TRANSITIONING TO COMPETENCY-BASED GRADING

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Abstract

Transitioning from traditional grading practices to competency-based grading practices was examined to determine if the use of competency-based grading practices increases student motivation and to examine whether or not a correlation exists between the type of grading system and the student and teacher perception of the extent and depth of learning in the classroom. Both students and teachers at a rural high school in Middle Tennessee participated in various quantitative measures including a Likert scale survey about motivation and qualitative observations such as personal interviews with the researcher and self-reflection journals. The research sample population included twelve students and two teachers. This study was focused through the lens of the Self-Determination theory in order to assess the correlation between competency-based grading and competence, autonomy, and relatedness for both the students and the teachers. Data gathered both qualitatively and quantitatively indicated a statistically significant correlation between competency-based grading practices and student and teacher motivation, albeit a negative correlation. The data indicated that competence, relatedness, and autonomy must be present to increase motivation. In this study, autonomy was not realized, therefore, motivation decreased. Autonomy is the keystone of the Self-Determination Theory. From the surveys, interviews, observations, and journals, the desired outcome of the research is for teachers and school districts to reflect on the purpose of grades and how more autonomous students can result in more motivated and self-determined students. If all three facets of the Self-Determination Theory are in place, competency-based grading should result in increased student and teacher motivation as well as an increase in the extent and depth of learning in the classroom.

*Keywords: autonomy, competency-based grading, Self-Determination Theory*

Dedication
I dedicate this dissertation to the Cheatham County Central High School Class of 2018 for motivating me when I too had senioritis.
Steve Williams taught me to hang around the winners. Without the following winners, there is no way I would have succeeded in this doctorate program. Dr. Andrea Bringard, thank you for guiding me through the entire process and not letting me quit the five times I wanted to. Soon to be, Dr. Terri Lockert, for being right alongside me, always a text away. Judy Bell, I would not be where I am today without you, thank you for your constant love and making me go to one more professional development that changed my career. Dr. Tara Watson, you always see greatness in me and push me to walk in it. Dr. Julia Price and Dr. Mark P. Taylor, your support was much needed and I appreciate every phone call or email letting me know I was heard. Dr. Brian Sohn, you are the best chairman a graduate student could have. You made me find fuel in an empty tank and I am a changed person because of it.

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CHAPTER ONE

Introduction

Educators across the country have been documenting the discrepancy between expert recommendations and teachers’ grading practices for years and have even called for reform (Brookhart et al., 2016; Donen, 2010; Kunnath, 2017). However, grading practices have remained largely unchanged in schools throughout the country (Kunnath, 2017). In the first part of Chapter One, I will report studies and theories that suggest learning is an innate concept, yet traditional grades have restricted students’ intrinsic motivation to learn (Donen, 2010; McMillan, 2017; Schinske, & Tanner, 2014). Even further, traditional grades have pushed more extrinsic motivation for students to earn a grade rather than learn (McMillan, 2017). Next, Brookhart’s (2011) summary of the three main opinions of grades give details of how the inconsistencies prevail from teacher to teacher as educators assume grades have the same purpose for all.

Grades are presented as a multi-dimensional construct containing cognitive and noncognitive factors that allow teachers the autonomy to choose what the purpose of grades are in their grade book (Bowers, 2009; Brookhart et al., 2016; Wormeli, 2012). Examples are given of how the multi-dimensional grading construct, when not used exclusively for the attainment of learning, leaves educational stakeholders uninformed about their students’ true level of learning (Kunnath, 2017). Described next are the negative consequences of some of the traditional grading practices such as: passing students with deficient knowledge and skills, misinforming parents of student learning, misrepresenting the student to colleges and universities and ultimately leading a student to drop out (Peters et al., 2017). Then, a brief history of grades highlights positive aspects of grading as examples of how some educators originally interpreted the purpose of grades and letter grades (Schinske & Tanner, 2014; Schneider & Hut, 2014). Marzano has pointed out that
the current American grading system, which is over a century old, lacks a body of supporting research (Peters, et al., 2017) and studies from across the country suggest a call to change. Therefore, this study has the goal of investigating what role motivational aspects play into the latest supporting research of transitioning from traditional grading practices to more competency-based grading systems.

The next part of Chapter One is divided into sections as follows: Research Problem, Purpose of the Study, Research Questions, Rationale for the Study, The Researcher, Definition of Terms, and then a Summary to conclude Chapter One. Each sections focus is to explain with deeper meaning the main purpose and concerns of the study.

**Motivation to Learn**

Learning is known to researchers as one of the most natural of psychological processes (Rigby, C. S., Deci, E., Patrick, B. C., & Ryan, R., 1992). Yet, educators have struggled and still struggle with students that have little to no motivation to learn in the classroom (Donen, 2010; Stanley & Plucker, 2008). So far, traditional actions such as grading for behavior issues, using a point system with averaging, grading formative assessments so heavily, and allowing extra credit, have caused problems with motivation. Even rewards have been known to affect the students’ motivation for learning (Rigby et al., 1992). While trying to understand why students achieve or not, research has suggested intrinsic and extrinsic motivation play a large role in a student’s learning (Riley, 2016). According to Ryan and Deci (2000), intrinsic motivation is an innate concept. Intrinsic motivation is the inherent tendency to seek out challenges, explore, and learn (Deci & Ryan, 2008). Because of the increase of research surrounding intrinsic motivation, it has created a different forum for learning (Riley, 2016). Intrinsically motivated students have stopped trying to achieve a grade or to be recognized, and
they have learned the content because they wanted to. When an individual was intrinsically motivated, they were energized and passionate about a task being performed, and after it was completed, they felt a sense of satisfaction or fulfillment (Riley, 2016). One study suggested it was plausible that children who did well in school might come to enjoy learning when they got high marks and positive feedback (Lepper et al., 2005). However, traditional grading has been known to give less feedback and focus more on the numerical value of a grade (Kohn, 2012).

Because of the value traditional grading has placed on grades, students have been known to achieve for external reasons. Extrinsic motivation is defined as a desire to engage in behavior for external reasons (Lepper et al., 2005). Some educators agree that extrinsic motivation works quicker than intrinsic motivation (Riley, 2016, p. 2). Although, when a reward is offered as an incentive, learning and autonomy often decrease, along with feelings of self-motivation (Rigby et al., 1992). Research has also revealed that tangible rewards were not the only items that diminished motivation but also threats, deadlines, pressured evaluations, and imposed goals (Ryan & Deci, 2000) that often occur in traditional classrooms.

Deci and Ryan (2008) addressed three significant psychological needs that must be present for an individual to foster self-motivation: competence, autonomy, and relatedness. Teachers that have allowed students to learn from their successes and failures, to be curious, and to make independent mastery attempts had higher self-esteem, they reported students felt more competent about school work and were more intrinsically motivated (Deci & Ryan, 2008). When an individual was given a sense of choice (autonomy), an acknowledgment of feelings, or an opportunity for self-direction, their feelings of intrinsic satisfaction were enhanced (Deci, Schwartz, Sheinman, and Ryan, 1981; Rigby et al., 1992; Riley, 2016). An individual’s intrinsic motivation was more likely to flourish when the individual felt a sense of security and
relatedness or connectedness. Overall, when a person has felt competent, connected, and autonomous, they became more self-determined and intrinsically motivated (Cherry, 2017).

**Opinions on Grades**

Although opinions about why grades are important differ, more and more educators have begun to question traditional grading practices (Brookhart, 2011). As early as 2011, Susan Brookhart, coauthor of *A Century of Grading*, highlighted the different facets of grading that I believe have caused issues in student learning. Brookhart noted that teachers tend to assume that other educators agree with their beliefs on grading; however, they do not. Teachers have many opinions on grading; but, there are three main common opinions of the purpose of grading. First, are educators that have cared more about grades reflecting academic meaning than anything else. These teachers have been more apt to compare their class grades to the state test scores when they have not matched. They have noticed student comments such as ‘with some teachers that would be an A but with another a B’. Inconsistencies have been recognizable to these types of teachers. Another type of educator has predominately addressed the importance of effort and has valued it equally as academics. An example Brookhart mentioned was a teacher stating that a student cannot get an A in their class until they complete homework because adulthood requires workers to do their whole job, not half. Everything has counted as a grade in this environment to instill life lessons and work ethic. Lastly, Brookhart reflected on the teacher that always considered the motivational aspect of grades. They made sure the student maintained hope; otherwise, the teacher feared they would lose the student (Brookhart, 2011). In Brookhart’s *(2011) Starting the Conversation about Grading*, she made clear points about common differing opinions of grades that teachers have which could affect student learning depending on the class they were chosen to attend. It was not written to prove any of their grading practices were
wrong; however, the differences in grading from teacher to teacher points to a flaw in how students were communicated to about what they were learning. In my own experience, I have witnessed grades being far removed from representing value of learning. In the rural county I taught in, educators allowed students extra credit to bring in cans of food to help a shelter, which affected their grade in the class. It was left up to the teacher, as most schools have left autonomy to the teacher, to determine what the grade represented in their classroom; however, the philosophy in the school was for grades to reflect academic meaning. In this case, the teacher was an example of how autonomy was used incorrectly because they went against their school’s grading policy and also how non-academic factors can affect a grade that is ‘supposed to’ reflect achievement but instead gave a false representation of what the student knew about the content.

