

COMPETENCY BASED GRADING  
IN STUDENTS' ACHIEVEMENT

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By:

CURT GRAVES

Dr. Cynthia MacGregor, Dissertation Supervisor

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

COMPETENCY BASED GRADING

IN STUDENTS' ACHIEVEMENT

presented by Curt Graves,

a candidate for the degree of doctor of education,

and hereby certify that, in their opinion, it is worthy of acceptance.

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Professor Cynthia MacGregor

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Professor

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Professor

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Professor

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Professor

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SECTION ONE:  
INTRODUCTION TO DISSERTATION

## **Background**

Education in the United States has evolved over the past 200 plus years. According to Harris and Witte (2011), “American education has progressed from an almost exclusively private system, open primarily to the wealthy, to one of the earliest and most vibrant systems of universal public education” (p. 92). Teachers and administrators have faced political as well as moral accountability to ensure the success and academic growth of all students. Grading practices create vital communication, feedback, and reporting aspects of student knowledge, skill, and progress. Unfortunately, as education has evolved, Boston (2003) noted, “One of the things that hasn’t changed much about schooling over the years is the ritual of assigning grades to student report cards” (p. 1).

Through this educational evolution, grades have served a number of traditional purposes. O’Connor (2011) asserted grades have fostered self-assessment, sorted and selected students, motivated and punished students, and communicated progress to students, parents, instructors, and administrators. Boston (2003) purported, “Teachers typically consider a variety of other factors when assigning grades, including effort, progress, participation, behavior, and attitude” (p. 2) in addition to individual achievement. Ultimately, schools exist to provide students the opportunity to acquire knowledge and develop skills. As part of this learning process, Dublin (2014) asserted, “Grade reporting is crucial” (p. 1).

Variances within grading practices and philosophies of teachers have been prolific throughout education’s history. According to Marzano (2010), “the grading schemes for the same course taught by two different teachers might be so different that grades are not

comparable from teacher to teacher” (p. 16). Within these variances of grading philosophy and practice, three primary grading systems have existed: norm-referenced grading, standards-referenced grading (SRG), and standards-based grading (SBG) (Marzano, 2010; Sturgis, 2014). These three grading systems can be categorized into compliance grading and competency grading models. The compliance grading model, which is most often referred to as traditional grading, is norm-referenced. The competency grading model includes both SRG and SBG grading systems. Varying practices and implications of practice exist within these models. Reeves (2011) noted, “One of the most perplexing things about debates over grading policy is how very intelligent and rational people can look at the same set of facts and come to radically different conclusions” (p. 104). Given these variations of philosophy and practice coupled with ensuring the success of students, effective grading that facilitates student achievement and supports student growth is imperative.

### **Statement of the Problem**

Traditional grading practices have roots grounded in a norm-referenced grading model potentially stemming back to the mid-nineteenth century (Marzano, 2010). To be clear and for the purpose of the study, the operational definition of traditional grading for this project was defined as the percentage of total points accumulated from total points possible based on a variety of assignments, assessments, projects, and individual teacher criteria. Teachers are often left to themselves to establish criteria for grading with several different elements potentially included: exams, quizzes, projects, reports, portfolios, labs, journals, presentations, homework, participation, effort, attendance, attitude, and extra credit (Dublin, 2014; Marzano, 2010; Reeves, 2011).

Inconsistencies and flaws have existed within the traditional grading system for years, potentially having a negative effect upon students. “These practices often not only result in ineffective communication about student achievement, but also may actually harm students and misrepresent their learning” (O’Connor, 2011, p. xii). According to Dueck (2014), “Confidence is critical to learning” (p. 5). However, several myths about student learning permeate the traditional grading system. For instance, Guskey (2011) noted “no research supports the idea that low grades prompt students to try harder” (pp. 18-19). Low grades, poor test scores, and student-to-student comparisons can diminish motivation and effort causing a loss of hope (Dublin, 2014; Guskey, 2011; Reeves, 2011; Sturgis, 2014). “Many of the factors that affect students’ abilities to succeed in school lie outside of their control” (Dueck, 2014, p. 15). These issues manifest and can be reflected in failed assessments, incomplete homework or projects, zero’s, and poor behaviors, all potentially skewing traditional grade reporting. Sturgis (2014) also noted a traditional system inherently exhibited the following flaws: inaccurate measures, earning of credit without substantive learning, lack of incentive to improve performance or learning, credit deficiency leading to dropouts, lowered GPA preventing college admittance, and student and/or teacher grade manipulation.

Competency-based grading models have been proposed to resolve these broad problems within compliance-based grading practices asserted by scholars such as Guskey, Marzano, O’Connor, Reeves, and Sturgis; however, practitioners have difficulty recognizing full and successful implementation of competency-based grading. Even more so, practitioners cannot ascertain how fully implemented competency-based grading practices impact the desired long-term outcome, i.e., student achievement. Qualitative

evidence has supported logic-model outputs within the implementation of standards-based or standards-reference grading systems (Beatty, 2013; Cox, 2011; Dublin, 2014; Scriffiny, 2008; Urich, 2012). Supporting these assertions, Dublin (2014) and Cox (2011) noted teachers and principals of schools implementing a competency-based model communicated favorable perceptions within their studies. Scriffiny (2008), once a math teacher, posited several reasons to implement a competency-based model into the classroom. While the qualitative evidence supports the initial inputs, the long-term outcomes of student achievement have not been quantitatively researched.

For this study and to clarify terminology, SRG and SBG have been included into competency-based grading. However, a fundamental difference does exist. Marzano (2010) and Heflebower, Hoegh, and Warrick (2014) noted many administrators and educators also blur these terms. Heflebower et al., (2014) clarified:

Standards-referenced grading as a system in which teachers give students feedback about their proficiency on a set of defined standards and schools report students' level of performance on the grade-level standards, but students are not moved forward (or backward) to a different set of standards. (p. 3)

Heflebower et al., (2013) continued:

Standards-based grading is a system of assessing and reporting that describes student progress in relation to standards. In a standards-based system, a student can demonstrate mastery of a set of standards and move immediately to a more challenging set of standards. (pp. 3-4)

This means students are not bound to grade-level standards but move forward (or backward) based on their abilities and mastery of skills. SRG, then, is bound to a grade-level set of standards while SBG is unbound by grade-level and more open to a ubiquitous set of subject standards. In both models, “grades must be based solely on students’ current levels of performance with specific standards” (Heflebower et al., 2014, p. 4). The emphasis of this study is on competency-based grading effects, therefore, SRG and SBG have been combined for the purpose of this research.

### **Purpose of the Study**

An increasing trend and support of standards-based and/or standards-referenced grading exists (Boston, 2003; Cox, 2011; Dublin, 2014; Marzano, 2010; O’Connor, 2011; Scriffiny, 2008). This study will identify high schools in Missouri that have fully implemented a competency-based grading system. In order to facilitate this identification, key elements of competency-based grading will be identified as a conceptual framework.

The driving impetus of this program evaluation is analyzing the impact of competency-based grading on student achievement after the identification of high schools fully implementing a competency-based model. “We want to know whether, and to what extent, the program’s actual results are consistent with the outcomes we expected” (McDavid, Huse, & Hawthorn, 2013, p. 17). Identified schools’ assessment data will be quantitatively analyzed as the outcomes within a logic model (McDavid et al, 2013). Therefore, the focus of this research will be the effect of competency-based grading on student achievement.

## **Research Questions**

The research questions guiding this study are:

1. Which high schools in Missouri have fully implemented a competency-based grading model?
2. To what extent do competency-based grading practices affect student achievement as measured by state standardized assessments in Missouri?

## **Conceptual Frameworks**

As indicated in the purpose section, key elements conceptualizing what a fully implemented competency-based model looks like are essential. A need exists to identify the major themes that must be instituted within a Missouri high school in order to be identified for the quantitative analysis portion. To complete the identification process, four elements are critical for determining full implementation.

The first element is the establishment of a comprehensive learning progression that includes a curriculum with aligned standards. Sturgis (2014) supported, “The first step in building a competency-based grading system is to develop the learning progression that indicates what students are expected to know and be able to do” (p. 14). According to Marzano (2006), properly aligned and taught standards should be an emphasis to ensure student success and achievement. Jung and Guskey (2007) further contended teachers should clearly link standards to achievement goals. Standards-based instruction from a fully aligned curriculum has been shown to positively affect student achievement (Reys, Reys, Lapan, Holliday, & Wasman, 2003). In other words, what do educators want students to know, learn, or demonstrate? While Sturgis (2014) suggested a learning progression can stretch from kindergarten through 12th grade, for the purpose

of this study, the scope will be limited to an aligned, standards-based curriculum from 9th through 12th grades.

The second element to an identifiable learning progression, pre-determining an acceptable level of performance or proficiency is critical. “Competency-based schools need a common framework to help teachers and students communicate about the depth of knowledge or learning target for any specific standard that students are expected to meet” (Sturgis, 2014, p. 16). O’Connor (2011) concluded, “The challenge is to create clear descriptors of our overall levels so that we have a delineated achievement continuum within which we can consistently judge student achievement” (p. 69). According to Marzano (2010), once standards or goals are identified then scaling should occur so all teachers and students have a universal understanding of expectations. “When teachers are working together with a shared understanding of proficiency, grading becomes a way of tracking progress” (Sturgis, 2014, p. 19). Identification of the content in the form of standards and then identifying the expected level of performance becomes imperative in order to appropriately assess students.

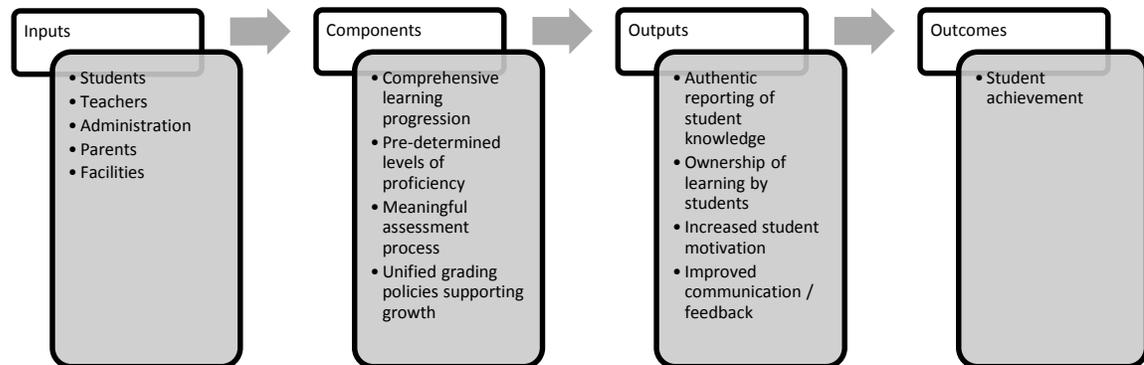
The third element of a fully implemented competency-based grading model is the facilitation of a meaningful and comprehensive assessment process. After curriculum has been constituted into standards, Marzano (2010) asserted, “The most common form of feedback is an assessment” (p. 5). A formative approach includes the use of formative assessment strategies culminating in an eventual summative assessment (Marzano, 2010). This formative approach requires frequent, timely, and specific feedback for both students and teachers (Marzano, 2001; Reeves, 2011). Sturgis (2014) supports this by noting formative assessments can provide meaningful feedback and additional

instructional opportunities for students to reach proficiency. “In competency-based schools, there is a constant cycle of learning, practice, application, and assessment” (Sturgis, 2014, p. 24). A proper feedback loop within the assessment process assists students and teachers in monitoring the progression of each student’s progression towards a set of standards and guides the instruction for students to achieve proficiency on the identified standards.

In addition to a highly effective assessment process, the fourth element is school-wide and/or district-wide grading policies reflecting “a growth mindset that believes that students...can develop and build skills with the right mix of feedback, supports, and time to practice” (Sturgis, 2014, p. 23). Grading policies should not penalize students for mistakes made within the formative process (Marzano, 2010; O’Connor, 2011; Reeves, 2011; Sturgis, 2014). “Practice (homework) is never graded” (Sturgis, 2014, p. 23). According to O’Connor (2011), grading policies within schools or districts should not allow extra credit but should allow late-work. Finally, a growth mindset encourages learning through allowing retakes of assessments and redo’s of projects (O’Connor, 2011; Reeves, 2011).

Given the previously mentioned four elements have been incorporated, high schools can be identified and analyzed for the impact of a competency-based model on student achievement. A basic logic model as suggested by McDavid et al. (2013) will be used: inputs, components, outputs, outcomes (See Figure 1). “Program inputs are resources that are required to operate the program” (McDavid et al., 2013, p. 52). Students, teachers, parents, administrators, the school facility, and various other resources constitute the program inputs. McDavid et al. (2013) described program components as

“clusters of activities in the program” (p. 53). The conceptualized framework of processes and activities described earlier reflects the components within the logic model.



*Figure 1.* Logic Model Applied to Competency Grading

The outputs materialize from the conglomeration of the inputs and components identified. “Program outputs occur as a result of the activities or work done” (McDavid et al., 2013, p. 55). The outputs of a competency-based model are the qualitative aspects, such as teacher and student perceptions about motivation, effort, and effectiveness. However, according to McDavid et al. (2013), the outcomes are “the intended results that correspond to program objectives” (p. 55). In the instance of evaluating the impact of competency-based grading, the program outcomes are established as quantitatively measured student achievement.

### **Design of the Study**

A mixed methods design will best generate findings to answer the proposed research questions. First, a qualitative survey incorporating a conceptual framework will identify Missouri high schools implementing a competency-based model. Then, quantitative data analysis of these identified and selected high schools will be completed following the logic model as described previously. Specifically, an exploratory

sequential mixed methods design will be used (Creswell, 2009). An exploratory sequential design structures the research by first exploring “qualitative data and analysis and then uses the findings in a second quantitative phase” (Creswell, 2009, p. 226).

Within the first phase of the exploratory sequential study, the qualitative identification of Missouri high schools implementing competency-based grading will be accomplished answering the first research question. To do so requires cross-sectional surveying of all Missouri high schools at the current time. According to Fink (2013), cross-sectional surveys describe the situation or circumstances as they are at that time. A survey (Appendix A) has been developed to evaluate the degree of implementation of the four grading elements identified: (1) Comprehensive learning progression (2) Predetermined level of proficiency (3) Meaningful assessment process (4) Unified grading policies supporting growth. The survey data will facilitate identification of high schools currently implementing competency-based grading.

“Surveys can be used in deciding policy or in planning and evaluating programs and conducting research when the information you need should come directly from people” (Fink, 2013, p. 5). The qualitative survey (Appendix A) will target high school building principals who will have firsthand knowledge of the procedures involved in the grading process and individuals who are willing to participate in the survey. Purposeful sampling will be useful in this situation because the “responses apply to the target population” (Fink, 2013, p. 87). McDavid et al. (2013) supported using purposeful sampling as a qualitative sampling strategy where participants are deliberately selected.

Following approved design and procedures by the University of Missouri IRB, all targeted participants, Missouri high school principals, will receive consent notification by

email clarifying privacy and purpose at the time the survey request is electronically sent to them via SurveyMonkey (Appendix B). Submission of the survey by participants will indicate consent of participation and permission to use their responses in the program evaluation. The consent form will contain adequate information for all respondents to decide whether to complete the survey (Fink, 2013). Privacy and confidentiality of survey responses will be a priority.

According to Fink (2013), “organizing or managing survey data is an essential part of data analysis” (p. 135). Given this survey is determining the implementation of the four grading elements within high schools required to be considered a competency-based grading school, a rubric based from these four elements will be used to rank and organize the schools as part of the content analysis (Appendix C). A rubric will also prevent what Creswell (2009) refers to as “drift in the definition of codes” (p. 203) in order to increase reliability. Initially, the collected responses from high school principals will be categorized identifying “the presence of certain words, concepts, themes, phrases, characters, or sentences in order to quantify” (Fink, 2013, p. 131). Survey questions one, three, and seven (Appendix A) were prioritized during this first cycle of categorization in order to identify schools and gain an initial understanding of the principal’s perception of their school’s grading model.

Once school principals’ responses had been categorized, a second cycle was conducted to quantify rubric scores from questions two, four, five, and six (Appendix A). These four questions specifically align to the four elements identified as fully implementing a competency-based grading model. Schools best meeting all criteria were selected for the quantitative phase of the study. The second categorizing process will

also assist in checking for consistency and ensuring reliability of the qualitative process (Fink, 2013).

From the qualitative survey data in the first phase of this mixed methods study, Missouri high schools who are incorporating a competency-based grading model, either standards-based or standards-referenced, satisfactorily meeting the four elements identified in the conceptual framework will be targeted for the second phase of the exploratory sequential design. The researcher anticipates identifying a minimum of 10 schools scoring at least proficient in all four rubric categories correlated to the four elements required for competency-based grading implementation. However, a limit of 30 identified schools will be established to maintain a manageable sample size. While specific buildings will be identified in order to complete the second phase of the study, responses will be kept in the highest regards and only used to assist in identification for the data review. Identifying information will be removed and pseudonyms will be used where required and appropriate (Creswell, 2009). The need for, and use of, pseudonyms is clearly explained in the consent form (Appendix B).

This second phase of the study includes the quantitative data analysis of identified and selected Missouri high schools addressing the second research question. In all Missouri high schools, every student is required to complete End-of-Course exams (EOC's) in Algebra I and English II upon completion of these courses. EOC assessments are standardized assessments with predetermined safe guards, required protocols and proctor training, and applied verification processes establishing reliability. These assessments are completed annually. Individual student, aggregate groups, and whole group building EOC data are collected and reported to DESE. Whole group data become

part of each high school building's annual data report and is publicly available for review. Therefore, the data that will be analyzed for comparison can be retrieved from the Department of Elementary and Secondary Education (DESE) website.

The primary purpose of this study is to understand the extent to which a competency-based grading model has effected student achievement. Simple descriptive statistics will be analyzed in order to report findings. Building data will be examined for trends. Trend data will be categorized as pre-implementation years, implementation years, and post-implementation years. Pre- and post-implementation trend data will be limited to three years. Data from identified buildings will be combined with all other analyzed buildings' data and reported in summary form. Again, pseudonyms will be appropriately assigned avoiding identification of individual schools when comparison data are relevant to the findings.

### **Significance of the Study**

Many public schools, including high schools, continue to progressively move toward a form of competency-based grading. Dublin (2014) supported this concept noting "since the mid-1990's standards-based grading (a form of competency-based grading) has increasingly become a prominent topic for educational researchers and practitioners" (p. 3). Much of the research regarding this topic is based in a scholarly context void of extensive research-based analysis. Given the time, energy, complexity, and cost associated with reforming a historic tradition such as grading practices, an impetus is placed on effectiveness for school leaders choosing this journey. Lasley (2009) resonated:

Educational practices have been ideologically driven for decades. Few teachers or researchers could prove that their methods were 'best practices' for students, so they simply argued for others to embrace advocated approaches based on theoretical arguments and selected anecdotal evidence. The method de jure was often a result of what conference or professional meeting a teacher or principal had just attended, not on sound evidence about what educational practice really worked. (p. 245)

Educational leaders including building principals and superintendents will find a practitioner-applicable significance within this study. The most applicable audience will be through organizations such as the Missouri Association of Secondary School Principals (MASSP). Additionally, a local report to the local school board and superintendent will be relevant as my district is currently pursuing competency-based grading. As an educational leader of a Missouri high school, it will be affirming personally to know and verify that such an intrusive and significant initiative can produce the desired outcomes will be affirming.

The significance that educational leaders will want to note within this study is the emphasis upon quantitative analysis. If a positive impact where standardized test scores indicate growth in student achievement, a support for and even call for schools to consider implementation can be asserted. Nevertheless, if a negative or no impact is found, school leaders will benefit from this study by analyzing suggestions for improvement, possible considerations for improved impact, or consideration of declining to follow this trend.

## Summary

While educational improvements over the past several years have focused on curricular alignment, development of curricular standards, and refinement of assessment processes, grading and reporting remains unaligned with little forward progress (Guskey, 2011). Teachers have done their best within the schemes provided and are not singularly to blame for ineffective traditional grading practices. In fact, teachers alone cannot correct the concerns identified previously. Dublin (2014) asserted, “In the void of direction and instruction in the area of grading, teachers are left to create their own system” (p. 11). A responsibility and an accountability for the grading practices observed within schools lie with the administrators and teachers. O’Connor posited while educators know more than ever before “about how people learn, traditional grading practices persist, especially in middle and high schools” (p. xi). Effective grading practices, potentially a competency-based grading model, that motivate students to take ownership of their learning and facilitate their learning is imperative.

SECTION TWO:  
PRACTITIONER SETTING

## Introduction

The educational policies determined by federal and state government representatives have pushed districts, including high schools, toward standards-based education (Boston, 2003). Vatterott (2015) affirmed, “People are doing a lot of rethinking about education these days” (p. 3). In similar fashion, my district determined that standards-based grading would be initiated and implemented at all levels beginning at the elementary levels with a progression in grade levels over several years. As a high school principal and instructional leader, a need developed to know more and have confidence in the instructional practices implemented just as every other building leader.

Many educational theorists have purported the culture of grading contains negative baggage which has perpetuated a system prohibiting student achievement and obstructing other educational reform movements (O’Connor, 2011; Reeves, 2011; Vatterott, 2015). Urich (2012) maintained a need for more educators to question traditional grading practices due to the era of educational accountability and intense scrutiny on public education systems. According to Guskey (2009):

Given the hodgepodge nature of grading and inconsistency between teachers, there is a need to investigate how schools can go about professional development that will result in greater consistency that will in effect standardize what is used to compute grades and weights given to each factor. (p. 118)

Clearly, inconsistencies exist within the embedded, traditional grading processes of school systems and will be further outlined in chapter three.

“Grades are a valuable tool for motivating learners to meet educational goals” (Comes, 2015, p. 1). Grading policies and practices affect students in ways that can often

be misinterpreted by educators or manifest superficial issues of students. According to Covington's (1992) self-worth theory of achievement motivation, "there is a pervasive tendency to equate accomplishment with human value, or put simply, individuals are thought to be only as worthy as their achievements" (p. 74). If students experience the noted inconsistencies of varied grading practices and grading policies built within a compliance model, it becomes understandable how students might confuse a growth mindset where ability can be cultivated versus a fixed mindset where ability is static and predetermined (Dweck, 2008). Covington (1992) noted:

The literature on school achievement makes clear that different kinds of incentives call out different student behavior. Every classroom reflects some type of reward structure within which all academic work is embedded. It is this structure that conveys information to students, explicitly or implicitly. (p. 131)

Great care in developing grading policies and analysis of grading practices should be performed. Guskey (2009) contended, "A need to investigate policies and practices that are targeted toward grading based primarily or entirely on achievement" (p. 118).

Opportunity exists for educational leaders to impart change. Dweck (2008) stated, "The view you adopt for yourself profoundly affects the way you lead your life" (p. 6). Educational leaders such as myself, other high school building principals, and the Missouri Association of Secondary School Principals (MASSP) members have the opportunity "to send students forward to college with the conceptual knowledge and learning strategies that are so critical to college success" (Vatterott, 2015, p. 2).

Competency-based grading has the potential to reform archaic practice and restore integrity to the grading process instilling student hope and motivation. "People have

more capacity for lifelong learning and brain development than they ever thought” (Dweck, 2008, p. 5). Competency-based grading practices and policy development can develop a growth mindset for students to achieve more than ever before. Guskey (2009) asserted, “This is an opportunity to create an expanded knowledge base that can in turn be used for effective teacher professional development and pre-service training” (p. 119). An impetus exists to start the professional development process and policy influence with district and building leaders. Servant leadership and organizational theory will be discussed in relation to the MASSP organization’s ability to provide a platform for communication and influence of policy for grading reform works such as competency-based grading models.

### **MASSP Overview**

MASSP is a professional organization for middle school and high school administrators. It is the “only association in Missouri serving the professional needs of principals and assistant principals of the state’s middle level and high schools with programs designed by secondary school administrators for secondary school administrators” (MASSP, 2015). State conferences are held annually in the fall and spring for all secondary administrators targeting relevant and timely educational topics. Professional development opportunities also exist for new secondary administrators and beginning teachers.

MASSP’s mission is “to improve secondary education through positive leadership and the enhancement of student performance” (MASSP, 2014, p. 5). The executive directors are committed to the “on-going improvement of secondary education, the professional development of middle level and high school principals and assistant

principals, and programs for the youth of Missouri” (MASSP, 2015). The organization works towards these purposes by providing information about state and federal educational issues to secondary principals, encouraging research, promoting high standards, and developing leadership (MASSP, 2015). Provisions for professional development around topics like grading practices and grading models aligns to the mission.

One of MASSP’s primary objectives is legislative advocacy. MASSP brings members together as a uniform voice in many instances. “At every level in organizations, alliances form because members have interests in common and believe they can do more together than apart” (Bolman & Deal, 2008, p. 201). This organization keeps administrators up to date with legislative issues and proposed initiatives in Missouri as well as nationally that may impact education. Coalitions can be found with the School Administrators Coalition, Better Schools for Missouri, and the National Association of Secondary School Principals (NASSP) (MASSP, 2015).

Representation by MASSP can also be identified within the Missouri Department of Elementary and Secondary Education (DESE) and the Missouri State High School Activities Association (MSHSAA). MASSP members are appointed to DESE and MSHSAA committees as liaisons. These coalitions formed “because of interconnections among its members; they need one another, even though their interests may only partly overlap” (Bolman & Deal, 2008, p. 196) on varying issues. As a legislative advocate for principals and students, MASSP has opportunity to encourage state-wide policy alignment to effective grading practices and de-emphasizing compliance factors within accountability measures like attendance.

## **MASSP Leadership Context**

Leadership requires more than a good plan and quality set of directives. Kotter (2011) described management as the ability to bring order, results, and consistency through planning and directing. “Leadership is different” (Kotter, 2011, p. 49). Good leadership motivates and empowers people (Bolman & Deal, 2008; Kotter, 2011). According to Bolman and Deal (2008), empowering others “involves encouraging autonomy and participation, redesigning work, fostering teams, promotes egalitarianism, and infusing work with meaning” (p. 149). Kotter (2011) supported the concept of empowering others through support of efforts, encouraging professional growth, and involving others in decisions. “Good leaders recognize and reward success” (Kotter, 2011, p. 49).

MASSP clearly articulates the mission and purposes of the organization. Annual recognition of leaders through district- and state-level awards are given. A voice for secondary principals, MASSP provides research, professional development, legislative updates, and legislative advocacy for secondary administrators. Through these actions and efforts, MASSP’s executive directors and state leaders exemplify traits of servant leadership by making the choice to serve secondary principals and students first and put the good of its members and constituents over the self-interests of the organization (Northouse, 2013).

### **Servant Leadership**

According to Northouse (2013), “Robert K. Greenleaf coined the term servant leadership and is the author of the seminal works on the subject” (p. 220). Credited with introducing the concept, Greenleaf (1977) asserted, “The great leader is seen as a servant

first, and that simple fact is the key to his greatness” (p. 19). Servant leaders, therefore, place others’ needs as priority over their own needs. They “make a conscious choice to serve first—to place the good of followers over the leaders’ self-interests” (Northouse, 2013, p. 248).

**Servant-leader relationship.** To distinguish, a servant leader views themselves as a servant first not a leader first. “Servant leadership is not only about ‘doing’ the acts of service but also ‘being’ a servant” (Sendjaya & Sarros, 2002, p. 60). Through study of Greenleaf’s essays, Spears (2010) purported ten characteristics of servant leadership which he viewed as essential facets and central to the development of anyone aspiring to be a servant leader. Sendjaya and Sarros (2002) clarified the “leader-follower relationship is that of a client-server, not supervisor-subordinate or master-slave relationship” (p. 60). From Spears’ ten characteristics, an understanding of servant leadership emerged more completely defining the relationship between the leader and follower.

**Servant leadership characteristics.** Spear’s characteristics outline actions a practitioner adopts and develops in order to build a proper leader-follower relationship within a servant leadership approach to leading. The ten characteristics are listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of people, and building community (Spears, 2010). As these characteristics are explored and developed by a leader, altruistic behavior emerges where “leaders give up control rather than seek control” (Northouse, 2013, p. 249). Acts of selflessness for the well-being of others materialize.

Spears (2010) by his own admission noted “these ten characteristics of servant leadership are by no means exhaustive” (p. 29). Russell and Stone (2002) identified nine functional attributes of servant leadership from research: vision, honesty, integrity, trust, service, modeling, pioneering, appreciation, and empowerment. According to Russell and Stone (2002), these functional attributes are “the operative qualities, characteristics, and distinctive features belonging to [servant] leaders” (p. 146).

### **Servant Leadership in Context of MASSP**

The MASSP organization consistently exhibits traits of servant leadership. Spears’ (2010) ten characteristics and Russell and Stones’ (2002) nine functional attributes are visible within the organization and its leaders. “Servant leadership seeks to involve others in decision making, is strongly based in ethical and caring behavior, and enhances the growth of workers while improving the caring and quality of organizational life” (Spears, 2010, p. 25). MASSP demonstrates each of these three actions.

**Involving others in decisions.** Involving members and constituents in the decision-making process is demonstrated within the MASSP organization consistently. “Organizations need to realize that a disciplined decision-making process, not individual genius, is the key to a sound strategy” (Kahneman, Lovallo, & Sibony, 2013, p. 40). Crucial to decision making is ensuring appropriate constituents are brought to the metaphorical or physical planning table (Cervero & Wilson, 2006). According to Garvin and Roberto (2013), “keeping people involved in the process is, in the end, perhaps the most crucial factor in making a decision” (p. 93).

Listening is a key characteristic of servant leaders that keeps others involved in the decision-making process. Spears (2010) asserted, “Leaders have traditionally been

valued for their communication and decision-making skills. Although these are also important skills for the servant leader, they need to be reinforced by a deep commitment to listening intently to others” (p. 27). The MASSP executive directors and officers are approachable and respond to inquiries via phone or email consistently. “The level of listening is an equally important indicator of a healthy decision-making process” (Garvin & Roberto, 2013, p. 92). The MASSP organization regularly surveys its members for opinions and inquire about professional needs. Results of MASSP listening are evidenced in relevant professional development opportunities and advocacy within legislation. When members of an organization feel valued and heard, leadership effectiveness increases (Barbuto & Wheeler, 2006).

When listening, “the servant leader strives to understand and empathize with others” (Spears, 2010, p. 27). Empathy extends from listening. Barbuto and Wheeler (2006) clarified “empathy as the ability to appreciate the circumstances that others face” (p. 306). Embedded throughout the MASSP organization is understanding of the work, time commitment, stressors, and pressures placed on administrators. MASSP encourages networking, supporting, and mentoring of administrators. MASSP advocates for secondary principals through legal support and political presence “providing a voice for secondary school administrators where educational decision are made” (MASSP, 2015). “In short, failure to attend to the interests, needs, concerns, powers, priorities, and perspectives of stakeholders represents a serious flaw in thinking or action that too often and too predictably leads to poor performance, outright failure, or even disaster” (Bryson, Patton, & Bowman, 2011, p. 2). MASSP continues to serve secondary principals by effectively listening and empathizing.

