions and high rates of non-completion. The rationale for this hypothesis was that underprepared students may be motivated to withdraw from an academically demanding course leaving a high proportion of academically successful students who would then earn relatively higher grades. However, the correlation between class-level GPA and proportion of non-completers was negative ($r = -0.256, p < 0.001$). This result indicated that courses with higher proportions of non-completers also had relatively lower class-level GPAs. Therefore, it was not necessary to incorporate the proportion of non-completers into the definition of the likelihood of grade inflation construct to counteract the possibility that students who would have received a low grade in a class would drop leaving a disproportionate number of high-achieving students who would earn high grades in a stringently graded class.

Meritocratic grading practices are based on demonstration of academic achievement by a student, but particularistic grading practices are based on characteristics of individual students and are thought to contribute to grade inflation (Gordon & Fay, 2010). The particularistic nature of grading practices was measured by three Likert-type survey items:

- “The grade that I assign to a student reflects what the student learned in the class

- Students who learn the most in my class receive higher grades than students who do not learn as much
- Students who learn very little in my class may receive the same grade as students who learn a lot” (Gordon & Fay, 2010, p. 95).

The first two items were reverse coded so that a higher score in each item would correspond to a more particularistic orientation toward grading. Internal consistency of these items was 0.67.

To create a single variable that represented likelihood of grade inflation, k-means cluster analysis methods were used. Results for two groups, three groups, and four groups were evaluated. The cluster analysis revealed that the combination of estimated GPA and particularistic grading practices identified two groups of respondents that were conceptually and statistically significantly different in terms of their likelihood to inflate grades, $F(1, 324) = 162.1, p < 0.001$ for GPA; $F(1, 324) = 171.4, p < 0.001$ for particularistic grading. The distances from cluster centers were also visually inspected and judged to indicate that the procedure sorted the cases into groups that fit well together. For the purpose of analysis, grade inflation was defined as high or low likelihood.

Summary of construct composition. The experience with grading practices and instructors’ empathy with students constructs were measured by a single survey item each. The remaining predictor variable constructs and a component of the outcome variable construct were measured using a scaled variable calculated from multiple Likert-type survey items. The composition of each of these scaled variables along with evidence of reliability for each is summarized in Table 1.

Table 1

Composition of Scaled Predictor Variables

Scaled predictor variable	Original # of survey items	Final # of survey items	α
Perceptions of SETs	15	2	0.59
Perceptions of job security	2	2	0.59
Perceptions of student complaints	3	2	0.79
Perceptions of student nuisance	4	4	0.84
Likelihood of grade inflation	5	3	0.67

Revised Research Questions and Analysis Methods

The planned method of data analysis for this study was structural equation modeling (SEM). However, the data that were collected did not meet the expectations required for this method of data analysis. Specifically, many items did not fit together in scales as expected. Furthermore, even for the restricted set of survey items, in many cases, the internal consistency (Cronbach's α) fell into the low end of the acceptable range. Ultimately, measurement error in the constructs precluded confirmatory factor analysis (i.e., the measurement model in SEM). Furthermore, exploratory correlations among scales ruled out path analysis (i.e., the structural model in SEM). Therefore, a revised set of research questions was developed:

- 1) What is the influence of instructors' perceptions of student evaluations of teaching, perceptions of their own job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and empathy with students on the likelihood of grade inflation?
- 2) Are the influences on the likelihood of grade inflation different for adjunct faculty members than full time faculty members?

The influence of predictor variables on the outcome variable of likelihood of grade inflation was assessed using both multivariate and univariate analyses. Logistic regression was used to determine the ability of the predictor variables to correctly place cases into the high and low likelihood of grade inflation outcome groups. Model fit was tested using a Hosmer and Lemeshow goodness-of-fit test. The explanatory value of the model was assessed both by considering the percent of cases correctly placed into each outcome group and the effect size of the model as measured by Nagelkerke R^2 . A full model with all predictor variables included was tested first and compared against a null model. Models with subsets of predictor variables selected based on empirical support from the literature were subsequently tested to explore the possibility of an improved model with fewer predictors. Based on the inconclusive results of this analysis, an exploratory approach employing univariate analyses was ultimately adopted. Descriptive statistics for both the high and low likelihood groups were calculated for each factor. Independent t -tests were employed to test for differences in each predictor variable between cases categorized as high or low likelihood of grade inflation. This analysis assumed that the ratings data from Likert-type survey items are interval-level scales of measurement, which is an appropriate assumption for an exploratory approach with

interpretations offered cautiously (Thorne & Giesen, 2003, p. 17). The size of the effect, Cohen's d was also calculated for each difference between the high and low likelihood groups for each factor.

The effect of faculty status on the influence of factors that affect the likelihood of grade inflation was tested using analysis of variance. A two-way ANOVA with the independent variables of faculty status and likelihood of grade inflation was performed for each factor proposed to influence the likelihood of grade inflation. The interaction effect of these two independent variables was examined for significance. Descriptive statistics for each factor disaggregated by the status x likelihood groupings were calculated. The size of the effect, partial eta squared of the interaction between faculty status and likelihood of grade inflation for each factor was also calculated.

Summary

Chapter three has described the methods by which this study was conducted. Participants in this study were curriculum instructors at seven publicly-funded community colleges in the United States. Data were collected by an electronically-distributed survey instrument that was developed specifically for use in this study. Survey items were based on ones used in previous studies on similar phenomena as well as items that were developed without antecedent. The survey instrument was modified based on the results of think-aloud interviews, review by a panel of experts, and a pilot test.

Two outcome clusters, high likelihood of grade inflation and low likelihood of grade inflation were identified by cluster analysis. The data that were collected did not meet the expectations required for structural equation modeling (SEM), so the data were

analyzed by logistic regression. Independent *t*-tests were performed to determine if differences existed between the high and low likelihood of grade inflation groups for each of the predictor variables. Predictor variables were analyzed using a two-way ANOVA (faculty status x likelihood of grade inflation) to evaluate the research question addressing differences between adjunct and full-time faculty members with regard to influence of factors proposed to affect the likelihood of grade inflation.

CHAPTER FOUR: RESULTS

The purpose of this study was to estimate the potential influence of a number of factors on the likelihood of grade inflation by instructors at community colleges. The factors that potentially influence the likelihood of grade inflation by community college instructors include perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students. Data analysis methods for this study were revised due to the observation that the collected data did not meet the expectations necessary for the originally intended methods (see Chapter Three for details). New research questions and a new model were developed to reflect the analysis that was actually conducted.

This study addressed the following research questions:

- 1) What is the influence of instructors' perceptions of student evaluations of teaching, perceptions of their own job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and empathy with students on the likelihood of grade inflation?
- 2) Are the influences on the likelihood of grade inflation different for adjunct faculty members than full time faculty members?

The revised model that summarizes the proposed mechanism by which the original predictor variables influence the likelihood of grade inflation is shown in Figure 3.

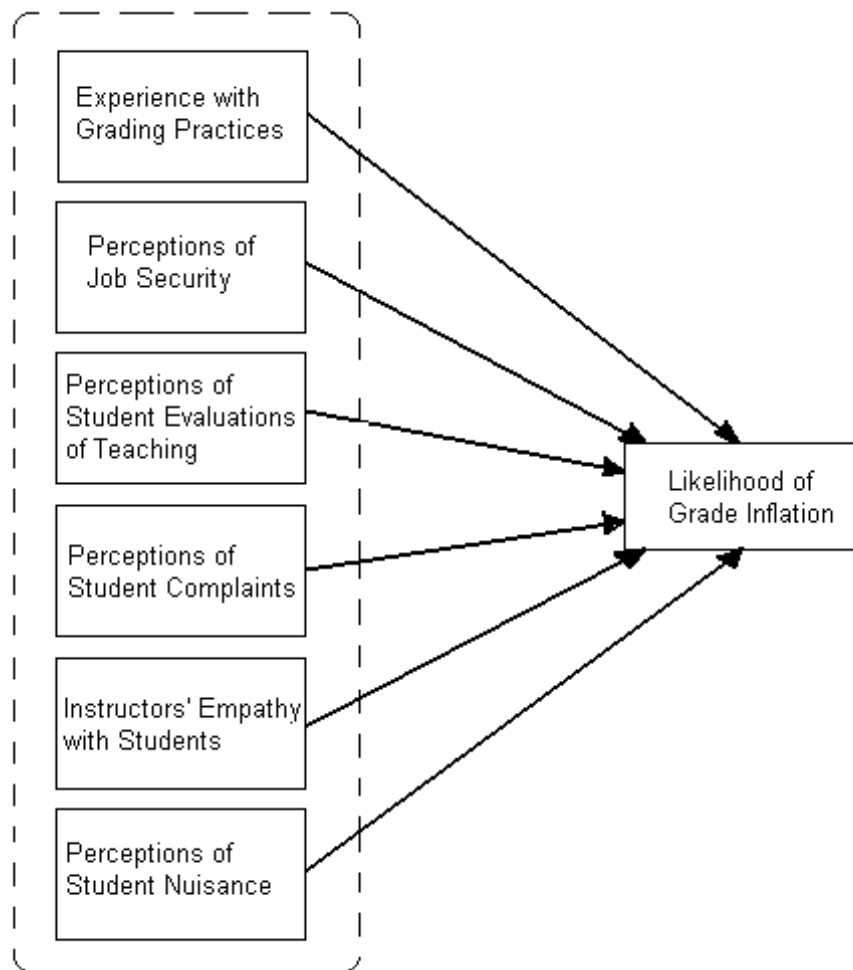


Figure 3. Revised model for the mechanism by which factors influence likelihood of grade inflation

This study employed a correlational research design. Data relating to the perspectives of community college faculty regarding grading decisions and the factors that potentially influence grading decisions were collected via an electronically distributed survey that was developed specifically for this study. Frequency distributions for responses to all survey items are presented in Appendix D. This chapter will describe the results of the study including characteristics of the sample and the results of the analyses that addressed each research question.