**Academic and Non-Academic Factors Combined**

Unsurprisingly, it has seemed that educators have discovered extra credit (among many other non-academic factors) to no longer serve a purpose when they transition from traditional based grading to competency-based grading systems (Donen, 2010). Tony Donen, Educational author and administrator, wrote *Grades Don’t Matter* during his principalship at Fairview High School in Tennessee, and noted his experience with extra credit. As his school teachers experimented with transitioning from traditional grading to more competency-based grading, Donen acknowledged that extra credit has been used with varying degrees. Teachers have allowed dressing up, attending after school activities, completing extra book reports; however, he expressed in this transition that “only academic achievement should be communicated through a student’s grade-extra credit, therefore, should not find its way into our gradebooks” (Donen, 2010, p.104).

**Brief History of Grades**
The traditional A-F grading system has transformed from some educators’ original interpretation of the purpose of grades and letter grades (Brookhart, 2011; Long, 2015; Provini, 2014). Originally, schools did not have letter grades. Throughout history, universities only created them to communicate between institutions. In fact, most universities had a grading system, but it was kept secret from the students to eliminate competition and prevent distraction from learning (Schinske & Tanner, 2014; Schneider & Hut, 2014). Specifically, Yale, as well as William and Mary, were reported in 1817 for using a four-category scale for grading: First in their class, orderly correct and attentive, very little improvement, and learned little or nothing (Schneider & Hutt, 2014, p.204). According to Schneider and Hutt (2014), Yale and Harvard had a separate grade for non-academic criteria such as attending chapel or showing up for class. By the early 1900s, the 100-point, percentage-based grading system was common. Even during that period in history, people expressed concerns regarding the meaning of grades from one teacher or institution to the next (Schinske & Tanner, 2014).

A Call to Change

In the article, Are Letter Grades Failing Our Students, Cindy Long described the status of states stretching from different directions of the United States, and how their grading systems have changed (Long, 2015). In Colorado, the districts wanted to get rid of D’s while Virginia wanted to standardize what an F signifies. In Iowa, letter grades have been replaced with more feedback, while Kentucky attempted a statewide reform to standards-based grading in 2013. According to Long (2015), “it seems that letter grades are no longer making the grade when it comes to measuring student progress”. Also, letter grades reflecting a numerical value have struggled to convey academic meaning as well (Kohn, 2012). Alfie Kohn (2012), American author and lecturer on education, believes our society has an overreliance on numbers. Kohn
(2012) stated that quantification does have a role to play; however, the most valuable forms of assessment are often qualitative which emphasizes feedback to the student. He warned educators from solely looking at scores and ignoring outcomes like students’ enthusiasm about learning and their experience in the classroom (Kohn, 2012). Long and Kohn both agree that kids who are solely focused on grades and have been pushed to try to improve their grades-tend to lose interest in the learning itself (Long, 2015). Kohn (2012) states these students not only lost interest in learning, but also avoided challenging tasks whenever possible in order to maximize the chance of getting an ‘A’. In traditional grading the letter grades reported the number of points earned in a subject, but according to Long, these grades have not reported very much about what the student has learned. Instead, she and Kohn both propose standards-based grading for offering better feedback by evaluating how well students have met measurable milestones and objectives. Standards-based grading is known for improvement of instruction for each individual student while it also has allowed students to demonstrate they have learned the material more than one way (Knight, 2017; Long, 2015).

The New York Times reported in August of the 2017 school year about a new program in Brooklyn’s Middle School 442 (Spencer, 2017). Students were encouraged to focus on mastery of a set of grade-level skills then move to the next set of skills when ready. There were no C’s or D’s or failing; the only goal was to learn the material sooner or later. The practice looked different from classroom to classroom, but the students worked at their own pace to master the standards. “Mastery-based learning, also known as proficiency-based or competency-based learning is taking hold across the country” (Spencer, 2017). Vermont and Maine have passed laws to phase these new practices into their school districts. New York, New Hampshire, Illinois, and Idaho have all had legislature discuss competency-based approaches to learning (Spencer,
2017). There is a call to action for schools across the nation to refocus on what their purposes for grading are with emphasis on grading for academic meaning.

**Research Problem**

The traditional grading system has been proven to have significant inconsistencies between letter grades (Brimi, 2011; Rumberger, 2011; O’Connor & Wormeli, 2012), and sometimes consist of a random mix of academic and non-academic factors (Tierney, 2011; Simon et al., 2010; Sun & Cheng, 2013). TGP have been known to produce a grade that does not represent academic achievement. Students have been psychologically damaged by grades as they have been used to produce shame and guilt which has contributed to a decline in motivation to learn (Schinske & Tanner, 2014; Schneider & Hutt, 2014). Grades have been manipulated by being averaging together out of tradition (O’Connor, 2012; O’Connor & Wormeli, 2011; Marzano, 2000). However, the most prevalent negative effect for the purpose of this study is that TGP have deterred students’ motivation to learn (McMillan, 2017; Schinske & Tanner, 2014).

**Inconsistencies with Academic and Non-Academic Factors**

There are problems with inconsistencies within teachers’ purposes of grades. It is thought amongst educational researchers that, “despite advances in grading and reporting in many schools and districts, this imprecision and lack of meaning persists” (O’Connor & Wormeli, 2011, p.40). One study conducted surveys from teachers on how much academic and non-academic factors influence their grades (Yesbeck, 2011). Non-academic factors included responsibility, effort, attitude, behavior, motivation, and attendance. Academic factors included student performance. The results concluded that teachers use hodgepodge grading mixing both academic and non-academic factors even though measurement theory experts have
recommended only academic factors (McMillan, Myran, & Workman, 2002). The recommendations for teachers was reflection on their purpose of grading and become familiar with how to use non-academic factors in ways to support learning other than grades. There was a “disconnect existing between grading purposes, practices, and policies resulting in controversial and misunderstood grading practices” (Yesbeck, 2011). Differences in grading criteria and teacher severity or leniency have also been sources of variability in grades (Brimi, 2011; Brookhart et al., 2016).

Inconsistencies with Letter Grades and Standards

The same reason grading on a 100-point scale was found to be highly unreliable in the 1900s stemmed from the inconsistency between teachers, which is still the case today (Schinske & Tanner, 2014). Because of the unreliability, researchers created the letter grades A-E and eventually ‘F’. The E’s disappeared by the 1930s so students would not confuse ‘E’ for “excellent”. The issue was known then within traditional grading practices that teachers had allowed letters and number grades to intertwine behavior and academics. When a teacher inputted behavior in a student’s grade, that grade no longer reflected what the student knew in relation to the standards being taught (Pijanowski, 2011; Yesbeck, 2011). The same went for assignments that had little to do with content such as an ‘organized notebook’ which was not a state standard (O’Connor & Wormeli, 2011, p.40). The notion of improvement was to grade against standards and learner outcomes, not against the methods students used to achieve them. Some teachers understood this and changed but others did not, which is why inconsistencies are still prevalent today as teachers pick and choose what is important instead of the standards that are provided by the state (O’Connor & Wormeli, 2011).

Psychologically Damaging Grades
Some argue that grades were psychologically harmful and concerned themselves with the integrity of the A-F system (Schinske, & Tanner, 2014; Schneider & Hutt, 2014). There was a thought among professors in one study, that grades did no more than essentially create an illusion of coherence because they were so far removed from actually representing what a student has learned (Hanover Research, 2011). It has been noted that in the United States children learn the point system at a very early age (Hanover Research, 2011). They know that school can be about the accumulation of points, not the accumulation of skills and knowledge. Sometimes grades have affected students’ fears about punishment or shame because they were used in an unhealthy way (Schinske, & Tanner, 2014).

**Averaging and Gaming the System**

Averaging all assignments in a grade book to make one single grade is normal in the traditional grading system; however, research has suggested that is not most effective representation of a student’s academic learning (O’Connor, 2012; O’Connor & Wormeli, 2011; Marzano, 2000). Well known grading expert Rick Wormeli stated that just because something is mathematically easy to calculate does not necessarily mean it is pedagogically sound (Wormeli, 2012). The 100-point scale has made averaging attractive, credible, and mathematically objective to teachers. However, grades can be manipulated and manipulative. Sometimes the one percentage point was the cut-off between getting into or being denied to an educational program. We cannot discern mastery of content to this level of specificity. Even if two students were even in mastery of content they were declared different based on the one single percentage point; the difference in a scholarship and a “lesser path.” Rick Wormeli holds the opinion that something is wrong with this picture (Wormeli, 2012).
According to Wormeli, there are two significant ways that averaging falsifies grades. The first is when a student retakes a test and instead of getting the new grade which shows their current knowledge, most teachers averaged the two together. If the student made an ‘F’ the first time, an ‘A’ on the second, the average is a ‘C’; this does not accurately reflect what he knows. The second example influences the final grade for a student who has figured out how to “game the system”. A student may fail all year as teachers have put in 50s or 60s on the 100-point scale. Then somewhere toward the end, the student mastered a few standards, and everything was averaged together allowing the student to pass the class mathematically. This is an incorrect report of the student’s performance against individual standards. It was because of all these negatives that educators have moved away from traditional grades, and many districts have adopted competency-based grading practices such as standards-based grading (Wormeli, 2012).