**Ethical and caring.** Given its mission to improve and enhance secondary education, MASSP maintains high ethical expectations outlined within the MASSP policy manual. These ethical expectations include exercise of care and due diligence in dealing with organizational affairs, demonstration of respect to all cultures, adherence to confidentiality of sensitive information, compliance to legal responsibilities, and providing credible and reliable oversight to the organization's work (MASSP, 2014).

“The problem is, biases invariably creep into any team's reasoning—and often dangerously distort its thinking” (Kahneman, Lovallo, & Sibony, 2013, p. 23). Servant leaders are able “to notice what is happening by picking up cues in the environment” (Barbuto & Wheeler, 2006, p. 307). Awareness, characteristic identified by Spears (2010), is described by Barbuto and Wheeler (2006) “as the leader's astuteness” (p. 306). According to Kahneman, Lovallo, and Sibony (2013), “the real challenge for executives who want to implement decision quality control is not time or cost. It is the need to build awareness that even highly experienced, superbly competent, and well-intentioned managers are fallible” (p. 40). Awareness “strengthens the servant-leader. Awareness helps one in understanding issues involving ethics, power, and values” (Spears, 2010, p. 27). Ethical standards of operation outline a conflict of interest procedure for MASSP officers and directors (MASSP, 2014), a sign of awareness of the founding members. Provisions are clarified for full disclosure, recusal, and record of proceedings (MASSP, 2014).

**Enhancing growth.** Creating professional growth of its members and “providing for the general welfare of principals” (MASSP, 2015), the MASSP executive directors and officers demonstrate Spears' (2010) characteristic of commitment to the growth of

people and Russell and Stones' (2002) functional attribute of teaching. According to Barbuto and Wheeler (2006), growth is "an ability to identify others' needs and provide developmental opportunities" (p. 308). Referring to the teaching functional attribute, Russell and Stone (2002) asserted leaders coach, develop, and equip others.

The MASSP hosts fall and spring secondary principals' conferences, beginning teacher workshops, and district informational meetings. The MASSP strategic plan includes a focus for ensuring "quality conferences, workshops, and professional development opportunities" (MASSP, 2015). "Leaders who demonstrate a commitment to growth of employees will experience positive organizational outcomes" (Barbuto & Wheeler, 2006, p. 308).

MASSP consistently demonstrates and exhibits precepts of servant leadership. The few described are not an all-inclusive list as other characteristics and functional attributes may manifest given proper context. Barbuto and Wheeler (2006) noted "a service-oriented philosophy of and approach to leadership is a manifestation of and an antecedent to enabling a wise organization" (p. 300). Through the services, supports, and actions of MASSP, clearly the organization operates successfully with great influence through a servant leadership approach.

### **MASSP Organizational Analysis**

According to Spears (2010), "we are experiencing a rapid shift in many businesses and not-for-profit organizations away from the more traditional autocratic and hierarchical models of leadership" (p. 25). In order to stimulate growth and positive change to an embedded educational practice requires leaders who strategically plan and construct "ways of providing defensible information to decision makers and

stakeholders” (McDavid et al., 2013, p. 3). Bolman and Deal (2008) proposed using four frames for reference: structural, political, human resource, and symbolic.

The impending discussion analyzes the MASSP organization using each of Bolman and Deal’s (2008) four frames. “Learning to apply all four deepens your appreciation and understanding of organizations” (Bolman & Deal, 2008, p. 18). This action when applied to any organization or situation, especially given potential complexity, calls for analysis viewed from multiple perspectives moving beyond a narrow perspective to a greater, enriched perspective. According to Bolman and Deal (2008), “multiframe thinking requires moving beyond narrow, mechanical approaches for understanding organizations” (p. 19). Following this analysis of MASSP within the context of framing, perspective to implications MASSP can have on grading reform initiatives will be explored.

### **Structural Analysis**

The structural frame views an organization from a highly managerial viewpoint. According to Kotter (2011), “good management brings a degree of order and consistency to key dimensions like quality and profitability of products” (p. 38). “The structural frame looks beyond individuals to examine the social architecture of work” (Bolman & Deal, 2008, p. 68). Within this genre of analysis, perspective is gained through evaluation of organizational mission and goals, coordination of efforts, quality control, and performance (Bolman & Deal, 2008).

MASSP is a not-for-profit organization with a clearly defined bureaucratic structure. According to the MASSP Policy Manual, a board of directors and the executive director are charged with managing the affairs of the organization (MASSP,

2014). Duties and responsibilities are clearly detailed for each position identified.

Additionally, mission and goals are clearly established, clearly communicated, and highly visible.

Unique to an organization like MASSP is the need to address both vertical and lateral forms of coordination (Bolman & Deal, 2008). “Organizations have to use both vertical and horizontal procedures for coordination” (Bolman & Deal, 2008, p. 60) especially when facing unique needs of schools, students, and administrators while interpreting national and state legislative decisions. “Many organizations find that they have to do both and somehow accommodate the competing structural tensions” (Bolman & Deal, 2008, p. 68). Much of the structure given a board of directors that includes representation from NASSP as well as current practitioners provides opportunity to blend both procedures. MASSP’s ability to vertically and horizontally coordinate provides a tremendous platform for potential grading reform discussions, state and national policy considerations, and professional development for educational leaders.

### **Human Resource Analysis**

Technical and managerial skills should not be overlooked but also not overestimated; relational and social skills are important leadership attributes that motivate, inspire, and empower (Goleman, 2011; Kotter, 2011; Northouse, 2013). “When individuals find satisfaction and meaning in work, the organization profits from effective use of their talent and energy” (Bolman & Deal, 2008, p. 164). Through the human resource frame, Bolman and Deal (2008) asserted, “Organizations exist to serve human needs” and “people and organizations need each other” (p. 122). Examining an

organization through this framework investigates the association between the organization and the personnel.

MASSP values and listens to their constituents and members. “Progressive organizations give power to employees as well as invest in their development” (Bolman & Deal, 2008, p. 149). Members are often asked for feedback and input when agendas are set. Conferences provide professional development. According to Bolman and Deal (2008), “empowerment includes keeping employees informed...it also involves encouraging autonomy and participation” (p. 149). Regular legislative updates are produced and communicated. Acting building principals are part of the leadership of the organization and given voice. Secondary principals are encouraged to present best practices and research (MASSP, 2015).

MASSP and Missouri’s secondary principals greatly benefit from each other in this symbiotic relationship. Principals find meaningful, need-based support and the organization gains talent, energy, and expertise from its members. Learning and collaborating about grading reform components like formative assessment processes or unified grading policies affords MASSP to continue the servant leadership role while providing opportunity for growth and improving education. Bolman and Deal (2008) noted, “A good fit benefits both” (p. 122).

### **Symbolic Analysis**

MASSP has been operating since 1925 (MASSP, 2014). During the enduring years of support to administrators and advocacy of Missouri students, the organization’s culture is revealed and communicated through its established symbols and traditions (Bolman & Deal, 2008). The annual efforts made by MASSP to recognize exemplary

performance among secondary school principals cultivates and continues a tradition of recognizing excellence within the profession. In contrast to the structural and human resource frames where logic and rationale are observed, the symbolic frame “centers on complexity and ambiguity and emphasizes the idea that symbols mediate the meaning of work and anchor culture” (Bolman & Deal, 2008, p. 277).

The longstanding mission of MASSP establishes the values and vision bringing consistency and clarity to the established culture. Bolman and Deal (2008) emphasized “values characterize what an organization stands for, qualities worthy of esteem or commitment” (p. 255). MASSP makes very clear the servant-leader mentality within this mission addressing the priority to serve principals and the youth of Missouri that brings greater meaning, hope, and direction (Bolman & Deal, 2008; MASSP, 2015).

MASSP state and district meetings extend an aspect of ceremony and ritual that Bolman and Deal (2008) claimed “provide scripts for celebrating success and facing calamity” (p. 278). Annually at the fall district meeting, principals and assistant principals are recognized for their works. Fall and spring state meetings provide meaning and bind the organization through scheduled dinners and events. “Events and processes are often more important for what is expressed than for what is produced” (Bolman & Deal, 2008, p. 253). Throughout the district and state meetings, MASSP’s culture has been established and continues “over time as members develop beliefs, values, practices and artifacts that seem to work and are transmitted” (Bolman & Deal, 2008, p. 278).

Continuing these traditions through recognition of academic gains, positive reform movements, and effective leadership can incorporate those implementing competency-based grading models. Professional development topics at annual state

meetings can provide seminars about standards-based or standards-referenced grading. Speakers such as Rick Wormeli can be scheduled for the larger venues. MASSP's culture establishes the ability to challenge thinking, recognize growth, and support change.

### **Political Analysis**

A traditional or simple view of an organization would assume creation and control by those identified as "in charge" or the leaders. For instance, many would simply assume the executive director and the board of directors are firmly in control of MASSP as they are the "authorities who set goals, design structures, hire and manage employees, and ensure pursuit of the right objectives" (Bolman & Deal, 2008, p. 209). Mintzberg (2005) purported leaders vie for power within a power game that requires identification of the many players and strategy to gain power as well as use it. Similar to the symbolic frame, the political frame looks beyond the traditional and typical bureaucratic view recognizing that authorities "must vie with many other contenders for other forms of leverage" (Bolman & Deal, 2008, p. 209).

As a non-profit organization with a goal to advocate policy at various levels within the educational system, MASSP has very little positional or legitimate power (Bolman & Deal, 2008; French & Raven, 2005). MASSP is an advocacy organization with a mission to serve. The types of power more keenly associated to MASSP stem from the organizations servant-leadership style. French and Raven (2005) noted referent and expert types of power. Bolman and Deal (2008) also acknowledged noting expertise and reputation as sources of power. "Power flows to those with the information and know-how to solve important problems" (Bolman & Deal, 2008, p. 203). Likewise,

Bolman and Deal (2008) asserted, “Opportunities and influence flow to people with strong reputations” (p. 203). MASSP has gained power in the form of influence through the servant first, leader second ideal.

MASSP has the power to lobby for grading reform changes beyond the building level. State and national accountability factors can be challenged to address some of the inconsistencies binding local districts. For instance, MSIP5 policy holds schools accountable for attendance; however, within a competency grading model, attendance is not a factor of what a student has learned. Could this be a point of discussion at various levels?

### **Implications for Research**

The purpose of this study is to evaluate the impact of the long-term outcomes for high schools fully implementing a competency-based grading model. However, compliance-based grading models and practices permeate secondary institutions. These traditional grading practices are strongly embedded within many school cultures, entrenched in school policy, and embedded in daily practices. Russell and Stone (2002) recognized servant leadership as “a concept that can potentially change organizations and societies because it stimulates both personal and organizational metamorphoses” (p. 154). Through servant leadership principles established within MASSP ineffective yet entrenched practices can be changed.

Spears (2010) asserted “servant leadership seeks to involve others” (p. 25) suggesting a collaborative effort. Beginning discussions, sharing insights and findings, and developing understanding about competency-based grading models can develop other leaders to be empowered and build community which are servant leadership

attributes (Russell & Stone, 2002; Spears, 2010). Kotter (2011) encouraged involving constituents in the decision-making process like a unified grading policy at a high school to give ownership and provide autonomy. Hammond, Keeney, and Raiffa (2013) emphasized open-minded collaboration considering different viewpoints and seeking information from a variety of people. After all, “good talk begets good thought” (Bruffee, 1999, p. 134).

As with any paradigm shift, but especially with a process so deeply entrenched in the teaching profession, grading reform can be an arduous process. A formidable strategy to stimulate collaborative change and stimulate collaborative conversation is the facilitation of an appreciative inquiry-style approach. Since servant leaders place the good of others above their own self-interests building strong relationships through empathy, listening, and ethical practice (Northouse, 2013), appreciative inquiry becomes a viable approach as others feel valued, heard, and safe to construct meaning (Carr-Stewart & Walker, 2003). “With inquiry, you carefully consider a variety of options, work with others to discover the best solutions, and stimulate creative thinking rather than suppressing dissension” (Garvin & Roberto, 2013, p. 77). Because many grading practices are entrenched within K-12 education, discussions can cause conflict and challenge educator practices. Preferred by Garvin and Roberto (2013), inquiry can be defined as an open process generating multiple alternatives, fostering exchange of ideas and possible solutions to issues, and producing a quality resolution. “Openness can create opportunities for unimagined initiatives to be tried” (Preskill & Brookfield, 2009, p. 25). An appreciative inquiry approach can be much more productive when established

through a pre-established servant-leader relationship where trust and confidence have developed to facilitate this openness.

A strategically planned and organized presentation of the results can cultivate meaningful and systematic improvement to learning and impact achievement when presented from a servant-leader using an appreciative inquiry approach. The ultimate purpose is “anticipatory articulations of tomorrow’s possibilities” (Carr-Stewart & Walker, 2003, p. 10) from the collaborative efforts of educational leaders who are empowered to address changes to positively affect student achievement. Professional development opportunities for secondary administrators and state stakeholders should account for the structural and human resource aspects of grading practices and reporting while accounting for the symbolic and political aspects associated with embedded, traditional practices found within compliance grading models. An appreciative inquiry approach would be a highly productive process for such an entrenched process.

### **Summary**

“Nonprofit board members are critical in creating a culture of learning because they set the tone for the entire organization” (Gill, 2010, p. 29). The MASSP organization has established a servant-leader relationship and reputation with Missouri secondary school principals that has yielded a well-respected, integrous, yet powerful culture of learning, growth, and influence. The board of directors and executive director continue to hold true to the mission and goals of the organization permeating attributes of servant leadership including trust, empowerment, competence, and credibility (Russell & Stone, 2002). Referent power (French & Raven, 2005) and the attribute of persuasion (Russell & stone, 2002) affords MASSP great influential power. MASSP can, therefore,

provide a platform for communicating grading reform, findings of research, and potential strategies to incorporate within individual school buildings, districts, and, even, the state. With liaisons through NASSP, potential exists for impact at the national level. “If leaders are able to encourage climates or structures that allow expressions of new ideas and unfamiliar perspectives, opportunities for learning abound” (Preskill & Brookfield, 2009, p. 25). Systemic change where learning is authentically communicated and compliance factors are minimized is a true possibility.

SECTION THREE:  
SCHOLARLY REVIEW

## **Introduction**

According to Vatterott (2015), competency-based grading requires a paradigm shift that redefines learning in many ways. Specifically, “learning is defined by the standards” (Vatterott, 2015, p. 27). In order to leverage the potential influence of competency-based grading methods requires identifying the standards or learning outcomes, recognizing proficiency levels, constructing proper assessment processes, and providing opportunity for mastery and re-learning through consistent grading policies. Subsequently when these elements are identified, the impact, or the extent to which desired outcomes are achieved, can be analyzed (Rossi, Lipsey, & Freeman, 2004).

This scholarly review will examine the evolution of public education and the developing push for competency-based grading initiatives. First, the historical aspect of public education in the development of standards-based curriculum and the impending increase of educator accountability will be addressed. The limitations of traditional grading practices and possible resulting effects are then discussed. The tenets of competency-based grading will then be explored. Following this exploration, a conceptual framework providing a school identification method for the study is clearly defined. The review concludes with a summary of similar studies conducted setting the stage and clarifying the impetus for a mixed methods study of the effects competency-based grading had on student achievement.

### **Standards-based Curriculum Movement**

From the 1950’s to present times, public schools have experienced world events and political reactions that have greatly affected and shaped educational beliefs and policy. The 1954 Supreme Court desegregation decision in *Brown v. Board of*

Education, the 1957 Sputnik launch by the Soviet Union, and the unionization of teachers in the early 1960's contributed to a more government-centered control of education as opposed to "the belief that education policy should be handled strictly by local communities" (Mitchell, Crowson, & Shipps, 2011, p. 4). According to St. John, Daun-Barnett, and Moronski-Chapman (2013), "The Elementary and Secondary Education Act of 1965 (ESEA) was passed during this period of innovation in education" (p. 56). ESEA prioritized financial supports for students experiencing education barriers such as race or low socioeconomic status (SES) in an attempt to provide greater equity and access for all American students.

The 1983 publication of *A Nation at Risk (ANAR)* can be viewed as a political reaction rendering a move away from the intent and progress gained by the original passing of ESEA (St. John et al., 2013). St. John et al. (2013) surmised, "ANAR rapidly became a rationale for shifting the intent of high schools from serving as comprehensive, local institutions with a curriculum defined by local school boards to becoming part of a national system" (p. 57). *Brown v. Board of Education*, teacher unionization, ESEA, and *ANAR* "have remained important throughout the ensuing decades placing schools at cross-roads of energetic and sometimes even violent struggles over racial and social class integration, reform and improvement of curricula, and systemic restructuring of school organizations" (Mitchell et al., 2011, p. 4).

These historical proceedings shaped today's movement towards national- and state-mandated standards-based curricula. Galvanizing the reform agendas of politicians ensuring a standards-based curricula was the 2001 passing of the *No Child Left Behind (NCLB)* policy. According to Dublin (2014), "cementing standards-based education in

the United States education system, *NCLB* requires all states to establish standards for learning and subsequently utilize assessments that measure student progress” (p. 9).

Stemming from *NCLB*, many states “enacted initiatives that tended to be more prescriptive in their tone, more comprehensive in their scope, and more punitive in their tactics” (Mitchell, et al., 2011, p. 34). Missouri was no different. According to Dublin (2014), “In 2004, the K-12 Grade-Level Expectations were developed to further delineate what students should know and be able to do and ensure students across the state of Missouri are learning the same established set of standards” (p. 10). Missouri’s Grade-Level Expectations have been revised periodically with input from educators. Missouri high schools are required to assess students using End of Course Exams (EOC’s) specifically in math, English, and science in order to measure student achievement from these state standards.

More recent, reform efforts have focused on national standards with financial incentives for states to adopt. These national standards are called Common Core Standards (National Governors’ Association Center for Best Practices & Council of Chief State School Officers, 2010). According to the National Governors’ Association Center for Best Practices & Council of Chief State School Officers (2010), Missouri adopted the Common Core on June 15, 2010, with full implementation planned for 2014-15. In the wake of political unrest from Missouri’s residents, the Missouri Learning Standards have been adopted. “The Missouri Learning Standards define the knowledge and skills student need in each grade and course for success” (Missouri Department of Elementary and Secondary Education, 2015).

Today's educators are experiencing long-lasting effects of these historical events and policy decisions. According to Rosales (2013), "for the first time in American history there is a sense of a national curriculum and an urgency to reach a level of proficiency" (p. 1). From these events and policies, teachers and administrators have experienced a shift to standards-based accountability while facing increased political accountability as well as moral accountability to ensure the success and academic growth of all students. Across the nation, teachers and administrators have searched for more efficient and effective ways to instruct and assess a growing diverse population.

### **Grading Practices and Models**

"Grading and reporting are foundational elements in nearly every educational system" (Munoz and Guskey, 2015, p. 64). Ultimately, schools exist to provide students the opportunity to acquire knowledge and develop skills. As part of the learning process, Dublin (2104) asserted, "grade reporting is crucial" (p. 1). Unfortunately, while education has evolved into high-stakes student assessments over normed standards and increased accountability for teachers and administrators, grading and grade reporting haven't adapted. "One of the things that hasn't changed much about schooling over the years is the ritual of assigning grades to student report cards" (Boston, 2003, p. 1).

Variances and inconsistencies within grading practices and philosophies of teachers have been prolific throughout education's history. O'Connor (2011) asserted grades have fostered self-assessment, sorted and selected students, motivated and punished students, and communicated progress to students, parents, instructors, and administrators. Boston (2003) purported, "Teachers typically consider a variety of other factors when assigning grades, including effort, progress, participation, behavior, and

attitude” (p. 2) in addition to individual achievement. According to Marzano (2010), “the grading schemes for the same course taught by two different teachers might be so different that grades are not comparable from teacher to teacher” (p. 16). Reeves (2011) noted, “One of the most perplexing things about debates over grading policy is how very intelligent and rational people can look at the same set of facts and come to radically different conclusions” (p. 104). Through this political evolution of educational reform, policy development, and increased teacher accountability, grades have continued to serve traditional purposes within traditional formats.

### **Competency-based and Compliance-based Grading Designs**

Three primary grading systems have existed: norm-referenced grading, standards-referenced grading (SRG), and standards-based grading (SBG) (Marzano, 2010; Sturgis, 2014). These three grading systems can be categorized into compliance grading and competency grading models. The compliance grading model, which is most often referred to as traditional grading, is norm-referenced. The competency grading model includes both SRG and SBG grading systems. While SRG and SBG have been included in the competency grading category for this study, a fundamental difference exists. Heflebower et al., (2014) elucidated:

Standards-referenced grading as a system in which teachers give students feedback about their proficiency on a set of defined standards and schools report students’ level of performance on the grade-level standards, but students are not moved forward (or backward) to a different set of standards. (p. 3)

Heflebower et al., (2014) continued:

Standards-based grading is a system of assessing and reporting that describes student progress in relation to standards. In a standards-based system, a student can demonstrate mastery of a set of standards and move immediately to a more challenging set of standards. (pp. 3-4)

Students are not bound to grade-level standards but progress forward or regress based on their abilities and mastery of skills in a SBG model. SRG, though, is a bound model with a grade-level set of standards while SBG is unbound by grade-level and more open to a ubiquitous set of subject standards. Marzano (2010), as well as Heflebower, Hoegh, and Warrick (2014), noted many administrators and educators have confused these terms. While a fundamental difference exists, both systems attribute to the same fundamental principle. In either model, “grades must be based solely on students’ current levels of performance with specific standards” (Heflebower et al., 2014, p. 4).

### **Apprehensions of Compliance Grading**

Traditional grading practices, embedded in compliance grading models, have roots grounded from norm-referenced grading stemming back to the mid-nineteenth century (Marzano, 2010). In this study, traditional grading will be referenced as a compliance-based grading model and defined as the percentage of total points accumulated from total points possible based on a variety of assignments, assessments, projects, and individually-determined teacher criteria. Teachers are often left to their own experiences to establish criteria for grading with several different elements potentially included: exams, quizzes, projects, reports, portfolios, labs, journals, presentations, homework, participation, effort, attendance, attitude, and extra credit (Dublin, 2014;

Marzano, 2010; Reeves, 2011). With so many individually-determined teacher criteria, inconsistencies and flaws have remained.

Inconsistencies and flaws have existed within a compliance-based grading system for years potentially having a negative impact upon students' achievement. "These practices often not only result in ineffective communication about student achievement, but also may actually harm students and misrepresent their learning" (O'Connor, 2011, p. xii). Covington (1992) supported O'Connor's (2011) contention:

Even among the winners, the psychological casualty rate is prohibitive whether it be reflected in the young, upward-striving entrepreneur who sacrifices the joy of discovery for the sake of conformity, or the gifted child who amasses an enviable academic record as a way to offset persistent self-doubts about her worth, doubts that linger nonetheless. (p. 153)

### **Self-worth Theory Implications on Traditional Grading Practices**

Myths about student learning permeate the traditional grading system. For instance, Guskey (2011) noted, "No research supports the idea that low grades prompt students to try harder" (pp. 18-19). "The claim that achieving under adversity (competition) builds character is flatly contradicted by the evidence" (Covington, 1992, p. 153). Low grades, poor test scores, and student-to-student comparisons can diminish motivation and effort causing a loss of hope (Dublin, 2014; Guskey, 2011; Reeves, 2011; Sturgis, 2014). "Many of the factors that affect students' abilities to succeed in school lie outside of their control" (Dueck, 2014, p. 15).

Self-worth theory purports the protection of one's sense of ability as the student's highest priority (Covington, 1992). Correlating to self-worth theory, Tollefson's (2000)

expectancy of success model “assumes the amount of effort invested is a product of the expectation of success and the value of the reward” (p. 65). Tollefson (2000) postulated students would only put forth effort if the perceived rewards were valued and achievable. These academic issues manifest and can be reflected in failed assessments, incomplete homework or projects, zero’s, and poor behaviors skewing traditional grade reporting.

According to Covington’s (1992) Theory of Self-worth, students “are busy avoiding failure” (p. 152) in order to prohibit feelings of shame due to the competitiveness and conformity factors of our current school structure, specifically grading practices that communicate success or failure. “To be able is to be *worthy*, but to do poorly is evidence of inability and is reason to despair” (Covington, 1992, p. 79). Tollefson (2000) acknowledged, “Students who do not try because they fear failure are placed in a very difficult position” (p. 77) where teachers misperceive student actions. Sturgis (2014) noted a traditional system inherently exhibited the following flaws: inaccurate measures, earning of credit without substantive learning, lack of incentive to improve performance or learning, credit deficiency leading to dropouts, lowered GPA preventing college admittance, and student and/or teacher manipulation. According to Covington (1992), nothing had greater impact on a student’s sense of self-esteem than good grades, nor shattered that sense than poor grades.

### **A Case for Systemic Change**

Tinsley, Dillon, and Madsen (2013) identified, “Organizations often fail to expose and correct latent errors” (p. 56). In accordance with Covington’s (1992) theory and Tollefson’s (2000) success expectancy model, the behaviors Sturgis (2014) identified can be a superficial result of a more systemic problem. Educators should be cautious of

simply blaming student achievement concerns on a lack of motivation, lack of effort, or non-compliance issues (Covington, 1992). Hattie's (2009) research suggested:

(Educators) seriously consider student demotivation caused by, for example, public humiliation, devastating test results, or conflicts with teachers or peers.

For many, demotivation has more impact than motivation. Such demotivation can directly affect commitment to the goals of learning, turn off the wish for and power of feedback, and decrease involvement. (p. 48)

These negative student behaviors are potentially latent errors of a flawed compliance grading system. Hattie (2009) also asserted that “students were becoming more cynical, and using more ineffective stress management strategies, and it could be suggested that the increased emphasis on external accountability testing models has not helped” (pp. 48-49). With the advent and development of standards-based curriculum, increased accountability, and closer scrutiny of schools, grades and achievement have become a competitive environment. “In the competitive learning game teachers become the gatekeepers of success and approval. This puts a powerful weapon in their hands. Sometimes teachers use the dynamics of scarcity to ensure good behavior” (Covington, 1992, p. 134).

Varying practices and implications of practice exist within the compliance grading model. According to Vatterott (2015), “we must acknowledge how traditional grading practices obstruct the learning process, damage motivation, and cause teachers and students to fixate on grades to the detriment of learning” (p. 37). Damaged motivation results from continued failure and eventual loss of hope. “There is no question that sustaining hope motivates people and increases their enthusiasm for work

and their creativity” (Preskill & Brookfield, 2009, p. 176). The concern is a systemic issue beyond simply reporting a grade. “It is not only a specific set of practices that must be changed, but also a broader philosophy as well” (Covington, 1992, p. 153).

When considering self-worth theory (Covington, 1992), growth mindset (Dweck, 2008), the expectancy of success equation (Tollefson, 2000), and hope theory concepts (Preskill & Brookfield, 2009), students who have hope begin to expect success resulting in an increased effort. Hattie (2009) supported:

The notion that increasing achievement is a function of our efforts and interest is critical to success—there is not point, for example, in investing in study or preparation if we do not believe that our efforts can make a difference. (p. 48)

With an increased effort and feelings of success, student motivation rises ultimately resulting in achievement. A cyclic effect can be postulated as a student experiences achievement, the student gains more hope leading to greater expectancy of success, effort, motivation, and even greater achievement (Figure 2). Competency-based grading can address and even resolve many of the issues found within a compliance grading model contributing to under achievement and apathy of students. This grading model has the potential for systemic change improving achievement through instillation of hope, success, effort, and motivation.



*Figure 2. Cycle of Achievement*

Given variations of philosophy and inconsistent practices of educators coupled with the professional responsibilities of ensuring the success of students, it is imperative that grading consistently and accurately reports student achievement and facilitates student growth. An increasing trend and support of standards-based and/or standards-referenced grading exists (Boston, 2003; Cox, 2011; Dublin, 2014; Marzano, 2010; O'Connor, 2011; Scriffiny, 2008). Competency-based grading models, either SRG or SBG, have been proposed to resolve these broad problems of grading practice by scholars such as Guskey, Marzano, O'Connor, Reeves, and Sturgis; however, practitioners have difficulty recognizing full and successful implementation.

### **Competency-based Grading Conceptual Framework**

The exploration into the impact of fully implemented competency-based grading models upon student achievement will be the focal point of the research. To do so, this study must first identify high schools in Missouri where a competency-based grading system has been fully implemented. To facilitate school identification, key elements of competency-based grading will be identified as a conceptual framework. To complete the identification process, four elements have been determined as critical for full implementation. A rubric from these critical elements can be used to analyze

implementation stage (Appendix A). Conceptualizing what a fully implemented competency-based model looks like is essential to this study. Identifying the essential concepts required as part of full implementation within a Missouri high school for quantitative analysis is imperative.

### **Comprehensive Learning Progression**

The first element is the establishment of a comprehensive learning progression that includes a curriculum with aligned standards. Sturgis (2014) supported, “The first step in building a competency-based grading system is to develop the learning progression that indicates what students are expected to know and be able to do” (p. 14). According to Marzano (2006), properly aligned and taught standards should be an emphasis to ensure student success and achievement. Jung and Guskey (2007) further contended teachers should clearly link standards to achievement goals. Standards-based instruction from a fully aligned curriculum has been shown to positively affect student achievement (Reys, Reys, Lapan, Holliday, & Wasman, 2003). In other words, what do educators want students to know, learn, or demonstrate? Vatterott (2015) contended standards should be synthesized into learning targets that are prioritize learning goals that are clearly communicated to students. While Sturgis (2014) suggested a learning progression can stretch from kindergarten through 12th grade, for the purpose of this study, the scope will be limited to an aligned, standards-based curriculum from 9th through 12th grades.

### **Predetermined Level of Proficiency**

In addition to an identifiable learning progression, pre-determining an acceptable level of performance or proficiency is critical. “Competency-based schools need a

common framework to help teachers and students communicate about the depth of knowledge or learning target for any specific standard that students are expected to meet” (Sturgis, 2014, p. 16). O’Connor (2011) concluded, “The challenge is to create clear descriptors of our overall levels so that we have a delineated achievement continuum within which we can consistently judge student achievement” (p. 69). According to Marzano (2010), once standards or goals are identified then scaling should occur so all teachers and students have a universal understanding of expectations. “When teachers are working together with a shared understanding of proficiency, grading becomes a way of tracking progress” (Sturgis, 2014, p. 19). Identification of the content in the form of standards and then identifying the expectation level of performance becomes imperative in order to appropriately assess students.