Characteristics of the Sample

The population of interest was all curriculum instructors at publicly funded community colleges in the United States, a group that includes approximately 240,000 adjunct faculty members and 120,000 full time faculty members at 993 institutions (National Center for Educational Statistics [NCES], n.d.). The total sampling frame included full-time and adjunct curriculum instructors at each of seven colleges chosen using a stratified random sampling method based on school size and geographic location. A total of 336 instructors responded to the survey. As shown in Table 2, 82% of the respondents ($n = 274$) were serving as instructors at large colleges, and 18% of the respondents ($n = 62$) were serving as instructors at small colleges.

Table 2

Number of Faculty Respondents Based on Institutional Characteristics (N=336)

State/Institution	Small		Large	
	n	%	n	%
NC1	8	2.38	71	21.13
NC2	-	-	102	30.36
CA	11	3.27	83	24.70
TX	43	12.80	18	5.36

Note. Data were not collected from a second small NC college. See chapter three for an explanation of site selection.

As shown in Table 3, 72% of the respondents ($n = 241$) were employed as full-time instructors, and 28% ($n = 95$) were employed as adjunct instructors who were compensated on a per-course basis. Of the full-time instructors, 71% ($n = 169$) had previous experience as an adjunct instructor and 29% ($n = 69$) held tenure at their institutions. As shown in Table 3, more than 75% of respondents held graduate degrees. The most common credential reported as the highest level of education achieved was a masters degree (61%).

Table 3

Respondents' Highest Level of Education

Highest level of education	Full Time ($n = 241$)		Adjunct ($n = 94$)		Total ($N = 335$)	
	n	%	n	%	n	%
Doctorate	33	13.7	17	18.1	50	14.9
Masters	140	58.1	64	68.1	204	60.9
Graduate Certificate	1	0.4			1	0.3
Bachelors	41	17.0	11	11.7	52	15.5
Associates	22	9.1	1	1.1	23	6.9
High School	4	1.7	1	1.1	5	1.5

Compared to universities, the setting for most studies of grade inflation, community colleges typically teach a wider variety of disciplines including more

programs that are categorized as vocational (also known as career and technical education). Another important area of community college instruction that distinguishes it from university curricula is developmental education, which consists of courses that are intended to prepare students for college-level work. College transfer programs at community colleges are intended to mimic the freshman and sophomore, or general education curricula, at bachelors-degree-granting institutions. As shown in Table 4, a majority of respondents (54%) taught at least some courses as part of a vocational program of study. The next most common category which respondents taught at least some courses was college transfer (46%). Only 17% of respondents taught classes as part of a developmental education curriculum. A total of 53 instructors (16%) taught in multiple curriculum categories.

Table 4

Areas of Instruction

Areas of instruction	Full Time		Adjunct		Total	
	n	%	n	%	n	%
Vocational	147	61.0	34	36.2	181	54.0
College Transfer	98	40.7	56	59.6	154	46.0
Developmental	31	12.9	27	28.7	58	17.3

Influence of Factors on Likelihood of Grade Inflation

Descriptive statistics were calculated for the high likelihood and low likelihood of grade inflation outcome clusters (see Table 5). The low likelihood group had a lower anticipated GPA and lower mean orientation toward particularistic grading than the high likelihood group did.

Table 5

Mean of GPA and Orientation toward Particularistic Grading for Outcome Clusters

Component	Outcome cluster	
	High likelihood of grade inflation (<i>n</i> = 121)	Low likelihood of grade inflation (<i>n</i> = 206)
Anticipated class-level GPA	3.12	2.45
Orientation toward particularistic grading	2.34	1.67

Six variables were hypothesized to influence the likelihood of grade inflation. For each construct, a higher value for the variable indicates a higher measure of the attribute or characteristic that comprises the construct. For all constructs except for experience with grading practices, the range of values is 1 to 4. For the construct of experience with grading practices, the range of potential responses is 1 to 7.75. Descriptive statistics of each predictor variable for each outcome group (i.e., high or low likelihood of grade inflation) are summarized in Table 6. One predictor variable, experience with grading practices, was not based on Likert-type survey items. This

variable is the square root of the total number of semesters that a respondent had worked as an instructor. Additionally, the survey contained 15 items related to the construct of perceptions of SETs, but two of these items were selected to measure this construct based on conceptual relationship to instructors' perceptions of SETs in the context of effect of these evaluations on employment. While many of the responses relating to the six predictor variables were very similar between the two outcome groups, instructors with a low likelihood of grade inflation indicated stronger perceptions of both of student nuisance and student complaints.

Table 6

Descriptive Statistics of Predictor Variables by Likelihood of Grade Inflation

Predictor variable and group	<i>n</i> *	Min	Max	<i>M</i>	<i>SD</i>
Perceptions of SETs					
High	119	1.0	4.0	2.67	0.64
Low	204	1.0	4.0	2.67	0.57
Perceptions of job security					
High	121	1.0	4.0	3.19	0.64
Low	206	1.0	4.0	3.26	0.58
Perceptions of student complaints					
High	118	1.0	3.0	2.00	0.61
Low	200	1.0	4.0	2.16	0.70
Experience with grading practices					
High	121	1.0	7.8	4.46	1.89
Low	206	1.0	7.8	4.54	1.78
Perceptions of student nuisance					
High	119	1.0	4.0	2.12	0.58
Low	204	1.0	4.0	2.27	0.59
Instructor empathy with students					
High	118	1.0	4.0	2.29	0.73
Low	200	1.0	4.0	2.25	0.67

Note. *Values of *n* differ amongst predictor variables and groups due to missing data that resulted from respondents skipping certain questions.

Correlations between predictor variables were calculated to determine if any predictor variable was sufficiently redundant with any other predictor variable to warrant removal from the logistic regression model (see Table 7). None of the predictor variables

were found to be sufficiently correlated with each other to justify elimination, so the logistic regression model was first tested using all predictor variables.

Table 7

Inter-correlations between Predictor Variables

Predictor variable	1	2	3	4	5	6
1. Perceptions of SETs	-----					
2. Perceptions of job security	-.06	-----				
3. Perceptions of student complaints	.05	.07	-----			
4. Experience with grading practices	-.17**	.15**	.09	-----		
5. Perceptions of student nuisance	.12*	.09	.18**	-.05	-----	
6. Instructor empathy with students	.13*	-.05	-.06	-.03	.06	-----

** $p < 0.01$

* $p < 0.05$

The full model was not strong, Nagelkerke $R^2 = .03$, $\chi^2 (8) = 14.62$, $p = 0.067$, 64% of cases correctly classified. The model was not an improvement over the null model (63% of cases correctly classified), so subsequent analyses removed predictors from the model based on statistical evidence.

Bivariate correlations between predictor variables and the outcome variable were analyzed to identify predictor variables that had statistical support for inclusion in the logistic regression model. Two predictor variables were so identified: perceptions of student nuisance, $r_{pb} = -0.121$, $p = 0.029$, and perceptions of student complaints, $r_{pb} = -0.115$, $p = 0.041$. This model correctly placed 65% of the observed cases into the predicted clusters, which was not appreciably better than the null model (63% correct placement). Furthermore, this model only explained 3.2% of the variance in the outcome based on a Nagelkerke R^2 value and was observed to have a poorer fit than the six-predictor model based on a Hosmer and Lemeshow goodness-of-fit test $\chi^2 (8) = 13.21$, $p = 0.105$.

Based on the results of the logistic regression analyses, it was decided that multivariate analysis was unsuitable to address the research questions, and an exploratory approach was adopted. For research question #1, independent t -tests were performed to determine if mean differences existed between the high likelihood of grade inflation and low likelihood of grade inflation outcome groups for each of the predictor variables. The distributions of each predictor variable were examined visually and determined to approximate normality. The standard deviations of each of these predictor variables were also evaluated for consistency to evaluate homogeneity of variance and the data were deemed to meet the assumptions of parametric tests reasonably well. The use of multiple

t -tests potentially inflates type I error rate, but this limitation of the study was deemed acceptable for the exploratory approach intended by this analysis. Table 8 summarizes the results of these t -tests.

Table 8

Mean Differences Among High and Low Grade Inflation Groups on Predictor Variables

Predictor variable	t	df	p	d	M_D	95% CI	
						Lower	Upper
SETs	0.050	225	0.960	0.007	0.004	-0.135	0.142
Job security	0.959	232	0.339	0.117	0.068	-0.072	0.207
Student complaints	2.123	272	0.035	0.227	0.158	0.012	0.305
Experience with grading practices	0.401	239	0.689	0.048	0.085	-0.333	0.503
Student nuisance	2.197	250	0.029	0.249	0.147	0.015	0.279
Instructors' empathy with students	0.403	230	0.687	0.049	0.033	-0.195	0.129

Perceptions of student complaints were significantly higher for instructors in the low likelihood group ($M = 2.2$, $SD = 0.7$) than instructors in the high likelihood group ($M = 2.0$, $SD = 0.6$), $t(272) = 2.123$, $p = 0.035$, $d = 0.227$. Perceptions of student nuisance were significantly higher for instructors in the low likelihood group ($M = 2.3$, $SD = 0.6$) than instructors in the high likelihood group ($M = 2.1$, $SD = 0.6$), $t(250) = 2.197$, $p = 0.029$, $d = 0.249$. No significant difference was found between the high and low likelihood of grade inflation groups for the following predictors: perceptions of SETs,

perceptions of job security, experience with grading practices, and instructors' empathy with students.

Effect of Faculty Status on Factors that Influence Grade Inflation

For research question #2, predictor variables were analyzed using two-way analysis of variance (ANOVA). To assess the possibility that these factors influence the likelihood of grade inflation differently for adjunct and full-time instructors, the interaction effects of faculty status and likelihood of grade inflation were examined for significance. Descriptive statistics for the faculty status by likelihood of grade inflation groups for each predictor variable are presented in Table 9.