**Motivation for Grades**

Grades have been used as motivation to learn; however, they have also been used more to motivate students to avoid bad grades. Some students have sought performance-approach goals and performance-avoidance goals (McMillan, 2017). Performance-approach students are determined to take on new tasks and outwardly demonstrate their abilities. The performance-avoidance students are motivated to avoid challenging tasks out of fear of revealing incompetence. With both types of performance goal students, neither are motivated for learning but rather for getting a high grade. Even though their intentions are not to learn they may very well learn the information; however, when performance goal students fail it affects them very negatively. However, teachers do have the ability to use grades for mastery goals as long as they encourage grades to demonstrate learning and not about getting a good score (McMillan, 2017).
Similarly, problems in grading labeled as “norm-referenced” has also proven to deter students’ motivation and their perception of achievement (Schinske & Tanner, 2014). This was when student work was graded based on another students’ work. An example is when a teacher curved a grade, this made the class all about the grade and not even their own grade. These actions dissociated grades from meaning content knowledge and learning. (Hanover Research, 2011) while sometimes leaving students hopeless of achievement.

**Purpose of the Study**

The purpose of the study is to determine whether transitioning from traditional grading practices to competency-based grading practices increases student motivation and affects the student and teacher perception of the extent and depth of learning that occurred. The study takes place in a rural high school and middle school in southeastern United States. This study is designed to determine if students’ motivation towards learning increases as their grading system changes from traditional to competency-based. Brookhart (2011) reported the three common differing opinions of grades that most teachers hold: academic meaning, adult work ethic, and motivation. My goal is to focus on the benefits of grading for academic meaning versus non-academic meaning, but not with the intention to discredit these skills that are deemed necessary by most of society. As in the Yesbeck (2011) study, it is the goal that teachers reflect on their purpose of grading and become familiar with how to use non-academic factors in ways to support learning other than grades. By observing and interviewing students in the study, it is my goal to help teachers spotlight those that begin to learn out of intrinsic motivation instead of a grade. In turn, the intrinsically motivated and self-determined students will be successful adults (Deci, Koestner, & Ryan, 1999).
The aim of the study is to spark students and teachers’ awareness of the correlation between grades, learning, and the messages being given to students. The study will motivate the educators in our building and county to find a common purpose for grades, specifically for academic meaning, or mastery, instead of completion. Such was the case at Fairview High as the principal, Tony Donen, attempted to change the grading environment (Donen, 2010).

The teachers will transition to competency-based grading but will choose how to document learning in their grade book. There are options such as the NM: Non-Mastery-M: Mastery scale (Donen, 2010), the 1-4 scale (O’Connor & Wormeli, 2011), or 65 below proficient, 75 almost proficient, 85 proficient, 95/100 advanced scale. The teachers will choose which competency-based grading scale is comfortable for them to use in order to encourage autonomy, one of the key factors in the Self-Determination Theory, as discussed in detail in Chapter Two.

**Research Questions**

I used Robert Yin’s (2004) approach of a case study because my research addressed what happens to students and teacher motivation and perception of learning when grading practices changed from traditional to CBG (Yin, 2004). Also, the study addressed why motivation changed or did not change through observations in a natural setting. The study aimed to get a close and in depth understanding of the changes in perception of learning through a survey and interviews. The case was whether 12 students and two teachers’ motivation and their perception of the extent and depth of learning, was affected or increased as they transitioned from TGP to CBG. The following were the questions used to drive the study.

1. Does moving to competency-based grading practices increase student motivation?
2. How does moving to competency-based grading practices affect student and teacher perception of the extent and depth of learning that occurred?

**Rationale for the Study**

This study was conducted out of the need for a common purpose of grades in the rural district I have served in for the past 10 years. Research has stated that having a common purpose in grading has united educators and helped shift students’ focus from grades to learning (Brookhart, 2011; Donen, 2010; Peter et. al, 2017). This study revealed insights about standards-based grading that can be applied to teachers through the rearranging of their grade book and teaching philosophy, though it is hard to change old ways of thinking, it benefits all stakeholders (Knight, 2017). The educators were given a new way of thinking about how to report what students have learned or not learned through their choice of scale, which they had never been privy to.

In one particular study, change was not easy for educators (Wheeler, 2017); however, the study sought to push educators towards a growth mindset, which also pushed students to a more growth mindset, like numerous high school studies have witnessed (Carter, 2017; Hoernke, 2015; Knight, 2017). The results of this study can be used to close communication and achievement gaps in low-performing as well as high-performing students as standards-based grading provides a more equal opportunity for all students to learn (Barnes, Andrews, & Gibbs, 2016). Traditional grading practices have not always allowed for equitable treatment of students (Barnes et al., 2016) specifically high school students. This study focused on the high school level because I found fewer studies about high schools transitioning over to more CBG; whereas, elementary and middle schools have transitioned more frequently and are more prevalently researched.
The Researcher

In 2012, I attended a Rick Wormeli conference in Nashville, Tennessee that sparked my exploration of grading. I am an experienced middle school teacher in a rural county of Tennessee. I taught U.S. History in the middle school setting for six years and always wondered whether my grading practices were accurate. After I attended the conference I was acutely aware of ways that my grading had not accurately reflected learning. I transitioned from traditional grading to a competency-based system: standards-based grading. I had previously experienced problems with traditional grading such as averaging, gaps in student achievement and motivation, and extra credit flaws. A version of standards-based grading worked well for me, as I used 65 below proficient, 75 almost proficient, 85 proficient, and 95/100 advanced. I discovered grading that accurately reflected what my students had learned. I also aligned my grading to the TCAP cut off scores that were given to me; therefore, all year long I knew how my students would score because their grades reflected their level of content knowledge. Because of my passion for this topic, I wanted to further examine my expertise with the district that I work in and care about. Grades have been an unclear measurement of learning, and the default usage of grades is not sufficient for our needs.

Definition of Terms

Academic enablers. These may include effort, ability, work habits, attention, and participation that could possibly intertwine with an achievement grade depending on the teachers grading system (Simon et al., 2010; Sun & Cheng, 2013)

Competency-based grading or competency-based system (CBG). A competency-based education system is where learners advance through content or earn credit based on demonstration of proficiency of competencies rather than seat time (Iowa Department of Education, 2014).
Outcomes-based approach (OBA). The approach provides a clear plan for desired learning outcomes which drive the design of the learning environment (Lok, McNaught, & Young, 2016).

Standards-based grading (SBG). A grading system based on learning goals and performance standards. One grade/entry is given per learning goal. It measures achievement only or separates achievement from effort/behavior. No penalties or extra credit are given. It emphasizes the most recent evidence of learning when grading (O’Connor, 2012).

Traditional-grading practices (TGP). These practices are based on assessment methods (quizzes, tests, homework, projects, etc.). One grade/entry is given per assessment. They use an uncertain mix of assessment, achievement, effort, and behavior to determine the final grade. They may use late penalties and extra credit. This includes every score, regardless of when it was collected. It uses assessments to record the average – not the best – work (O’Connor, 2012).

Summary

Although grading practices have remained largely unchanged throughout the country (Kunnath, 2017), some schools and districts have tried and are still trying relentlessly to produce better grading systems. Research has shown that grades are multi-dimensional, having numerous purposes, with a long history in our educational system (Bowers, 2009; Brookhart et al, 2016; Wormeli, 2012). Therefore, as problems have arisen in traditional-grading practices (TGP) they have not been fixed as easily as educators wish they could have (Brookhart et. al, 2016). The history of traditional-grading practices provided insight into the timeline that demonstrated the waves that the purpose of grading has gone through, from student learning, achievement to ranking and letter grades then back (Brookhart et. al, 2016; Schinske & Tanner, 2014).

Traditional-grading practices have proven to be a very unreliable way to determine what a student has learned in the classroom (Brookhart, 2011; Donen, 2010; Schinske & Tanner,
A large problem has lied in the inconsistency between teachers, schools, districts, and what grades have meant to them (O’Connor & Wormeli, 2011; Schinske & Tanner, 2014). Differences in grading criteria and teacher severity or leniency have also all been sources of variability in grades (Brimi, 2011; Brookhart et al., 2016). Throughout history grades have been used as motivation to work hard; however, studies have shown that the A-F grading system has psychologically damaged children, as well as dampened their intrinsic motivation for learning (Schinske & Tanner, 2014; Schneider & Hutt, 2014). Grades have been used for punishment and shame in education. Also, the intertwining of behavior and academics (academic factors versus non-academic factors) has not produced an accurate reflection of what a student has learned (Pijanowski, 2011; Yesbeck, 2011). Because of these negative effects linked to traditional-grading, competency-based grading approaches have been established in schools all over the country (Brookhart et al., 2016; Kunnath, 2017; Peters et al., 2017). Competency-based grading studies have given hope that students can transition from caring solely about numerical grades and letters to whether they have mastered a standard or not (Donen, 2010; Spencer, 2017).