### **Meaningful Assessment Process**

The third element of a fully implemented competency-based grading model is the facilitation of a meaningful and comprehensive assessment process. After curriculum has been constituted into standards, Marzano (2010) asserted, “The most common form of feedback is an assessment” (p. 5). A formative approach includes the use of formative assessment strategies culminating in an eventual summative assessment (Marzano, 2010). A formative approach requires frequent, timely, and specific feedback for both students and teachers (Reeves, 2011; Marzano, 2001). Hattie (2009) clarified through statistical analysis that “feedback was most powerful when it is from the student to the teacher” (p. 173). Sturgis (2014) supported by noting formative assessments can provide meaningful feedback and provide additional instructional opportunities for students to reach proficiency. “In competency-based schools, there is a constant cycle of learning,

practice, application, and assessment” (Sturgis, 2014, p. 24). A proper feedback loop within the assessment process assists students and teachers in progress monitoring the learning progression of each student towards a set of standards and guides the instruction for students to achieve proficiency on the identified standards. “Most programs and methods that worked best were based on heavy dollops of feedback” (Hattie, 2009, p. 173).

### **Consistent Grading Policies**

In addition to a highly effective assessment process, school-wide and/or district-wide grading policies should reflect “a growth mindset that believes that students... can develop and build skills with the right mix of feedback, supports, and time to practice” (Sturgis, 2014, p. 23). Dweck (2008) asserted a “growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts” (p. 7). Grading policies should not penalize students for mistakes made within the formative process but support re-teaching and re-learning missed concepts (Marzano, 2010; O’Connor, 2011; Reeves, 2011; Sturgis, 2014). “Practice (homework) is never graded” (Sturgis, 2014, p. 23). According to O’Connor (2011), grading policies within schools or districts should not allow extra credit but should allow late-work. Finally, a growth mindset encourages learning through allowing retakes of assessments and redo’s of projects (O’Connor, 2011; Reeves, 2011). Dweck (2008) indicated:

The passion for stretching yourself and sticking to it, even (or especially) when it’s not going well, is the hallmark of the growth mindset. This is the mindset that allows people to thrive during some of the most challenging times in their lives.  
(p. 7)

Grading practices and grading policies should encourage and support this outlook.

### **Review of Existing Research Studies**

Given the previously mentioned four elements constructing a fully implemented competency-based grading system have been incorporated, high schools may be identified for analysis of impact on student achievement. Suggested by McDavid, Huse, and Hawthorn (2013), the logic model (Figure 1) illustrates: inputs, components, outputs, and outcomes related to competency-based grading. “Program inputs are resources that are required to operate the program” (McDavid et al., 2013, p. 52). Students, teachers, parents, administrators, the school facility, and various other resources constitute the program inputs. McDavid et al. (2013) described program components as “clusters of activities in the program” (p. 53). The conceptualized framework of processes and activities described earlier (Figure 1) reflects the components within the logic model.

Resulting from the conformation of the inputs and components identified, the outputs and outcomes materialize as byproducts. “Program outputs occur as a result of the activities or work done” (McDavid et al., 2013, p. 55). The outputs of a competency-based model are the qualitative aspects, such as teacher and student perceptions about motivation, effort, and effectiveness. The outcomes according to McDavid et al. (2013) are “the intended results that correspond to program objectives” (p. 55). In the instance of evaluating the impact of competency-based grading, the program outcomes are established as student achievement which can be measured quantitatively.

### **Middle School Studies**

Little research has been conducted in reference to the outcomes of student achievement in high schools. “The research for its use at the high school level is sparse”

(Rosales, 2013, p. 38). However, several SBG studies have been conducted with emphasis upon the inputs and components for successful implementation. Interestingly, many of these studies have been completed in middle schools. Urich (2012) researched implementation of standards-based grading practices “to learn the process middle school teachers in a Midwestern suburban middle school experience as they transition from traditional grading practices to (standards-based reporting) SBR” (p. 3). Another study explored “the perceptions of middle school teachers and principals regarding standards-based grading and effect practices to accompany SBG” (Dublin, 2014, p. 2).

Much of the theoretical works published by Marzano, O’Connor, Reeves, Guskey, and other renowned authors is cited but void of data-rich literature pertaining to student achievement. Beatty (2013) concurred asserting “to date, much of the argument in support of SBG is theoretical” (p. 3). However, the previously stated arguments within this scholarly review are highly persuasive. Although there is a void of quantitative data, there is also a distinct need to either verify or invalidate these theoretical assertions.

### **Qualitative Analysis of Outputs**

Even more so than debate of the inputs and components for implementation, questioning practitioners cannot ascertain how competency-based grading impacts the desired long-term outcome, student achievement, once fully implemented. Qualitative evidence does exist supporting logic-model outputs within the implementation of standards-based or standards-reference grading systems. Advocating these assertions, Dublin (2014) and Cox (2011) documented teachers and principals implementing a competency-based model communicated favorable perceptions. “The data analysis showed schools that have been implementing SBG for one to three years were

significantly more favorable toward grading practices presented in the survey when compared to non-SBG schools” (p. 72).

Following implementation, Urich (2012) administered interviews and a focus group of the twelve teachers involved in the study finding anecdotal support of standards-based reporting. The teacher participants “viewed themselves as more effective teachers with the use of standards-based practices” (Urich, 2012, p. 101). Urich (2012) further purported, “SBR can be more effective than traditional grading practices for both teachers and students when it comes to ensuring each student learns at a high level” (p. 118).

Beatty’s (2013) study included college-aged students’ perceptions in physics. “In general, many but not all students liked the SBG approach in Physics 291 despite the difficulties we encountered” (p. 8). While this study purported support for SBG, several limitations are evidenced in the study such as a longitudinal perspective, potential instructor bias, and sample size.

While qualitative evidence espoused the initial inputs and logic of the components leading to quality outputs, quantitative studies investigating the long-term outcomes of student achievement are narrow and limited. Through comprehensive review, only three studies were found where quantitative data was collected in relation to competency-based grading. Of these three studies, only two pertained to high school students while the other study pertained to middle school students. Reys et al. (2003) asserted standards-based math curriculum improved eighth-grade students’ achievement on the Missouri Assessment Program (MAP) math subtest exam when they noted:

This research, based on data from six different school districts and involving more than 2,000 students, documents that middle school students using Standards-based mathematics curricula for at least 2 years equaled or exceeded the achievement of students from matched comparison groups on the state mandated eighth-grade mathematics test.

(p. 89)

This study did not specifically explore grading practices or competency grading, however, a standards-based curriculum, a component, showed positive impact on student achievement.

### **Limited Quantitative Studies**

Comes (2015) examined criterion-referenced grading (CRG) versus traditional grading. CRG attributes align with competency-based grading model practices. While the study noted student achievement growth using both grading systems, “the data did not yield enough statistical significance to determine if the students under CRG or those under traditional grading saw a larger increase in student achievement” (Comes, 2015, p. 118). Comes’ (2015) study was limited to one high school, two teachers, local assessments, and six groups of students. Sample size, implementation process, and instructor bias limited the generalizability and validity of this research; however, the data did not show a significant statistical difference.

Rosales (2013) investigated the effects of standards-based grading on student achievement of high school aged students. Rosales’ focus of the study included quantitative data comparing Algebra II EOC scores of students in an SBG classroom versus students in a traditional classroom (Rosales, 2013). Findings of the data from the

107 students were “neither grading method was more beneficial than the other on the posttest” (Rosales, 2013, p. 58). Conducting multiple analyses, Rosales (2013) concluded, “No significant difference existed between SBG students and traditionally-graded students” (p. 62). As with other studies, sample size, focus on a single subject area, implementation process, and instructor bias limited the generalizability and reliability of this research.

### **Conclusion**

This review of the literature founded the evolution of public education and the developing push for competency-based grading initiatives. A conceptual framework to identify full implementation of a competency grading model was identified. Finally, a lack of extensive and quality research pertaining to the effects of competency grading models upon high school students’ achievement was explicated. A majority of the established and accepted research supporting the trend of competency-based grading models is theoretical and qualitative. This raises a great concern and an impetus upon additional research. Lasley (2009) posited:

Educational practices have been ideologically driven for decades. Few teachers or researchers could prove that their methods were 'best practices' for students, so they simply argued for others to embrace advocated approaches based on theoretical arguments and selected anecdotal evidence. The method de jure was often a result of what conference or professional meeting a teacher or principal had just attended, not on sound evidence about what educational practice really worked. (p. 245)

While these theoretical arguments and educator perceptions are highly persuasive, additional quality and extensive quantitative data are needed. The driving impetus of this exploratory sequential mixed methods study is to evaluate the impact of the long-term outcomes of high schools fully implementing a competency-based grading model complementing and enhancing this body of educational research.

SECTION FOUR:  
CONTRIBUTION TO PRACTICE

## Preface

With an increasing trend and growing interest for standards-based and/or standards-referenced grading (Boston, 2003; Cox, 2011; Dublin, 2014; Marzano, 2010; O'Connor, 2011; Scriffiny, 2008), a program evaluation designed to analyze the long-term outcomes is viable in today's era of public education scrutiny, accountability, and criticism. Missouri secondary administrators have provided MASSP feedback requesting additional information regarding formative assessments and standards-based grading (MASSP, 2015). Secondary school administrators need information and research to guide best practices within their buildings and districts. "Evaluations are often conducted in situations in which stakeholders have different views of the effectiveness of the program" (McDavid et al., 2013, p. 37).

The exploratory sequential design of the study consisted of two phases related specifically to the two research questions. Research question one was answered through the qualitative process. Research question two became more challenging. An attempt to quantify learning within competency-based grading systems was perplexing. Given the changes in federal requirements and state reporting, longitudinal data of Algebra 1 and English 2 EOC's was only available for 2009-2015. According to Janet Duncan, Assistant Director of Accountability Data for the Missouri Department of Elementary and Secondary Education, high school assessments changed in 2003, 2006, and 2009.

While researching and attempting to correlate data from 2003 to 2015, several superintendents and a data specialist encouraged a review of a joint study between DESE and the University of Missouri. After extensive searching and inquiry, this study was not found and appears to not exist. When inquiring of Mrs. Duncan, she responded, "I have

been with DESE since 2003, I should have recollection of any joint study. It was discussed at one time. However, to my knowledge, it never came to fruition.” Therefore, trend data for this study was limited to the span of 2009 to 2015. This resulted in adaptation of the proposed quantitative methodology. Additionally, data points per school were limited depending upon the identified implementation year. While an impetus for this longitudinal data is apparent, connections were derived that are informative to practice.

Educational leaders have varied viewpoints and opinions as to the effectiveness of varied grading practices, policies, and models. Providing in-depth knowledge of theory, prior studies, findings, and then making recommendations may lead to incremental changes benefiting students across Missouri high schools. The purpose of this study was to evaluate the impact of competency based grading on student achievement in Missouri high schools. A program evaluation report is presented as an executive summary (McDavid et al., 2013) in addition to the anticipated presentation for secondary school principals.

## Executive Summary

### Competency based grading in students' achievement

#### *Introduction & Purpose*

Competency-based grading models are trending in public schools all across the nation. The driving impetus of this study was to evaluate the impact of competency based grading in Missouri high school students' achievement. Much of the previous research is theoretical with a distinct void of extensive research-based analysis of intended outcomes. Secondary school administrators need information and quality research to guide best practices within their buildings.

#### *Key Elements of Competency-based Grading Model*

- a) A comprehensive learning progression aligned to and identifying state standards is developed.
- b) Levels of proficiency are pre-determined.
- c) A meaningful assessment process that emphasizes formative assessment practices promotes learning.
- d) A unified grading policy that promotes academic growth and provides continued learning opportunities.

#### *Method of Investigation*

This exploratory sequential mixed methods study first identified schools that have fully implemented a competency-based model, are transitioning to a competency-based model, or are maintaining a traditional grading model. After identifying and classifying schools using a competency-based rubric, the Algebra 1 and English 2 EOC scores were analyzed for eight schools identified as fully implementing a competency grading model.

#### *Findings*

Of 89 school principals responding for their respective high schools, 9% had fully implemented a competency-based grading model prior to 2015. Additionally, 14.6% of respondents indicated their schools to be transitioning to a competency-based model. Whether implemented, transitioning, or remaining with a traditional grading model, 90% of respondents indicated their school had implemented a comprehensive learning progression through a state-aligned curriculum.

Analyzing the eight schools fully implementing a competency-based grading model, 50% of schools improved EOC scores following full implementation in both Algebra 1 and English 2. Of the four schools implementing four or more years, 75% of these schools increased their Algebra 1 and English 2 scores.

#### *Conclusion*

Several conclusions can be drawn from this study. One conclusion is that Missouri high schools have moved towards standards-based education. Survey responses indicated a trend and interest in competency-based grading models similar to national trends. Survey responses also supported that changing grading practices and reporting systems is an intensive and extensive process. While attempting to quantify learning and analyze

impact has proven difficult, some schools have shown an increase in EOC scores and have benefited from implementing a competency based model.

***Recommendations***

- 1) A need for professional development and clear understanding of grading philosophy and practices exists.
- 2) An understanding of and recognition of implementation process requirements is necessary for educational leaders.
- 3) More research is necessary further evaluating the impact as well as completing a human resource cost analysis study for competency-based grading in schools.

## Presentation



COMPETENCY BASED GRADING  
IN STUDENTS' ACHIEVEMENT

Curt Graves  
cgraves1971@gmail.com  
@cgraves1971  
(417)742-3524  
(417)209-7119



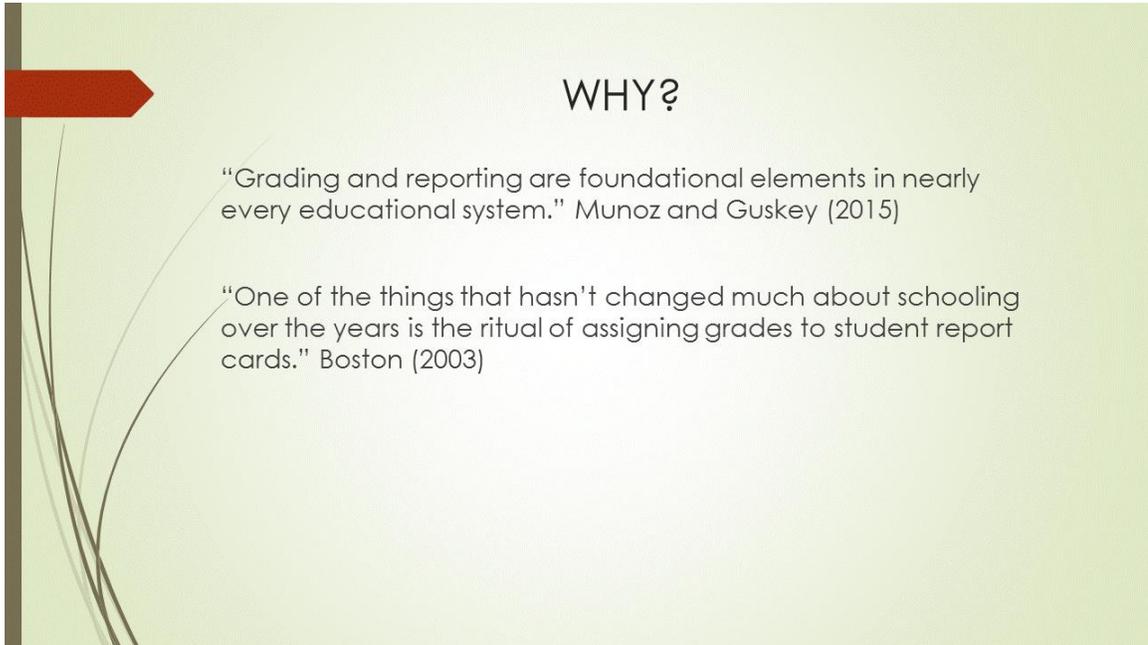
WHY?

*"Educational practices have been ideologically driven for decades...The method de jure was often a result of what conference or professional meeting a teacher or principal had just attended, not on sound evidence about what educational practice really worked." Lasley (2009)*

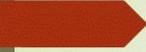
- ▶ Competency grading is becoming a trend.
- ▶ Much of the research is theoretical and scholarly.
- ▶ Distinct void of extensive research-based analysis of intended outcomes.

My district determined that standards-based grading would be initiated and implemented at all levels beginning at the lower levels and moving up. As a high school principal and instructional leader, I needed to know more and have confidence in the

instructional practices implemented just as any other building leader. As my professional research into competency grading progressed, realizations occurred spurring this study.



Grade reporting is a common communication regarding student progress. Curriculum, teacher quality, instructional practices, and student engagement are common professional development topics within the educational community. However, while grading philosophy and practices have a tremendous impact on student motivation and growth, they are rarely discussed.



## WHY: THE STANDARDS BASED MOVEMENT

- Brown v. Board of Education, 1954
- Sputnik, 1957
- Unionization of teachers, early 1960s
- Elementary and Secondary Education Act (ESEA), 1965
- Publication of A Nation at Risk (ANAR), 1983
- No Child Left Behind (NCLB), 2001
- Missouri Grade-Level and Course-Level Expectations (GLEs and CLEs), 2004
- Common Core Standards, 2010
- Missouri Learning Standards

*"For the first time in American history there is a sense of a national curriculum and an urgency to reach a level of proficiency." Rosales (2013)*

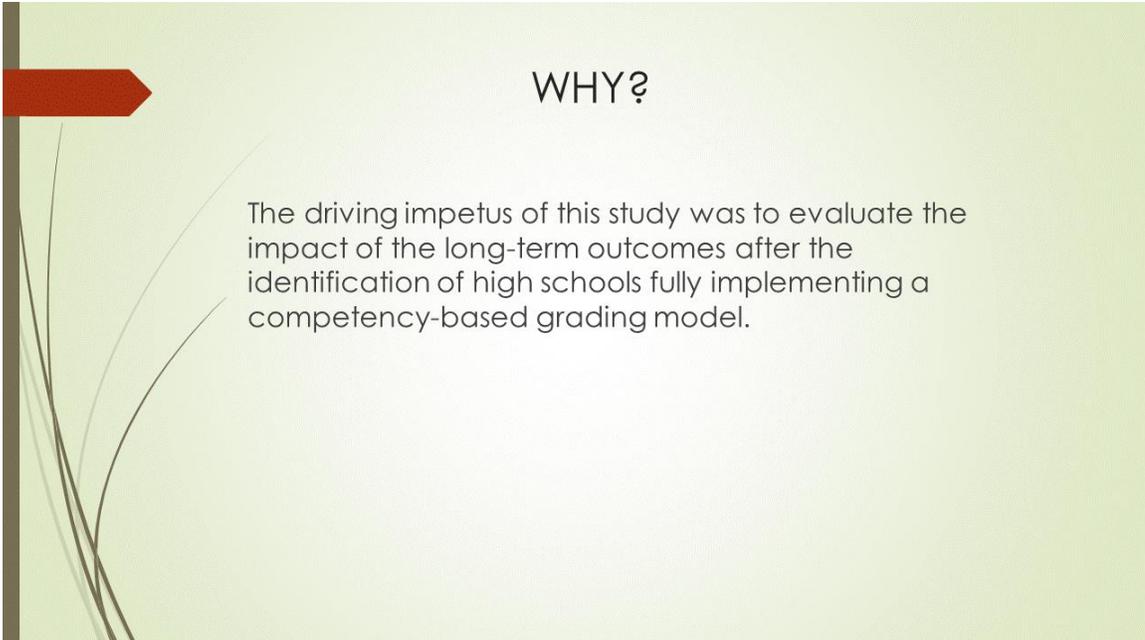
From the 1950's to present times, public schools have experienced world events and political reactions that have greatly affected and shaped educational beliefs and policy. "Although some schools and districts have forged considerable progress, grading still remains an aspect of school that is clothed in myth, mystery, and magic" (O'Connor, 2011, p. xi).



## WHY: EXISTING RESEARCH

- Middle School Studies
  - Dublin (2014)
  - Urich (2012)
- Quantitative Studies
  - Comes (2015)
  - Rosales (2013)
- Qualitative Analysis
  - Beatty (2013)
  - Cox (2011)
  - Dublin (2014)
  - Urich (2012)

Very little research has been conducted in reference to the outcomes of student achievement in high schools. Only two studies have attempted to quantify the impact of changing to a competency-based model. A majority of other studies have pertained to implementation processes or have been qualitative in nature. While quality studies have been conducted, sample size, focus on a single subject area, and instructor bias limited the generalizability and reliability of many studies.



## WHY?

The driving impetus of this study was to evaluate the impact of the long-term outcomes after the identification of high schools fully implementing a competency-based grading model.

Across the nation as accountability measures have increased and budgets have tightened, teachers and administrators have searched for more efficient and effective ways to instruct and assess a growing diverse population. Secondary school administrators need information and research to guide best practices within their buildings and districts.



## KEY TERMS / COMMON LANGUAGE

*Norm referenced grading*

*Traditional grading*

*Non-academic factors*

*Compliance grading*

*Standards based grading (SBG)*

*Standards referenced grading (SRG)*

*Competency grading*

Norm referenced grading relies on reporting a student's progress in comparison to others.

Traditional grading has roots within norm referenced formats and includes non-academic factors within reporting a student's progress. In this study, traditional grading was defined as the percentage of total points accumulated from total points.

Non-academic factors are compliance items that can influence a grade without input towards the student's acquiring of knowledge or skill. Examples might include extra credit, late-work or disciplinary penalties, attendance, and homework.

Compliance grading is any form of grading that incorporates use of non-academic factors into grade reporting.

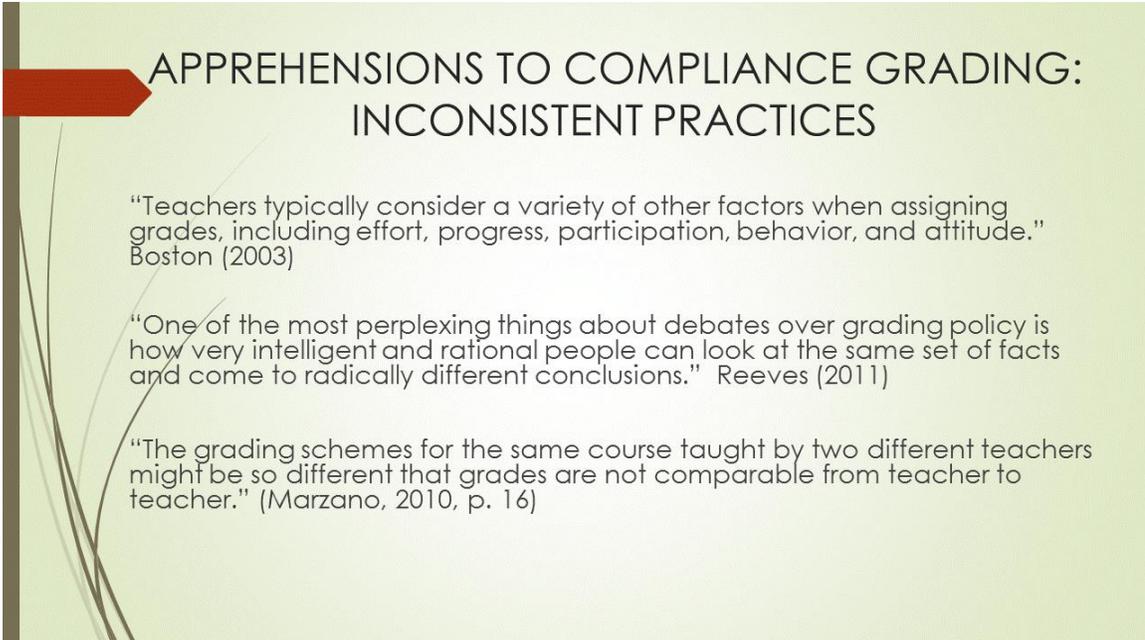
“Standards-referenced grading as a system in which teachers give students feedback about their proficiency on a set of defined standards and schools report students' level of performance on the grade-level standards, but students are not moved forward (or backward) to a different set of standards” (Heflebower et al, 2014, p. 3).

“Standards-based grading is a system of assessing and reporting that describes student progress in relation to standards. In a standards-based system, a student can demonstrate mastery of a set of standards and move immediately to a more challenging set of standards” (Heflebower et al, 2014, pp. 3-4).

Competency grading can be SBG or SRG. Non-academic factors have been removed from the reported grade to provide an authentic report of student growth and mastery.



Variations and inconsistencies within grading practices and philosophies of teachers have been prolific throughout education’s history.



## APPREHENSIONS TO COMPLIANCE GRADING: INCONSISTENT PRACTICES

"Teachers typically consider a variety of other factors when assigning grades, including effort, progress, participation, behavior, and attitude." Boston (2003)

"One of the most perplexing things about debates over grading policy is how very intelligent and rational people can look at the same set of facts and come to radically different conclusions." Reeves (2011)

"The grading schemes for the same course taught by two different teachers might be so different that grades are not comparable from teacher to teacher." (Marzano, 2010, p. 16)

"Grades need to be consistent across teachers" (O'Connor, 2011, p. 4). Myths about student learning permeate the traditional grading system. Guskey (2011) noted, "No research supports the idea that low grades prompt students to try harder" (pp. 18-19). "The claim that achieving under adversity (competition) builds character is flatly contradicted by the evidence" (Covington, 1992, p. 153). Low grades, poor test scores, and student-to-student comparisons can diminish motivation and effort causing a loss of hope (Dublin, 2014; Guskey, 2011; Reeves, 2011; Sturgis, 2014).

Inconsistencies and flaws have existed within a compliance-based grading system for years potentially having a negative impact upon students' achievement. "These practices often not only result in ineffective communication about student achievement, but also may actually harm students and misrepresent their learning" (O'Connor, 2011, p. xii).

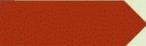


## APPREHENSIONS TO COMPLIANCE GRADING: VARYING PHILOSOPHIES

Grades have fostered self-assessment, sorted and selected students, motivated and punished students, and communicated progress to students, parents, instructors, and administrators. O'Connor (2011)

“The grading schemes for the same course taught by two different teachers might be so different that grades are not comparable from teacher to teacher.” Marzano (2010)

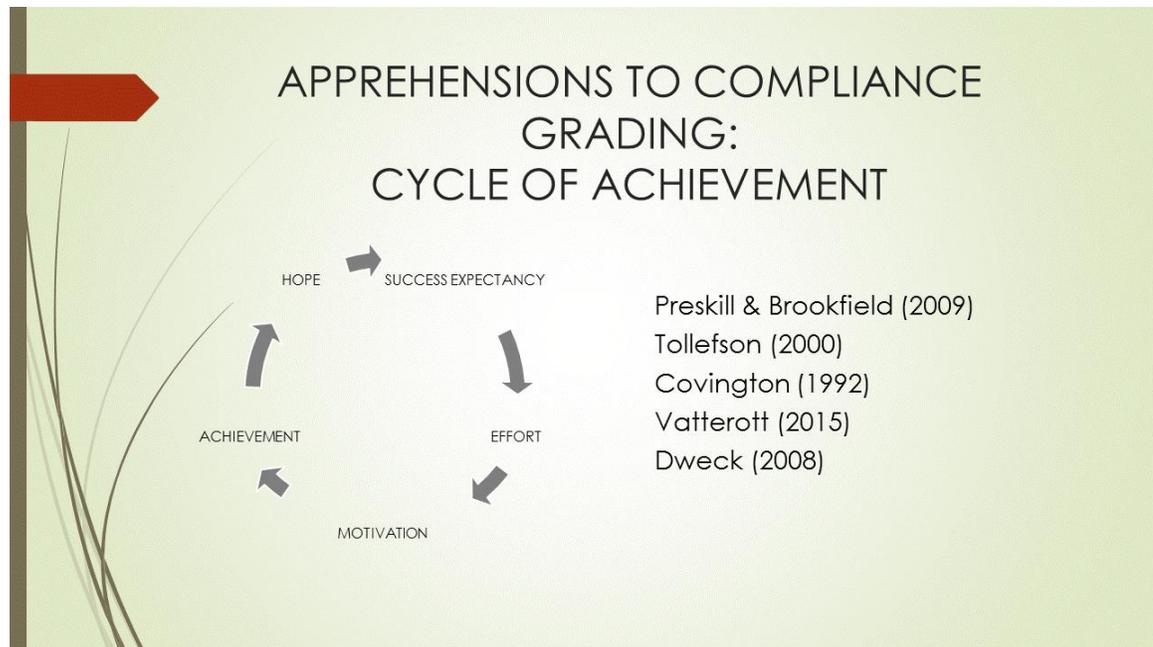
“Although standards-based education is common in the United States, it has often been adopted without commensurate changes to grading and reporting practices. This mismatch has led to confusion about how grades should be computed, what they mean, and how they should be used” (Heflebower et al., 2014, p. 1).



## APPREHENSIONS TO COMPLIANCE GRADING: NON-ACADEMIC FACTORS

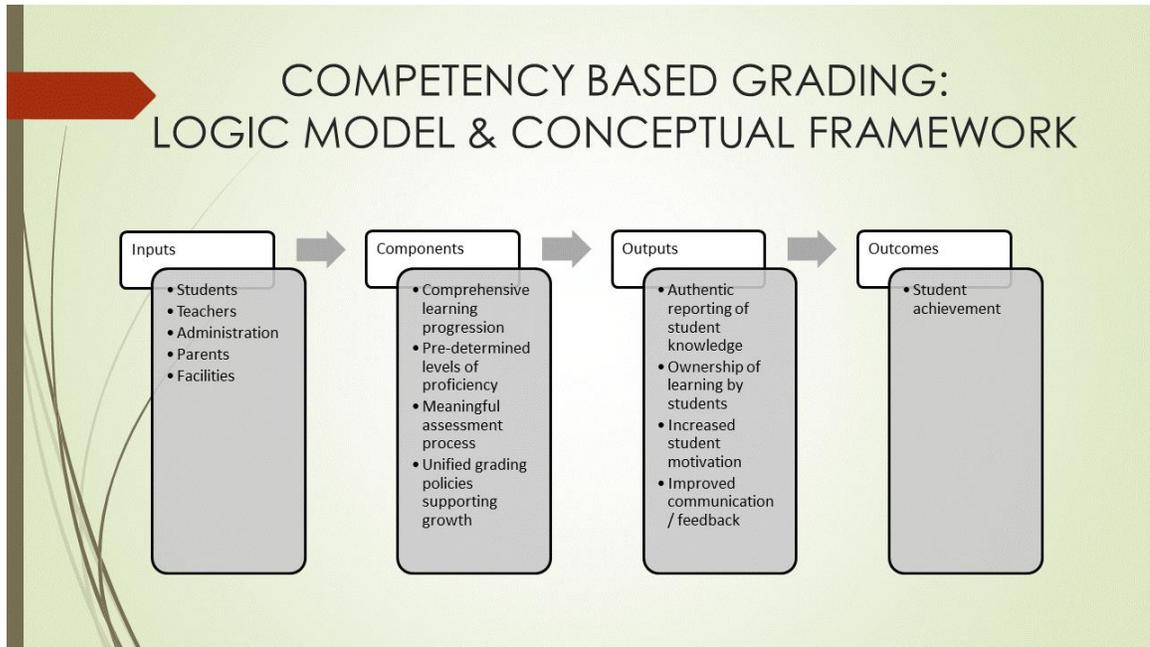
Knowledge and/or skill acquisition overshadowed by non-academic factors such as extra credit, effort, attendance, attitude, participation, homework completion. Dublin (2014), Marzano (2010), Reeves (2011)

When points are awarded within a compliance grading system for non-academic factors, reports are skewed and distorted. According to O'Connor (2011), "Inaccurate grades most commonly result from teachers determining them by blending achievement with behaviors (effort, participation, adherence to class rules, etc.)" (p. 4).