Table 9

Descriptive Statistics for Faculty Status x Likelihood of Grade Inflation Groups

Predictor/Group	Full-Time			Adjunct		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
SETs						
High	82	2.60	0.64	36	2.78	0.58
Low	151	2.61	0.58	53	2.85	0.51
Job security						
High	84	3.29	0.65	36	2.99	0.59
Low	153	3.33	0.55	53	3.06	0.62
Student complaints						
High	81	2.04	0.64	36	1.89	0.49
Low	148	2.21	0.70	52	2.03	0.66
Experience						
High	84	4.92	1.81	36	3.36	1.67
Low	153	4.85	1.64	53	3.67	1.87
Student nuisance						
High	82	2.10	0.56	36	2.15	0.63
Low	151	2.27	0.58	53	2.26	0.62
Empathy						
High	81	2.23	0.73	36	2.42	0.73
Low	149	2.20	0.69	51	2.41	0.61

Measures of most predictor variables were notably similar between instructors in the high and low likelihood of grade inflation groups for both full-time and adjunct instructors. However, perceptions of student nuisance and perceptions of student complaints showed higher mean values for instructors in the lower likelihood group within each faculty status group.

A two-way ANOVA with the independent variables of faculty status and likelihood of grade inflation was performed for each factor proposed to influence the likelihood of grade inflation. Significant interaction effects between faculty status and likelihood of grade inflation were found for experience with grading practices, perceptions of job security, perceptions of SETs, and perceptions of student complaints. These results provide evidence that these factors influence the likelihood of grade inflation differently for adjunct instructors than full-time instructors. Significant interaction effects between faculty status and likelihood of grade inflation were not found for empathy with students or student nuisance. Results of the analyses of variances are presented in Table 10.

Table 10

Interaction Effect between Faculty Status and Likelihood of Grade Inflation on Predictor Variables

Predictor variable	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	$\hat{\eta}^2$
Perceptions of SETs	3.030	3	1.010	2.965	0.032	0.027
Perceptions of job security	5.610	3	1.870	5.342	0.001	0.047
Perceptions of student complaints	3.902	3	1.301	2.974	0.032	0.028
Experience with grading practices	117.086	3	39.029	13.098	<0.001	0.109
Perceptions of student nuisance	1.756	3	0.585	0.139	0.165	0.016
Instructors' empathy with students	2.602	3	0.867	1.815	0.144	0.017

Summary

Chapter four has described the results of this study. Participants included 241 full-time instructors and 95 adjunct instructors from seven publicly-funded community colleges in the United States for a total of 336 respondents to the survey. Cluster analysis was used to identify two groups of instructors based on likelihood of grade inflation. Multivariate and univariate analyses were employed to assess the influence of factors proposed to affect likelihood of grade inflation. Logistic regression analysis was used to test a number of models that predicted group membership based on combinations of six predictor variables. However, based on the results of these tests, it was decided that multivariate analysis was unsuitable to address the research questions, and an exploratory approach was adopted. Independent *t*-tests were performed to determine if significant differences existed between the high likelihood of grade inflation and low likelihood of grade inflation outcome groups for six factors that potentially influence grade inflation: perceptions of SETs, perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students. Perceptions of student complaints and perceptions of student nuisance were found to differ significantly by likelihood of grade inflation.

The effect of faculty status on the influence of the factors that potentially affect grade inflation was assessed by analysis of variance. Two-way ANOVA tests with the independent variables of faculty status and likelihood of grade inflation were performed for all predictor variables. The interaction effect of faculty status and likelihood of grade inflation was found to be significant for experience with grading practices, perceptions of job security, perceptions of SETs, and perceptions of student complaints. These results

provide evidence that these factors influence grade inflation differently for adjunct instructors and full-time instructors. The interaction effect of faculty status and likelihood of grade inflation was not found to be significant empathy with students or student nuisance. These results provide no evidence that these factors influence grade inflation differently for adjunct instructors and full-time instructors.

CHAPTER FIVE: DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS

The purpose of this study was to estimate the potential influence of a number of factors on the likelihood of grade inflation by instructors at community colleges. The factors that potentially influence the likelihood of grade inflation by community college instructors include perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and instructors' empathy with students. Data analysis methods for this study were revised due to the observation that the collected data did not meet the expectations necessary for the originally intended methods. Revised research questions and a new model were developed to reflect the analysis that was actually conducted. This study addressed the following research questions:

- 1) What is the influence of instructors' perceptions of student evaluations of teaching, perceptions of their own job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, and empathy with students on the likelihood of grade inflation?
- 2) Are the influences on the likelihood of grade inflation different for adjunct faculty members than full time faculty members?

The revised model that summarizes the proposed mechanism by which the predictor variables influence the likelihood of grade inflation is shown in Figure 4.

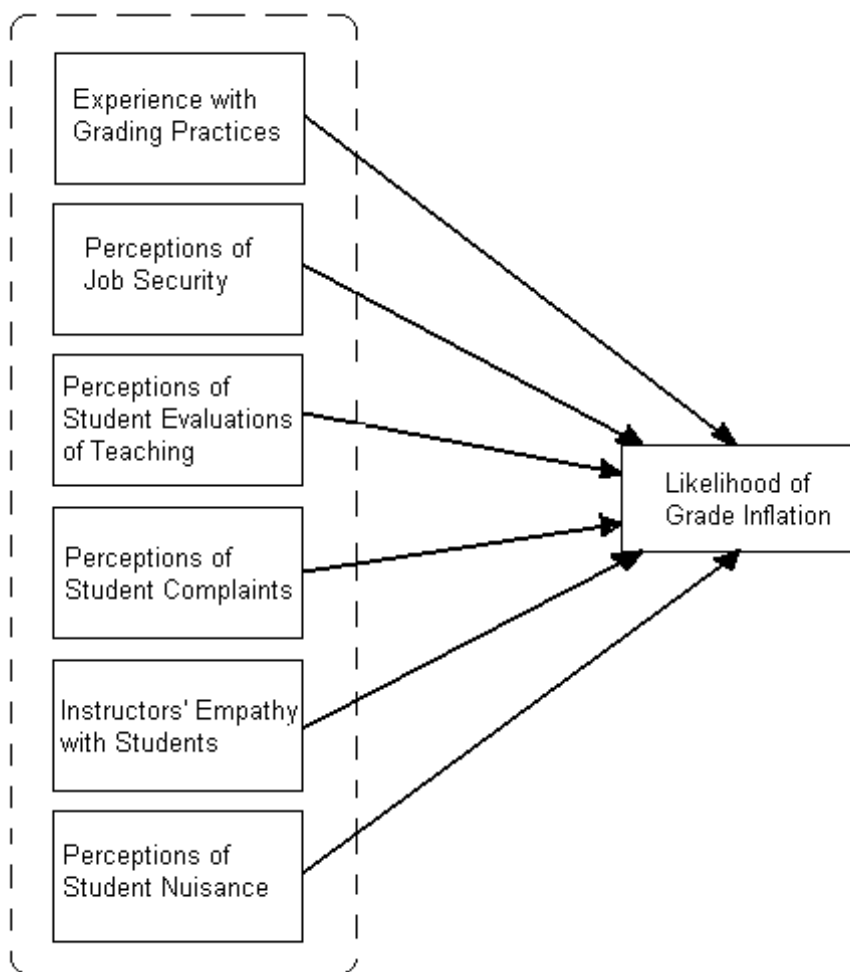


Figure 4. Revised model for the mechanism by which factors influence likelihood of grade inflation

This chapter will discuss the results of this study as they pertain to the research questions. This discussion will include the relationship of findings to previous research and theory. The limitations of the study will be described along with suggestions for improving methodology for future research on the topic of factors that influence grade inflation at community colleges. Finally, implications of the research will be described including ways that the results of the study can inform practice and directions of future research.

Discussion of Results

The approach to this study shifted from explanatory to exploratory based on the analysis of data collected. The explanatory approach that had been planned was deemed unsuitable because the data did not meet the expectations of structural equation modeling. Specifically, many of the scaled predictor variables that were ultimately established were based on fewer than anticipated survey items due to the fact that a restricted set of survey items was necessary to achieve acceptable reliability of measurement of a single construct. Furthermore, even for the restricted set of survey items, in many cases, the measure of reliability (Cronbach's α) fell into the low end of the acceptable range for construction of a new scaled variable. Ultimately, excessive measurement error in the constructs precluded use of structural equation modeling. Therefore, the results of this study will be discussed in the context of exploring factors that may be related to grade inflation rather than measuring the relationships between constructs in the original structural model.

Influence of Factors on Likelihood of Grade Inflation

Perceptions of student evaluations of teaching (SETs). Perceptions of SETs did not differ significantly between instructors in the high and low likelihood of grade inflation groups. This result is surprising given the evidence from multiple studies that ratings on SETs are correlated with grades (Babcock, 2010; Eiszler, 2002; Greenwald & Gillmore, 1997; Langbein, 2008; Marsh & Roche, 2000; Stumpf & Freedman, 1979; Yunker & Yunker, 2003), and that projected grades were a component of the likelihood of grade inflation variable in this study. Evidence that instructors perceive grade inflation as a potential mechanism for manipulating SETs (Crumbley & Reichelt, 2009)

would also suggest that instructors who perceive that SETs affect their employment situation might be motivated to adopt a transactional approach to grading (Oleinik, 2009) that is consistent with social exchange theory (Cropanzano & Mitchell, 2005). Such transactions would increase the likelihood of grade inflation, but evidence of this association is lacking in the current study.

One possible explanation of the result of no significant difference in perceptions of SETs between instructors in the high and low likelihood groups is that the effects of SETs on instructors' careers may be complex. The survey contained 15 items related to perceptions of SETs, and exploratory factor analysis revealed that these survey items related to multiple conceptual groupings. Ultimately, the two survey items that related to perceptions of SETs in the context of employment were used to measure this variable. However, in practice, SETs are used for personnel decisions in addition to judgments about employment including decisions about compensation, promotion, and tenure (Abrami et al., 1990; Langbein, 2008). In the current study, 64% of instructors indicated that receiving favorable ratings on SETs was important for their careers. Even though perceptions of SETs in the context of employment did not differ significantly between outcome groups, perceptions of SETs in other contexts such as students' motivations for the ratings they provide on SETs may relate to likelihood of grade inflation.