The most detrimental part of the research relevant to this study are the effects TGP have on a students’ intrinsic motivation to learn (Donen, 2010; McMillan, 2014; Schinske & Tanner, 2014). A case study with empirical data that investigates competency-based grading effectively motivating student learning could change the culture of the learning community in the rural school where the study takes place. The study hopes to produce more self-determined students and learn what next steps need to be taken to help the entire district to transition to more competency-based grading practices.
CHAPTER TWO

Review of Literature

Brief Overview

In 2012, I attended a Rick Wormeli conference in Nashville, Tennessee that sparked my exploration of grading. After I attended the conference I was made aware of ways that my grading had not accurately reflected learning. I transitioned from traditional grading to a competency-based system: standards-based grading. A version of standards-based grading worked well for me, and I discovered grading that accurately reflected what my students had learned. Because of my passion for this topic, I wanted to further examine my expertise with the district that I work in and care about. Grades have been an unclear measurement of learning, and the default usage of grades is not sufficient for our needs.

The first chapter presented the multi-dimensional purposes of grades and the problems with traditional grading, especially the influence it has had on motivation (Bowers, 2009; Brookhart et. al, 2016; Wormeli, 2012). One of the problems with the system was that it did not accurately reflect what a student had learned academically and tends to encourage the focus to be on grades alone (Brookhart, 2011; Donen, 2010; Schinske & Tanner, 2014; Wormeli, 2012). There have been large inconsistencies between teachers and schools grading systems (O’Connor & Wormeli, 2011; Schinske & Tanner, 2014), particularly the difference in teachers’ criteria and leniency in grading (Brimi, 2011; Brookhart et. al, 2016). Grades have been used for motivation; however, have been known to hurt children psychologically and dampen intrinsic motivation (Schinske & Tanner, 2014). The most common issue with traditional grading has been combining academic factors and non-academic factors to produce one grade with many meanings (Pijanowski, 2011; Tierney, Simon, & Charland, 2011; Simon et al., 2010; Sun &
Cheng, 2013; Yesbeck, 2011). Because of these negative effects linked to traditional-grading, competency-based grading approaches have been established in schools all over the country (Brookhart et. al, 2016; Kunnath, 2017; Peters et al, 2017). This study intends to investigate the effects competency-based grading has on student motivation and hopefully produce more self-determined students in the rural district in which the study will take place.

Organization

In Chapter Two the researcher will report the broad literature found on the history of the traditional grading system with specific topics such as: norm-referenced grades and percentage-based grades. Next, grading approaches such as outcomes-based and mastery learning will be explained. Then, reasons for grading and grade books that have led educators and school districts to transition to competency-based grading practices will be highlighted. The literature will narrow into comparing the two grading systems: traditional and competency-based, such as standards-based. Teachers’ opinions and beliefs on grading will be explained afterwards. Next, the topic of variability and reliability in elementary schools as well as secondary schools will be expounded upon. Transitioning from traditional grading to competency-based grading will be viewed through the theoretical framework of the Self-Determination Theory. This will help describe what role motivation plays in the process of traditional grading and in competency-based grading, specifically clarifying the importance of competence, autonomy, and relatedness. The benefits and reasoning behind the standards-based grading system, will be explored and explained. Next, the positive and negative concerns that competency-based grading has on post-secondary education will be identified. Lastly, both the specific hardships and beneficial outcomes of transitioning to competency-based grading will be depicted. Specifically explaining
the experiences of teachers and school districts that have transitioned to competency-based grading. A summarization of the literature will conclude Chapter Two.

**Research Method**

There was a recent well-developed review of literature on grades in general with a large portion focused on standards-based grading (Brookhart et al., 2016). It was a high-quality piece of work; however, the previous research was mainly received from peer reviewed journal articles. In order to explain this topic in more depth I also looked at dissertations written on standards-based grading from the past 10 years. I chose the past 10 years because this is within the range of time in which I experienced my initial interest in grading from attending the Rick Wormeli conference. The dissertation research in Chapter Two was retrieved from the dissertation database from the Carson-Newman Library. I limited the search to standards-based grading and motivation. For the remaining research articles, I used Google Scholar and the EBSCO Discovery Service database through the Carson-Newman Library. ERIC and the SAGE Journal databases were used as well as recommendations from my dissertation chair. Scholarly reviewed literature was used to ensure validity. Educational journals were used to find common problems with traditional grading among educators to provide assurance of more than one stakeholder having problems with grading. The history of grading was included; however, the majority of information hails from research completed in the past 20 years to relate more to current educators and their grading systems.

**History of Grades**

Grading has been referred to as the symbols assigned to individual pieces of student work or to composite measures of student performance on student report cards. Grading practices have proved important because of the severity that they have held as they have become one of
the central features of the educational experience for some students (Schnieder & Hutt, 2014). Grading has become one of the most fundamental facets of American education. Grades have been known to have lasting consequences because they have served as a key determinant of future success in their relationship to schools, universities, and employers’ ability to judge achievement (Schnieder & Hutt, 2014). Grades have been mainly perceived as what students earn for their achievement; however, the meaning of grades and how to create grades has changed over the course of history.

Grades were used at all levels of education at the turn of the 20th century but were still idiosyncratically determined (Schneider & Hutt, 2014). In the 1920s, teachers began adopting grading systems with fewer and broader categories such as the A-F scale. By the 1940s, more than 80% of the U.S. schools had adopted the A-F grading scale, and it has remained the most commonly used scale until the present day (Brookhart, et al., 2016). People like Harold Rugg, one of the best-known educators during the era of Progressive education in the United States, and his social reconstructionist allies, believed students should work on real world problems (Stern, 2001). They viewed the role of the teacher “as that of a facilitator who guided students to use the tools of critical thinking and problem solving” to help preserve a democratic country (Stern, 2001). One very important theory that is still relevant today is Rugg’s idea that in order for students to acquire, attain, understand or remember information, it must be relevant to their life. He believed in “problem-centered” approach learning (Stern, 2001, p.58).

Because the United States was young, it was working from European models of grading (Schneider & Hutt, 2014). Therefore, American universities invented systems of grading for ranking purposes more than achievement. In fact, they based their grades on both academic performance, progress, conduct, attentiveness, interest, effort, and regular attendance at class and
chapel (Schneider & Hutt, 2014). They combined academics with non-academic factors which has continued as a traditional grading practice (Simon et al., 2010; Sun & Cheng, 2013)

**Norm-referenced, percentage-based grading**

The notion of grading “on the curve,” remained popular through the early 1960s alongside the A-F approach (Brookhart, et al., 2016, McMillan, 2017). Also known as norm-referenced grading, the curve compared the achievement of one student with other students essentially basing a students’ grade on another’s achievement. “There is no indication of how much students master or what percentage of test items were answered correctly” (McMillan, 2017, p.350). Its major function was to show which were the highest or better performing students, so it could be used for sorting students but rarely for determining whether a student learned the content that was taught. Norm-referenced or relative-grading, fostered student competitiveness particularly because the students grade was dependent on others (McMillan, 2017). The competitive environment created a negative impact on student effort, interpersonal relationships, teacher communication, and particularly motivation. Student cooperation was reduced using this method of teaching which is why it was thought to have fallen out of fashion years ago; although, it is still used today (McMillan, 2017). Some teachers saw and still see sorting and ranking as an advantage of norm-referenced grading for reasons outside of the classroom (Lok et al., 2016).

Percentage-based grading was set by the percentage of correct items for each grade. An average percentage grading scale shows an ‘A’ is 94%-100%, a ‘B’ is 86%-93%, a ‘C’ is 75%-85%, a ‘D’ is 65%-74%, and then anything below 60% or 65% correct is an ‘F’ (McMillan, 2017). Some school systems have debated about the relative worth of stricter versus more lax grading scale. Most of the debating came from outside pressure to sort or rank students, which
became very difficult when the variability of difficulty on tests were different from teacher to teacher (Brimi, 2011; Guskey, 2013; McMillan, 2017). A score of 90% on a hard test meant something different from a 90% on an easy test, even if they were giving the same learning targets, their level of difficulty was not the same (McMillan, 2017). “Percentage-grading systems that attempt to identify 100 distinct level of performance distort the precision, objectivity, and reliability of grades” (Guskey, 2013). As time progressed, the United States experienced technical and societal events that led to changes in the perspectives of grading (Brookhart et al., 2016; Lok et al., 2016).

Outcomes-based approaches

Criterion-referenced testing, mastery learning, and the war in Vietnam, all played their role in effecting grading and learning about the real world in the 1960s and 1970s (Anderson, 1996; Carroll, 1989; Lok et al., 2016; McMillan, 2014; Romiszowski & Hartley, 2012; Stern, 2001). The term criterion-referenced was proposed by Glaser and Klaus and measured individual student success, not on other norms of students (Lok et al., 2016). Robert Glaser, was a leading scholar in the psychology of learning that helped initiate the criterion-referenced testing movement. This movement influenced the shift from testing for ranking individuals to performance levels that showed what students knew and could do (Romiszowski & Hartley, 2012). Criterion-referenced testing, standards-based grading, and competency-based grading are all under the term outcomes-based approaches. Outcomes-based approaches provide a clear plan for desired learning outcomes which drives the design of the learning environment. OBA were inspired by the education reform of the 2nd half of the century in the USA. Because of this shift of higher expectations for learning, norm-referencing became less popular (Lok et al., 2016).
Using outcomes-based approaches moved educators away from single grades or percentages and gave more feedback about various dimensions of student performance (McMillan, 2017). Lok et al. (2016), believed curriculum developers should address assessment processes in detail and not leave implementation to the whim of individual teachers. Having good alignment between curriculum and assessment is imperative to the process of outcomes-based approaches (Lock et al., 2016). Similarly, to other studies conclusions, all stakeholders needed to be aligned and more consistent with grading (Brimi, 2011; O’Connor & Wormeli, 2012; Rumberger, 2011; Schinske & Tanner, 2014).