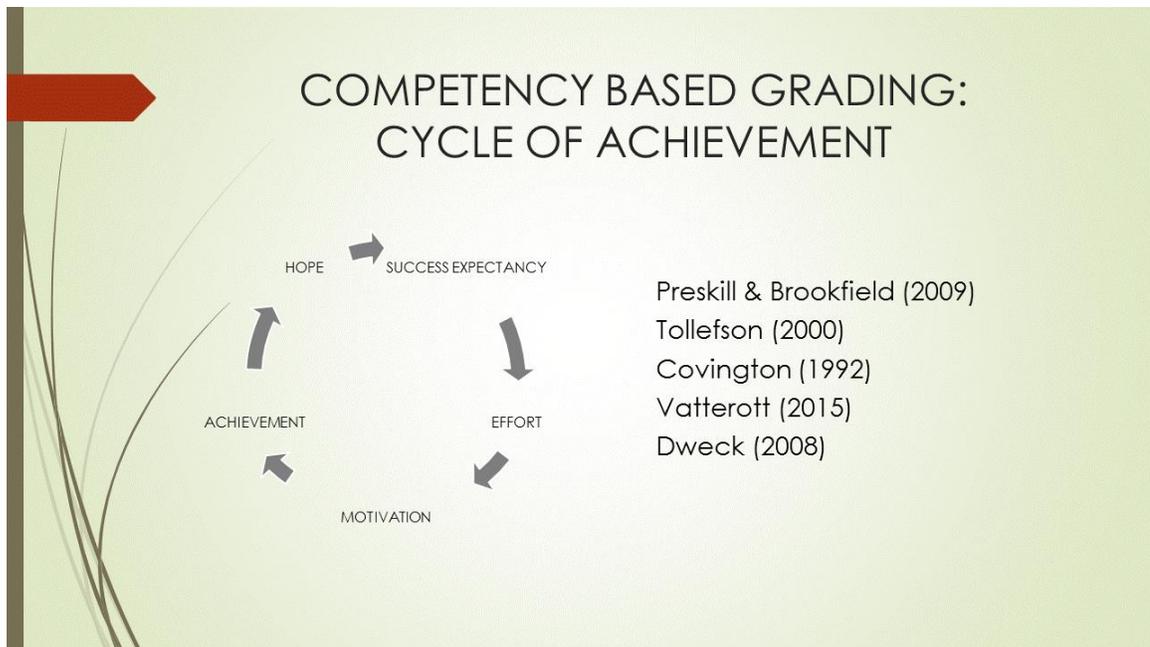


Vatterott (2015) asserted that "the worst damage done in the traditional grading paradigm is the damage to student motivation and how students personally experience grades" (p. 30). Developed from self-worth theory (Covington, 1992), hope theory (Preskill and Brookfield, 2009), success expectancy theory (Tollefson, 2000), and mindset (Dweck, 2008), a cycle of achievement is revealed. If students lose hope, have no expectation of success, lack effort, and become void of motivation, then achievement deteriorates. The downward spiral manifests in students and is masked as non-compliance, laziness, or unmotivated. Hattie (2009) supported, "the notion that increasing achievement is a function of our efforts and interest is critical to success—

there is no point, for example, in investing in study or preparation if we do not believe that our efforts can make a difference” (p. 48).



The essential elements required as part of full implementation of competency based grading are the components. (1) A comprehensive learning progression includes a curriculum with aligned standards. (2) Pre-determined levels of proficiency for each standard or set of standards clearly communicated from instructors to students. (3) The facilitation of a meaningful and comprehensive assessment process that includes formative and remedial processes. (4) A unified grading policy for the building or district that reflects a growth mindset, not penalizing students for mistakes within the formative process.



“Extrinsic motivators increase students’ focus on the reward or punishment rather than on the desired behavior...they give rise to the need to continuously increase the amount of reward or punishment to elicit the desired behavior” (O’Connor, 2011, p. 9). The single most important factor of intrinsic motivation for a student is actual success at learning (O’Connor, 2011). Hattie’s (2009) research suggested that educators “seriously consider student demotivation caused by, for example, public humiliation, devastating test results, or conflicts with teachers or peers. For many, demotivation has more impact than motivation. Such demotivation can directly affect commitment to the goals of learning, turn off the wish for and power of feedback, and decrease involvement” (p. 48).

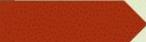
Therefore, a cyclic effect can be postulated. If students gain hope, have expectation of success, give effort, become motivated, then achievement rises. Removing factors out of students’ control, focusing on the learning, and giving opportunity for growth within a competency based model can create the upward spiral.



## WHAT DO WE WANT TO KNOW?

- 1) Which high schools in Missouri have fully implemented a competency-based grading model?
- 2) To what extent do competency-based grading practices affect student achievement as measured by state standardized assessments in Missouri?

This mixed method study was an exploratory sequential design. The first research question was addressed through a qualitative survey. The second research question was addressed after identifying schools that had fully implemented a competency based grading model, then studying these schools' Algebra 1 and English 2 EOC data.



## QUALITATIVE SURVEY OVERVIEW

- 500+ Surveys emailed
- 89 Responses
- 18% Response rate
- First reviewed questions 1, 3, and 7
- Scored all responses using rubric for questions 2, 4, 5, and 6

CATEGORY	Exemplary (4)	Proficient (3)	Approaching (2)	Unsatisfactory (1)
Comprehensive learning progression	All core department curriculum is aligned to state criteria. Students clearly understand standards to be mastered.	Curriculum is aligned to state criteria in core areas. Standards are identified by teachers.	Curriculum or standards may be partially aligned or identifiable. May or may not be communicated to students.	Curriculum is not aligned to state criteria. Standards are unidentifiable.
Predetermined level of proficiency	All core courses contain clear descriptors of proficiency levels. Proficiency scales are available for all assessments. Proficiency levels are clearly communicated in advance to students.	Most core courses contain clear descriptors of proficiency levels. Proficiency levels may be a percentage. Some proficiency scales may be developed. Proficiency levels are communicated in advance to students.	Some courses contain descriptors for proficiency. Percentages may be identified as proficiency. Proficiency levels are sometimes communicated.	Acceptable proficiency levels are undetermined.
Meaningful assessment process	A formative process guides daily instruction. Feedback is consistently and frequently provided. Proficiency is determined at the end of the complete learning cycle through a summative assessment format.	A formative process guides instruction. Feedback is provided. Proficiency is determined through a summative assessment format.	Assignments, quizzes, and tests provide feedback. Instruction may be adjusted at the teacher discretion.	Assignments, quizzes, and tests provide evaluative feedback.
Unified grading policies supporting growth	Proficiency is determined through assessment types for the entire building. Homework does not count for a grade. Remediation, do-overs, and retakes facilitate learning with full credit granted. Non-academic factors are reported separate.	Proficiency is determined through assessment types for core areas. Homework is minimally graded. Remediation, do-overs, and retakes facilitate learning for at least partial credit. Non-academic factors are reported separate.	Proficiency is determined through assessment types inconsistently throughout the building. Homework is minimally graded. Remediation, do-overs, and retakes may facilitate learning for at least partial credit. Non-academic factors may be reported separately.	Homework is graded. Remediation, do-overs, and retakes are not allowed. Non-academic factors may determine part of reported grade.

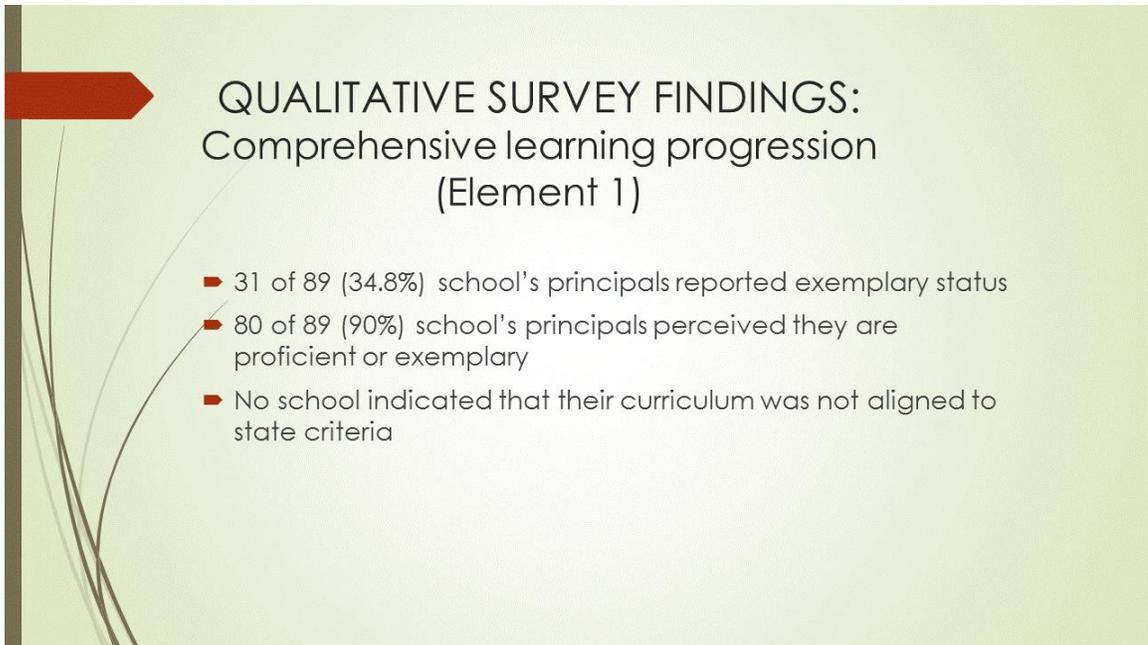
Sample of rubric (Appendix C). Each category applied to an element of competency-based grading and a specific qualitative survey question. These were questions two, four, five, and six.

## QUALITATIVE SURVEY FINDINGS (N=89)

- ▶ 68 (76.4%) Compliance-grading model schools  
*N = Schools noted as not implementing nor transitioning to a competency-grading model*
  
- ▶ 13 (14.6%) Transitioning to competency grading  
*T = Schools that principals classified as transitioning towards a competency based model*
  
- ▶ 8 (9%) Competency-grading model schools  
*F = Schools identified as fully implementing a competency based model*

(All responding schools within study were assigned a corresponding letter and a 'N', 'T', or 'F' as a pseudonym.)

Schools were given a corresponding letter and noted as a 'F' for fully implementing a competency-based system (ie. AF, BF, CF, ...), as a 'T' for transitioning towards a competency-based system (ie. AT, BT, CT, ...), or a 'N' for not transitioning and continuing with a compliance-based system.



**QUALITATIVE SURVEY FINDINGS:**  
Comprehensive learning progression  
(Element 1)

- 31 of 89 (34.8%) school's principals reported exemplary status
- 80 of 89 (90%) school's principals perceived they are proficient or exemplary
- No school indicated that their curriculum was not aligned to state criteria



## QUALITATIVE SURVEY FINDINGS: Comprehensive learning progression (Element 1)

Principal of school BT noted, "teachers were provided collaboration time to identify "power standards," by which departments would construct curriculum maps, align assessments, and create our framework for Standards Based Grading."

"We have established essential measurable learning objectives for all 31 of our professional learning teams. However, we are still in the process of becoming more intentional about how we communicate learning standards." Principal of School AT

"We are working to make sure students understand, but that has been difficult for the district office and instructors to implement." Principal of School EN

Principal of School BN reported, "The curriculum is aligned to the Missouri Learning Standards in all areas. Teachers identify 10-15 Essential Learning Outcomes to monitor student mastery."

A vast majority of fully implemented and transitioning schools indicated alignment to state standards and identification of power or essential standards. Heflebower et al. (2014) identified "prioritized standards" noting that "some standards need to be emphasized over others" (p. 16).



## QUALITATIVE SURVEY FINDINGS: Predetermined level of proficiency (Element 2)

- ▶ 17 of 89 (19%) of principals perceived their school as exemplary
- ▶ All 8 schools determined to be fully implementing competency based grading were rated proficient or exemplary
- ▶ 40 (59%) of 68 schools identified as compliance-based grading schools were perceived as unsatisfactory or approaching
- ▶ 27 (40%) of 68 compliance schools were rated exemplary or proficient



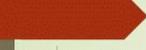
## QUALITATIVE SURVEY FINDINGS: Predetermined level of proficiency (Element 2)

"Rubrics are available for the majority of core area assessments which provide learning goals for our students. I can not say that we are at 100% in this area though, it is a work in progress." Principal of School BF

Principal of School DT reported, "We are in the process of this right now of creating proficiency (mastery) levels for our departments. We began this year with Math and ELA and will continue with additional departments."

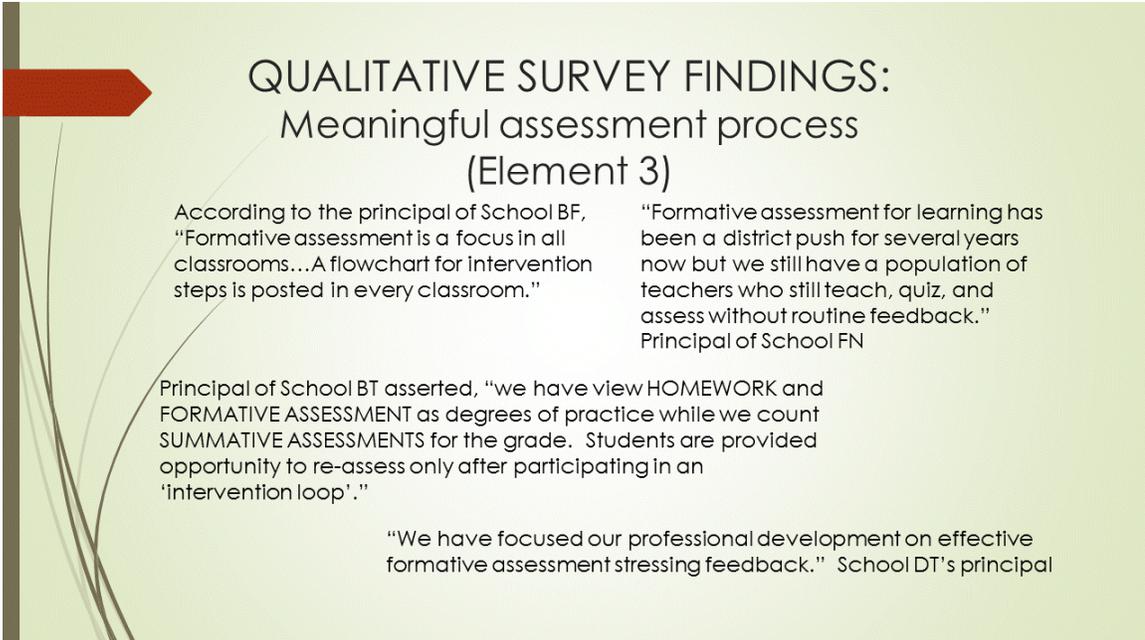
"One of the components constructed were learning goal rubrics that accompany each power standard identified in each department. These tools are used to communicate to students what they are accountable for knowing and being able to do." Principal of School BT

Proficiency scales in the form of rubrics or checklists articulate the learning progression for each essential standard and "bring prioritized standards to life in the classroom" (Heflebower et al., 2014, p. 28). Predetermined levels of proficiency can be communicated clearly to students.



## QUALITATIVE SURVEY FINDINGS: Meaningful assessment process (Element 3)

- 37 of 68 (54%) of compliance-based grading schools indicated approaching or unsatisfactory levels
- 31 of 68 (46%) of compliance-based grading schools indicated proficient or exemplary levels
- 19 of 21 (90%) of schools transitioning to or already implementing competency-based grading models reported proficient or exemplary
- 1 of 21 (5%) of schools transitioning to or already implementing competency-based grading models reported unsatisfactory level of proficiency
- 1 of 21 (5%) of schools transitioning to or already implementing competency-based grading models reported approaching a proficient level



## QUALITATIVE SURVEY FINDINGS: Meaningful assessment process (Element 3)

According to the principal of School BF,  
"Formative assessment is a focus in all  
classrooms...A flowchart for intervention  
steps is posted in every classroom."

"Formative assessment for learning has  
been a district push for several years  
now but we still have a population of  
teachers who still teach, quiz, and  
assess without routine feedback."  
Principal of School FN

Principal of School BT asserted, "we have view HOMEWORK and  
FORMATIVE ASSESSMENT as degrees of practice while we count  
SUMMATIVE ASSESSMENTS for the grade. Students are provided  
opportunity to re-assess only after participating in an  
'intervention loop'."

"We have focused our professional development on effective  
formative assessment stressing feedback." School DT's principal

District and building professional development on formative assessment processes was a recurring theme. Supporting this observation Reeves (2010) noted, "The focus of assessment has shifted dramatically from summative to formative assessment" (p. x). Ninety percent of principals of high schools fully implementing and transitioning to a competency-grading model indicated at least a proficient level of formative assessment. Several principals of schools still using a traditional grading system indicated aspects of or desires for a more formative assessment process.

## QUALITATIVE SURVEY FINDINGS: Unified grading policy (Element 4)

- 17 of 21 (81%) of schools transitioning to or already implementing competency-based grading models reported proficient or exemplary
- 4 of 21 (19%) of schools transitioning to or already implementing competency-based grading models reported approaching a proficient level *(these 4 schools were all transitioning schools)*
- 6 of 68 (9%) of compliance-based grading schools indicated a level of exemplary
- 23 of 68 (34%) of compliance-based grading schools indicated a proficient level
- 29 of 68 (34%) of compliance-based grading schools indicated approaching a proficient level
- 7 of 68 (10%) of compliance-based grading schools indicated an unsatisfactory level

## QUALITATIVE SURVEY FINDINGS: Unified grading policy (Element 4)

"Teachers give complete credit for reassessments. No non-academic factors are included in student grades. There is a district grading policy that all teachers are to follow." Principal of School HT

Principal of School BF reported, "Homework counts no more than 10%. Re-do and re-takes are offered...We separate behavior from academics."

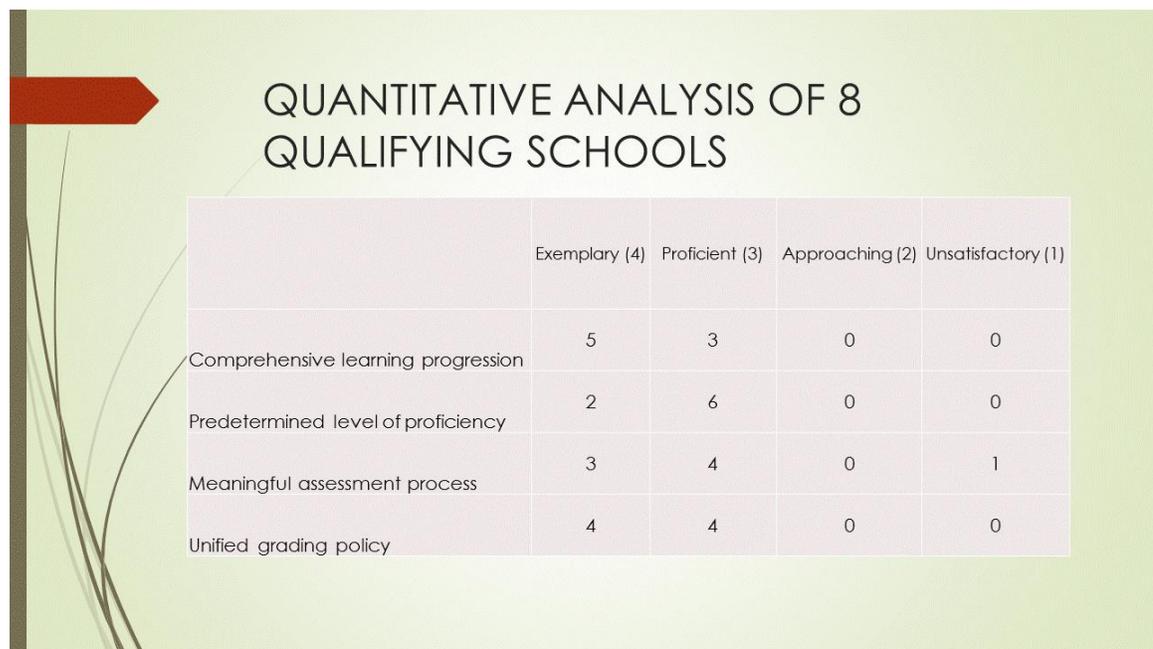
Principal of School DT responded, "Many of our teachers have already implemented these grading policies—all teachers will implement similar grading policies beginning in the 2016-17 school year."

"Some teachers allow partial credit on do-overs. 2% of participation is deducted from quarter grade for unexcused absences." Principal of School AN

"Any school that has begun the journey towards competency education, breaking free of the limitations of the time-based system, will eventually come face-to-face with grading policies and practices" (Sturgis, 2014, p. 4). Some Missouri high schools and districts have posted their grading policies on their websites. Sturgis (2014) asserted,

“Schools have to establish a standards-based (competency-based) grading policy, not just a standards-referenced approach” (p. 18).

Removal of non-academic factors to report an authentic grade has proven difficult in the researcher’s own experience. However, these discussions moving towards a unified grading policy have inspired instructional practices discussions. These discussions have also required professional development in several other areas such as classroom management, student engagement, and formative assessment strategies.



The chart shows the rubric scoring of the eight schools, AF through HF, that fully implemented a competency-based grading model. Noted is an irregularity for meaningful assessment process; otherwise, principals’ responses of these eight schools indicated their school as a competency-based school on the survey and scored proficient or exemplary in all categories on the rubric.

## DEMOGRAPHICS OF 8 SCHOOLS

SCHOOL	AF	BF	CF	DF	EF	FF	GF	HF
<b>School Type</b>	Public	Public	Public	Public	Public	Public	Charter	Public
<b>Student Population</b>	Large	Small	Large	Large	Medium	Large	Small	Medium
<b>Poverty level</b>	Low	Mod	Mod	Mod	High	High	High	High
<b>Cultural diversity</b>	High	NR	NR	Mod	Mod	Mod	NR	NR

Seven of eight schools analyzed were public 9-12 grade Missouri high schools. One school was a 9-12 grade charter school.

School size was determined by student population reported to DESE in 2015. Schools were ranked small (1-499), medium (500-999), or large (1000 or more). Four of 8 (50%) schools were large while 2 of 8 (25%) were both small and medium sized.

Poverty level was determined by the percent of students qualifying for free and reduced lunch prices as reported to DESE in 2015 by each high school. Schools were classified as low (below 14.9%), medium (15 – 34.9%), or high (35% or higher). School AF was the only low school with 3 of 7 considered moderate. Four of 8 (50%) schools ranked as high.

Cultural diversity was identified by the percent of non-white students within the student population of the high school. Schools were identified as low (10% or less), moderate (10.1 – 20%), and high (20.9% or more). One of 8 schools was identified as high with 3 schools identified as moderate. Four of 8 (50%) of schools were marked NR.

These schools were identified as ‘NR’ for not reported. Some schools did not have enough students within certain subgroups; therefore, DESE did not report to avoid confidentiality concerns.



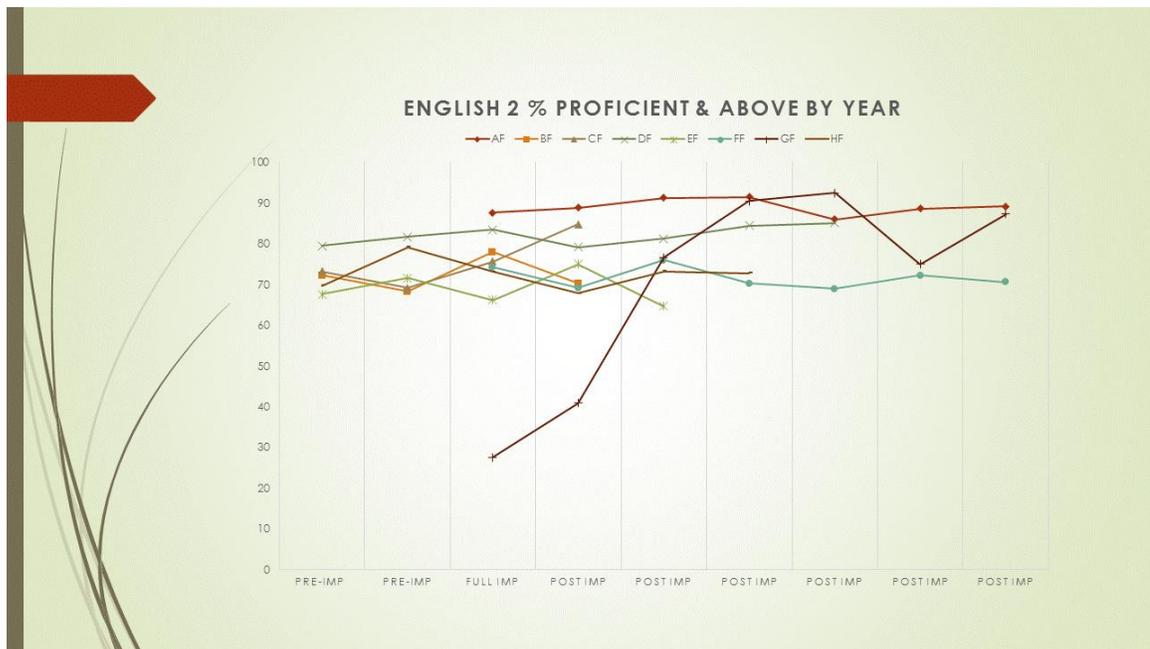
## QUANTITATIVE ANALYSIS CLARIFICATION

- Analysis of RQ2 became more challenging.
- Anticipated trend data comprised of pre-implementation, implementation, and post-implementation phases.
- Federal accountability requirements required changes in state reporting.
  - 2003-2005 & 2006-2008 Secondary MAP math & English does not correlate.
  - Longitudinal data available for comparison of Algebra 1 and English 2 EOC's available from 2009-2015 only.
- Trend data limited to 2009-2015; full implementation year denoted.

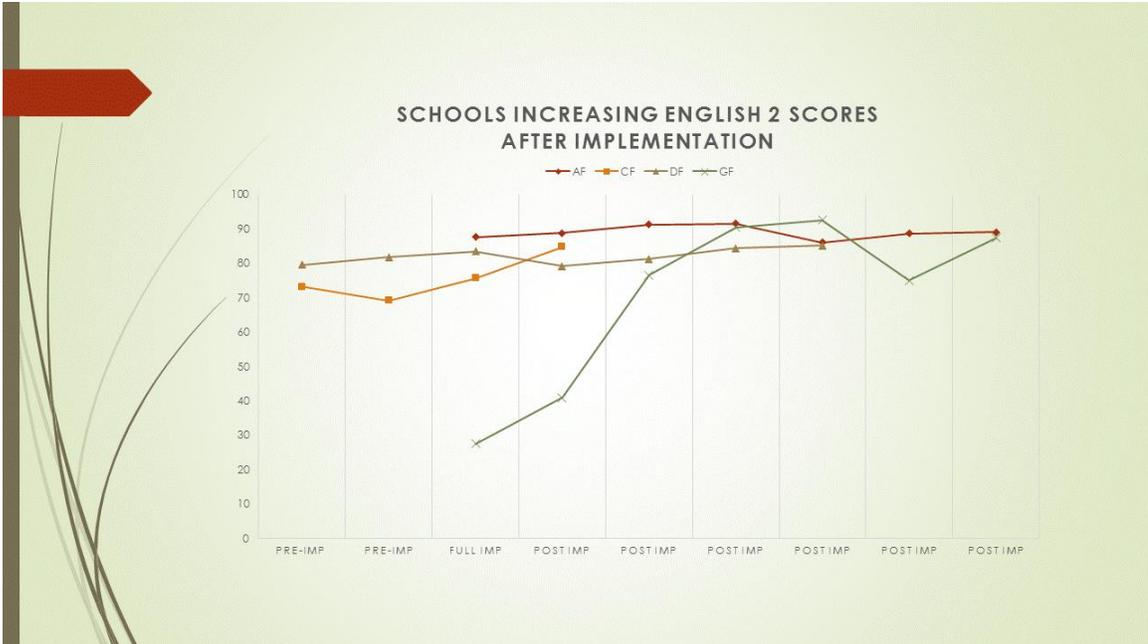
Only data points available from the 2009-2015 EOC assessments were graphed. These data points were dependent upon each schools' implementation year; therefore, some schools may appear to be missing data points. According to Janet Duncan (personal communication, May 23, 2016), assistant director of accountability data for the Missouri Department of Elementary and Secondary Education, verified during a phone interview, “For accountability purposes, we (DESE) have continued to use the same tests since 2009. Riverside and Questar worked together and continue using the same test bank to maintain longitudinal comparability.”

These changes in assessments, causing a lack of trend data, limited the study. Given the variation in available data points per school identified, a visual inspection of

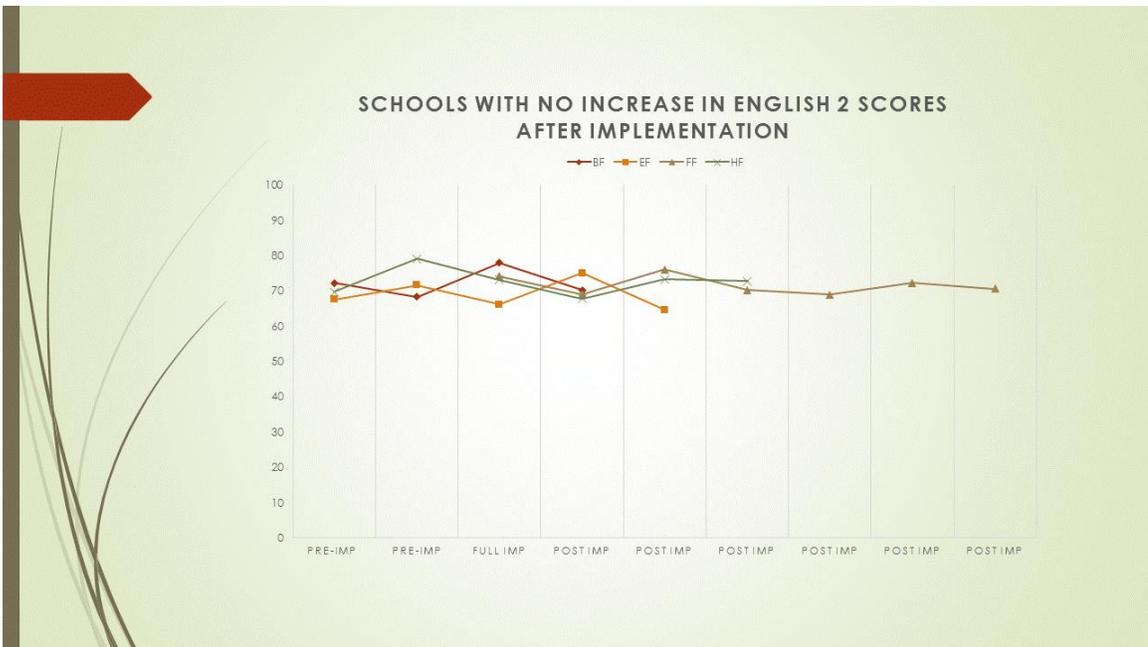
the data for trends was completed. Statistical analysis was not conducted. The researcher recognizes this presents potential issues of bias and lends to subjectivity; however, the following definitions will be followed to best determine a school's trend in student achievement. First, a trend towards increasing student achievement is defined as an upward movement of data points from the full implementation data point through the last post-implementation data point available. Second, a trend of no increase in student achievement is defined as no noticeable increase or a downward movement of data points from the full implementation year through the last post-implementation point available.