Despite the result of no significant difference in perceptions of SETs between instructors in the high and low likelihood groups, responses to individual survey items indicate that SETs may influence grading. A majority of instructors in this study (58%) indicated agreement or strong agreement with the statement "Students who receive higher grades in my class return more favorable evaluations." This result is consistent with

Crumbley and Reichelt's (2009) findings that instructors perceive the relationship between grades and ratings. A smaller percentage of respondents (44%) signified some level of belief that other instructors alter grading practices with the intention of favorably manipulating SETs. Finally, 4% of respondents indicated that they had altered grading practices with the purpose of receiving more favorable SETs. Despite the small percentage of instructors responding that they had engaged in a grades-for-ratings transaction, this result is direct evidence of the influence of SETs on grading practices in some situations. The discrepancy between the responses to survey items asking instructors about their own grading practices versus the grading practices of others may indicate that the practice of altering grades to manipulate SETs was underestimated by this study if some responses were given in a socially desirable manner.

Perceptions of job security. Perceptions of job security did not differ significantly between instructors in the high and low likelihood of grade inflation groups. This result is surprising since previous studies have found evidence that instructors with less secure employment awarded higher grades (Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000). However, these studies used faculty status as an indicator of secure employment and did not explicitly measure the instructors' perceptions of their own job security. Therefore, any relationship between job security and grade inflation is not empirically established at this time.

Based on the findings of Kezim et al. (2005), Moore and Trahan (1998), and Sonner (2000), it was proposed that instructors with perceptions of less job security would be more susceptible to influences leading to grade inflation, but the results of this study do not support that proposal. The prediction that job security influences grade

inflation is related to instructors' perceptions of SETs as used for personnel decisions and their perceptions of student complaints to supervisors. Given that connections between perceptions of SETs and grade inflation were not detected in this study, it may not be surprising that perceptions of job security were similarly not significantly related to likelihood of grade inflation. Nonetheless, a majority of instructors (64%) indicated that favorable SETs were important for success in their careers. This result could reflect the fact that SETs are used for personnel decisions about promotion and recognition (Abrami et al., 1990; Crumbley & Reichelt, 2009), not just decisions to employ. Therefore the effect of SETs on career success may not be fully captured in a measurement of job security.

Perceptions of student complaints. Moore and Trahan (1998) suggested that student complaints could motivate grade inflation, but such a relationship has not previously been the subject of an empirical study. Despite the fact that a significant difference between groups was found for perceptions of student complaints in this study, these results were still unexpected as the instructors in the low likelihood group indicated higher average agreement with perception of student complaints. This study proposed that student complaints to instructors' supervisors would motivate grade inflation as a way of mitigating any threat to employment resulting from student dissatisfaction. As discussed above, perceptions of job security were not significantly different for instructors in the high and low likelihood groups, so the result that perceptions of student complaints were not related to likelihood of grade inflation in the predicted manner may not be surprising. Also, the survey items relating to student complaints were about instructor knowledge of complaints. Therefore, the results may reflect a mechanism by

which stringent instructors motivate more complaints rather than the proposed mechanism by which more complaints motivate lenient grading.

Experience with grading practices. Moore and Trahan (1998) suggested that instructors who had less experience with grading practices may compensate for a lack of confidence in their ability to assess student performance by awarding higher grades. However, in the current study, experience with grading practices did not differ significantly between instructors in the high and low likelihood of grade inflation groups. Moore and Trahan (1998) did not directly test the relationship between experience and either confidence or grades, but found that lower-ranking, presumably less experienced faculty members awarded higher grades. Their suggestion of an association between experience and grade inflation is consistent with other studies that have found that many community college instructors learn to assess students' academic achievement primarily through personal experience (BoarerPitchford, 2010; Lei, 2008), which implies that less experienced faculty would have less knowledge of grading practices. However, any link between lack of knowledge and lack of confidence associated with grading has not been empirically established.

The problem of grade inflation is ultimately based on a threat to the validity of grades as measures of student performance. Therefore, the process by which instructors learn to assign grades is relevant to the utility of grades as communication tools. Results of the current study regarding how instructors learn to grade are consistent with the findings of BoarerPitchford (2010) and Lei (2008). Instructors were asked to indicate the strength of influence for each of the following sources of information about the way they assign grades: formal education as an instructor, personal experience as a student,

personal experience as an instructor, information from colleagues, and professional development provided by the college. Instructors indicated that personal experience as an instructor was the strongest influence on their grading practices, and a majority (54%) of the instructors indicated that professional development provided by their institutions had little or no effect on their approaches to assigning grades. In the absence of significant formal sources of information about how to assign grades, instructors must learn this function of education while performing it. However, even if less experienced instructors have less information about how to assign grades, Moore and Trahan's (1998) suggestion of a relationship between experience with grading practices and likelihood of grade inflation would only result if less knowledgeable instructors compensated by inflating grades.

An alternative explanation is that instructors' grading practices become more lenient over time. In a longitudinal study of grading practices, Longstreth and Jones (1976) found that instructors at one university awarded higher grades later in their careers. While their conclusion was that the adoption of SETs as an instructor evaluation tool during the course of the study was a potential causative influence on the more lenient grading at the later time, no such influence is likely for the current study since SETs have been common practice in institutions of higher education for more than four decades. Longstreth and Jones (1976) offered other potential explanations related to specific historical events that occurred during their longitudinal study. These events include faculty response to the conflict in Vietnam and the tragic events at Kent State University in 1970, but these influences would also not apply to the results of the present study. Still, if the trend detected by Longstreth and Jones (1976) is related to factors other than

the implementation of SETs and specific historical events, the relationship between experience and likelihood of grade inflation may be complex, with increasing knowledge of grading practices offset by a tendency toward more lenient grading over time.

A complex relationship between experience with grading practices and likelihood of grade inflation may reflect the fact that institutions of higher education lack a consistent concept of grading practices. Sadler (2005) observed that grading practices varied greatly across institutions and that colleges generally do not provide guidance to instructors regarding how grading standards should be established. Similarly, in their study of student perceptions of grading fairness, Gordon and Fay (2010) found that a combination of meritocratic and particularistic grading practices was common at a large state university. Lack of consistency in the concept of grades and the procedure by which they should be determined results in grading practices that rely on the professional judgments of individual instructors (Sadler, 2005) and may create situations where grading practices are particularly sensitive to personal experiences of those individual instructors. While academic autonomy may be desirable, such variability in grading practices creates intractability in determining what information is communicated by grades.

Perceptions of student nuisance. Perceptions of student nuisance differed significantly between instructors in the high and low likelihood of grade inflation groups. Inclusion of student nuisance in this study as a potential influence on grade inflation was based on the suggestion by Iris Franz (2010) that nuisance was a strategy employed by students to motivate instructors to inflate grades. In that study, instructors reported a perceived cost in terms of time and energy due to this student behavior. Furthermore,

that study found that lenient instructors experienced more student nuisance than stringent instructors, which is consistent with the proposed mechanism of nuisance motivating grade inflation.

However, the current study found that instructors in the low likelihood of grade inflation group perceived more student nuisance than instructors in the high likelihood group. This result is in contrast to the findings of Iris Franz (2010) but may be due to a difference in the measurement of student nuisance based on incidence versus perception. The Iris Franz (2010) study reported that lenient instructors experienced a higher incidence of student nuisance, but the results of the current study indicate that stringent instructors perceive more cost to the behavior. If stringent instructors refuse to capitulate, the students' strategy is perceived by those instructors but ineffective. Furthermore, lenient instructors who relent to student nuisance may experience lower costs simply because they limit the behavior by placating the student.

Instructors' empathy with students. Inclusion of instructors' empathy with students in this study as a potential influence on grade inflation was based on anecdotal evidence that suggested that such empathy may motivate grade inflation (Johnson, 2003; Kezim et al., 2005; Longstreth & Jones, 1976; Perrin, 1998; Singleton, 1978). Some of this anecdotal evidence is related to historical events such as the Vietnam conflict and the tragic events at Kent State University in 1970 (Kezim et al., 2005; Longstreth & Jones, 1976), which may have little influence on the current phenomenon of grade inflation. However, Johnson (2003) and Perrin (1998) indicated that grade inflation may also result from faculty members' desires to help their students gain an advantage in the job market or in admissions to graduate programs.

In the current study, empathy was measured in the context of considering individual students' personal challenges when assigning grades. This conceptualization of empathy is consistent with a particularistic approach to grading since it focuses on an individual student's particular situation rather than on the student's academic achievement (Gordon & Fay, 2010). Since orientation to particularistic grading was a component of the likelihood of grade inflation variable, the result of no difference in empathy between the high and low likelihood groups is surprising. Given that empathy in the current study was measured using a single Likert-type survey item, it is possible that measurement error precluded detection of any effect of empathy on likelihood of grade inflation. Another possible interpretation is that orientation to particularistic grading encompasses aspects of focus on individual students other than awareness of personal challenges and the aspects of particularistic grading used to define likelihood of grade inflation are unrelated to the aspects used to measure empathy.

Effect of Faculty Status on Factors that Potentially Influence Grade Inflation

Previous studies have found differences in the grades assigned by full-time and adjunct instructors (Cheng & Chen, 1998; Fedler et al., 1989; Iris Franz, 2010; Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000). In all of these studies except for Iris Franz (2010), adjunct instructors assigned higher grades than full-time instructors. Iris Franz (2010) found grades awarded by adjunct instructors to be lower than those awarded by full time instructors, but that study was restricted to a single academic department in a single university and may not be fully representative of the influence of employment status on the likelihood of grade inflation. The observed difference in grades awarded by adjunct and full-time faculty led Sonner (2000) to predict that grade inflation will

increase as colleges and universities hire an ever greater percentage of faculties as adjunct instructors.