**Mastery Learning**

Robert Glaser’s criterion-referenced testing supported mastering the subject and The Carroll Model accounted for the time it took for students to achieve mastery (Carroll, 1989). Therefore, Benjamin Bloom developed the underlying argument for the mastery learning theory, working from Carroll’s model of learning (Carroll, 1989). According to Lok et al. (2016), it was the work of Carroll and Bloom that navigated the idea of mastery learning, which later became a principle of outcomes-based approaches. The Carroll Model expressed variables that accounted for the variations of students’ achievement in school. Educators have mainly given attention to the Carroll Model’s emphasis on time. “The degree of learning or achieving is a function of the ratio of the time actually spent on learning to the time needed to learn” (Carroll, 1989, p.26). Bloom considered it possible for nearly all students to master the content if time was considered. One of Bloom’s suggestions was to improve the quality of teaching while also enhancing student motivation (Bloom, 1968). According to Guskey (1985), Bloom’s mastery of learning strategy involved steps. First the teacher organized the concepts into units each requiring a week or two of instructional time. Next, the teacher used a formative assessment to determine what the
student had learned. The formative assessment included “correctives” about what the student should do next to master the learning (Guskey, 1985, p. 2). Bloom’s strategy recommended teachers to include enrichment activities for the students who demonstrated proficiency on their first formative assessment. These activities gave students more exciting opportunities to broaden their learning. Guskey (1985) concluded that well implemented mastery learning classes reached higher levels of achievement than traditionally taught classes, as well as developed “greater confidence in their ability to learn and in themselves as learners” (Guskey, 1985, p.2).

It is believed that Bloom’s book Learning for Mastery was intended to bring positivity to the education field of the late 1960s in America, insisting change was possible (McMillan, 2017). One of the points Bloom made is that students’ grades have not reflected their learning. He noted that there was nothing sacred about the normal curve and that failing students were being determined by the rank order instead of their “failure to grasp the essential ideas of the course” (Bloom, 1968, p.2). He also wrote about differentiated instruction, as he mentioned some students might need different instruction in order to master the learning. Bloom believed that education had a purpose and that educators should want students to learn what they taught. In fact, he stated that students that mastered the standards felt more autonomy and in return were more motivated to learn. He said students experienced profound changes in their view of themselves and of the outer world. In order for students to master the learning, feel autonomous and view themselves in a positive way, they need many opportunities (Bloom, 1968). To think, Benjamin Bloom had unlocked the gate to student achievement and motivation and almost 50 years later educators still cling to 19th century grading practices. Nevertheless, it was both the work of Bloom and Glaser that led to a “substantial rethinking of the proper aims of education” (Brookhart, et al., 2016, p. 833).
Closely related to this idea, perspectives on education were changing and higher education specifically felt the hit of the war in Vietnam. As criterion-referenced assessments grew, grades began to rise (perhaps proof of learned content based on individual learning); however, some considered it inflation of grades. Accusations were made that professors gave higher grades to prevent students from going to war, especially as the war grew unpopular. There was increasing pressure on professors not to fail students and make them subject to the draft (Brookhart, et al., 2016; Lok et al., 2016). Grades rise and fall based on societal needs even today, and some contend that collegiate faculty still inflate grades to increase their course ratings (Love & Kotchen, 2010). Not only in college, but in middle and secondary schools’ educators have reported pressure to pass students from parents and administration (Lok et al., 2016; McMillan & Workman, 1999). Since the 1980s though, the challenge of measuring the “complex and multifaceted educational outcomes” have received increasing attention (Lok et al., 2016, p. 453). The ideas of criterion-referenced testing and mastery learning have shifted into what is now called standards-based grading. In this system, teachers, students, and districts have developed assessments that spell out in detail what standards students must achieve to obtain a letter grade (McMillan, 2017, p.351). Standards-based assessments tend to use rubrics to indicate achievement and define levels of mastery. This produces the grade that is assigned to indicate what level of performance was demonstrated. The system provides a large amount of feedback to the student without being an overly time-intensive method for educators. SBG has led to a very different type of reporting system from the traditional A, B, C, D, and F scale, which was a dramatic shift away from familiar methods. Because of its unfamiliarity, it is why educators believe districts have been slow to fully adopt this reform in the past couple of decades (McMillan, 2017).
**Grading and Grade books**

When it comes to grading there has been an expectation that the teacher is able to produce documentation in the form of a grade book or portfolio to justify the grade (McMillan, 2017, p.343). Grades carry a lot of value to students and parents as they are used for school class placements, college admission, and scholarships. Grades affect individual students’ perceptions of themselves and their motivation. It is common for teachers to develop a personal philosophy of grading whether there are district guidelines or collaborative settings that provide guidance. Most educators expect that on a basic level, all teachers want their grade books to have a positive impact on student learning and motivation; however, the reality is that grades can have various intended and unintended impacts. Teachers’ decisions have been known to have long-lasting social, emotional, and academic consequences for students (Tierney et al., 2011). Therefore, it is vital to have grading systems that fairly and accurately report the status of the student (McMillan, 2017).

Several grade book systems have been created to help educators’ grading practices and steer them away from the traditional ideals. Systems like PowerSchool or Skyward are examples of current online grading systems that allow for both traditional or standards-based grade books (Goff, 2015). There are reasons some still use a traditional grade book including: record keeping, assessment completion lists, and data of how well students have performed on different tasks. However, it is believed the traditional grade book oversimplifies a student’s performance. It is much harder to pinpoint the skills a student needs to address if they are all lumped together in one grade per assessment (Goff, 2015). If there is only one column for tests, it is very discouraging to a student because they do not know how to improve their score or on which area to focus. Problems also include arbitrary weighting of assessments and merging of diverse
knowledge and skills into the single assessment score (Peters, et al., 2017). To completely capture the learning goals for the class, one option teachers have used is a standards-based grade book. This type of grade book shows what particular topic with which the student is struggling. This narrows down if the student has met the basic learning goals set for the class. It helps the teacher determine what learning goals they need to spend more time on.

A review of studies on learning reported that providing students with specific information about their standing on particular objectives significantly increased achievement (Peters, et al., 2017). Students were entitled to accurate and timely feedback on their strengths, deficiencies, and actions that can be taken to achieve learning. Unfortunately, with traditional grade books that lump standards together, students were not aware of their standing or mastery of content. Often, it was difficult for students to understand the meaning of grades because of inaccurate and inconsistent messages about what a particular letter grade means. Traditional grading practices were believed by some to not allow for the “equitable treatment of students” while they hindered learning as well (Barnes et al., 2016). Grading systems change drastically from one classroom to another as grades serve multiple purposes, unique to each course or teacher (Bowers, 2009; Brookhart et al., 2016; Wormeli, 2012). This was precisely what led forty-two states, the District of Columbia, four territories, and the Department of Defense Education Activity (DoDEA) to adopt the Common Core State Standards in hopes that teachers would link grading and reporting to standards (CommonCoreStateStandardsInitiative, 2013). Comprehensive standards-based grading systems report what students know and can do relative to standards. Standards-based grading systems also purported to facilitate clearer, more targeted feedback compared to traditional letter grades (Peters, et al., 2017). Standards-based grade books were the same as comprehensive standards-based grade books which are different than a
traditional grade book. The teacher, from the very beginning, must establish the standards or learning goals. As scores are entered, the standards-based grade book aggregates students’ performance on each standard over time and across many assessments (Goff, 2015).

Swan, Guskey, and Jung (2014) found that parents preferred SBG instead of traditional report cards; however, in this instance there were a lesser number of teachers that supported the new report cards because of the uncertainty of change. Teachers in another study stated that the implementation of SBG took longer to record the detailed information included in the SBG report card; however, they felt it was worthwhile because SBGs yielded higher-quality information (Brookhart, et al., 2016). Ten years earlier, Guskey (2004) had found many parents attempted to interpret nearly all labels (e.g. below basic, basic, proficient, advanced) in terms of letter grades. They wanted to convert Advanced to an ‘A’, Proficient to a ‘B’ and so on, because that was their personal experience in school (Guskey, 2004). Guskey’s experiences with asking parents to interpret other mastery learning symbols discovered parents’ norm-referenced perspectives. Parents considered the words basic or intermediate as average or that their child was in the middle of the class. The researcher had to explain that the labels on the report cards were for the purposes of communicating what their student knows not how they rank compared to other students (Guskey, 2004).