Four of 8 schools demonstrated a trend of improvement in ELA2 scores. Four of 8 schools' ELA2 scores indicated a trend of no increase in student achievement.

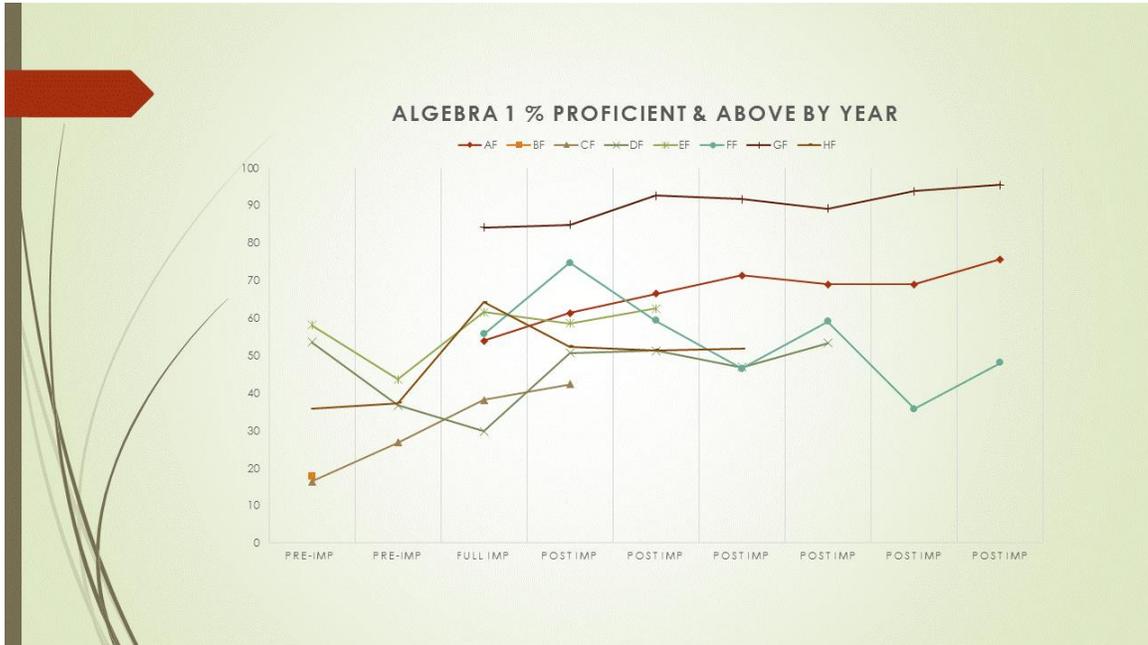


Schools trending towards an increase in student achievement in English 2 EOC scores were AF, CF, DF, and GF.

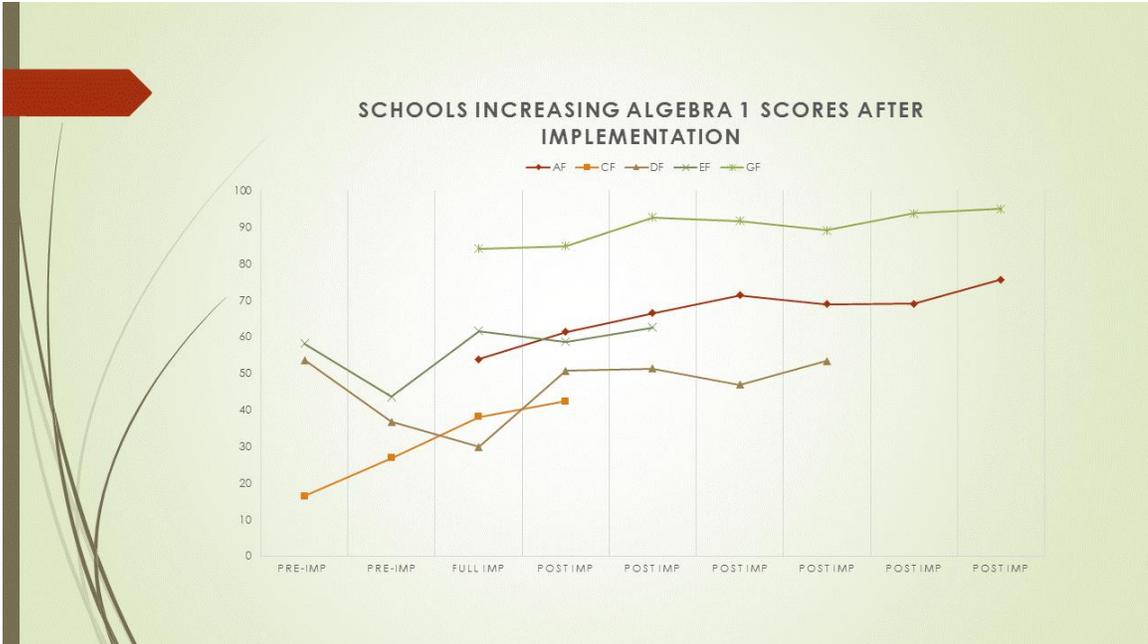


Schools indicating no noticeable trend towards an increase in student achievement in English 2 EOC scores were BF, EF, FF, and HF. While only slightly declining, the

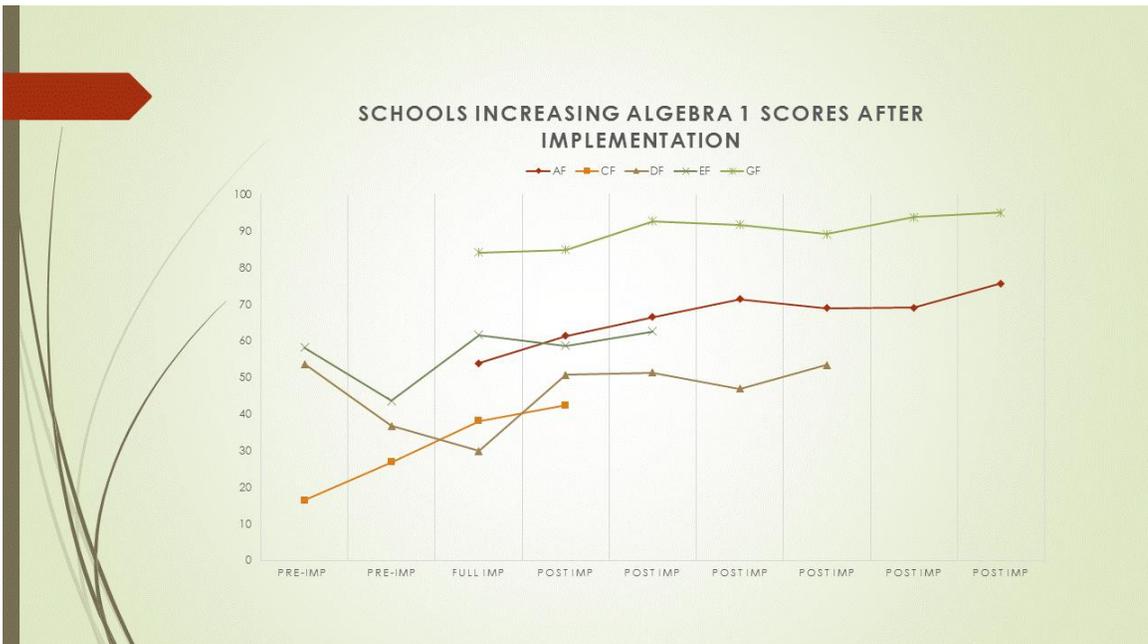
study looked for trends and associations within student achievement as impact. Statistical significance was not considered.



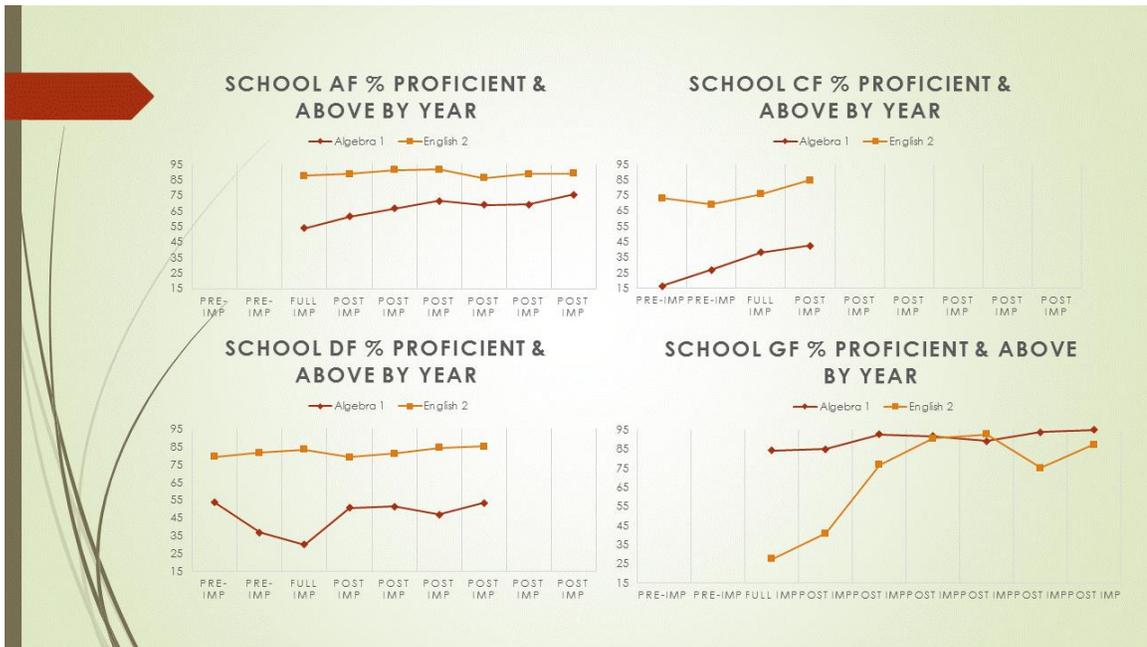
Data points available from the 2009-2015 Algebra 1 EOC assessments were graphed and dependent upon each schools' implementation date. Some data points are missing given a school's identified implementation year. Five of 8 schools trended towards increased student achievement in Algebra 1 scores following implementation year reported. Two of 8 schools indicated a declining trend following full implementation. School BF had only one data point reported by DESE given the timeframe all data were collected.



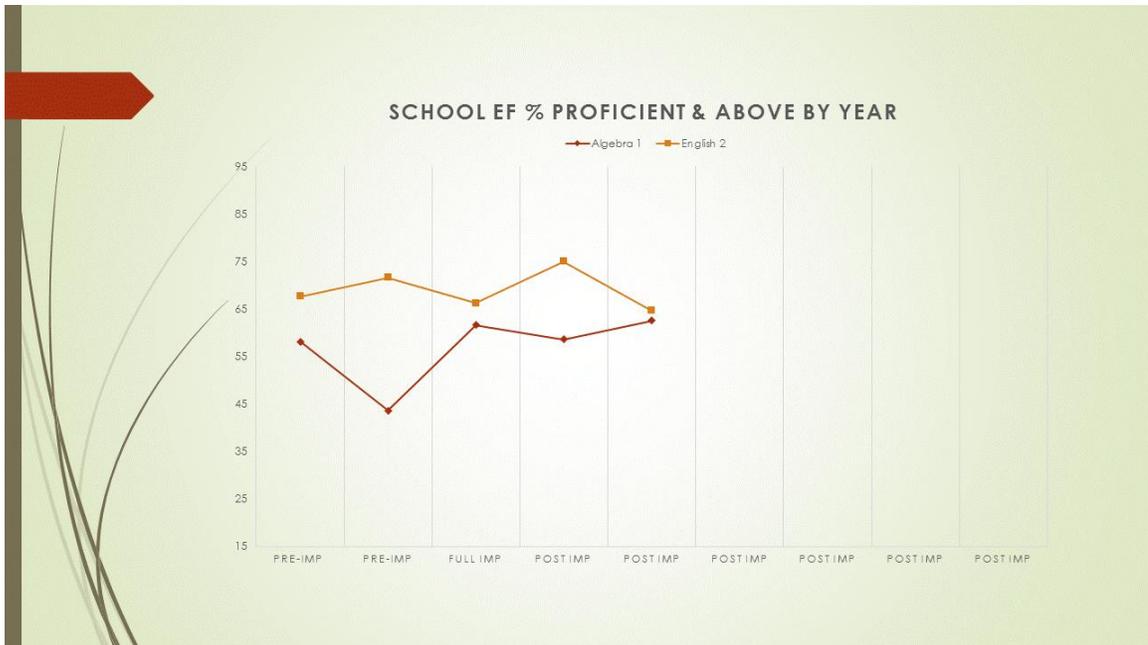
Schools trending towards an increase in student achievement within Algebra 1 EOC scores were AF, CF, DF, EF, and GF. School CF's post implementation data were limited to a single year.



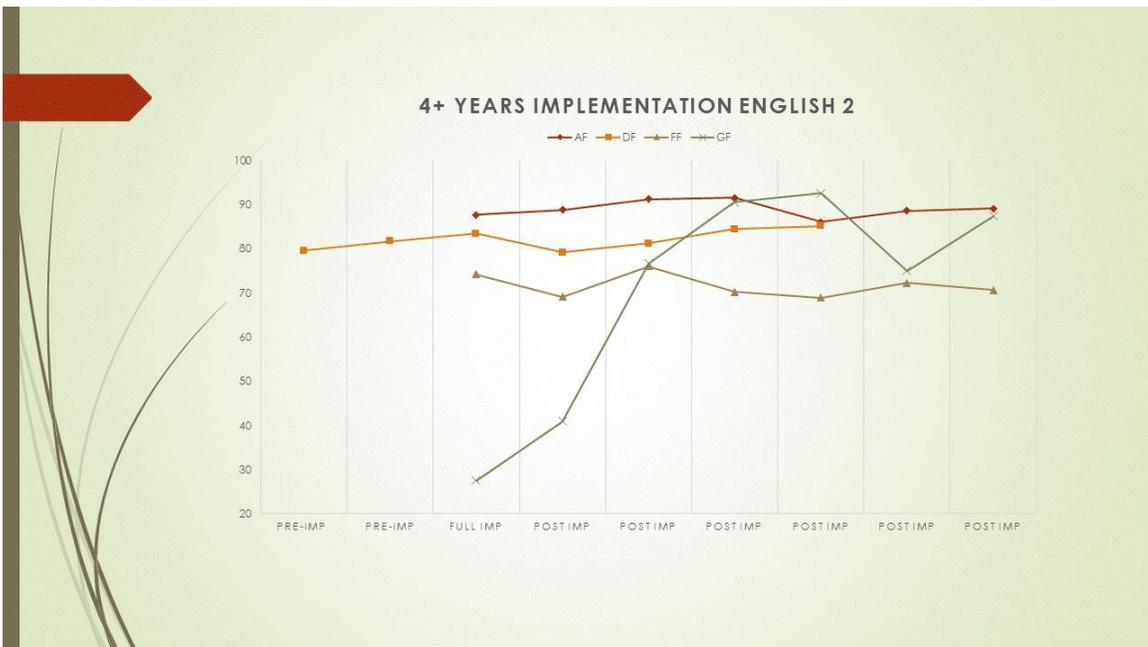
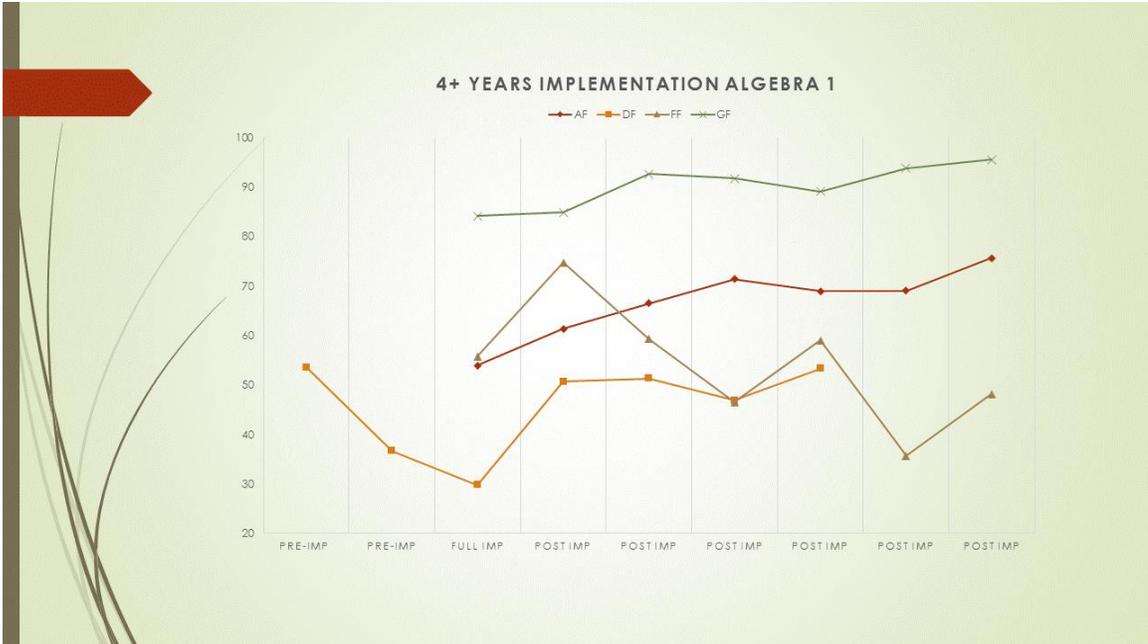
Two of 8 schools' Algebra 1 scores showed no noticeable increase in student achievement following the indicated full implementation year, FF and HF. School BF's Algebra 1 scores were not reported for all years yielding only a single data point.



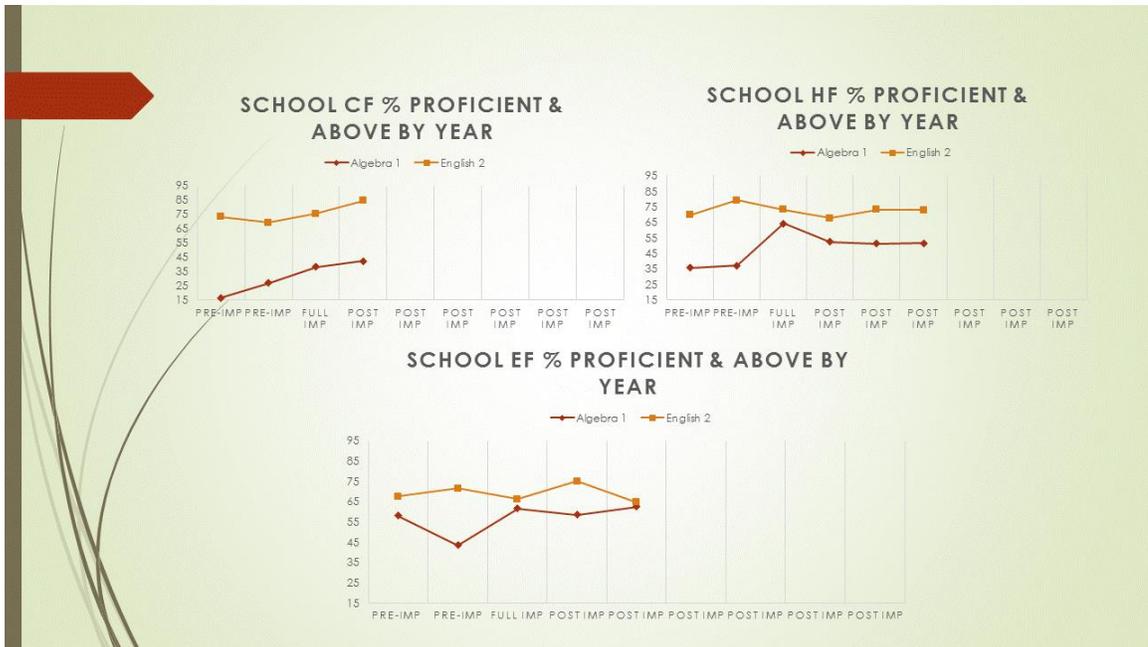
Four of 8 schools indicated an improving trend in EOC scores in both Algebra 1 and English 2. Three of these schools showed a growth trend over multiple years. Schools AF, CF, DF, and GF showed growth trends in achievement in both EOC areas following full implementation. School CF only had a single data point following full implementation due to limited available data and timing of full implementation.



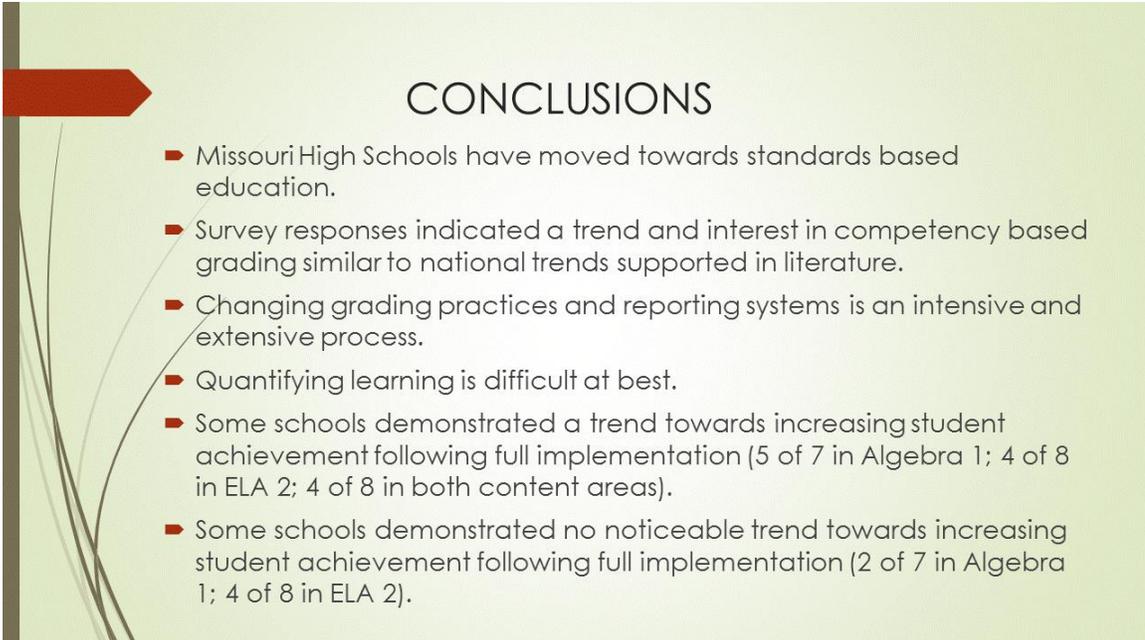
Only 1 school, EF, indicated a trend towards improvement in student achievement in a single content area with no noticeable increase in the other following implementation. School HF, shown on page 87, showed an initial improvement at full implementation in Algebra 1 but then rapidly declined during the post implementation years. The other six schools with data from 2009 to 2015 showed gains in both EOC areas or showed no noticeable increase in both EOC areas.



Three of 4 schools reporting 4 or more years post implementation showed a growth trend towards EOC scores in both Algebra 1 and English 2. One school reporting more than 4 years' implementation data showed no noticeable trend towards an increase in student achievement in both areas, School FF.



Following implementation, three schools in varying content areas revealed an implementation dip in scores before recovering. School CF in both EOC tested areas showed a decrease and then rise following implementation. School EF's and HF's Algebra 1 scores dipped and then rose during the full implementation year; these schools' Algebra 1 scores also declined the year after implementation.



## CONCLUSIONS

- Missouri High Schools have moved towards standards based education.
- Survey responses indicated a trend and interest in competency based grading similar to national trends supported in literature.
- Changing grading practices and reporting systems is an intensive and extensive process.
- Quantifying learning is difficult at best.
- Some schools demonstrated a trend towards increasing student achievement following full implementation (5 of 7 in Algebra 1; 4 of 8 in ELA 2; 4 of 8 in both content areas).
- Some schools demonstrated no noticeable trend towards increasing student achievement following full implementation (2 of 7 in Algebra 1; 4 of 8 in ELA 2).

Ninety percent of respondents indicated proficient or exemplary alignment to the Missouri Learning Standards. Some school principals noted the impending need to align to the spring 2016 adopted standards during the 2016-17 school year.

While many principals reported their schools currently were using traditional grading, several noted an interest or desire to move towards competency-based grading. MASSP (2015) noted inquiries and requests for presentation at conferences about grading practices.

Numerous variables unaccounted for in this study can affect student learning and student achievement. Teacher quality, teacher turnover, student motivation or incentive, and curriculum were not accounted for within this study. Some relationships can be derived void of causation.

Some schools demonstrated a trend towards increasing student achievement corresponding with full implementation of competency-based grading while others did not. Some schools did not demonstrate an increasing trend towards student achievement.

To clarify, this study completed a visual inspection of data points looking for achievement trends as impact. This study did not analyze the statistical significance of the changes.

**RECOMMENDATION #1:**  
Administrators & teachers need professional development increasing comprehension of grading philosophy & practices.

Principal of school CN noted, "Teacher knowledge of standards and alignment is sporadic and varied but improving with additional leadership devoted to such initiatives."

Teachers are often left to themselves to establish criteria for grading with several different elements potentially included: exams, quizzes, projects, reports, portfolios, labs, journals, presentations, homework, participation, effort, attendance, attitude, and extra credit. Dublin (2014), Marzano (2010), Reeves (2011)

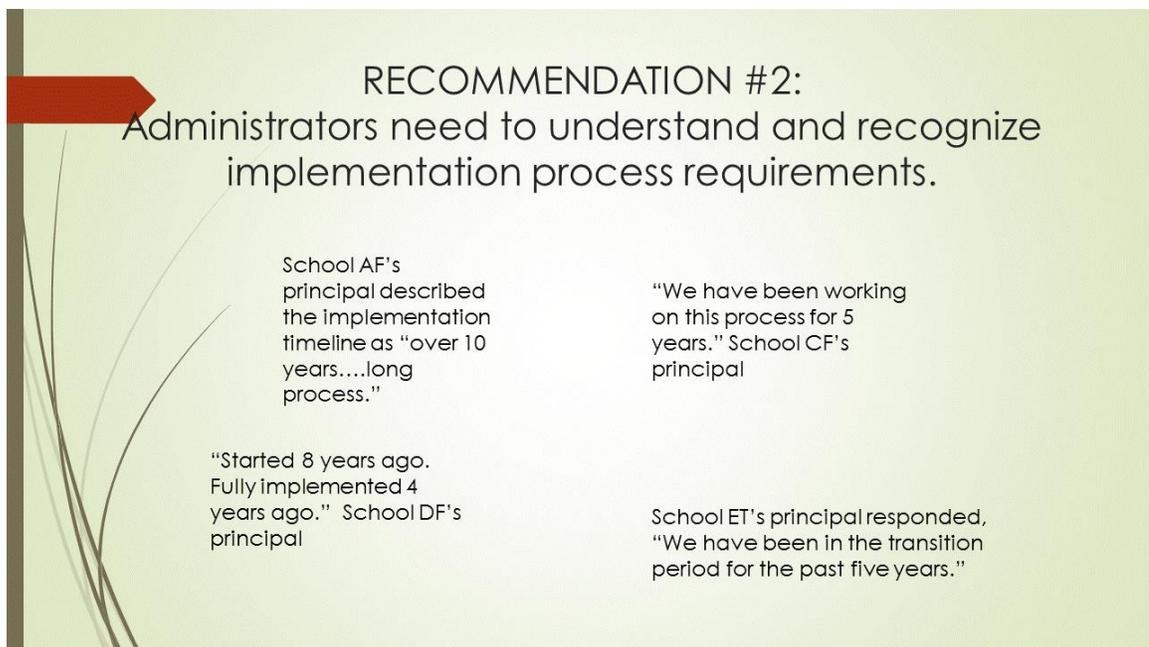
Principal of school BN marked the school down on the rubric yet noted, "Teachers utilize data to determine if material needs to be retaught. We do not wait until quarterly or semester exams to determine if material has been mastered."

A greater understanding of grading models, grading practices, and the interconnectedness to student motivation is needed for all educational professionals. Can grading practices be improved within a traditional grading system so a letter grade more accurately reflects a student's progress? Do educational professionals understand the difference between changing a reporting tool versus the changing a practice or philosophy?

From review of survey responses, an in-depth understanding of formative assessment processes and a complete comprehension of a full learning cycle are sporadic amongst educational leaders in Missouri high schools. Professional development would build capacity around the fundamental aspects of grading (Heflebower et al., 2014).

Leaders need full comprehension of grading philosophy, processes, and factors in order to effectively either implement a competency-based model or to substantiate use of the current adopted model of that school system.

Building capacity with teachers is important but also with students, parents, and Board of Education members. As teachers begin to understand, buy-in, and implement such changes, parents, students, and community need comprehension and understanding. All parties identified as inputs within the logic model need understanding to avoid community issues documented in other states like Minnesota and Iowa (Engler, 2013; Erzen, 2013; Koumpilova, 2013). All effected, such as parents, students, community members, and teachers, should be invited into the planning and training conversations (Cervero & Wilson, 2006).



**RECOMMENDATION #2:**  
Administrators need to understand and recognize implementation process requirements.

School AF's principal described the implementation timeline as "over 10 years....long process."