One reason that faculty status might influence grade inflation is that adjunct faculty experience more tenuous employment than full-time instructors and may therefore experience more pressure to inflate grades either to boost ratings on SETs or to reduce student complaints (Kezim et al., 2005; Moore & Trahan, 1998; Sonner, 2000). Less experience with grading practices has also been proposed as a difference between adjunct and full-time faculty that might result in adjuncts awarding higher grades (Moore & Trahan, 1998). However, these proposed causal mechanisms were not explicitly tested in these studies. The current study addressed those mechanisms and found a significant effect of faculty status on the likelihood of grade inflation for experience with grading practices, perceptions of job security, perceptions of SETs, and perceptions of student complaints. These results support the suggestions by Kezim et al. (2005), Moore and Trahan (1998), and Sonner (2000) that adjunct instructors with more tenuous employment and less experience may have a different propensity to inflate grades than their full-time counterparts. The current study found no significant effect of faculty status on the likelihood of grade inflation for the factors of empathy with students and student nuisance.

The relationship between experience with grading practices and likelihood of grade inflation depended on faculty status. Instructors with the most experience with grading practice were full-time instructors in the high likelihood group, and instructors with the least experience were adjunct instructors in the high likelihood group. The low likelihood group consisted of both full-time and adjunct instructors with intermediate

amounts of experience. One possible interpretation of this result is a non-linear relationship between experience and grading practices as suggested above. If confidence is related to grading practices as suggested by Moore and Trahan (1998), then instructors may become more stringent graders as they gain experience, but then become less stringent over the latter part of their careers as suggested by Longstreth and Jones (1976).

The relationship between perceptions of job security and likelihood of grade inflation depended on faculty status. Instructors with the lowest perceptions of job security were adjunct instructors in the high likelihood group, and instructors with the highest perceptions of job security were full-time instructors in the low likelihood group. Even though univariate statistics revealed no significant difference in perceptions of job security between the high and low likelihood groups, one interpretation of the significant interaction effect is that job security may have influenced likelihood of grade inflation for those instructors with the most tenuous employment situation. This interpretation is consistent with findings of Kezim et al. (2005), Moore and Trahan (1998), and Sonner (2000).

The relationship between perceptions of SETs and likelihood of grade inflation depended on faculty status. Instructors with the lowest perceptions of SETs were full-time instructors in the high likelihood group, and instructors with the highest perceptions of SETs were adjunct instructors in the low likelihood group. This result that the instructors with the highest perceptions of SETs were those with presumably the most tenuous employment situations and in the low likelihood group is surprising given evidence that grades correlate with ratings on SETs (Babcock, 2010; Eiszler, 2002; Greenwald & Gillmore, 1997; Langbein, 2008; Marsh & Roche, 2000; Stumpf &

Freedman, 1979; Yunker & Yunker, 2003), and evidence that instructors perceive grade inflation as a potential mechanism for manipulating SETs (Crumbley & Reichelt, 2009). One potential explanation is that the current study did not adequately capture any existing relationship between perceptions of SETs, perceptions of job security, and likelihood of grade inflation. An alternative explanation is that stringent graders in tenuous employment situations may have been most aware of any influence from SETs but chose rigorous grading despite any pressure to do otherwise. Future research to further elucidate the differential influence of perceptions of SETs on likelihood of grade inflation for full-time versus adjunct instructors is suggested later in this chapter.

Perceptions of student complaints was the only predictor variable found to be significantly different between likelihood groups and to have a significant interaction effect of likelihood and faculty status. The group with the highest perceptions of student complaints consisted of full-time instructors in the low likelihood group, and the group with the lowest perceptions of student complaints consisted of adjunct instructors in the high likelihood group. One possible interpretation of this result is that stringent instructors motivate more complaints. By that mechanism, adjunct instructors may be curtailing student complaints by inflating grades while full-time instructors who have fewer concerns about student complaints grade more stringently, consequently motivating more students to complain. One reason that adjunct instructors may be particularly susceptible to the influence of student complaints is that they may have less familiarity with their supervisors and may be less confident that they will receive support from those individuals in the event that students complain.

Limitations

The purpose of this study was to investigate multiple potential causes of grade inflation simultaneously in a way that no other study has done to date. Consequently, many of the constructs of the proposed causal model had not been previously measured in the context of influences on grade inflation. Therefore, the survey required considerable development with many items adapted from previous studies or developed without antecedent. None of the previous studies from which adapted items were drawn provided evidence of reliability or validity for the surveys employed (the exception being Gerdes's et al., 2011, study on empathy from which items were drawn for the original version of the survey but not included in the final survey). Furthermore, the constructs of empathy with students and perceptions of student complaints had not previously been the subject of empirical work and were measured by items developed specifically for this study. Other items developed without antecedent potentially measured the relationships between constructs more than the constructs themselves. Finally, given the negative connotation often associated with the concept of grade inflation in academia, the possibility of social desirability in responses created difficulties in measuring the constructs.

Evidence from the pilot test of the survey indicated that responses clustered into constructs of the model well enough to collect the necessary data to test the hypotheses of the study, but the final data set contained more measurement error. It is possible that the setting for the pilot test (a North Carolina community college) was not fully representative of the sampling frame and therefore provided limited ability for identification of problems with the instrument as interpreted by individuals working in other state systems. One possible aspect of this potential nonrepresentativeness is the fact

that North Carolina community colleges lack a system of tenure whereas tenure is a component of the Texas and California community college systems, and this difference may have affected measurement of perceptions of job security.

The approach to this study shifted from explanatory to exploratory based on the analysis of data collected. The explanatory approach that had been planned was deemed unsuitable because the data did not meet the expectations required for structural equation modeling (SEM). Specifically, many items did not fit together in scales as expected. Furthermore, even for the restricted set of survey items, in many cases, the internal consistency (Cronbach's α) fell into the low end of the acceptable range. One variable, instructors' empathy with students was measured using a single Likert-type survey item and, consequently, estimation of internal consistency of this variable was not possible. Ultimately, measurement error in the constructs precluded confirmatory factor analysis (i.e., the measurement model in SEM). Furthermore, exploratory correlations among scales ruled out path analysis (i.e., the structural model in SEM). Therefore, a revised model and set of research questions were developed, and univariate data analyses were employed.

Rather than testing the strength of relationships between factors that were proposed to influence the likelihood of grade inflation, independent *t*-tests were used to identify factors on which instructors in the high and low likelihood groups may differ. Performance of multiple *t*-tests on two groups results in an inflated effective type I error rate, but in this case, such inflation was deemed acceptable for the exploratory function for which these analyses were used. Furthermore, the use of ANOVAs to test for the influence of faculty status on likelihood of grade inflation identified four factors which

affect adjunct faculty members differently than full-time faculty members. However, this technique did not allow for comparisons of the strengths of these influences on the likelihood of grade inflation by adjunct versus full-time instructors.

The results of this study are based on responses from 336 instructors at seven community colleges. It is possible that these instructors are not fully representative of the entire population of interest which includes an estimated 360,000 faculty members at 993 institutions (NCES, n.d.). Also, the distribution of the survey to one of the colleges was not synchronous with the distribution to the other colleges. Specifically, instructors at the large California college received the survey approximately three weeks later than the instructors at the other colleges. The later timing may have influenced responses since it was closer to the time of final grade assignment for these instructors. Furthermore, the sample included many more instructors at large colleges (82%) than small colleges (18%). If the factors that potentially influence grade inflation have different effects at colleges of different sizes, then the results of this study may be biased toward influences on grade inflation at large colleges. Finally, the estimated response rate for this study was relatively low (13%). It is possible that instructors who responded to the survey were not fully representative of the sampling frame.

Due to the nature of the survey, instructors with an interest in grade inflation or with a disposition toward meritocratic grading may have responded in disproportionate numbers such that the most lenient or particularistic graders were under-represented. Evidence of this potential non-representativeness includes the observation that respondents reported an anticipated GPA of 2.70, which is well below the national average of 2.94 as of 2008 (NCES, n.d.) and the observation that the high likelihood of

grade inflation group included 121 instructors compared to 206 instructors in the low likelihood group. Further evidence of such non-representativeness is the relatively low scores on Likert-type survey items relating to particularistic nature of grading. Another possibility is that some instructors responded in a socially desirable manner given that the concept of grade inflation normally carries a negative connotation.

Due to constraints on the way that the survey was distributed, targeted communication to nonrespondents in the sample frame was not possible. During the recruitment process, some of the chief academic officers at the selected schools expressed concern over providing faculty contact information for the purpose of survey distribution. To meet that concern, a distribution mechanism that allowed college officials to distribute the survey directly to faculty was offered, but this mechanism precluded targeted communication to nonrespondents, a recommended method for increasing response rates (Creswell, 2008). Future studies should seek a recruitment procedure that provides the researcher with the opportunity to communicate directly with potential participants.

This study attempted to measure likelihood of grade inflation rather than to measure grade inflation directly. Since grade inflation is defined as a mismatch between academic grades and academic achievement (Zirkel, 1999), direct measurement of grade inflation would require a mechanism for obtaining actual rather than anticipated grades and an independent mechanism for measuring academic achievement. Access to students' academic grades is limited by confidentiality requirements, and measures of students' academic achievement independent of grades are diverse and not widely available at this time. Current efforts to increase measurement of student learning outcomes may result in greater access to such data in the future. Nonetheless, this study

is limited to instructors' perspectives on grading rather than direct measures of grade inflation.

Implications

Implications for Future Research

Grade inflation has received a lot of attention in both the mainstream media and the academic literature, but little empirical research about the causes of grade inflation has been conducted (Anglin & Meng, 2000; Oleinik, 2009). This study attempted to measure a number of proposed influences on grade inflation that had previously been subjected to little or no empirical investigation. Specifically, the influence of student nuisance was based on a single empirical study, and the influences of student complaints and instructor empathy were based on anecdotal evidence. Two of these influences (student nuisance and student complaints) were identified by this study as differing between instructors categorized as more or less likely to inflate grades. Future research should empirically determine the potential for these factors to influence grade inflation and the contexts within which the influence is strongest. For example, class size potentially affects the strength of influence of student nuisance on the likelihood of grade inflation if more students engage in the behavior such that the cost to the instructor increases disproportionately.