Students were known to reject SBG at first because of their years of experience with TGP (Timmons, 2017). A study conducted with tenth-graders in an Honor English II class experienced this first hand as they were presented with the SBG report card and the traditional report card. The SBG report card disaggregated achievement by the learning standard. The traditional report card utilized the single numerical average. The qualitative data showed that the group of sophomores preferred the traditional report card. The students stated they believed their
teachers grading criteria was clear and fair. Although, the student participants disagreed with SBG in that behaviors such as neatness, organization, and timeliness should be considered when determining final grades. The students did think more assessment options should be available. They liked the SBG report card fairly well but did not agree that it should replace the traditional one, because they favored numerical grades more than knowing whether they were below proficient, proficient, or advanced (Timmons, 2017). This study is relative to Kohn’s (2012) theory that our educational society has an overreliance on numbers and has drifted away from their purpose in grading: to reflect where a student is in their learning. Not only that, the quantitative focus has been documented in another study as the cause for students to eventually lose interest in learning itself (Long, 2015).

**Differences in Traditional and Competency-Based Grading Systems**

Many districts and states in the U.S. have adopted standards-based grading in addition to their previous traditional grading system. Some believe that standards-based grading can and should replace traditional point-based grades entirely (Scriffany, 2008). The traditional grading system is based on assessment methods like quizzes, tests, homework, etc., with one grade given per assessment (Townsley, 2014). Whereas, a standards-based grading system is based on learning goals and performance standards with one grade per learning goal. Some educators found that letter grades were not really the problem but that using a single grade without clear meaning to summarize all aspects of performances, was really the problem (Wiggins, 1994). With traditional grading systems, assessments are based on the percentage system and the criteria for success may be unclear. However, in a SBG system, assessments have proficiency-based meanings, and the criteria is made available to students ahead of time. Normally everything goes in the grade book in TGP, regardless of purpose. Whereas, in the SBG system, selected
assessments are used for grading purposes. Traditional grading includes every score and records an average from the past, but in standards-based grading, it emphasizes the most recent evidence of learning when grading (Townsley, 2014). Marzano & Heflebower’s (2011) research pointed out the inconsistencies between teachers’ criteria which created differences from one teachers’ ‘A’ to the next and was why they suggested SBG.

Unfortunately, teachers that want their grades to reflect learning often get stuck with their school’s reporting system that is geared more towards traditional based grading. However, effective teachers have benefitted from the standards-based research of Rick Wormeli and Robert Marzano to make changes using what they have (Miller, 2013). Marzano’s work helped one teacher discover she can replace individual assignments with standards and report student mastery as a number between zero to 10. Others have used 1-4, 4 excels, 3 is proficient, 2 is approaching proficient, and 1 is well below proficient (Guskey, 2013; O’Connor & Wormeli, 2011) or different letters (NM-IM-M-AM) to represent non-mastery, initial mastery, mastery, and advanced mastery (Donen, 2010). These grades were much more meaningful than A-F because they clearly showed the students’ strengths and weaknesses (O’Connor & Wormeli, 2011). Effective teachers made the grading system work for them. The teachers with the most success in transitioning out of traditional grading applied three key actions (Pijanowski, 2011). First, they separated behaviors from academics to ensure their grades accurately reflected achievement. They believed allowing “other factors to influence grades or marks misrepresents students’ learning attainment” (Guskey, 2000, p. 27). Secondly, they emphasized summative grades determined by high-quality assessments aligned to the standards. When it came to formative assessment, educators advocated a change from assessment of learning to assessment for learning (Duncan & Noonan, 2007). Third, they offered relearn and recovery opportunities
to show how students demonstrated learning over time. Teachers’ goals of mastering the standards made them realize it did not matter if the students completed the exact same assignments; the focus was on the students’ learning rather than doing (Marzano & Heflebower, 2011; Miller, 2013). Effective teachers using the student-centered approach to grading noticed each student’s strengths and needs and acted on that knowledge.

Consistency, mastery for learning, less focus on numbers, and clear purposes for grades have all been reasons schools across the United States have searched for methods of changing their grading to more competency-based systems (Donen, 2010; Kohn, 2012; Long, 2015; Spencer, 2017; Yesbeck, 2011). At Fairview High School in Tennessee, the grades were based on the luck of which teacher a student had for class. “In all classes, many grades were based on such work habits as doing work on time and complying with teacher requests as opposed to verifying that learning did take place for a specific target” (Donen, 2010, p. 11). It came down to two basic items for the school: completion versus mastery. Donen (2010) realized there is no perfect grade book or assessment process but there are better grading practices. “Our goal as educators is to promote student learning as our top priority.” (Donen, 2010, p.12). Donen (2010) and Wormeli (2014), both agreed that grades are meant to inform students of learning; they should not be a surprise. A few of Donen’s teachers changed their grade books to solely reflect mastery of standards, and the relationships between teacher and students changed at Fairview High. The results showed students with behavior issues especially, had grades that reflected what they had learned instead of their behavior and became increasingly more motivated (Donen, 2010, p.125).

**Teachers Beliefs on Grading**
Some teachers believe a more standards-based approach can empower teachers with information that will guide instruction and reduce meaningless assignments and paperwork. They believe SBG teaches students, parents, and community what quality looks like (Urich, 2012). However, the majority of teachers’ beliefs on grading have stemmed from traditional combinations of student achievement and non-academic factors, also known as academic enablers (Simon et al., 2010; Sun & Cheng, 2013). Teachers have viewed these non-academic factors or academic enablers as effort, ability, work habits, attention, participation and sometimes behavior (Simon et al., 2010; Sun & Cheng, 2013). Studies have found that academic performance and non-academic factors were by far the most important for educators in determining grades (McMillan & Workman, 1999; McMillan et al., 2002). In a study conducted with elementary teachers in grades 3-5, they concluded there was an indication that “teachers believe it is important to combine nonachievement factors, such as, effort, ability, and conduct with student achievement to determine grades” (McMillan et al., 2002, p.205). In a qualitative study by McMillan and Nash (2000), they found teaching philosophies, as well as judgements about what was best for students’ motivation and learning, contributed to the lack of consistency of grading practices. Randall and Engelhard (2010) found that teacher beliefs about what they think best supports students were important factors in grading. They found that some teachers thought they just graded for achievement but most still mixed non-factors in too. Sun and Cheng (2013) also found this to be true with a sample of Chinese secondary teachers. In their research they studied Chinese English language teachers to see how their grading practices compared. Their grades were closely related to American teachers: part academic enablers and the other part achievement. Two themes emerged from their research about the teachers values in grading:
they appealed to what was fair and to what was beneficial for their students. The teachers main concern was always the consequence of grading on the students’ learning (Sun & Cheng, 2013).

Studies have shown significant variation even among teachers in the same school, meaning the weight the different teachers gave to separate factors could vary a great deal within a single elementary or secondary school (Cizek, Fitzgerald, & Rachor, 1995; Duncan & Noonan, 2007; Guskey, 2009; Webster, 2011). As Long (2017) established, assuming all teachers grade the same or that they are on the same page is not accurate. Some teachers have indicated the need for fairness and accuracy, not just accomplishment. These types of teachers have been known to think grades were fairer if they were lowered for lack of effort or participation and that grading needed to be stricter for high achievers (Brookhart, et al., 2016). Teachers have also considered the consequences of grading decisions for students’ future success and their feeling of competence. However, it is consistent with best practices that grades should primarily be an “objective” measure of student performance (McMillan, 2017, p. 343). If a student received an ‘A’ for a course, an objective conclusion is that she mastered the content and the same that an ‘F’ represents failure to master the content. Being objective is the goal for most teachers, but it is not likely that they will remove their professional judgement in determining what might be later called objective. Teachers decide what details and how to teach a standard; they decide to allow extra credit, have multiple choice or essays. Sometimes districts or schools decide these factors; however, it has traditionally been decided on by the teacher (McMillan, 2017).