"We have been working on this process for 5 years." School CF's principal

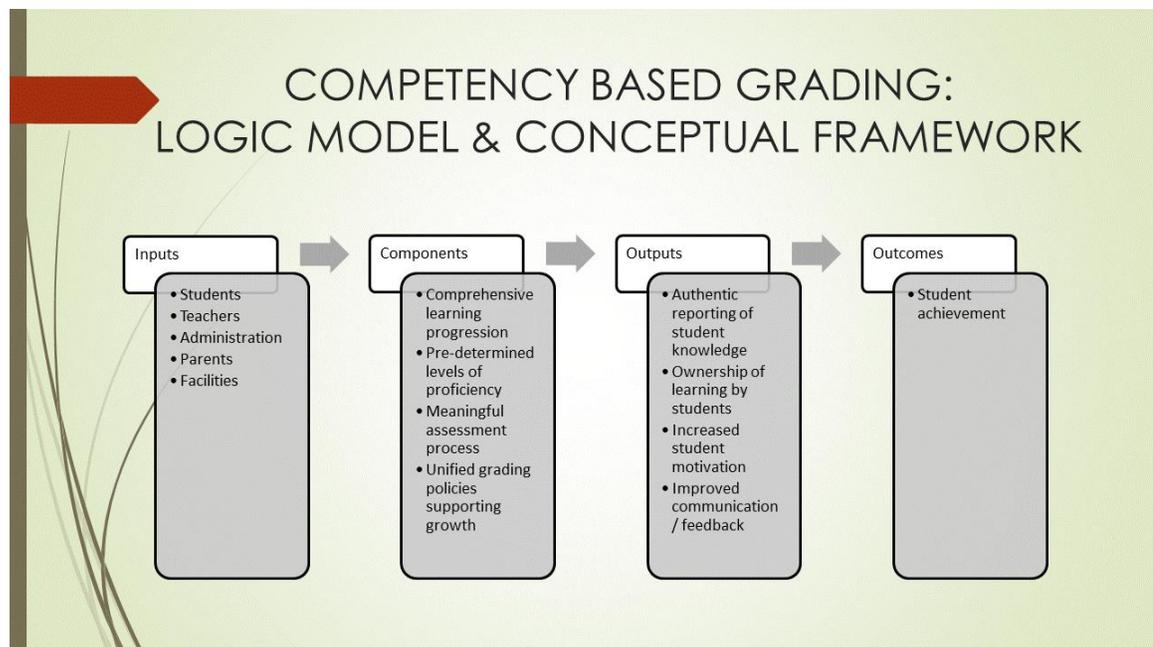
"Started 8 years ago. Fully implemented 4 years ago." School DF's principal

School ET's principal responded, "We have been in the transition period for the past five years."

Traditional grading practices are deeply imbedded. Implementation requires a paradigm shift for all parties: administrators, teachers, parents, and students. According

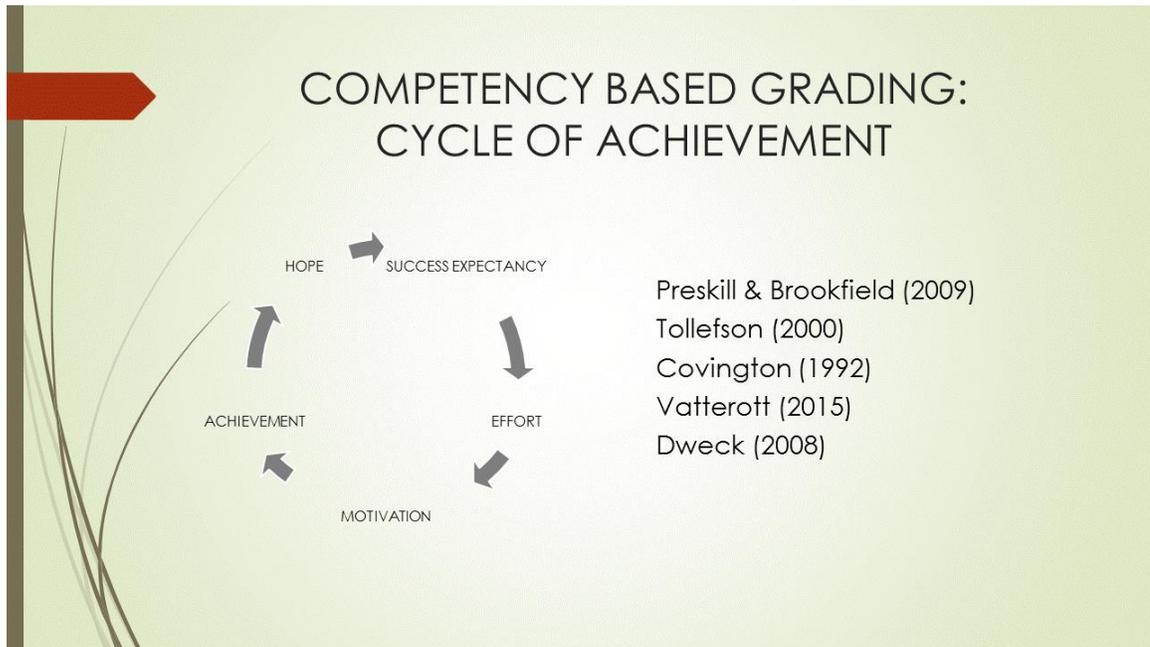
to Cervero and Wilson (2006), we need to invite all constituents to participate in the conversation about learning and grading. Learning and grading acculturation is necessary for effective change. Changing and implementing a new structure can successfully occur following an understanding (Recommendation #1).

Heflebower et al. (2013) proposed a 3-year implementation timeline. Some schools indicated a lengthier process, up to 8 years or more with continued evolution. Staff training, parent understanding, identification of standards, and development of proficiency scales takes time and energy. Research, book studies, site visits, community meetings, and parent nights may become part of the implementation process to assist with vision and instill confidence to all parties avoiding controversy and issues as seen in other school systems (Engler, 2013; Erzen, 2013; Koumpilova, 2013).



These two recommendations reverberate significance of the developed logic model. The inputs provide clarity of who should be included within the implementation

plan. The components identify aspects that should be addressed fully with clear comprehension for implementation. Developing professional development to address the components with the inputs will be critical for the outputs and outcomes to be reached.



These recommendations also distinguish the need for all constituents to identify mission and purpose of such a great undertaking like grading reform. Just as students need hope, expect success, give effort, become motivated, and experience achievement through a cyclic process, educators instilling changes in grading practices should experience efficacy, hope, motivation, and success as well. As noted prior, “increasing achievement is a function of our efforts and interest is critical to success—there is no point, for example, in investing in study or preparation if we do not believe that our efforts can make a difference” (Hattie, 2009, p. 48). While this statement applies to students’ learning, it also applies to the educational community attempting to transform grading practices within schools. Success is dependent upon having the correct

constituents at the planning table (Cervero & Wilson, 2006) to gain clear understanding of purpose for change, understanding processes for grading reform, and believing that the change will have impact.



**RECOMMENDATION #3:**  
More research is necessary.

- Further impact analysis and additional research is needed.
- Human resource cost analysis should also be considered.
  - Teachers
  - Students
  - Administrators
  - Parents
  - Community
- Facilities conducive to implementation practices.

Longitudinal data were limited. Additional schools are implementing and will provide additional data to review. The sample size is growing. Case studies of schools implementing for 4 or more years could reveal implementation and rich, qualitative data.

In any situation, multiple views must be accounted for including the human resource frame (Bolman & Deal, 2008). Of significance, but yet to be studied, is the impact on all of the inputs: teachers, students, administrators, parents, and community. Some school districts in other states attempting to change grading practices have received negative feedback from parents and teachers (Engler, 2013; Erzen, 2013; Koumpilova, 2013). What is the cost of a district's or school's human resources when implementing competency-based grading models? Is implementation worth the cost? Is the paradigm

shift from traditional, compliance-grading concepts to competency-grading philosophy so arduous creating negativity within school culture?

As schools continue to use and other schools continue to adopt competency-based models, sample size will improve for study. Additionally, the Missouri State Board of Education approved the administration of the ACT to all juniors in Missouri public schools beginning the Spring of 2015 as part of the Missouri School Improvement Program (MSIP5) to measure college and career readiness. Potential exists to use the junior class ACT test scores for longitudinal studies in future years.

A presentation slide with a light green background. On the left side, there is a vertical grey bar and a red arrow pointing right. The word "QUESTIONS?" is written in large, black, sans-serif capital letters in the center. In the bottom right corner, the following contact information is listed:

Curt Graves  
cgraves1971@gmail.com  
@cgraves1971  
(417)742-3524  
(417)209-7119

SECTION FIVE:  
CONTRIBUTION TO SCHOLARSHIP

## Preface

In an era of high stakes assessment and accountability, an increasing trend and interest in competency-based grading models exist amongst the educational community (Boston, 2003; Cox, 2011; Dublin, 2014; Marzano, 2010; O'Connor, 2011; Scriffiny, 2008). While theory and supposition abound, published research on the topic is extremely limited. A mixed methods program evaluation that provides quantitative findings aligns with the aim and scope of *Educational Evaluation and Policy Analysis (EEPA)*. According to *EEPA* (2015), the journal:

Publishes manuscripts of theoretical or practical interest to those engaged in educational evaluation or policy analysis, including economics, demographic, financial, and political analyses of education policies; syntheses of previously completed policy studies, evaluation theories, and methodologies; results of significant evaluation efforts; retrospective views of evaluation studies, and book reviews related to educational evaluation and policy issues.

According to the description provided by *EEPA* (2015), the journal:

Publishes scholarly manuscripts of theoretical, methodological, or policy interest to those engaged in educational policy analysis, evaluation, and decision making. *EEPA* is a multidisciplinary policy journal, and considers original research from multiple disciplines, theoretical orientations, and methodologies.

This sequential mixed-methods study was a program evaluation of grading methodology that was supported through theoretical research aligning with the describing and scope of *EEPA*. It should be of practical and theoretical interest to subscribers and editors of

*EEPA* given the potential implications and impact the findings and recommendations could have on local, state, and national levels.

From the survey results of 89 Missouri High School principals, the qualitative data and findings revealed a tremendous amount of knowledge to the topic. The sample size and lack of longitudinal data within the second phase of the study altered the intended course of investigation and greatly limited the generalizability. However, data from four schools having implemented a competency grading model for several years provided association to student achievement.

EEPA (2015) provided a checklist prior to submission that included several recommendations for a submitting author to consider. Those six recommendations are listed below.

1. The submission has not been previously published and is not under consideration for publication elsewhere; or an explanation has been provided in the Cover Letter.
2. **THE MANUSCRIPT CONTAINS NO IDENTIFYING INFORMATION, EVEN ON THE TITLE PAGE.** “Author” and publication year are used in any mention of the author’s work and in the bibliography and notes instead of author names, titles of works, etc. The author’s name has been removed from the document’s Properties, which in Microsoft Word is found in the File menu (select “File,” “Properties,” “Summary,” and remove the author’s name; select “OK” to save).
3. The text conforms to APA style and the requirements stated above under “Manuscript Style, Length, and Format.”
4. The submission is in Microsoft Word. Any supplemental files are in Microsoft Word, RTF, Excel, or PDF.
5. All URL addresses in the manuscript (e.g., <http://www.aera.net>) are activated and ready to click.
6. An abstract of 100–120 words is included. Please also include at least 3-5 keywords, the terms that researchers will use to find your article in indexes and databases. Such a term may contain more than one word.

Standard APA style and standard formatting is expected: 12 point size type; 1” margins; and, double spaced. “Manuscripts should not be more than 45 pages or exceed

10,000 words in length” (EEPA, 2015). This count includes any figures and tables. Additionally, all figures and tables are to be included at the end on separate pages for submission. EEPA (2015) cautioned against redundancy between text and figures. Any tables must also be editable.

## COMPETENCY BASED GRADING IN STUDENTS' ACHIEVEMENT

**Abstract:** An increasing trend and support of standards-based and/or standards-referenced grading exists (Boston, 2003; Cox, 2011; Dublin, 2014; Marzano, 2010; O'Connor, 2011; Scriffiny, 2008). Much of the research supporting competency-grading models is theoretical. Very little research exists referencing the outcomes of student achievement. This exploratory sequential mixed methods study first identified Missouri high schools that have fully implemented a competency-based grading system identifying four key elements for implementation. Then, a program evaluation was conducted using the eight identified schools' Algebra 1 and English 2 End-of-course exam data. Data indicated that Missouri high schools are transitioning towards different grading models. Supporting the trend, 4 of 8 schools improved EOC scores in both Algebra 1 and English 2 after full implementation. A cycle of achievement is proposed to explain support of a competency grading model as well as recommendations for future research.

**Keywords:** competency grading, compliance grading, standards-based grading, standards-referenced grading, student achievement

### **Introduction**

Education in the United States has evolved over the past 200 plus years. According to Harris and Witte (2011), "American education has progressed from an almost exclusively private system, open primarily to the wealthy, to one of the earliest and most vibrant systems of universal public education" (p. 92). Teachers and administrators have faced political as well as moral accountability to ensure the success and academic growth of all students. Grading practices create vital communication, feedback, and reporting aspects of student knowledge, skill, and progress. Unfortunately, as education has evolved, Boston (2003) noted, "One of the things that hasn't changed much about schooling over the years is the ritual of assigning grades to student report cards" (p. 1).

### **A Standards-based Movement**

From the 1950's to present times, public schools have experienced world events and political reactions that have shaped educational beliefs and policy. The 1954

Supreme Court desegregation decision in *Brown v. Board of Education*, the 1957 Sputnik launch by the Soviet Union, and the unionization of teachers in the early 1960's contributed to a more government-centered control of education as opposed to "the belief that education policy should be handled strictly by local communities" (Mitchell, Crowson, & Shipps, 2011, p. 4). According to St. John, Daun-Barnett, and Moronski-Chapman (2013), "The Elementary and Secondary Education Act of 1965 (ESEA) was passed during this period of innovation in education" (p. 56). ESEA prioritized financial supports for students experiencing education barriers such as race or low socioeconomic status (SES) in an attempt to provide greater equity and access for all American students.

The 1983 publication of *A Nation at Risk (ANAR)* can be viewed as a political reaction rendering a move away from the intent and progress gained by the original passing of ESEA (St. John et al., 2013). St. John et al. (2013) surmised, "ANAR rapidly became a rationale for shifting the intent of high schools from serving as comprehensive, local institutions with a curriculum defined by local school boards to becoming part of a national system" (p. 57). *Brown v. Board of Education*, teacher unionization, ESEA, and *ANAR* "have remained important throughout the ensuing decades placing schools at cross-roads of energetic and sometimes even violent struggles over racial and social class integration, reform and improvement of curricula, and systemic restructuring of school organizations" (Mitchell et al., 2011, p. 4).

These historical proceedings shaped today's movement towards national- and state-mandated standards-based curricula. Galvanizing the reform agendas of politicians ensuring a standards-based curricula was the 2001 passing of the *No Child Left Behind (NCLB)* policy. According to Dublin (2014), "cementing standards-based education in

the United States education system, *NCLB* requires all states to establish standards for learning and subsequently utilize assessments that measure student progress” (p. 9).

Stemming from *NCLB*, many states “enacted initiatives that tended to be more prescriptive in their tone, more comprehensive in their scope, and more punitive in their tactics” (Mitchell, et al., 2011, p. 34). Missouri was no different. According to Dublin (2014), “In 2004, the K-12 Grade-Level Expectations were developed to further delineate what students should know and be able to do and ensure students across the state of Missouri are learning the same established set of standards” (p. 10). Missouri’s Grade-Level Expectations have been revised periodically with input from educators. Missouri high schools are required to assess students using End of Course Exams (EOC’s) specifically in math, English, and science in order to measure student achievement from these state standards.

More recently, reform efforts have focused on national standards with financial incentives for states to adopt. These national standards are called Common Core Standards (National Governors’ Association Center for Best Practices & Council of Chief State School Officers, 2010). According to the National Governors’ Association Center for Best Practices & Council of Chief State School Officers (2010), Missouri adopted the Common Core on June 15, 2010, with full implementation planned for 2014-15. In the wake of political unrest from Missouri’s residents, the Missouri Learning Standards have been adopted. “The Missouri Learning Standards define the knowledge and skills students need in each grade and course for success” (Missouri Department of Elementary and Secondary Education, 2015).

Today's educators are experiencing long-lasting effects of these historical events and policy decisions. According to Rosales (2013), "for the first time in American history there is a sense of a national curriculum and an urgency to reach a level of proficiency" (p. 1). From these events and policies, teachers and administrators have experienced a shift to standards-based accountability while facing increased political accountability as well as moral accountability to ensure the success and academic growth of all students. Across the nation, teachers and administrators have searched for more efficient and effective ways to instruct and assess a growing diverse population.

### **Grading Practices and Models**

"Grading and reporting are foundational elements in nearly every educational system" (Munoz and Guskey, 2015, p. 64). Ultimately, schools exist to provide students the opportunity to acquire knowledge and develop skills. As part of the learning process, Dublin (2104) asserted, "grade reporting is crucial" (p. 1). Unfortunately, while education has evolved into high-stakes student assessments over normed standards and increased accountability for teachers and administrators, grading and grade reporting have not adapted.

Variances and inconsistencies within grading practices and philosophies of teachers have been prolific throughout education's history. O'Connor (2011) asserted grades have fostered self-assessment, sorted and selected students, motivated and punished students, and communicated progress to students, parents, instructors, and administrators. Boston (2003) purported, "Teachers typically consider a variety of other factors when assigning grades, including effort, progress, participation, behavior, and attitude" (p. 2) in addition to individual achievement. According to Marzano (2010), "the

grading schemes for the same course taught by two different teachers might be so different that grades are not comparable from teacher to teacher” (p. 16). Reeves (2011) noted, “One of the most perplexing things about debates over grading policy is how very intelligent and rational people can look at the same set of facts and come to radically different conclusions” (p. 104). Through this political evolution of educational reform, policy development, and increased teacher accountability, grades have continued to serve traditional purposes within traditional formats.

### **Competency-based and Compliance-based Grading Designs**

Three primary grading systems have existed: norm-referenced grading, standards-referenced grading (SRG), and standards-based grading (SBG) (Marzano, 2010; Sturgis, 2014). These three grading systems can be categorized into compliance grading and competency grading models. The compliance grading model, which is most often referred to as traditional grading, is norm-referenced. The competency grading model includes both SRG and SBG grading systems. While SRG and SBG have been included in the competency grading category for this study, a fundamental difference exists. Heflebower et al., (2014) elucidated:

Standards-referenced grading as a system in which teachers give students feedback about their proficiency on a set of defined standards and schools report students’ level of performance on the grade-level standards, but students are not moved forward (or backward) to a different set of standards. (p. 3)

Heflebower et al., (2014) continued:

Standards-based grading is a system of assessing and reporting that describes student progress in relation to standards. In a standards-based system, a student can demonstrate mastery of a set of standards and move immediately to a more challenging set of standards. (pp. 3-4)

Students are not bound to grade-level standards but progress forward or regress based on their abilities and mastery of skills in a SBG model. SRG, though, is a bound model with a grade-level set of standards while SBG is unbound by grade-level and more open to a ubiquitous set of subject standards. Marzano (2010), as well as Heflebower, Hoegh, and Warrick (2014), noted many administrators and educators have confused these terms. While a fundamental difference exists, both systems attribute to the same fundamental principle. In either model, “grades must be based solely on students’ current levels of performance with specific standards” (Heflebower et al., 2014, p. 4).

### **Apprehensions of Compliance Grading**

Traditional grading practices, embedded in compliance grading models, have roots grounded from norm-referenced grading stemming back to the mid-nineteenth century (Marzano, 2010). In this study, traditional grading has been referenced as a compliance-based grading model and defined as the percentage of total points accumulated from total points possible based on a variety of assignments, assessments, projects, and individually-determined teacher criteria. Often, teachers have been left to their own experiences to establish criteria for grading with several different elements potentially included: exams, quizzes, projects, reports, portfolios, labs, journals, presentations, homework, participation, effort, attendance, attitude, and extra credit

(Dublin, 2014; Marzano, 2010; Reeves, 2011). With so many individually-determined teacher criteria, inconsistencies and flaws have remained.

These inconsistencies and flaws, which have existed within a compliance-based grading system for years, could potentially have a negative impact upon students' achievement. "These practices often not only result in ineffective communication about student achievement, but also may actually harm students and misrepresent their learning" (O'Connor, 2011, p. xii). Covington (1992) supported O'Connor's (2011) contention:

Even among the winners, the psychological casualty rate is prohibitive whether it be reflected in the young, upward-striving entrepreneur who sacrifices the joy of discovery for the sake of conformity, or the gifted child who amasses an enviable academic record as a way to offset persistent self-doubts about her worth, doubts that linger nonetheless. (p. 153)

### **Self-worth Theory Implications on Traditional Grading Practices**

Myths about student learning permeate the traditional grading system. For instance, Guskey (2011) noted, "No research supports the idea that low grades prompt students to try harder" (pp. 18-19). "The claim that achieving under adversity (competition) builds character is flatly contradicted by the evidence" (Covington, 1992, p. 153). Low grades, poor test scores, and student-to-student comparisons can diminish motivation and effort causing a loss of hope (Dublin, 2014; Guskey, 2011; Reeves, 2011; Sturgis, 2014). "Many of the factors that affect students' abilities to succeed in school lie outside of their control" (Dueck, 2014, p. 15).

Self-worth theory purports the protection of one's sense of ability as the student's highest priority (Covington, 1992). Correlating to self-worth theory, Tollefson's (2000) expectancy of success model "assumes the amount of effort invested is a product of the expectation of success and the value of the reward" (p. 65). Tollefson (2000) postulated students would only put forth effort if the perceived rewards were valued and achievable. These academic issues can manifest and be reflected in failed assessments, incomplete homework or projects, zeros, and poor behaviors skewing traditional grade reporting.

According to Covington's (1992) Theory of Self-worth, students "are busy avoiding failure" (p. 152) in order to prohibit feelings of shame due to the competitiveness and conformity factors of our current school structure, specifically grading practices that communicate success or failure. "To be able is to be *worthy*, but to do poorly is evidence of inability and is reason to despair" (Covington, 1992, p. 79). Tollefson (2000) acknowledged, "Students who do not try because they fear failure are placed in a very difficult position" (p. 77) where teachers misperceive student actions. Sturgis (2014) noted a traditional system inherently exhibited the following flaws: inaccurate measures, earning of credit without substantive learning, lack of incentive to improve performance or learning, credit deficiency leading to dropouts, lowered GPA preventing college admittance, and student and/or teacher manipulation. According to Covington (1992), nothing had greater impact on a student's sense of self-esteem than good grades, nor shattered that sense than poor grades.

### **A Case for Systemic Change**

Tinsley, Dillon, and Madsen (2013) identified, "Organizations often fail to expose and correct latent errors" (p. 56). In accordance with Covington's (1992) theory and

Tollefson's (2000) success expectancy model, the behaviors Sturgis (2014) identified can be a superficial result of a more systemic problem. Educators should be cautious of simply blaming student achievement concerns on a lack of motivation, lack of effort, or non-compliance issues (Covington, 1992). Hattie's (2009) research suggested:

(Educators) seriously consider student demotivation caused by, for example, public humiliation, devastating test results, or conflicts with teachers or peers.

For many, demotivation has more impact than motivation. Such demotivation can directly affect commitment to the goals of learning, turn off the wish for and power of feedback, and decrease involvement. (p. 48)

These negative student behaviors are potentially latent errors of a flawed compliance grading system. Hattie (2009) also asserted that "students were becoming more cynical, and using more ineffective stress management strategies, and it could be suggested that the increased emphasis on external accountability testing models has not helped" (pp. 48-49). With the advent and development of standards-based curriculum, increased accountability, and closer scrutiny of schools, grades and achievement have become a competitive environment. "In the competitive learning game teachers become the gatekeepers of success and approval. This puts a powerful weapon in their hands. Sometimes teachers use the dynamics of scarcity to ensure good behavior" (Covington, 1992, p. 134).

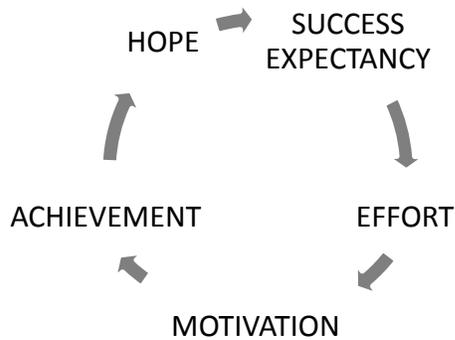
Varying practices and implications of practice exist within the compliance grading model. According to Vatterott (2015), "we must acknowledge how traditional grading practices obstruct the learning process, damage motivation, and cause teachers and students to fixate on grades to the detriment of learning" (p. 37). Damaged

motivation results from continued failure and eventual loss of hope. “There is no question that sustaining hope motivates people and increases their enthusiasm for work and their creativity” (Preskill & Brookfield, 2009, p. 176). The concern is a systemic issue beyond simply reporting a grade. “It is not only a specific set of practices that must be changed, but also a broader philosophy as well” (Covington, 1992, p. 153).

When considering self-worth theory (Covington, 1992), growth mindset (Dweck, 2008), the expectancy of success equation (Tollefson, 2000), and hope theory concepts (Preskill & Brookfield, 2009), students who have hope begin to expect success resulting in an increased effort. Hattie (2009) supported:

The notion that increasing achievement is a function of our efforts and interest is critical to success—there is not point, for example, in investing in study or preparation if we do not believe that our efforts can make a difference. (p. 48)

With an increased effort and feelings of success, student motivation rises ultimately resulting in achievement. A cyclic effect can be postulated as a student experiences achievement, the student gains more hope leading to greater expectancy of success, effort, motivation, and even greater achievement (Figure 2). Competency-based grading can address and even resolve many of the issues found within a compliance grading model contributing to under achievement and apathy of students. This grading model has the potential for systemic change improving achievement through instillation of hope, success, effort, and motivation.



*Figure 1. Cycle of Achievement*

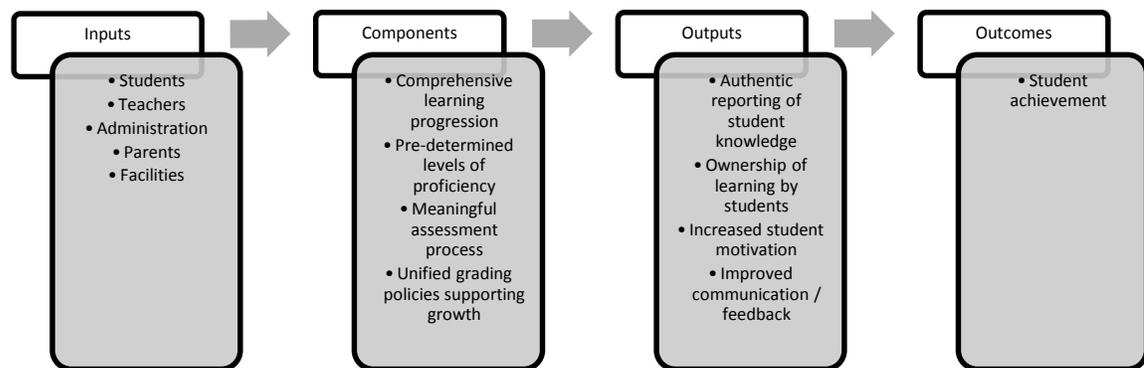
Given variations of philosophy and inconsistent practices of educators coupled with the professional responsibilities of ensuring the success of students, it is imperative that grading consistently and accurately reports student achievement and facilitates student growth. An increasing trend and support of standards-based and/or standards-referenced grading exists (Boston, 2003; Cox, 2011; Dublin, 2014; Marzano, 2010; O’Connor, 2011; Scriffiny, 2008). Competency-based grading models, either SRG or SBG, have been proposed to resolve these broad problems of grading practice by scholars such as Guskey, Marzano, O’Connor, Reeves, and Sturgis; however, practitioners have difficulty recognizing full and successful implementation.

### **Competency-based Grading Conceptual Framework**

The exploration into the impact of fully implemented competency-based grading models upon student achievement was the focal point of the research. To do so, this study first identified high schools in Missouri where a competency-based grading system had been fully implemented. To facilitate school identification, key elements of competency-based grading were identified as a conceptual framework and outlined within a logic model. A basic logic model as suggested by McDavid et al. (2013) was used: inputs, components, outputs, outcomes (See Figure 2). “Program inputs are

resources that are required to operate the program” (McDavid et al., 2013, p. 52).

Students, teachers, parents, administrators, the school facility, and various other resources constitute the program inputs. McDavid et al. (2013) described program components as “clusters of activities in the program” (p. 53). The conceptualized framework of processes and activities described earlier reflects the components within the logic model.



*Figure 2. Logic Model Applied to Competency Grading*

The outputs materialize from the conglomeration of the inputs and components identified. “Program outputs occur as a result of the activities or work done” (McDavid et al., 2013, p. 55). The outputs of a competency-based model are the qualitative aspects, such as teacher and student perceptions about motivation, effort, and effectiveness. However, according to McDavid et al. (2013), the outcomes are “the intended results that correspond to program objectives” (p. 55). In the instance of evaluating the impact of competency-based grading, the program outcomes are established as quantitatively measured student achievement.

To complete the identification process, the four elements determined as critical for full implementation were the components of the logic model. A rubric from these critical elements was used to analyze implementation stage (Appendix A).

Conceptualizing what a fully implemented competency-based model looks like was

essential to this study. Identifying the essential concepts required as part of full implementation within a Missouri high school for quantitative analysis was imperative.

### **Comprehensive Learning Progression**

The first element is the establishment of a comprehensive learning progression that includes a curriculum with aligned standards. Sturgis (2014) supported, “The first step in building a competency-based grading system is to develop the learning progression that indicates what students are expected to know and be able to do” (p. 14). According to Marzano (2006), properly aligned and taught standards should be an emphasis to ensure student success and achievement. Jung and Guskey (2007) further contended teachers should clearly link standards to achievement goals. Standards-based instruction from a fully aligned curriculum has been shown to positively affect student achievement (Reys, Reys, Lapan, Holliday, & Wasman, 2003). In other words, what do educators want students to know, learn, or demonstrate? Vatterott (2015) contended standards should be synthesized into learning targets, which are prioritize learning goals clearly communicated to students. While Sturgis (2014) suggested a learning progression can stretch from kindergarten through 12th grade, for the purpose of this study, the scope will be limited to an aligned, standards-based curriculum from 9th through 12th grades.

### **Predetermined Level of Proficiency**

In addition to an identifiable learning progression, pre-determining an acceptable level of performance or proficiency is critical. “Competency-based schools need a common framework to help teachers and students communicate about the depth of knowledge or learning target for any specific standard that students are expected to meet” (Sturgis, 2014, p. 16). O’Connor (2011) concluded, “The challenge is to create clear

descriptors of our overall levels so that we have a delineated achievement continuum within which we can consistently judge student achievement” (p. 69). According to Marzano (2010), once standards or goals are identified, scaling should occur so all teachers and students have a universal understanding of expectations. “When teachers are working together with a shared understanding of proficiency, grading becomes a way of tracking progress” (Sturgis, 2014, p. 19). Identification of the content in the form of standards and then identifying the expected level of performance becomes imperative in order to appropriately assess students.