Furthermore, grade inflation is likely the result of multiple proximate causes (Oleinik, 2009). As a complex phenomenon, grade inflation may be influenced by the interaction of these causes in a way that study of isolated causes may not detect. This study attempted to investigate multiple potential causes simultaneously in a way that would allow indirect effects and the strengths of the different relationships to be assessed.

Future studies should not only attempt to identify factors that influence grade inflation but the relative significance of those factors. Additionally, this study found that faculty status affected the influence of experience, job security, perceptions of SETs, and perceptions of student complaints on likelihood to inflate grades. However, the mechanisms by which these factors influence the likelihood of grade inflation by adjunct faculty differently than by full-time faculty were not elucidated. Future studies should investigate the strength of influence of each of these factors on the likelihood of grade inflation by adjunct instructors compared to their full-time counterparts.

The originally proposed relationship between perception of SETs and the likelihood of grade inflation was suggested to be mediated by perceptions of job security (Kezim et al., 2005). It is generally accepted that SETs are an important mechanism used by administrators to evaluate faculty (Abrami et al., 1990; Crumbley & Reichelt, 2009; Langbein, 2008). However, the degree to which job security is linked to SETs has yet to be established. If, for example, adjunct instructors with the most tenuous employment arrangement amongst faculty members are motivated to inflate grades to receive more favorable SETs as suggested by Eiszler (2002) and Kezim et al. (2005), a relationship between ratings on SETs and the frequency with which subsequent teaching contracts are offered would be predicted. Empirical evidence of such a relationship would support the suggestion that perceptions of job security mediate the relationship between perceptions of SETs and likelihood of grade inflation. Furthermore, the use of SETs in personnel decisions extends beyond decisions to employ and includes judgments about promotion and recognition (Abrami et al., 1990; Crumbley & Reichelt, 2009). Such use is also likely to vary greatly across institutions. It is possible that the influence of SETs on

instructors' careers is more complex than a direct effect on perceptions of job security. In the current study, exploratory factor analysis revealed multiple conceptual groupings of survey responses related to perceptions of SETs. These groupings included perceptions of SETs in the contexts of employment, students' motivations for the ratings they provide on SETs, and the value of information provided by SETs. Even though perceptions of SETs in the context of employment did not differ significantly between outcome groups, perceptions of SETs in other contexts such as students' motivations for the ratings they provide on SETs may relate to likelihood of grade inflation. Further work is needed to determine what effects SETs have on instructors' careers and the perceptions of instructors regarding those effects.

Implications for Practice

Ultimately, grades are a symbol intended to represent some aspect of student performance, and grade inflation is a threat to the ability of grades to successfully serve this function because it represents a detachment of the symbol from the performance that it is intended to symbolize. To increase the utility of a representation of student achievement, instructors should explicitly connect measures to performances. If links between learning objectives, performance assessments, and representations of student achievement are established, the clarity of communication can be increased and grade inflation can be eliminated. Furthermore, the concept of grade inflation is inherently linked to decisions about the intended function of grades. Guskey (1996) asserted that grades serve five distinct functions: communication of achievement, feedback for improvement, grouping of students, motivation to students, and assessment of instructional activities (p. 18). Variation in grading practices such as those observed by

Sadler (2005) may be a reflection of confusion about the intended function of grades, and institutions can reduce such variation by specifying a purpose for grades and establishing a method for determining grades (Guskey, 1996).

Letter grades may be an ineffective means of representing student performance if they require too much abstraction for a complex set of information to be expressed as a single symbol (Guskey, 1996). Other systems of representing student performance include individualized narratives or comments chosen from a standardized list (Guskey, 1996). Narratives represent a lower level of abstraction from performance, but are time consuming and more subjective than standardized methods. Comments chosen from a standardized list are a compromise between a highly abstracted letter grades and detail-rich but cumbersome narratives (Guskey, 1996). While the majority of instructors in the current study indicated that letter grades are an effective means of communicating student performance, it is notable that 16% disagreed. It may be that acceptance of letter grades is based more on tradition than functionality. Alternative representations of student performance such as narratives or standardized comments should be considered.

Regardless of the system of representing student performance which is utilized, administrators should maximize its effectiveness by providing explicit guidance regarding the intended function (Guskey, 1996; Sadler, 2005). In the current study, a majority of instructors indicated that professional development on grading practices had very little or no influence on their approach to assigning grades. It is unclear if this lack of influence is due to limited professional development opportunities offered by the institutions or to decisions by faculty members not to assimilate such experiences into their methods for determining grades. If the former case applies, administrators should

facilitate creation by faculty of such professional development opportunities.

Administrators should also clearly communicate in these professional development opportunities the expectation that a variety of measures be used to assess student performance and that these measures be explicitly tied to achievement of specific learning objectives. If the latter case applies, faculty members should take advantage of the opportunity to participate in determining the appropriate functions of grades and more consistent methods for determining grades.

The two trends in higher education of increased reliance on adjunct instructors and increased grades have occurred over roughly the same time period (Jacoby, 2006; Kuh & Hu, 1999), and a causative link between the two has been suggested (Eiszler, 2002; Kezim et al., 2005; Sonner 2000). This study provides evidence of the relationship between faculty status and likelihood of grade inflation for the factors of experience with grading practices, perceptions of SETs, perceptions of job security, and perceptions of student complaints. These results support Sonner's (2000) prediction that grade inflation will increase as colleges and universities hire an ever greater percentage of faculties as adjunct instructors. Therefore, administrators should work to mitigate such influences on the likelihood of grade inflation for adjunct faculty. Specifically, administrators should clearly articulate to adjunct instructors expectations concerning academic rigor.

Additionally, administrators should exercise caution in interpreting feedback from students in the form of SETs and complaints. Specifically, administrators should be aware that communications with adjunct instructors about concerns from students may be interpreted by those instructors as an expectation that the students will receive satisfaction, possibly in the form of better grades. Finally, administrators should provide

more training to adjunct faculty members regarding the process of determining grades. This training should emphasize the intended functions of grades and an expectation that grades be based on performance measures that are explicitly tied to clearly stated student learning objectives.

Conclusion

Grade inflation is a potentially costly phenomenon in higher education. Many causes of grade inflation have been proposed, but few have been tested empirically (Anglin & Meng, 2000; Oleinik, 2009). This study investigated the potential influence of multiple factors on the likelihood of grade inflation at community colleges. These factors include perceptions of student evaluations of teaching (SETs), perceptions of job security, perceptions of student complaints, experience with grading practices, perceptions of student nuisance, instructors' empathy with students, and faculty status. Instructors categorized as having a low likelihood of inflating grades were found to perceive higher levels of both student nuisance and student complaints. These results were surprising given that both student nuisance and student complaints had been proposed as influences that would increase the likelihood of grade inflation.

Faculty status was found to affect the influence of experience with grading practices, perceptions of SETs, perceptions of job security, and perceptions of student complaints on the likelihood of grade inflation. These results indicate that the trends toward increased reliance on adjunct instructors and increased grades awarded over time may be causally linked. Future increases in the percentage of faculty employed on an adjunct basis may exacerbate the problem of grade inflation.

A number of avenues for future work have been identified for greater understanding of grade inflation. Specifically, the potential causes of grade inflation such as student complaints, student nuisance, and instructor empathy need more empirical investigation. Also, the complex interactions between potential causes should be investigated in a way that allows interactions and relative strengths of influences to be determined. Finally, future studies should investigate the degree to which experience with grading practices, perceptions of job security, perceptions of SETs, and perceptions of student complaints might increase or decrease the likelihood that adjunct instructors will inflate grades compared to their full-time counterparts.

To mitigate the costs of grade inflation, institutions of higher education should more explicitly establish a consistent purpose for grading. Furthermore, meritocratic grading which explicitly connects student performance to academic achievement should be encouraged. Administrators should provide more opportunities for faculty members to learn about this function of their roles as educators. Finally, faculty members should participate in the process of creating a more effective system for communicating student performance by creating links to student learning outcomes.

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APPENDIX A: SURVEY INSTRUMENT

Community College Instructors' Grading Decisions Survey

Default Question Block

The following survey is part of a study of the factors that may influence grading decisions at community colleges. You are being asked to participate in this study because you have been identified as a full-time or adjunct curriculum instructor who is teaching at least one class at your institution in the fall 2012 semester. If you feel that you have received this email in error, please email me at stheulett1@catamount.wcu.edu.

Your participation in the study is voluntary and will consist of completion of this survey. The survey should require about 10 to 15 minutes for you to complete. Participants will be given the opportunity to enter a drawing for a \$200 gift card. If you do not wish to complete the survey, you may stop at any time. The survey is confidential, and your individual responses will not be disclosed to your college. Participation in this study is not associated with any foreseeable risks. A potential benefit of this study is an increased ability for informed decision making about grading practices. The results of the study will be sent to you upon your request. To request the results of the survey, please contact Steven Heulett at Western Carolina University (phone: 828-593-8773; email: stheulett1@catamount.wcu.edu).

If you have questions about this study, you may contact Steven Heulett at Western Carolina University (phone: 828-593-8773; email: stheulett1@catamount.wcu.edu) or my faculty advisor, Dr. Meagan Karvonen at Western Carolina University (karvonen@email.wcu.edu). If you have questions or concerns about your rights as a participant in this study, you may contact WCU's Institutional Review Board (phone: 828-227-7212; email: irb@wcu.edu). If you consent to participate in this study, please continue with the survey by answering "yes" to the question below. Your responses are much appreciated and will be most useful for the purposes of this study if submitted by November 19th.

Are you willing to participate in this study?

Yes

No

Which of these terms best describes your current faculty status at this institution?