It is common for teachers to use their understanding of individual student circumstances, their instructional experience, perceptions of equity, consistency, accuracy, and fairness to make professional judgments (Brookhart, et al., 2016; McMillan, 2017). Teacher judgements are subjective and intuitive, meaning, “there is no single correct procedure or set of rules that take
professional decision making out of the process” (McMillan, 2017, p.345). Many educators have believed a completely objective procedure does not exist, nor should it. Teachers may differ on the meaning of a student’s performance based on what they are looking for. With all of the factors teachers have used to produce a grade and remain objective, it has been suggested that grading practices may vary within classrooms, but this can be viewed as a needed element of fair grading and not as a problem (Brookhart, et al., 2016). In fact, one case study with a mathematics teacher in Canada reported that the standardized grading policy often conflicted with professional judgment and had a significant impact on determining students’ final grades (Simon et al., 2010). Grading is complex because even after a teacher has decided their grading philosophies, there are always individual student situations that demand flexibility (McMillan, 2017). A teacher’s beliefs on grades effect their decision making on grades which effects student grades and learning. Some teachers have felt strongly about students’ success being represented in a grade, so they have given extra credit or an assessment they knew everyone would pass to “pull up” low grades (McMillan, 2017, p.346). There have been teachers that supported student participation and effort because they think it motivates them; therefore, they would give a participation grade to boost their average (Russell & Austin, 2010). Sometimes educators cannot quite verbalize their grading criteria, so they use a “gut feeling” (Svennberg, Meckbach, & Redelius, 2014). In these situations, transparency, validity, and reliability are all problematic. Educators’ beliefs and grading procedures must meet at a crossroads when teachers are asked to provide objective evidence about why a student passed or failed their class. This can be a sensitive area considering “a teacher's grade book has long been considered that teacher's domain and what is contained therein, a reasoned judgment by a professional” (Pijanowski, 2011).
Teachers have tended to use this “hodgepodge” grading which included attitude and effort mixed with achievement (McMillan & Lawson, 2001; McMillan et al., 2002). A study was conducted to inquire about why secondary teachers have had such hodgepodge grading systems (McMillan & Lawson, 2001). The teachers stated they wanted to develop higher-order thinking skills for their students, yet their assessments were not aligned to this. Of the items on their tests, only 50% required only basic knowledge and barely any required application. As they interviewed the teachers they said they were unaware of the contradictions between what they believed they were teaching and assessing versus what they actually were (McMillan & Lawson, 2001). Similarly, a principal did a study at her school with some traditional practicing teachers and others more competency-based (Adrian, 2012). She surveyed the teachers about some of the more traditional beliefs and found that even though they did not think they practiced standards-based grading, they knew the premise and had tendencies. Whereas, the ones that said they used SBG did not really understand the concepts aligned with SBG (Adrian, 2012). A study in Virginia discovered that although teachers had beliefs that academics were the primary purpose of grading they continued hodgepodge grading lacking an alignment of their beliefs and practices (Grimes, 2010). Another study revealed that many schools did not have a purpose of grading-policy but even of the ones that did, the teachers were unsure about them. Disappointingly, the data revealed little variation in the purpose of grades and grading practices among educators with higher degrees or who had training in the practice of grading (Imperial, 2012). The research pointed to various conclusions, some were that hodgepodge grading remains because educators are not aware of their actual grading practices, and despite training, are still unaware of what competency-based grading practices really entail.
Another contributing factor for teachers to keep hodgepodge grading practices, was that teachers’ beliefs on grading were affected from pressures outside of the classroom. A study in Virginia pertaining to secondary teachers and their grading practices, discovered there was tension on educators’ decision-making: both teacher beliefs and external pressures and constraints (McMillan & Workman, 1999). There were pressures to communicate student progress, school-division policies, post-secondary skills that students needed to be taught and high state testing demands. Sometimes teachers’ beliefs on grading were very swayed by other items that also carried weight and value (McMillan & Workman, 1999). Closely related to this idea, was another study on teachers’ decision-making that discovered tension between teachers’ internal beliefs and values and the realities of the classroom, as well as other external factors, imposed on them (McMillan & Nash, 2000). Overall, there were a wide variety of factors such as: experience, understanding of the subject content, outside pressures and personal value systems that influenced a teacher’s judgement and beliefs about grades (McMillan & Workman, 1999; McMillan & Nash, 2000; McMillan, 2017).

**Variability and Reliability in Elementary and Secondary**

Elementary and secondary schools serve different populations; however, all stakeholders have benefitted from better alignment (Brimi, 2011; McKee, 2016). Throughout the many changes in the history of grading, elementary schools maintained narrative descriptions as high schools increasingly favored percentage grades to certify student accomplishment in each subject (Guskey, 2013). “One could argue that this move to percentage grades eliminated the specific communication of what students knew and could do” (Brookhart, et al., 2016, p. 805). As far back as 1912, educational researchers have been disputing percentage grades because of the inconsistency they produced from one teacher and assignment to the other (Guskey, 2013).
Percentage grades have been called the “impediment to making grades fairer, more accurate, and more meaningful” (Guskey, 2013, p.68). Yet, percentage grades remained the foundation of many state grading policies. In the early 20th century, the 100-point scale was based on the average grade of 50; grades above 75 and below 25 were rare. Now percentage grade averages are at 75, a ‘C’ letter grade, and 60-65 as the minimum for passing. This is considered to some as a “negatively skewed grade distribution” (Guskey, 2013, p.69). The scale in most schools identifies 60 or more levels of failure and only 40 levels of success. According to Guskey (2013), “nearly two-thirds of the percentage grading scale describes levels of failure” (p.70). His research suggests a 50-point grading scale to designate ten levels of failure instead of 60 levels. Educational researcher, Rick Wormeli believes an ‘F’ is an ‘F’ whether a 30% or 60%, it represents the student has not learned the material and that is what should be focused on rather than the degree of failure (Wormeli, 2007-2008). Wormeli (2007-2008, 2012) and Guskey (2013) both speak to the need for eliminating zeros to help this 100-percentage-based grading scale that remains. Zeros are not recoverable and when averaged into the grade it can greatly skew the academic meaning (Guskey, 2013). On the 4.0 scale that is commonly used, to give a grade of zero is actually giving a negative six. Whether in elementary or secondary schools, “How instructive is it to tell a kid they earned six times less than absolute failure?” (Wormeli, 2007-2008).

This is also applicable to students that have earned zeros in the traditional grading system because of behavior. In Donen’s (2010) case study at Fairview High School, a student that normally received zeros for disrupting class learned as the teacher transitioned to more competency-based grading, that misbehaving only meant a delay in the work that had to be done. At the end of the grading period, the student received a ‘B’ but questioned it in disbelief,
so the teacher reassured the student it was a ‘B’. The student’s response was, “But I thought you hated me” (Donen, 2010, p. 144). Zeros have not always represented failure, they have also been a behavior punishing mechanism in the traditional grading system.

Differences in grading criteria, or a lack of criteria, severity and leniency have all been found to be prominent sources of variability in grades in both elementary and secondary (Brimi, 2011). In 2011, Hunter Brimi replicated a study done by Daniel Starch and Edward Elliot in 1912 on grading with the 100-point scale. Brimi was not surprised to learn that teachers within the same training graded papers within 2-3 different letter grades (35 to 40-point differences). This concluded that grades are still largely subjective, and rarely reliable even amongst educators that teach together. Interesting too, that the study found some teachers do not change their practices simply because they are stubborn but also because of a lack of knowledge. In some cases, the teacher has not mastered the content they are teaching and therefore they grade assignments differently, based on their knowledge, particularly in writing. The results suggested that teachers are not remotely close to alignment even upon grading the same assignment (Brimi, 2011).

Conversely, Guskey (2009) found differences, especially between secondary and elementary teachers, in their perspectives on the purpose of grading. Elementary teachers were more likely to view grading as a process of communication with stakeholders and to differentiate grades for individual students. They were found to express more progressive ideas on grading and have become a more common place for SBG report cards (Cox, 2011). However, secondary teachers believed that grading served more of a classroom management and control purpose, emphasizing student behavior and completion of work (Guskey, 2009). Interesting to note that high school teachers do not have to eliminate these non-academic factors completely. In both
Texas and Georgia, two school districts transitioned into CBG and created a separate grade for Assignment Completion, Participation, Responsibility, and Interpersonal skills (CCISD, 2017; Pijanowski, 2011). These are not normal ideals of grades though. When a study compared parents, teachers, and students’ ideals of grades, elementary parents expected more A’s while secondary parents expected grades to be distributed evenly across categories. According to the study, these results were likely based on what the parents experienced themselves during their school years (Guskey, 2002; 2009).

Because teacher-assigned grades are known to predict graduation from high school as well as predict the transition from high school to college, parents and students care about grades starting on the elementary level (Atkinson and Geiser, 2009; Bowers, 2010). Indicators of student success in freshman year of high school start as early as middle school with their GPA, grades, and attendance (McKee, 2016). Failing one or more subjects at the end of a male student’s freshman year was used for some as an indication of whether he will drop out (Bowers, 2010). Other research has shown that if any student fails a core subject in ninth grade they are likely to drop out of school, or get off track for graduation (McKee, 2016). Other educational studies included variables such as absence, misbehavior, retention, family socio-economics, single parent homes and grades as strong predictors of a student’s future (Bowers, 2010). More recent research used a life course perspective, and showed that low or failing grades have a cumulative effect over a student’s time in school and can even contribute to the eventual decision to leave school altogether (McKee, 2016; Schnieder & Hutt, 2014). Although, according to Rumberger (2011), scholars have not established a definite factor that causes students to drop out. High school grades are still considered to be the best indicator of college readiness even more so than standardized tests. Because of the inconsistency of grading standards across the
schools, high school grades are sometimes viewed as a less reliable indicator (Atkinson & Geiser, 2009). Nevertheless, students and parents care about grades starting from elementary school (Rumberger, 2011).

**Theoretical Lens**

Motivation plays a key factor in a student’s success since it is “what moves individuals to think, act, and develop” (Riley, 2016, p. 2). According to Ryan and Deci (2000), intrinsic motivation is an innate concept. Intrinsic motivation is the inherent tendency to seek out challenges, explore, and learn. It is an energy orientation, a display of the positive attributes of humanity which include curiosity, vitality and self-determination (Deci & Ryan, 2008). According to the Self-Determination Theory, “the source of intrinsic motivation is an innate pattern of development and assimilation” (Riley, 2016, p. 2). Learning is known to researchers as one of the most natural of psychological processes. Some researchers have found the “tendency to explore and to assimilate is an innate endowment of the human being” (Rigby, Deci, Patrick, & Ryan, 1992, p.166). This study aims to use the Self-Determination Theory lens to investigate if a student’s motivation changes from one grading practice to the next. According to research, an increase in motivation has created a different forum for learning (Riley, 2016). The differences are that students have stopped learning for a grade or to be recognized, and they have learned because they wanted to. When an individual is intrinsically motivated, they are energized and passionate about a task being performed, and after it is completed, they feel a sense of satisfaction or fulfillment (Riley, 2016). In one study on intrinsic motivation it was determined there was a positive relationship between intrinsic motivation and performances in class and on standardized tests. The students in the study that desired easy work and aimed to only please teachers, did not perform well in class nor on the standardized tests (Lepper, Corpus,
The study suggests it is plausible that children who do well in school “might come to enjoy learning, feel capable of taking on challenges, and like to master the material independently” when they get high marks and positive feedback (Lepper et al., 2005, p. 193). Without giving feedback to go with grades, they become an extrinsic motivation and can likely deter students from learning (McMillan, 2017).