### **Meaningful Assessment Process**

The third element of a fully implemented competency-based grading model is the facilitation of a meaningful and comprehensive assessment process. After curriculum has been constituted into standards, Marzano (2010) asserted, “The most common form of feedback is an assessment” (p. 5). A formative approach includes the use of formative assessment strategies culminating in an eventual summative assessment (Marzano, 2010). A formative approach requires frequent, timely, and specific feedback for both students and teachers (Reeves, 2011; Marzano, 2001). Hattie (2009) clarified through statistical analysis that “feedback was most powerful when it is from the student to the teacher” (p. 173). Sturgis (2014) supported by noting formative assessments can provide meaningful feedback and provide additional instructional opportunities for students to reach proficiency. “In competency-based schools, there is a constant cycle of learning, practice, application, and assessment” (Sturgis, 2014, p. 24). A proper feedback loop within the assessment process assists students and teachers in progress monitoring the learning progression of each student towards a set of standards and guides the instruction

for students to achieve proficiency on the identified standards. “Most programs and methods that worked best were based on heavy dollops of feedback” (Hattie, 2009, p. 173).

### **Consistent Grading Policies**

In addition to a highly effective assessment process, school-wide and/or district-wide grading policies should reflect “a growth mindset that believes that students...can develop and build skills with the right mix of feedback, supports, and time to practice” (Sturgis, 2014, p. 23). Dweck (2008) asserted a “growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts” (p. 7). Grading policies should not penalize students for mistakes made within the formative process but support re-teaching and re-learning missed concepts (Marzano, 2010; O’Connor, 2011; Reeves, 2011; Sturgis, 2014). “Practice (homework) is never graded” (Sturgis, 2014, p. 23). According to O’Connor (2011), grading policies within schools or districts should not allow extra credit but should allow late-work. Finally, a growth mindset encourages learning through allowing retakes of assessments and redo’s of projects (O’Connor, 2011; Reeves, 2011). Dweck (2008) indicated:

The passion for stretching yourself and sticking to it, even (or especially) when it’s not going well, is the hallmark of the growth mindset. This is the mindset that allows people to thrive during some of the most challenging times in their lives.

(p. 7)

Grading practices and grading policies should encourage and support this outlook.

## **Review of Existing Research Studies**

Given the previously mentioned four elements constructing a fully implemented competency-based grading system have been incorporated, high schools may be identified for analysis of impact on student achievement. Suggested by McDavid, Huse, and Hawthorn (2013), the logic model (Figure 2) illustrates: inputs, components, outputs, and outcomes related to competency-based grading. “Program inputs are resources that are required to operate the program” (McDavid et al., 2013, p. 52). Students, teachers, parents, administrators, the school facility, and various other resources constitute the program inputs. McDavid et al. (2013) described program components as “clusters of activities in the program” (p. 53). The conceptualized framework of processes and activities described earlier (Figure 2) reflects the components within the logic model.

Resulting from the conformation of the inputs and components identified, the outputs and outcomes materialize as byproducts. “Program outputs occur as a result of the activities or work done” (McDavid et al., 2013, p. 55). The outputs of a competency-based model are the qualitative aspects, such as teacher and student perceptions about motivation, effort, and effectiveness. The outcomes according to McDavid et al. (2013) are “the intended results that correspond to program objectives” (p. 55). In the instance of evaluating the impact of competency-based grading, the program outcomes are established as student achievement which can be measured quantitatively.

### **Middle School Studies**

Little research has been conducted in reference to the outcomes of student achievement in high schools. “The research for its use at the high school level is sparse” (Rosales, 2013, p. 38). However, several SBG studies have been conducted with

emphasis upon the inputs and components for successful implementation. Interestingly, many of these studies have been completed in middle schools. Urich (2012) researched implementation of standards-based grading practices “to learn the process middle school teachers in a Midwestern suburban middle school experience as they transition from traditional grading practices to (standards-based reporting) SBR” (p. 3). Another study explored “the perceptions of middle school teachers and principals regarding standards-based grading and effect practices to accompany SBG” (Dublin, 2014, p. 2).

Much of the theoretical works published by Marzano, O’Connor, Reeves, Guskey, and other renowned authors is cited but void of data-rich literature pertaining to student achievement. Beatty (2013) concurred asserting “to date, much of the argument in support of SBG is theoretical” (p. 3). However, the previously stated arguments within this scholarly review are highly persuasive. Although there is a void of quantitative data, there is also a distinct need to either verify or invalidate these theoretical assertions.

### **Qualitative Analysis of Outputs**

Even more so than debate on the inputs and components for implementation, questioning practitioners cannot ascertain how competency-based grading impacts the desired long-term outcome, i.e. student achievement, once fully implemented.

Qualitative evidence does exist supporting logic-model outputs within the implementation of standards-based or standards-reference grading systems. Advocating these assertions, Dublin (2014) and Cox (2011) documented teachers and principals implementing a competency-based model communicated favorable perceptions. “The data analysis showed schools that have been implementing SBG for one to three years

were significantly more favorable toward grading practices presented in the survey when compared to non-SBG schools” (p. 72).

Following implementation, Urich (2012) administered individual interviews and a focus group of the twelve teachers involved in the study finding anecdotal support of standards-based reporting. The teacher participants “viewed themselves as more effective teachers with the use of standards-based practices” (Urich, 2012, p. 101). Urich (2012) further purported, “SBR can be more effective than traditional grading practices for both teachers and students when it comes to ensuring each student learns at a high level” (p. 118).

Beatty’s (2013) study included college-aged students’ perceptions in physics. “In general, many but not all students liked the SBG approach in Physics 291 despite the difficulties we encountered” (p. 8). While this study purported support for SBG, several limitations are evidenced in the study such as a longitudinal perspective, potential instructor bias, and sample size.

Qualitative evidence espoused the initial inputs and logic of the components lead to quality outputs. However, quantitative studies investigating the long-term outcomes of student achievement are narrow and limited. Through comprehensive review, only three studies were found where quantitative data were collected in relation to competency-based grading.

### **Limited Quantitative Studies**

Of the three quantitative studies, only two pertained to high school students while the other study pertained to middle school students. Reys et al. (2003) asserted

standards-based math curriculum improved eighth-grade students' achievement on the Missouri Assessment Program (MAP) math subtest exam when they noted:

This research, based on data from six different school districts and involving more than 2,000 students, documents that middle school students using standards-based mathematics curricula for at least 2 years equaled or exceeded the achievement of students from matched comparison groups on the state mandated eighth-grade mathematics test.

(p. 89)

This study did not specifically explore grading practices or competency grading; however, a standards-based curriculum showed positive impact on student achievement.

Comes (2015) examined criterion-referenced grading (CRG) versus traditional grading. CRG attributes align with competency-based grading model practices. While the study noted student achievement growth using both grading systems, "the data did not yield enough statistical significance to determine if the students under CRG or those under traditional grading saw a larger increase in student achievement" (Comes, 2015, p. 118). Comes' (2015) study was limited to one high school, two teachers, local assessments, and six groups of students. Sample size, implementation process, and instructor bias limited the generalizability and validity of this research.

Rosales (2013) investigated the effects of standards-based grading on student achievement of high school aged students. Rosales' focus of the study included quantitative data comparing Algebra II EOC scores of students in an SBG classroom versus students in a traditional classroom (Rosales, 2013). Findings of the data from the 107 students were "neither grading method was more beneficial than the other on the

posttest” (Rosales, 2013, p. 58). Conducting multiple analyses, Rosales (2013) concluded, “No significant difference existed between SBG students and traditionally-graded students” (p. 62). As with other studies, sample size, focus on a single subject area, implementation process, and instructor bias limited the generalizability and reliability of this research.

A majority of the established and accepted research supporting the trend of competency-based grading models is theoretical and qualitative. This raises a great concern and an impetus upon additional research. Lasley (2009) posited:

Educational practices have been ideologically driven for decades. Few teachers or researchers could prove that their methods were 'best practices' for students, so they simply argued for others to embrace advocated approaches based on theoretical arguments and selected anecdotal evidence. The method de jure was often a result of what conference or professional meeting a teacher or principal had just attended, not on sound evidence about what educational practice really worked. (p. 245)

While these theoretical arguments and educator perceptions are highly persuasive, additional quality and extensive quantitative data are needed. The driving impetus of this exploratory sequential mixed methods study is to evaluate the impact on high schools fully implementing a competency-based grading model complementing and enhancing this body of educational research.

### **Design of the Study**

A mixed methods design best generated findings to answer the proposed research questions. Specifically, an exploratory sequential mixed methods design was used

(Creswell, 2009). An exploratory sequential design structures the research by first exploring “qualitative data and analysis and then uses the findings in a second quantitative phase” (Creswell, 2009, p. 226). First, a qualitative survey incorporating a conceptual framework identified Missouri high schools implementing a competency-based model. Then, quantitative data analysis of these identified and selected high schools was completed following the logic model as previously described.

Within the first phase of the exploratory sequential study, the qualitative identification of Missouri high schools implementing competency-based grading answered the first research question. To do so required cross-sectional surveying of all Missouri high schools. According to Fink (2013), cross-sectional surveys describe the situation or circumstances as they are at that time. A survey was developed to evaluate the degree of implementation of the four grading elements identified: (1) Comprehensive learning progression (2) Predetermined level of proficiency (3) Meaningful assessment process (4) Unified grading policies supporting growth. The survey data facilitated identification of high schools currently implementing competency based grading.

“Surveys can be used in deciding policy or in planning and evaluating programs and conducting research when the information you need should come directly from people” (Fink, 2013, p. 5). The qualitative survey targeted high school building principals who had firsthand knowledge of the procedures involved in the grading process and individuals who are willing to participate in the survey. Purposeful sampling was useful in this situation because the “responses apply to the target population” (Fink, 2013, p. 87). McDavid et al. (2013) supported using purposeful sampling as a qualitative sampling strategy where participants are deliberately selected.

Following approved design and procedures by the University of Missouri IRB, all Missouri high school principals surveyed for this study were contacted by email using SurveyMonkey to clarify the study's purpose and to ensure participant privacy. Submission of the survey by participants indicated consent of participation and permission to use their responses in the program evaluation. The consent form contained adequate information for all respondents to decide whether to complete the survey (Fink, 2013). Privacy and confidentiality of survey responses was a priority.

According to Fink (2013), "organizing or managing survey data is an essential part of data analysis" (p. 135). Given this survey was determining the implementation of the four grading elements within high schools required to be considered a competency-based grading school, a rubric based from these four elements was used to rank and organize the schools as part of the content analysis (Appendix A). A rubric also prevented what Creswell (2009) referred to as "drift in the definition of codes" (p. 203) in order to increase reliability. Initially, the collected responses from high school principals were categorized identifying "the presence of certain words, concepts, themes, phrases, characters, or sentences in order to quantify" (Fink, 2013, p. 131). Survey questions one, three, and seven (Appendix A) were prioritized during this first cycle of categorization in order to identify schools and gain an initial understanding of the principal's perception of their school's grading model.

Once school principals' responses had been categorized, a second cycle was conducted to quantify rubric scores from questions two, four, five, and six (Appendix A). These four questions specifically align to the four elements identified as fully implementing a competency-based grading model. Schools best meeting all criteria were

selected for the quantitative phase of the study. The second categorizing process also assisted in checking for consistency and ensuring reliability of the qualitative process (Fink, 2013).

From the qualitative survey data in the first phase of this mixed methods study, Missouri high schools who are incorporating a competency-based grading model, either standards-based or standards-referenced, and satisfactorily meeting the four elements identified in the conceptual framework were targeted for the second phase of the exploratory sequential design. The researcher anticipated identifying a minimum of 10 schools scoring at least proficient in all four rubric categories correlated to the four elements required for competency-based grading implementation. While specific buildings were identified in order to complete the second phase of the study, responses were kept in the highest regards and only used to assist in identification for the data review. Identifying information was removed and pseudonyms were used where required and appropriate (Creswell, 2009). Schools were noted as an 'F' for fully implementing a competency-based system, as a 'T' for transitioning towards a competency-based system, or an 'N' for continuing with a compliance-based system. As well, each of the three groups of identified schools were given a second corresponding letter. For example, the eight schools fully implementing a competency-based grading model were labeled: AF, BF, CF, DF, EF, FF, GF, and HF. The schools transitioning towards a competency grading model were given a corresponding letter beginning with 'A' and also the 'T' to denote transitioning. Therefore, these schools were identified as School AT, School BT, and so on.

This second phase of the study included the quantitative data analysis of identified and selected Missouri high schools addressing the second research question. In all Missouri high schools, every student is required to complete End-of-Course (EOC) exams in Algebra I and English II upon completion of these courses. EOC assessments are standardized assessments with predetermined safe guards, required protocols and proctor training, and applied verification processes establishing reliability. These assessments are completed annually. Building EOC data are collected and reported to DESE by individual student, aggregate group, and whole group. Whole group data become part of each high school building's annual data report and are publicly available for review. Therefore, the data analyzed for comparison were retrievable from the Department of Elementary and Secondary Education (DESE) website.

Analysis of the second research question became more challenging than anticipated. Trend data were to be categorized as pre-implementation years, implementation years, and post-implementation years. Pre- and post-implementation trend data were to be limited to three years. Data from identified buildings would be combined with all other analyzed buildings' data and reported in summary form. The use of pre-implementation, implementation, and post-implementation data was not plausible.

Due to changes in Missouri high school state-wide exams, the data did not align longitudinally as accountability measures and cut scores varied based on years. Janet Duncan (personal communication, May 23, 2016), assistant director of accountability data for the Missouri Department of Elementary and Secondary Education, verified that "For accountability purposes, we (DESE) have continued to use the same tests since

2009. Riverside and Questar worked together and continue using the same test bank to maintain longitudinal comparability.”

Therefore, simple descriptive statistics were analyzed to report findings from available building data. Because this was the only available longitudinal data to the researcher, schools meeting identified criteria from the qualitative phase of the mixed methods study were analyzed by their Algebra 1 and English 2 EOC scores from 2009-2015. Full implementation year was distinguished in order to determine trends in student achievement following the transition to a competency-based grading model.

These changes in assessments, causing a lack of trend data, limited the study. Given the variation in available data points per school identified, a visual inspection of the data for trends was completed. Statistical analysis was not conducted. The researcher recognizes this presents potential issues of bias and lends to subjectivity; however, the following definitions will be followed to best determine a school’s trend in student achievement. First, a trend towards increasing student achievement is defined as an upward movement of data points from the full implementation data point through the last post-implementation data point available. Second, a trend of no increase in student achievement is defined as no noticeable increase or a downward movement of data points from the full implementation year through the last post-implementation point available.

### **Data Review**

From more than 500 surveys sent to every Missouri High School principal, 89 responses were received, an 18% response rate. Using the rubric (Appendix A) to analyze principals’ responses, 68 or 76.4% of Missouri high schools were categorized as compliance-grading schools that used traditional grading practices. These schools were

assigned AN through DDDN. To clarify, the ‘N’ denoted a school not moving towards competency-based grading and remaining a traditional grading school. Given 68 schools in this category, the entire alphabet was used twice with four schools receiving a triple letter identifier (ie. AAAN, BBBN, CCCN, and DDDN).

Nine percent of responding schools, eight total, were categorized as fully implementing a competency-grading system while an additional 13 or 14.6% indicated their schools were transitioning towards a competency-grading model. Schools identified as fully implementing a competency-based model were assigned a corresponding letter and a ‘F’ (AF through HF). Schools identified as AT through MT were labeled as transitioning towards competency grading. Additional qualitative data also emerged through the categorization and analyzation of principal responses. The eight schools identified as fully implementing a competency-based grading model were quantitatively analyzed using their EOC scores.

### **Qualifying Schools’ Demographics**

For the eight schools identified as fully implementing competency-based grading, type of school, school size, poverty level, and cultural diversity were reviewed (Figure 3).

	<b>AF</b>	<b>BF</b>	<b>CF</b>	<b>DF</b>	<b>EF</b>	<b>FF</b>	<b>GF</b>	<b>HF</b>
<b>School Type</b>	Public	Public	Public	Public	Public	Public	Charter	Public
<b>Student Population</b>	Large	Small	Large	Large	Medium	Large	Small	Medium
<b>Poverty Level</b>	Low	Mod	Mod	Mod	High	High	High	High
<b>Cultural Diversity</b>	High	NR	NR	Mod	Mod	Mod	NR	NR

*Figure 3.* School demographics of 8 schools fully implementing competency-based grading.

Seven of eight schools analyzed were public 9-12 grade Missouri high schools. One school was a 9-12 grade charter school. School size was determined by student population reported to DESE in 2015. Schools were ranked small (1-499), medium (500-999), or large (1000 or more). Four of 8 (50%) schools were large while 2 of 8 (25%) were both small and medium sized.

Poverty level was determined by the percent of students qualifying for free and reduced lunch prices as reported to DESE in 2015 by each high school. Schools were classified as low (below 14.9%), medium (15 – 34.9%), or high (35% or higher). School AF was the only low school with 3 of 7 considered moderate. Four of 8 (50%) schools ranked as high.

Cultural diversity was identified by the percent of non-white students within the student population of the high school. Schools were identified as low (10% or less), moderate (10.1 – 20%), and high (20.9% or more). One of 8 schools was identified as high with 3 schools identified as moderate. Four of 8 (50%) of schools were marked NR. These schools were identified as ‘NR’ for not reported. Some schools did not have enough students within certain subgroups; therefore, DESE did not report to avoid confidentiality concerns.

### **Additional Qualitative Data**

While evaluating the first key element, a comprehensive learning progression, a vast majority of fully implemented and transitioning schools indicated alignment to state standards and identification of power or essential standards. Principal of school BT noted, “teachers were provided collaboration time to identify power standards by which departments would construct curriculum maps, align assessments, and create our

framework for Standards Based Grading.” In fact, 90% of all responding schools’ principals perceived themselves as proficient or exemplary; 34.8% of all responding schools ranked as exemplary on the rubric. “The curriculum is aligned to the Missouri Learning Standards in all areas. Teachers identify 10-15 Essential Learning Outcomes to monitor student master” (Principal of School BN). Heflebower et al. (2014) supported these progressive actions noting that “some standards need to be emphasized over others” (p. 16) and appeared to be widespread

Pre-determining an acceptable level of performance or proficiency, the second key element, was not as wide-spread and more sporadic within implementation. Principal of School BF remarked, “Rubrics are available for the majority of core area assessments which provide learning goals for our students. I cannot say that we are at 100% in this area though, it is a work in progress.” Proficiency scales in the form of rubrics or checklists articulate the learning progression for each essential standard and “bring prioritized standards to life in the classroom” (Heflebower et al., 2014, p. 28). “We are in the process of this right now of creating proficiency (mastery) levels for our departments. We began this year with Math and ELA and will continue with additional departments” (Principal of School DT). Predetermined levels of proficiency can be communicated clearly to students.

District and building professional development on formative assessment processes was a recurring theme as the need for a meaningful assessment process, the third key element, appears to be a priority for a majority of school systems. School DT’s principal responded, “We have focused our professional development on effective formative assessment stressing feedback.” Ninety percent of principals of high schools fully

implementing and transitioning to a competency-grading model indicated at least a proficient level of formative assessment. According to principal of School BF, “Formative assessment is a focus in all classrooms...A flowchart for intervention steps is posted in every classroom.” Several principals of schools still using a traditional grading system indicated aspects of or desires for a more formative assessment process. “Formative assessment for learning has been a district push for several years now but we still have a population of teachers who still teach, quiz, and assess without routine feedback,” according to principal of School FN. Supporting this observation Reeves (2010) noted, “The focus of assessment has shifted dramatically from summative to formative assessment” (p. x).

The final key element for fully implementing competency-based grading is a unified grading policy. “Any school that has begun the journey towards competency education, breaking free of the limitations of the time-based system, will eventually come face-to-face with grading policies and practices” (Sturgis, 2014, p. 4). Eighty-one percent of high schools transitioning or already fully implementing a competency-based system were categorized as proficient or exemplary on the rubric for this element. Principal of School DT reported, “Many of our teachers have already implemented these grading policies—all teachers will implement similar grading policies beginning in the 2016-17 school year.” Some Missouri high schools and districts have even posted their grading policies on their websites. “Teachers give complete credit for reassessments. No non-academic factors are included in student grades. There is a district grading policy that all teachers are to follow” (Principal of School HT). Sturgis (2014) supported that

“schools have to establish a standards-based (competency-based) grading policy, not just a standards-referenced approach” (p. 18).

As an education leader of a Missouri high school, removal of non-academic factors to report an authentic grade has proven difficult. However, these discussions moving towards a unified grading policy have inspired instructional practices discussions. Principal of School AN reported, “Some teachers allow partial credit on do-overs. 2% of participation is deducted from quarter grade for unexcused absences” accentuating more work is needed. “Homework counts for no more than 10%. Re-do and re-takes are offered... We separate behavior from academics” (Principal of School BF). These discussions have also required professional development in several other areas such as classroom management, student engagement, and formative assessment strategies for implementation and gaining teacher buy-in.

### **Quantitative Data**

While the anticipated minimum of ten fully implementing schools was not achieved, a review of the eight schools’ available data provided some patterns for consideration. Reviewing that only 2009-2015 EOC data were longitudinally comparable, a review of English 2 (Figure 4) and Algebra 1 (Figure 5) trends for all eight qualifying schools was conducted.

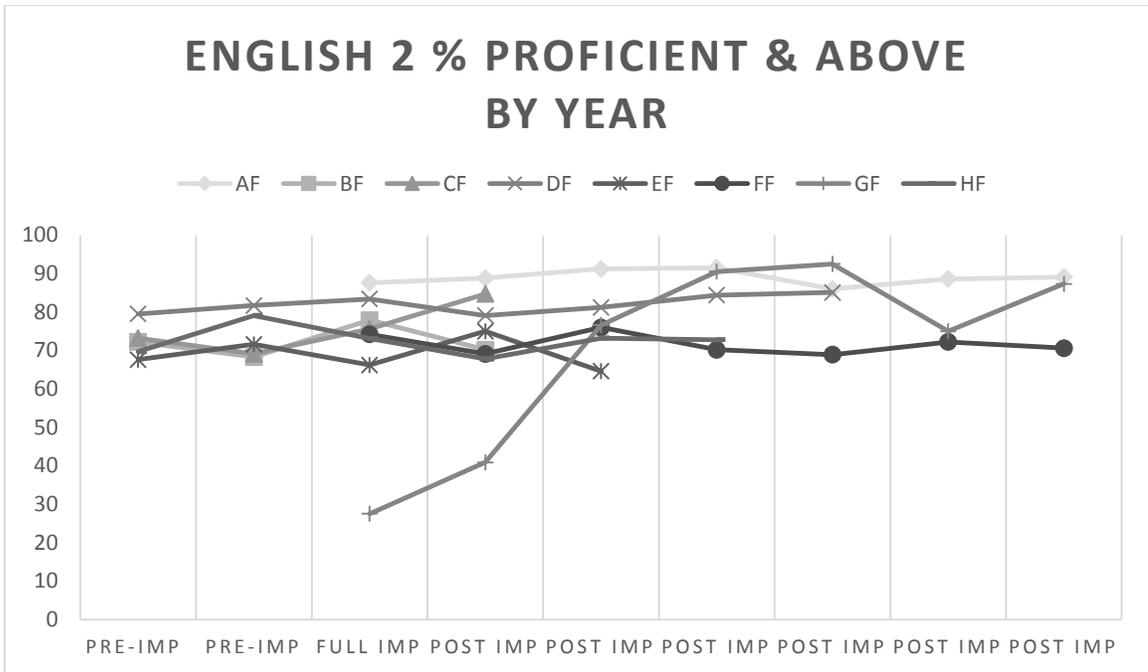


Figure 4. English 2 EOC percent proficient and above by year of all 8 qualifying Missouri high schools.

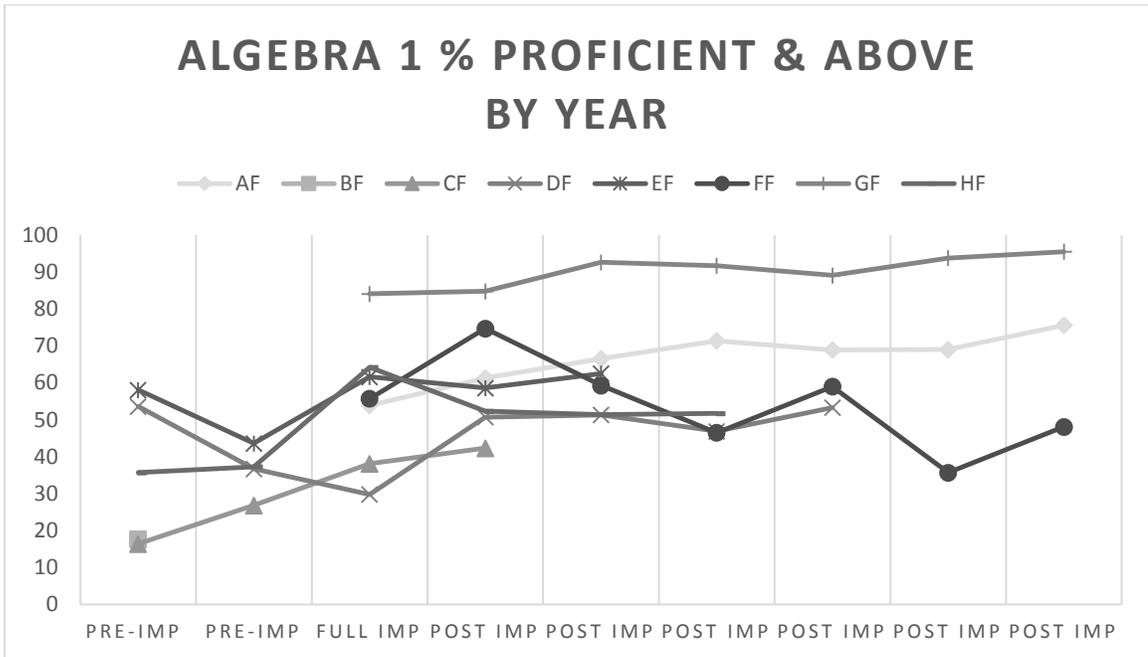


Figure 5. Algebra 1 EOC percent proficient and above by year of all 8 qualifying Missouri high schools.

Highlighted in Figure 6, four (AF, CF, DF, and GF) of 8 demonstrated a trend of improvement in ELA2 scores following implementation year reported.

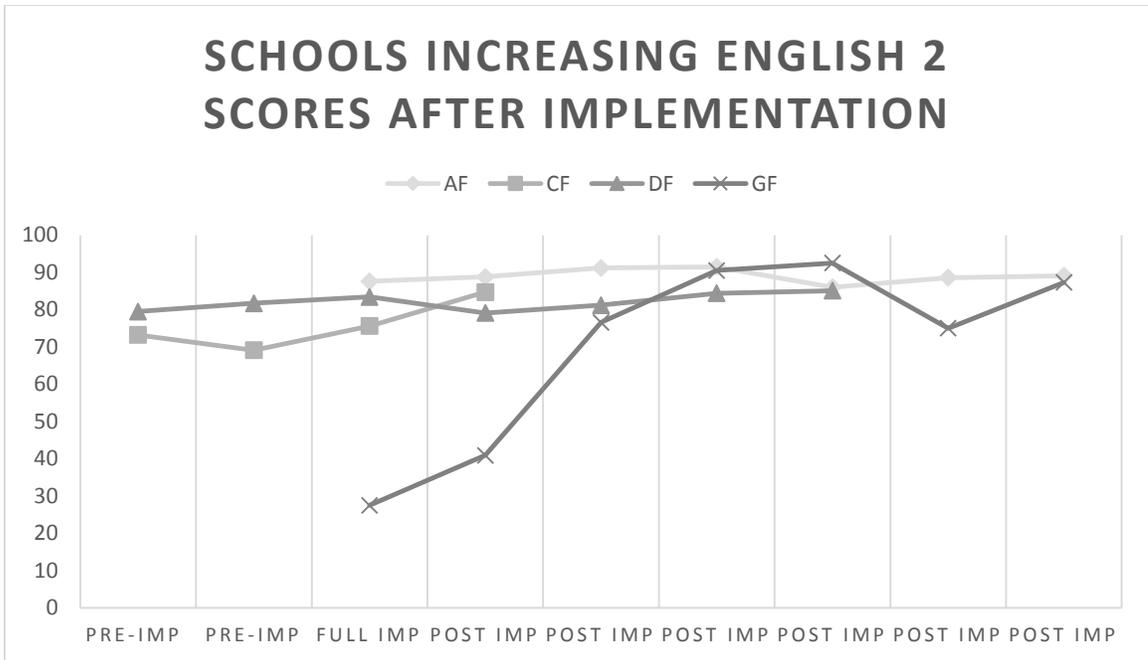


Figure 6. Schools showing an increase in English 2 EOC scores following implementation.

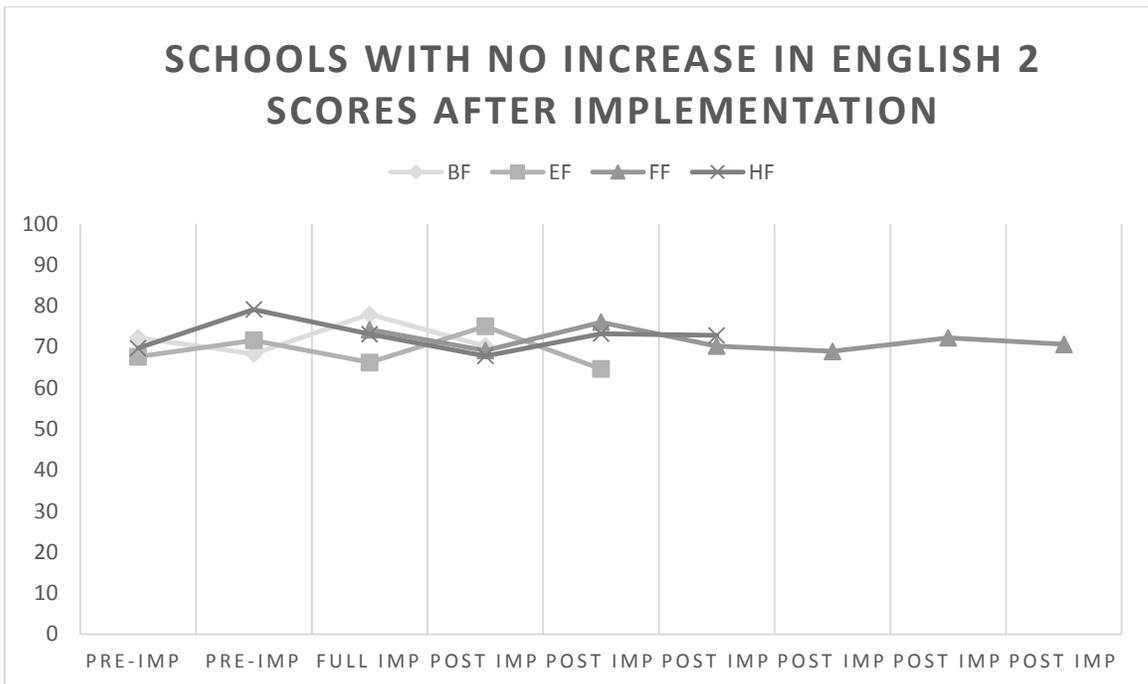


Figure 7. Schools showing a decrease in English 2 EOC scores following implementation.