The term "Part-time Instructor" refers to individuals who are compensated on a per course basis.

The term "Full-time Instructor" refers to individuals who are paid a fixed salary

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rather than compensated on a per course basis.

- Part-time Instructor
- Full-time Instructor

Have you ever worked as a part-time instructor?

- Yes
- No

Is teaching currently your primary job responsibility (>50%) at your institution?

- Yes
- No

Considering both full-time and part-time work, indicate the total number of semesters including this semester that you have worked as a community college instructor.

**Which of the following best describes the program(s) in which you primarily teach?
(Check all that apply)**

- Career & Technical/Vocational
- College Transfer
- Developmental

Indicate your highest degree completed.

- Doctorate
- Masters
- Graduate Certificate
- Bachelors
- Associates
- High School Diploma

Do you hold tenure at your institution?

- Yes
- No

Block 1

To what extent do each of the following influence the way you assign grades?

	No Influence	Very Little Influence	Moderate Influence	Strong Influence
Formal education as an instructor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal experience as an instructor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal experience as a student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information from colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development on grading practices provided by college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please consider a single course that you are teaching this semester. Please estimate the number of times you have taught this course prior to this semester.

To what extent do each of the following factor into final grades for this course?

	Not at all	Very little	Somewhat	A lot
Participation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tests, quizzes, and homework with objective questions where there is one correct answer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing assignments (including papers and essay questions on exams)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other kinds of assignments (including presentations, labs, group work, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Are grades in this course assigned solely on the basis of assignments listed in the syllabus or are there other factors that affect grades?

- Grades are based solely on assignments listed in the syllabus
- There are other factors

What percentage of students are expected to have the following outcomes in this class (numbers should add to 100)?

A grade	percent <input type="text" value="0"/>
B grade	percent <input type="text" value="0"/>
C grade	percent <input type="text" value="0"/>
D grade	percent <input type="text" value="0"/>
F grade	percent <input type="text" value="0"/>
Not Complete Class	percent <input type="text" value="0"/>
<hr/>	
Total	percent <input type="text" value="0"/>

Please indicate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I believe that a letter based grading system is an effective way to communicate student performance in a class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The grade that I assign to a student reflects what the student learned in the class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use the same procedures to determine grades for all students in a class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students who learn				

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the most in my class receive higher grades than students who do not learn as much.

Students who learn very little in my class may receive the same grade as students who learn a lot.

I consider a student's improvement in a course when assigning a final course grade to the student.

Block 2

Please indicate your level of agreement with the following.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I am satisfied with my current level of job security.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I expect to be offered the opportunity to teach at this institution in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 3

Please indicate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Student evaluations of teaching are used to evaluate my job performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving more favorable student				

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evaluations of teaching will increase my chances of being offered future opportunities to teach at this institution.

I would be concerned if students complained to my supervisor about their grades in my class.

Responding to students' requests for better grades is costly in terms of my time.

I am annoyed when students complain to me about their grades.

My students are more likely to write comments on their evaluations when they feel positively about me as an instructor.

Most of my students take the course evaluation process seriously.

Please indicate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Responding to students' requests for better grades is costly in terms of my energy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider personal				

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challenges that a student may have faced during the semester when assigning that student's final course grade.

My performance as an instructor should be evaluated by students.

I am annoyed when students complain to my supervisor about their grades.

Students who receive higher grades in my class return more favorable evaluations.

I am annoyed when students request better grades from me.

My students are more likely to write comments on their evaluations when they feel negatively about me as an instructor.

I make changes in my classes from semester to semester based on student comments noted in student evaluations of teaching.

Please indicate your level of agreement with each of the following statements.

Strongly

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	Disagree	Disagree	Agree	Strongly Agree
I believe that students have complained to my supervisor about their grades in my class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that some other instructors alter their grading practices in the hopes of receiving better student evaluations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that students have complained to my supervisor about the academic requirements of my class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that administering the student evaluations of teaching every semester is not productive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My students are more likely to write comments on their evaluations when they feel strongly about me as an instructor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have adjusted the academic requirements in one or more of my classes in order to get more favorable ratings on student evaluations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take the written comments in student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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evaluations seriously.

Student evaluations provide me with useful information.

I feel that it is important to my career for me to receive favorable ratings on student evaluations.



Block 4

If you wish to be entered into the drawing for the \$200 gift card, please provide your email address. Entering the drawing and providing your contact information are optional and will not affect the use of your responses in this study.

APPENDIX B: PANEL OF EXPERTS REVIEW FORM

Community College Instructors' Grading Decisions Survey

Thank you for helping me to develop this survey through your input as an expert on the issues of faculty grading decisions and faculty evaluation. This survey will be used to collect data for my dissertation research, and your input will help to insure that it will collect the type of information that I will need to test my hypotheses. Specifically, this research will attempt to determine how some factors may affect grading decisions at community colleges. The factors that will be investigated are: perceptions of job security, student evaluations of teaching, student complaints to supervisor, student nuisance, instructor empathy with students, and experience with grading practices. The research will also consider the possibility that these factors may influence grading decisions for adjunct instructors differently than full time instructors.

Please use this data sheet to record your thoughts about the degree to which this survey will function successfully. For each question, a space has been provided so that you can indicate if the question is not worded clearly, will not elicit the kind of information desired, or will not be interpreted by all respondents in the same way. A space is also provided for general comments. Please type your comments directly into the table and return the edited file to: stheulett1@catamount.wcu.edu. **You do not need to provide feedback for all questions, and you may choose to focus on questions that you perceive to need improvement.** Please note that this survey will be converted to an

online format, so feedback about the nature of the questions will be more useful than feedback about the current format.

Reviewer:	
Date:	

Survey Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
1.) Which of these terms best describes your current faculty status at this institution?				
1a.) If you indicated in question #1 above that you are a Full-Time Instructor, have you ever worked as a Part-Time Instructor?				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
2.) Indicate the total number of years that you have worked as a community college instructor.				
3.) Which of the following best describes the program in which you primarily teach? (Check all that apply)				
4.) Indicate your highest degree completed.				
5.) Do you currently hold tenure at your institution?				

- 6.) Please rank the following sources of information about grading practices from **most** influential to **least** influential on your current approach to assigning grades. The most influential source of information should receive a rank of 1, and the least influential source of information should receive a rank of 5.

Formal education as an instructor	
Personal experience as an instructor	
Personal experience as a student	
Information from colleagues	
Professional development on grading practices provided by college	

Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments

- 7.) Please consider a **single course** that you are teaching this semester. Please indicate the number of times you have taught this course prior to this semester.

Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments

8.) Considering the **same course** from question #7 above, think about the students who are expected to complete the class. Estimate the percentage of course grades that course completers will likely receive (numbers should add to 100).

Student Grade	Estimated Percentage of Course Completers
A	
B	
C	
D	
F	

Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments

9.) Please consider that same course from questions #7 and #8 above and indicate the percentage of course grade which is based on each of the following student activities (numbers should add to 100).

Types of Student Activities	Approximate Percentage of Course Grade
Participation (including attendance)	
Objective Exams	
Essay Exams	
Quizzes	
Lab Activities	
Homework and/or Worksheets	
Research Projects	
Group Work	
Peer Evaluations	
Oral Presentations	
Portfolios	
Learning Journals	

Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
10.) I am satisfied with my current level of job security.				
11.) I expect to be offered the opportunity to teach at this institution during the spring 2013 semester.				
12.) I expect to be offered the opportunity to teach at this institution during the 2013-14 academic year.				
13.) Student evaluations of teaching are used to evaluate my job performance.				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
14.) Receiving more favorable student evaluations of teaching will increase my chances of being offered future opportunities to teach at this institution.				
15.) I am concerned about students directing complaints to my supervisor concerning their grades in my class.				
16.) The grade that I assign to a student reflects what the student learned in the class.				
17.) Students who learn the most in my class receive higher grades than students who do not learn as much.				
18.) I use the same procedures to determine grades for all students in a class.				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
19.) Students who learn very little in my class may receive the same grade as students who learn a lot.				
20.) Responding to students' requests for better grades is costly in terms of my time.				
21.) Student comments on evaluations of my teaching are confidential.				
22.) Students' complaints to me about their grades bother me.				
23.) My students are more likely to write comments on their evaluations when they feel positively about me as an instructor.				
24.) Responding to students' requests for better grades is costly in terms of my energy.				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
25.) I consider a student's improvement in a course when assigning a final course grade to the student.				
26.) I consider personal challenges that a student may have faced during the semester when assigning a final course grade to the student.				
27.) My performance as an instructor should be evaluated by students.				
28.) Students' complaints to my supervisor about their grades bother me.				
29.) Students who receive higher grades in my class return more favorable evaluations.				
30.) My supervisor values student evaluations of teaching.				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
31.) Students' requests to me for better grades bother me.				
32.) My students are more likely to write comments on their evaluations when they feel negatively about me as an instructor.				
33.) I know of a colleague who has altered his or her grading practices in the hopes of receiving better student evaluations.				
34.) Most of my students take the course evaluation process seriously.				
35.) I am aware that students have complained to my supervisor about their grades in my class.				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
36.) I am aware that students have complained to my supervisor about the requirements of my class.				
37.) I believe that administering the course and teacher evaluations every semester is a waste of time.				
38.) I frequently make changes in my classes from semester to semester based on student comments.				
39.) I have adjusted the requirements in one or more of my classes in order to get more favorable ratings on student evaluations.				
40.) I take the written comments in student evaluations seriously.				

Question	Clarity of Wording	Appropriateness of question for obtaining intended information	Likelihood that question will be understood by all participants in the same way	Other Comments
41.) Student evaluations often provide me with useful information.				
42.) I feel that it is important for me to receive favorable ratings on student evaluations.				
43.) I think society should help out people in need.				
44.) It is easy for me to see other people's point of view in discussions.				
45.) I can feel the characters in a well-written book.				
46.) I can imagine what it is like being poor.				

1.) Have I included all of the necessary questions?