Four (BF, EF, FF, and HF) of 8 schools' ELA2 scores indicated no noticeable trend toward an increase in student achievement as depicted in Figure 7. While only slightly

declining or flatlining, the study looked for trends and associations within student achievement as impact. Statistical significance was not considered.

Figure 8 shows that 5 (AF, CF, DF, EF, and GF) of 8 schools trended towards increased student achievement in Algebra 1 scores following implementation year reported.

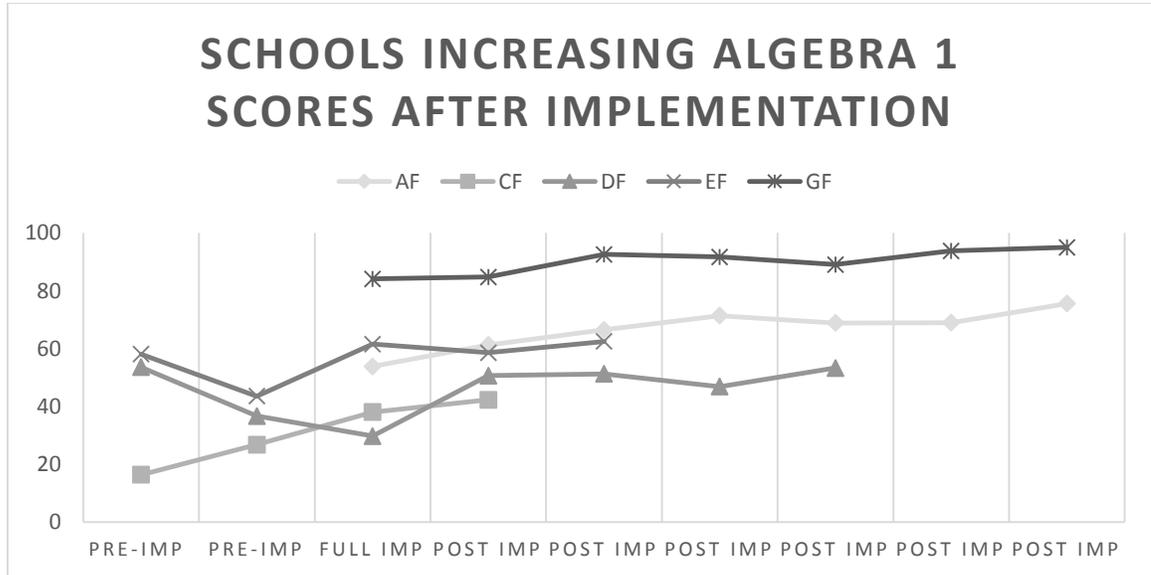
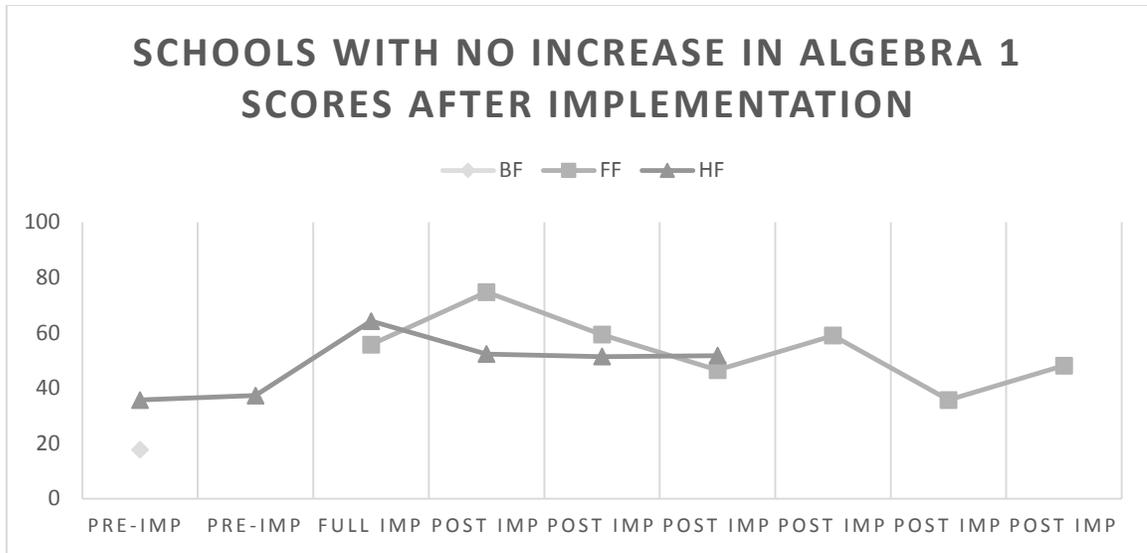


Figure 8. Schools showing an increase in Algebra 1 EOC scores following implementation.

Two (FF and HF) of 8 schools' Algebra 1 indicated no noticeable increase in student achievement following full implementation (Figure 9). School BF's Algebra 1 scores were not reported for all years yielding only a single data point.



*Figure 9.* Schools showing a decrease in Algebra 1 EOC scores following implementation.

Of the eight schools identified, four Missouri high schools reported full implementation of a competency-based grading model prior to 2012. Schools AF, FF, and GF indicated implementation in 2009 while school DF reported full implementation in 2011. Three of four schools reporting four or more years post implementation showed a growth trend in achievement in EOC scores in both English 2 (Figure 10) and Algebra 1 (Figure 11). School FF’s EOC scores showed no noticeable increase in student achievement in both content areas following implementation.

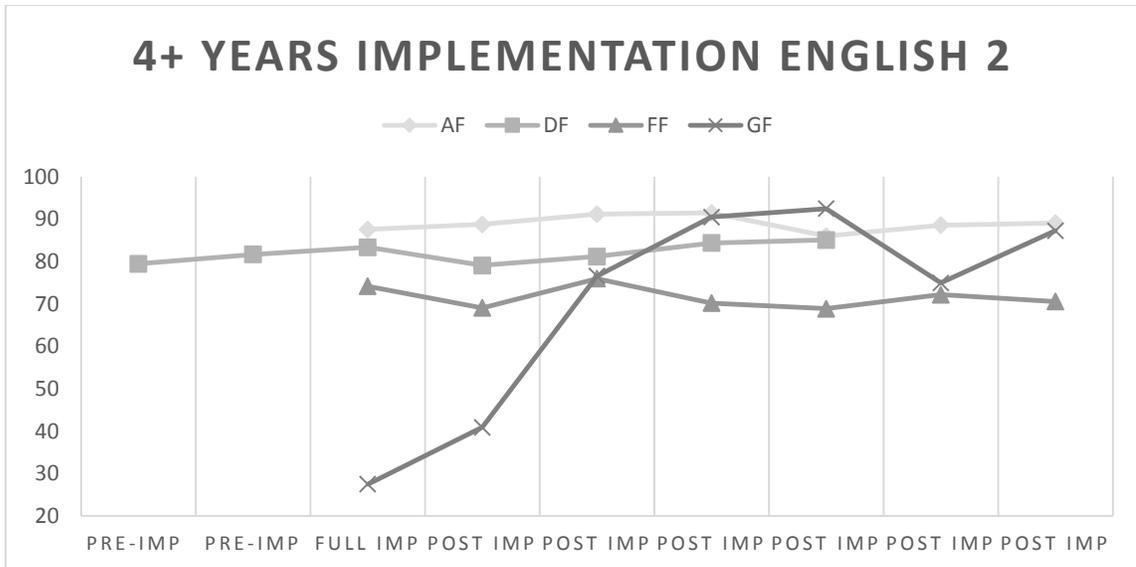


Figure 10. English 2 EOC scores of schools implementing competency-based grading prior to 2012.

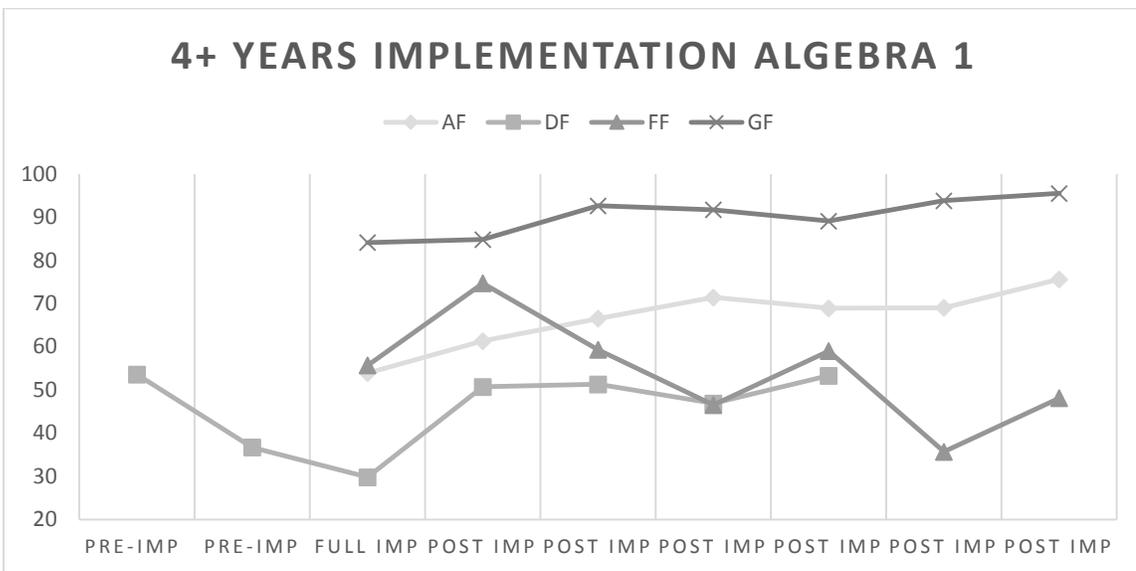


Figure 11. Algebra 1 EOC scores of schools implementing competency-based grading prior to 2012.

### Discussion

This program evaluation addressed the impact of competency-based grading models on student achievement in Missouri high schools. While patterns exist, learning is complex and extremely difficult to quantify. Complexity of quantifying learning is exemplified given the number of variables beyond control of the researcher and

sometimes the school staff implementing grading reforms. Possible variables that could also affect student achievement include student mobility, teacher turnover, leadership changes, community support, teacher quality, curriculum quality, or staff buy-in. However, some relationships can still be derived void of causation lending evidence to how grading reforms impact student achievement.

### **Summary of Key Findings**

From the survey results of 89 Missouri high school principals, the qualitative data were informative. As noted earlier and supported within the data presented, a growing trend exists of schools transitioning towards and adopting a competency-based system of grading. Principal feedback also noted an interest to move towards a competency-based grading system. This trend posits an impetus for educational leaders to know a positive impact can correspond with grading reform initiatives.

Given the standards-based movement discussed previously, survey responses indicated Missouri high schools have certainly moved towards standards-based education. Ninety percent of respondents indicated proficient or exemplary alignment to the Missouri Learning Standards. Some school principals noted the impending need to align to the spring 2016 adopted standards during the 2016-17 school year. Many respondents indicated formative assessment processes were in development or already employed.

While limited to eight Missouri high schools, the program evaluation generated important insights. To clarify, this study looked for improvement of student achievement as impact. This study did not analyze the statistical significance of the improvement. Rather, a visual inspection of the data for trends was completed. While researcher

subjectivity and potential bias can exist, specific definitions of increasing and decreasing trends were established.

Some schools demonstrated a trend towards increasing student achievement corresponding with full implementation of competency-based grading while others did not. Some schools showed no noticeable increase in student achievement. Most notably, three of the four high schools (75%), having four or more years of post-implementation data showed a trend towards increasing student achievement in EOC scores of both content areas.

### **Recommendations**

With this growing trend across the nation including Missouri schools studied, the first recommendation is for administrators and teachers to receive professional development increasing comprehension of grading philosophy and practices. A greater understanding of grading models, grading practices, and the interconnectedness to student motivation is needed for all educational professionals. Principal of School CN noted, “Teacher knowledge of standards and alignment is sporadic and varied but improving with additional leadership devoted to such initiatives.” Can grading practices be improved within a traditional grading system so that a letter grade more accurately reflects a student’s progress? Do educational professionals understand the difference between changing a reporting tool versus the changing a practice or philosophy?

From review of survey responses, an in-depth understanding of formative assessment processes and a complete comprehension of a full learning cycle are sporadic amongst educational leaders in Missouri high schools. Professional development would build capacity around the fundamental aspects of grading (Heflebower et al., 2014).

Leaders need full comprehension of grading philosophy, processes, and factors in order to effectively either implement a competency-based model or to substantiate use of the current adopted model of that school system.

Building capacity with teachers is important but also with students, parents, and Board of Education members. As teachers begin to understand, buy-in, and implement such changes, parents, students, and community need comprehension and understanding. All parties identified as inputs within the logic model need understanding to avoid community issues documented in other states like Minnesota and Iowa (Engler, 2013; Erzen, 2013; Koumpilova, 2013). All effected, such as parents, students, community members, and teachers, should be invited into the planning and training conversations (Cervero & Wilson, 2006).

Another recommendation is a need for understanding of and recognition of implementation process requirements by administrators. Traditional grading practices are deeply imbedded. Implementation requires a paradigm shift for all parties: administrators, teachers, parents, and students. Qualitative responses indicated a lengthy process in order to implement all four elements and shift the paradigm. Heflebower et al. (2014) supports these findings indicating multiple years to fully implement. According to Cervero and Wilson (2006), educational leaders need to invite all constituents to participate in the conversation about learning and grading. Learning and grading acculturation is necessary for effective change. This process begins with the first recommendation. Changing and implementing a new structure can successfully occur following an understanding of grading models and grading practices. The process takes time.

Heflebower et al, (2013) proposed a 3-year implementation timeline. School ET's principal responded, "We have been in the transition period for the past five years." Some schools indicated a lengthier process, up to 8 years or more with continued involvement. In fact, School AF's principal described the implementation timeline as "over 10 years...long process." Staff training, parent understanding, identification of standards, and development of proficiency scales takes time and energy. Research, book studies, site visits, community meetings, and parent nights may become part of the implementation process to assist with vision and instill confidence to all parties avoiding controversy and issues as seen in other school systems (Engler, 2013; Erzen, 2013; Koumpilova, 2013).

These two recommendation reverberate significance of the developed logic model (Figure 2). The inputs provide clarity of who should be included within the implementation plan. The components identify aspects that should be addressed fully with clear comprehension for implementation. Developing professional development to address the components with the inputs will be critical for the outputs and outcomes to be reached.

These recommendations also distinguish the need for all constituents to identify mission and purpose of such a great undertaking as grading reform. Just as students need hope, should expect success, give effort, get motivated, and experience achievement through a cyclic process, so should the educators instilling change (Figure 1). As noted prior, "increasing achievement is a function of our efforts and interest is critical to success—there is no point, for example, in investing in study or preparation if we do not believe that our efforts can make a difference" (Hattie, 2009, p. 48). While this statement

applies to students' learning, it also applies to the educational community attempting to transform grading practices within schools. Success is dependent upon having the correct constituents at the planning table (Cervero & Wilson, 2006) to gain clear understanding of purpose for change, understanding processes for grading reform, and believing that the change will have impact.

Finally, additional research is obligatory to verify or negate current interpretations. Longitudinal data were limited due to changes in accountability measures and assessment formats (J. Duncan, personal communication, May 23, 2016). The sample size and lack of longitudinal data within the second phase of the study altered the intended course of investigation and greatly limited the generalizability. Additional schools are implementing and will provide additional data to review. The sample size is growing. Case studies of schools implementing for four or more years could reveal implementation and rich, qualitative data.

In any situation, multiple views must be accounted for including the human resource frame (Bolman & Deal, 2008). Of significance, but yet to be studied, is the impact on all of the inputs: teachers, students, administrators, parents, and community. Some school districts in other states attempting to change grading practices have received negative feedback from parents and teachers (Engler, 2013; Erzen, 2013; Koumpilova, 2013). What is the cost of a district's or school's human resources when implementing competency-based grading models? Is implementation worth the cost? Is the paradigm shift from traditional, compliance-grading concepts to competency-grading philosophy so arduous creating negativity within school culture?

As schools continue to use and other schools continue to adopt competency-based models, sample size will improve for study. Additionally, the Missouri State Board of Education approved the administration of the ACT to all juniors in Missouri public schools beginning the Spring of 2015 as part of the Missouri School Improvement Program (MSIP5) to measure college and career readiness. Potential exists to use the junior class ACT test scores for longitudinal studies in future years.

## Appendix A

CATEGORY	Exemplary (4)	Proficient (3)	Approaching (2)	Unsatisfactory (1)
<b>Comprehensive learning progression</b>	All core department curriculum is aligned to state criteria. Students clearly understand standards to be mastered.	Curriculum is aligned to state criteria in core areas. Standards are identified by teachers.	Curriculum or standards may be partially aligned or identifiable. May or may not be communicated to students.	Curriculum is not aligned to state criteria. Standards are unidentifiable.
<b>Predetermined level of proficiency</b>	All core courses contain clear descriptors of proficiency levels. Proficiency scales are available for all assessments. Proficiency levels are clearly communicated in advance to students.	Most core courses contain clear descriptors of proficiency levels. Proficiency levels may be a percentage. Some proficiency scales may be developed. Proficiency levels are communicated in advance to students.	Some courses contain descriptors for proficiency. Percentages may be identified as proficiency. Proficiency levels are sometimes communicated.	Acceptable proficiency levels are undetermined.
<b>Meaningful assessment process</b>	A formative process guides daily instruction. Feedback is consistently and frequently provided. Proficiency is determined at the end of the complete learning cycle through a summative assessment format.	A formative process guides instruction. Feedback is provided. Proficiency is determined through a summative assessment format.	Assignments, quizzes, and tests provide feedback. Instruction may be adjusted at the teacher discretion.	Assignments, quizzes, and tests provide evaluative feedback.
<b>Unified grading policies supporting growth</b>	Proficiency is determined through assessment types for the entire building. Homework does not count for a grade. Remediation, do-overs, and retakes facilitate learning with full credit granted. Non-academic factors are reported separate.	Proficiency is determined through assessment types for core areas. Homework is minimally graded. Remediation, do-overs, and retakes facilitate learning for at least partial credit. Non-academic factors are reported separate.	Proficiency is determined through assessment types inconsistently throughout the building. Homework is minimally graded. Remediation, do-overs, and retakes may facilitate learning for at least partial credit. Non-academic factors may be reported separately.	Homework is graded. Remediation, do-overs, and retakes are not allowed. Non-academic factors may determine part of reported grade.

SECTION SIX:  
SCHOLARLY PRACTITIONER REFLECTION

## **Introduction**

As a building leader of a high school housing approximately 1,300 students and 95 staff, I chose to apply for the MU-MSU Educational Leadership Doctoral Program to hone my current skills as well as develop new skills and knowledge. The intent was to develop myself into the complete leader described by Ancona, Malone, Orlikowski, and Senge (2011):

Top executives, the thinking goes, should have the intellectual capacity to make sense of unfathomably complex issues, the imaginative powers to paint a vision of the future that generates everyone's enthusiasm, the operational know-how to translate strategy into concrete plans, and the interpersonal skills to foster commitment to undertakings that could cost people's jobs should they fail. (p. 179)

Northouse (2013) asserted, "Leadership is a highly sought-after and highly valued commodity" (p. 1). Becoming a highly valued commodity and sought-after leader that meets needs and reaches the goals, vision, and mission of my organization was my original intention. I intended to become the 'complete leader'. However, Ancona, et al. (2011) continued:

No one person could possibly stay on top of everything. But the myth of the complete leader (and the attendant fear of appearing incompetent) makes many executives try to do just that, exhausting themselves and damaging their organizations in the process. (p. 180)

From the first readings within the program during summer 2013 to the final course work in spring 2015, my personal leadership skills and paradigms have been challenged. I

continue to propose that the better leader I am, then the better those around me become, both teaching staff and attending students. Through study within the doctoral program, I have grown to more fully understand how a ‘complete leader’ is better and more fully defined, true and effective characteristics of quality leaders, and decision-making attributes necessary to move an organization forward. “It’s time to put that myth to rest, not only for the sake of frustrated leaders but also for the health of organizations” (Ancona, et al., 2011, p. 196). The dissertation as the culminating experience continued to transform and influence me.

### **How has the dissertation influenced your practice as an educational leader?**

Similar to many of the experiences throughout the doctoral program, the dissertation has influenced me as an educational leader. A significant factor was the realization of what research-based can mean. A number of educational programs and initiatives are implemented because they are labeled as research-based strategies. Standards-based or standards-referenced grading are examples. The national trend continues. My research supports that the trend continues in Missouri high schools. However, the quantitative data that I would have assumed does not exist; rather, a majority of the research is theoretical and limited to qualitative data. Recognizing quality research, looking for student achievement data, and asking better questions as an educational leader will be a direct result of this experience as I want to avoid implementing programs because they are the latest fad (Lasley, 2009).

This experience has also developed an understanding for program implementation and evaluation. My organization has implemented two new initiatives during the dissertation process. Logic models (McDavid et al., 2013) have been developed and used

to add clarity of process, increase comprehension, and verify evaluation procedure. In both instances, data collection has been established in order to complete program evaluations.

Development of presentations, presenting to experts, and answering experts' questions has also influenced my practice. I am able to collect my thoughts, organize my materials, and be more confident when presenting and discussing a topic. Presentation skills will be used throughout my career when presenting to MASSP or the Missouri Association of School Boards (MASB).

### **How has the dissertation process influenced you as a scholar?**

The dissertation process has created an "educational nerd". First, the process has developed a desire to read the research more critically. The ability to comprehend what I read has greatly improved. I have more questions and need more clarification when reading scholarly articles; subsections that I skimmed over in the past now have greater relevance and application.

Second, the process has helped me strengthen vocabulary. This has been reflected in my comprehension when reading scholarly works and research articles. This strengthened vocabulary reflects in my writing. At times, I now must simplify general writings for announcements, conversations with students, and publications to the general public.

Finally, the dissertation process has helped develop my ability to conceptualize and evaluate. Within this process, I developed a 'Cycle of Achievement' grounded in multiple other authors' theories. A logic model was used to identify the human resources

(Bolman & Deal, 2008), clarify the key elements necessary for implementation of a competency-based grading model, then recognize the intended outcomes.

### **Conclusion**

Throughout the program specifically during the dissertation process, my leadership skills and paradigms have been challenged and cultivated. Transformative learning is fostering change and most suited for those who have had enough life experiences to make the process effective (Merriam & Bierema, 2014; Taylor, 2009) such as adult professionals. According to Merriam and Bierema (2014), “Transformative learning is essentially a learning process of making meaning of one’s experience” (p. 84). While Merriam and Bierema (2014) noted the literature is inconclusive regarding “the permanence of social-level transformations” (p. 100), I am confident the transformative learning process has truly impacted me for life and will continue to impact those around me.

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## Appendix A

### Competency-based Grading Survey Questions

The following survey will ask you of your experiences with and perceptions associated with grading practices within your building. The survey should take no more than 15 minutes to complete. Please review the following statements:

- a) Participation in this study is completely voluntary.*
- b) Participants may stop at any time or may choose not to answer all questions.*
- c) All responses will remain confidential and all identifiers will be removed. Pseudonyms will be used where appropriate.*

1. What is the name of the high school you represent?
2. Which of the following responses best describe your school?
  - A. All core department curriculum is aligned to state criteria. Students clearly understand standards to be mastered.
  - B. Curriculum is aligned to state criteria in core areas. Standards are identified by teachers.
  - C. Curriculum or standards may be partially aligned or identifiable. May or may not be communicated to students.
  - D. Curriculum is not aligned to state criteria. Standards are unidentifiable.

Please justify your answer:

3. When does the school you represent assess 9<sup>th</sup> graders with the Algebra 1 EOC?
  - A. Immediately upon completion of the Algebra 1 course including 8<sup>th</sup> graders taking Algebra 1 for high school credit.
  - B. Immediately upon completion of the Algebra 1 course except 8<sup>th</sup> graders that take the Math 8 MAP.
  - C. All 9<sup>th</sup> graders take the Algebra 1 EOC.
  - D. Students take the Algebra 1 EOC after completing Algebra 2.
4. Which of the following responses best describe your school?
  - A. All core courses contain clear descriptors of proficiency levels. Proficiency scales are available for all assessments. Proficiency levels are clearly communicated in advance to students.

- B. Most core courses contain clear descriptors of proficiency levels. Proficiency levels may be a percentage. Some proficiency scales may be developed. Proficiency levels are communicated in advance to students.
- C. Some courses contain descriptors for proficiency. Percentages may be identified as proficiency. Proficiency levels are sometimes communicated.
- D. Acceptable proficiency levels are undetermined.

Please explain your reasoning:

5. Which of the following responses best describe your school?

- A. A formative process guides daily instruction. Feedback is consistently and frequently provided. Proficiency is determined at the end of the complete learning cycle through a summative assessment format.
- B. A formative process guides instruction. Feedback is provided. Proficiency is determined through a summative assessment format.
- C. Assignments, quizzes, and tests provide feedback. Instruction may be adjusted at the teacher discretion.
- D. Assignments, quizzes, and tests provide evaluative feedback.

Please explain your response:

6. Which of the following responses best describe your school?

- A. Proficiency is determined through assessment types for the entire building. Homework does not count for a grade. Remediation, do-overs, and retakes facilitate learning with full credit granted. Non-academic factors are reported separate.
- B. Proficiency is determined through assessment types for core areas. Homework is minimally graded. Remediation, do-overs, and retakes facilitate learning for at least partial credit. Non-academic factors are reported separate.
- C. Proficiency is determined through assessment types inconsistently throughout the building. Homework is minimally graded. Remediation, do-overs, and retakes may facilitate learning for at least partial credit. Non-academic factors may be reported separately.
- D. Homework is graded. Remediation, do-overs, and retakes are not allowed. Non-academic factors may determine part of reported grade.

Please justify your selection:

7. Is your school considered to be using a standards-based, standards-referenced, or traditional grading system? Please justify your response.

- a. If you consider your school to use a standards-based or standards referenced system, please describe the timeline of implementation.
- b. If you consider your school to use a standards-based or standards referenced system, please specifically note the first year of full implementation.

## Appendix B

### Competency-based Grading Survey Consent Form

Building principal,

In addition to being a building principal, I am also a student in the Missouri University - Missouri State University Doctoral Program. I am conducting a mixed methods study to determine the effect of competency-based grading models upon student achievement. This survey will assist with identifying schools incorporating standards-based or standards-referenced grading practices. A quantitative program evaluation of identified schools using DESE-reported data will be used for completion of the research project. As part of this project, I am surveying all Missouri high school building principals.

While the survey identifies buildings, your privacy is important. Your responses will be kept in the highest regards and used only to assist in school identification for the data review. All information naming schools will be removed, and only summary results will be reported. This researcher understands any comparison data discussed will require the proper use of pseudonyms. There is no penalty should you choose not to participate or answer all questions. Your completion and submission of the survey will indicate your consent to participate and permission to use the information that you have provided in this mixed method study.

I am asking for your participation. The survey should take no more than 15 minutes of your time to complete. It will ask you of your experiences with and perceptions associated with grading practices within your building.

Prior to making a final decision about participation, please read the following statements:

- Participation in the study is completely voluntary.
- Participants may stop at any time or may choose not to answer all questions.
- All responses will remain confidential as results will be presented in summary form and pseudonyms used where appropriate. All identifying information will be removed.

The research procedures adequately safeguard the subject's privacy, welfare, civil liberties, and rights. If you have questions regarding the review and procedures of this study, you may contact Dr. Cynthia MacGregor at (417)836-6046 or [cmacgregor@missouristate.edu](mailto:cmacgregor@missouristate.edu). If you have any questions or concerns about your participation in this survey, you may contact me at (417)742-3524 or at [curtgraves@willardschools.net](mailto:curtgraves@willardschools.net). Thank you for your time and consideration.

Sincerely,  
Curt Graves  
Principal  
Willard High School

## Appendix C

### Competency-based Grading Survey Rubric

CATEGORY	Exemplary (4)	Proficient (3)	Approaching (2)	Unsatisfactory (1)
<b>Comprehensive learning progression</b>	All core department curriculum is aligned to state criteria. Students clearly understand standards to be mastered.	Curriculum is aligned to state criteria in core areas. Standards are identified by teachers.	Curriculum or standards may be partially aligned or identifiable. May or may not be communicated to students.	Curriculum is not aligned to state criteria. Standards are unidentifiable.
<b>Predetermined level of proficiency</b>	All core courses contain clear descriptors of proficiency levels. Proficiency scales are available for all assessments. Proficiency levels are clearly communicated in advance to students.	Most core courses contain clear descriptors of proficiency levels. Proficiency levels may be a percentage. Some proficiency scales may be developed. Proficiency levels are communicated in advance to students.	Some courses contain descriptors for proficiency. Percentages may be identified as proficiency. Proficiency levels are sometimes communicated.	Acceptable proficiency levels are undetermined.
<b>Meaningful assessment process</b>	A formative process guides daily instruction. Feedback is consistently and frequently provided. Proficiency is determined at the end of the complete learning cycle through a summative assessment format.	A formative process guides instruction. Feedback is provided. Proficiency is determined through a summative assessment format.	Assignments, quizzes, and tests provide feedback. Instruction may be adjusted at the teacher discretion.	Assignments, quizzes, and tests provide evaluative feedback.
<b>Unified grading policies supporting growth</b>	Proficiency is determined through assessment types for the entire building. Homework does not count for a grade. Remediation, do-overs, and retakes facilitate learning with full credit granted. Non-academic factors are reported separate.	Proficiency is determined through assessment types for core areas. Homework is minimally graded. Remediation, do-overs, and retakes facilitate learning for at least partial credit. Non-academic factors are reported separate.	Proficiency is determined through assessment types inconsistently throughout the building. Homework is minimally graded. Remediation, do-overs, and retakes may facilitate learning for at least partial credit. Non-academic factors may be reported separately.	Homework is graded. Remediation, do-overs, and retakes are not allowed. Non-academic factors may determine part of reported grade.

## VITA

Curt Graves was born in Albany, Georgia, while his father was serving in the Navy. He graduated from Pawnee Heights High School in western Kansas, then attended college. He graduated from Sterling College, Sterling, Kansas, with a Bachelor's degree in education. While teaching at Sterling Junior – Senior High for ten years, the author continued his educational pursuits earning his master's degree in Educational Administration from Friends University in Wichita, Kansas.

Curt has continued his educational career as a secondary school principal. He has been a building leader in three different school systems of different demographics ranging from small and rural to suburban and more diverse.

The author stays active when not at school. He enjoys spending time with his wife and boys. They enjoy many activities including tournament fishing, hunting, and various sports activities together.