- 2.) Are any of the questions redundant?
- 3.) Were any of the questions worded in a way that was confusing to you?
- 4.) Did you see any terms that might be confusing to others taking this survey?
- 5.) Do all of the questions have an answer that can be marked by every respondent?

APPENDIX C: SURVEY RECRUITMENT COMMUNICATIONS

Email to Chief Academic Officers

Subject: Grading Practices Research

Greetings,

My name is Steven Heulett, and I am conducting a study of grading practices at community colleges. This study is my dissertation research and is being conducted as part of my doctoral work at Western Carolina University. The research involves use of a survey instrument to collect information from full-time and adjunct faculty members about their perspectives on grading practices.

I am contacting you as the chief academic officer of this institution to request your permission to invite the faculty of your college to participate in this study. Their participation will consist of completion of an electronically distributed survey, which should require approximately 10 to 15 minutes to complete. The survey will be distributed in October of 2012. Respondents will be entered into a raffle for a \$200 gift certificate.

If you grant this permission, I would also appreciate your help in dissemination of the survey to all full-time and adjunct curriculum instructors who will teach at least one course in the fall 2012 semester. If you would be willing to assist me in obtaining college email addresses of faculty members at your institution, I will contact all eligible participants. Alternatively, I could provide a draft email with a link to the survey which could be forwarded to all faculty members. If you would be willing to encourage faculty to participate, this communication from you may significantly improve response rates. I can provide draft language and suggest a date for this communication.

This research project has received IRB approval through Western Carolina University, and I will be happy to provide a copy of this IRB approval as well as a copy of the survey. I will also be happy to comply with whatever procedures your institution may require for conducting such research. Responses will be treated confidentially, and participants will have the ability to opt out of the survey at any time. A potential benefit of this study is an increased ability for informed decision making about grading practices. At the completion of this research project, I will provide a summary of the findings to all participating institutions.

If you have questions about this study, you may contact Steven Heulett at Western Carolina University (phone: XXX-XXX-XXXX; email: XXXX) or my faculty advisor, Dr. Meagan Karvonen at Western Carolina University (XXXX).

Thank You,
Steven Heulett
WCU Graduate Student

Pre-notice Email to Participants

Subject: Grading Decisions Study - Survey of Community College Instructors

Greetings,

In one week, you will receive a survey that is part of a study of grading practices at community colleges. The opportunity to participate in this study is being offered to full-time and adjunct curriculum instructors who teach at least one class at _____ Community College in the Fall 2012 semester. Your completion of this survey is voluntary, and should require about 10 to 15 minutes. Your participation in this study is very important and would be greatly appreciated. Participants will be entered into a raffle for a \$200 gift card.

If you have questions about this study, you may contact Steven Heulett at Western Carolina University (phone: XXX-XXX-XXXX; email: XXXX) or my faculty advisor, Dr. Megan Karvonen at Western Carolina University (XXXX). If you have questions about your rights as a participant in this study, you may contact WCU's Institutional Review Board (phone: 828-227-7212; email: irb@wcu.edu).

Thank You,
Steven Heulett
Western Carolina University Graduate Student

Cover Letter to Participants

Greetings,

The following survey is part of a study of grading practices at community colleges. You are being asked to participate in this study because you have been identified as a full-time or adjunct curriculum instructor who is teaching at least one class at your institution in the fall 2012 semester. If you feel that you have received this email in error, please email me at XXXX.

Your participation in the study is voluntary and will consist of completion of this survey. The survey should require about 10 to 15 minutes for you to complete. Participants will be offered the opportunity to enter a free raffle for a \$200 gift card. If you do not wish to complete the survey, you may stop at any time. The survey is confidential, and your individual responses will not be disclosed to your college. Participation in this study is not associated with any foreseeable risks. A potential benefit of this study is an increased ability for informed decision making about faculty grading decisions. The results of the study will be sent to you upon your request. To request the results of the survey, please contact Steven Heulett at Western Carolina University (phone: XXX-XXX-XXXX; email: XXXX).

If you have questions about this study, you may contact Steven Heulett at Western Carolina University (phone: XXX-XXX-XXXX; email: XXXX) or my faculty advisor, Megan Karvonen at Western Carolina University (XXXX). If you have questions or concerns about your rights as a participant in this study, you may contact WCU's Institutional Review Board (phone: 828-227-7212; email: irb@wcu.edu). If you consent to participate in this study, please continue with the survey by clicking on the link below.

Your responses are much appreciated and will be most useful for the purposes of this study if submitted by _____.

Reminder Email to Participants

Subject: Dissertation Research – Participants will be entered to win \$200 gift card

Greetings,

Two weeks ago you received a request for your participation in a study of instructors' grading decisions. If you have not already responded to this survey, please consider doing so. Your perspective on this issue is very important to the success of this research project. All respondents will be given the opportunity to enter a raffle for a \$200 gift card. If you have already responded to this survey, please do not respond again as double responses will complicate analysis.

If you would like to participate, please click on the following link:

Thank You,
Steven Heulett
Western Carolina University Graduate Student

APPENDIX D: FREQUENCY DISTRIBUTIONS OF SURVEY RESPONSES

Responses to Likert-Type Survey Items

Survey items	SD		D		A		SA	
	n	%	n	%	n	%	n	%
I believe that a letter based grading system is an effective way to communicate student performance in a class	9	2.7	43	13.1	200	61.0	76	23.2
The grade that I assign to a student reflects what the student learned in the class	4	1.2	46	14.0	215	65.4	64	19.5
I use the same procedures to determine grades for all students in a class	0	0	6	1.8	102	31.1	220	67.1
Students who learn the most in my class receive higher grades than students who do not learn as much	10	3.1	52	15.9	173	52.7	93	28.4
Students who learn very little in my class may receive the same grade as students who learn a lot.	110	33.4	163	49.5	51	15.5	5	1.5
I consider a student's improvement in a course when assigning a final course grade to the student.	37	11.3	112	34.0	155	47.1	25	7.6
I am satisfied with my current level of job security	20	6.1	38	11.6	181	55.0	90	27.4
I expect to be offered the opportunity to teach at this institution in the future	5	2.0	1	0.4	131	51.0	120	46.7

Note: SD = strongly disagree, D = disagree, A = agree, and SA = strongly agree

Responses to Likert-Type Survey Items (continued)

Survey items	SD		D		A		SA	
	n	%	n	%	n	%	n	%
Student evaluations of teaching are used to evaluate my job performance	6	1.9	27	8.3	202	62.4	89	27.5
Receiving more favorable student evaluations of teaching will increase my chances of being offered future opportunities to teach at this institution	19	5.9	98	30.3	174	53.7	33	10.2
I would be concerned if students complained to my supervisor about their grades in my class	13	4.0	96	29.6	148	45.7	67	20.7
Responding to students' requests for better grades is costly in terms of my time	47	14.5	203	62.7	55	17.0	19	5.9
I am annoyed when students complain to me about their grades	52	16.0	171	52.6	90	27.7	12	3.7
My students are more likely to write comments on their evaluations when they feel positively about me as an instructor	15	4.6	93	28.6	170	52.3	47	14.5
Most of my students take the course evaluation process seriously	15	4.6	89	27.6	196	60.7	23	7.1
Responding to students' requests for better grades is costly in terms of my energy	38	11.8	202	62.9	65	20.3	16	5.0

Note: SD = strongly disagree, D = disagree, A = agree, and SA = strongly agree

Responses to Likert-Type Survey Items (continued)

Survey items	SD		D		A		SA	
	n	%	n	%	n	%	n	%
I consider personal challenges that a student may have faced during the semester when assigning that student's final course grade	41	12.8	156	48.8	119	37.2	4	1.3
My performance as an instructor should be evaluated by students	5	1.6	41	12.8	205	64.1	69	21.6
I am annoyed when students complain to my supervisor about their grades	40	12.6	180	56.6	79	24.9	19	6.0
Students who receive higher grades in my class return more favorable evaluations	10	3.2	124	39.1	162	51.1	21	6.2
I am annoyed when students request better grades from me	26	8.2	178	56.0	98	30.8	16	5.0
My students are more likely to write comments on their evaluations when they feel negatively about me as an instructor	11	3.5	142	44.9	126	39.9	37	11.7
I make changes in my classes from semester to semester based on student comments noted in student evaluations of teaching	4	1.3	44	13.7	210	65.4	63	19.6
I believe that students have complained to my supervisor about their grades in my class	70	21.9	154	48.1	87	27.2	9	2.8

Note: SD = strongly disagree, D = disagree, A = agree, and SA = strongly agree

Responses to Likert-Type Survey Items (continued)

Survey items	SD		D		A		SA	
	n	%	n	%	n	%	n	%
I believe that some other instructors alter their grading practices in the hopes of receiving better student evaluations	31	9.8	146	46.4	115	36.5	23	7.3
I believe that students have complained to my supervisor about the academic requirements of my class	60	18.8	178	55.8	75	23.5	6	1.9
I believe that administering the student evaluations of teaching every semester is not productive	49	15.3	193	60.1	60	18.7	19	5.9
My students are more likely to write comments on their evaluations when they feel strongly about me as an instructor	2	0.6	40	12.5	214	67.1	63	19.8
I have adjusted the academic requirements in one or more of my classes in order to get more favorable ratings on student evaluations	180	56.3	127	39.7	10	3.1	3	0.9
I take the written comments in student evaluations seriously	2	0.6	16	5.0	198	61.7	105	32.7
Student evaluations provide me with useful information	4	1.3	24	7.5	211	65.9	81	25.3

Note: SD = strongly disagree, D = disagree, A = agree, and SA = strongly agree

Responses to Likert-Type Survey Items (continued)

Survey items	SD		D		A		SA	
	n	%	n	%	n	%	n	%
I feel that it is important to my career for me to receive favorable ratings on student evaluations	13	4.1	103	32.4	181	56.9	21	6.6

Note: SD = strongly disagree, D = disagree, A = agree, and SA = strongly agree