Curriculum and time constraints have made it difficult to facilitate intrinsic motivation within the traditional classroom. In fact, it has been the loss of intrinsic motivation for learning that has prompted some parents recently to home school their children because most home education systems revolve around a child’s motivation to learn (Riley, 2016). Some researchers believed that “mainstream educational institutions seem to rely on the use of rewards and/or incentives as a way to enhance student performance and motivation” (Riley, 2016, p. 2). Deci et al. (1999), agree it is true in most educational institutions that students are given rewards for good behavior, high test scores, and academic achievement or improvement. Also, “recognition, competition, and grades are all highly valued within the academic arena” (Riley, 2016, p. 2). However, for some students, extrinsic motivation was important and gave them something to aim for when a specific task did not create internal enjoyment. Extrinsic motivation is defined as a desire to engage in behavior for external reasons (Lepper et al., 2005). Many educators agree that extrinsic motivation may work more “quickly and powerfully” than intrinsic motivation (Riley, 2016, p. 2). Although, when a reward is offered as an incentive, learning and autonomy decrease, as do feelings of self-motivation (Rigby et al., 1992). Research has also revealed that tangible rewards were not the only items that diminished motivation but also threats, deadlines, pressured evaluations, and imposed goals (Ryan & Deci, 2000).
Some students have created performance-approach goals and performance-avoidance goals for themselves (McMillan, 2017). The first presented a student determined to take on new tasks and outwardly demonstrated their abilities. The second was motivated to avoid challenging tasks out of fear of revealing incompetence. With both types of performance goal students, neither were motivated for learning but rather for getting a high grade. These students’ motivation to do well was based on extrinsic rewards such as impressing others, obtaining privileges, regardless of learning. When performance goal students failed it created dysfunctional behaviors. On the other hand, students have the opportunity to be mastery goal-oriented, when they based their reason for learning and wanting on a desire to demonstrate their knowledge because it is important to them. These mastery goal-oriented students in turn, learned more, preferred more challenging tasks and had better attitudes. They were success oriented rather than failure avoiding and believed that success depended on internal factors such as ability and effort (McMillan, 2017). Teachers have the ability to use grades for mastery goals. “If the meaning of the grade is mostly about getting a good score rather than demonstrating understanding, motivation is transient and less powerful” (McMillan, 2017, p.355).

**Competence, Autonomy, Relatedness**

Deci and Ryan (2008) address three significant psychological needs that must be present for an individual to foster self-motivation: competence, autonomy, and relatedness. Children are naturally driven by a need for competence. A sense of competence and the ability to take on optimal challenges have all fostered the development of intrinsic motivation. “Conversely, any negative intrusion toward this process, whether it be in the form of criticism or control, may undermine feelings of intrinsic motivation” (Riley, 2016, p. 3). Mastery goal-oriented students involved students’ conceptions of their own competence about performing tasks or completing
tests; their focus was on self-improvement or demonstrating their knowledge and skills (McMillan, 2017). Teachers that allowed students to learn from their successes and failures, to be curious, and to make independent mastery attempts had higher self-esteem; they reported students felt more competent about school work and were more intrinsically motivated (Deci & Ryan, 2008).

When an individual was given a sense of choice (autonomy), an acknowledgment of feelings, or an opportunity for self-direction, their feelings of intrinsic satisfaction were enhanced (Deci, Schwartz, Sheinman, and Ryan, 1981; Rigby et al., 1992; Riley, 2016). Educators can provide autonomy support for students by creating choice and opportunity for self-direction, which enhances intrinsic motivation. “By creating learning opportunities that take into consideration a student’s personal interests, and by providing choice, those responsible for a child’s education can reap the benefits of intrinsic motivation in their students” (Riley, 2016, p. 3). Deci et al. (1981), spent several years observing the difference between autonomy-supportive versus control-oriented educators. They found the teachers that were more autonomy-supportive had more of a positive impact on their students than those who were control-oriented. The educators did not have negative intentions with the controlled room, the problem occurred when the controlling was more important than the learning. There were statistically significant differences that demonstrated students of the autonomy-supportive teachers were seen as more self-determining and intrinsically motivated to learn while they also exhibited higher level of self-esteem (Deci et al., 1981; Riley, 2016). Having an autonomy supportive classroom not only encouraged intrinsic motivation but also helped students’ curiosity and a desire for challenges (Ryan, & Deci, 2000). Choice, acknowledgement of feelings, and opportunities for self-direction were known to enhance intrinsic motivation because students have more autonomy.
Relatedness means the connectedness to other people. “Researchers have specifically stressed that parents and teachers who are more involved with their children have children who are highly motivated and self-directed” (Riley, 2016, p. 4). Relationships and relevance are two of the “new three R’s of education reform” along with rigor (Stanley & Plucker, 2008, p.2). Stanley and Plucker (2008) studied ways to improve high school graduation rates and established that relationships and relatedness within education were a key to educational reform. Because of the traditional classroom setting, many students reported feeling like their high school education was not related to their future. When they studied the drop-out rates, 4 out of 5 students said they needed more real-world learning experiences. Only 56% of students knew they could go to an adult in their building about their school problems. According to Stanley and Plucker (2008), it was vital that every student felt connected to his or her learning community. Every student needed a relationship with one or more adult in the school. The connection to their community increased engagement in educational settings, and it was an important indicator of academic and personal success. An individual’s intrinsic motivation was more likely to flourish when the individual felt a sense of security and relatedness.

The concept of heutagogy was developed from the study of self-determined learning and has become a popular approach in education (Snowden & Harsall, 2016). Heutagogy, is a form of self-determined learning with practices and principles which have recently resurfaced as a learning approach after a decade of limited attention. In a heutagogical approach, learners were highly autonomous and self-determined. The emphasis was placed on development of learner capacity with the goal to produce learners who were prepared for the complexities of today’s workplace (Blaschke, 2012).
In summary, when students clearly know what they were supposed to be learning, they feel more competent. When a person feels competent, connected, and autonomous, they become self-determined and able to be intrinsically motivated (Cherry, 2017). When people are authentically motivated they have more interest, excitement, and confidence which has been seen in enhanced performance, persistence, and creativity (Ryan & Deci, 2000). If more students were able to take ownership, become more intrinsically motivated, and more heutagogical, they would find higher success in the classroom and later in the workplace. It is known in the real world, motivation is highly valued because motivation produces (Ryan & Deci, 2000). So far, traditional actions such as grading for behavior issues, using a point system with averaging, grading formative assessments so heavily, and allowing extra credit, have caused problems with motivation. Even rewards have been known to affect the students’ motivation for learning. However, if rewards are given to affirm or support an individual’s feelings of competence, then the reward may maintain or enhance intrinsic motivation and benefit the student’s success (Rigby et al., 1992).

**Positives of Standards-Based Grading**

Standards-based grading principles favor median and mode versus mean scores, proficiency-based rubrics versus percentages, and a balance of quality formative and summative assessments (Wormeli, 2007-2008). Marzano and Heflebower (2011) believe an effective SBG and reporting system should eliminate omnibus grades: mixing everything together (hodgepodge). Breaking standards down into individual grades better demonstrated what a student had learned (Marzano & Heflebower, 2011). In SBG, work habits and other nonachievement factors were reported separately from achievement (Melograno, 2007). In one study student perceptions were more positive than the teacher, as 50% of students preferred
standards-based grading (Winton, 2016). A more standards-based approach has been adopted by teachers as a major solution to the grading problems (Urich, 2012). SBG differentiated from standardized grading, which provided teachers with uniform grading procedures in an attempt to improve grading methods consistency. SBG recommendations emphasized communicating student progress in relation to grade-level standards that described performances using ordered categories (Donen, 2010; Guskey, 2013; Wormeli, 2007-2008). The categories helped with feedback. In general, providing feedback had a positive effect on student learning and motivation (McMillan, 2017). The right kind of feedback allowed students “to make more accurate connections” between how they studied and performed (McMillan, 2017, p.348). Effective teachers learned how to give consistent, detailed, and useful feedback to students (McMillan, 2017). Some asserted that SBG can provide exceptionally high-quality information to parents, teachers, and students; therefore, suggesting it had the potential to bring about instructional improvements and large educational reform (Brookhart, et al., 2016).

**Differing opinions of SBG**

Many people oppose the change as “it requires a philosophical shift and overhaul of the grading system” they are used to (Franklin, 2017). One study, educators opposed SBG because there was not qualitative data revealed to show any significant difference on the end-of-course exams of students assessed with SBG and students traditionally taught (Winton, 2016). However, the study was not focused on the main purpose of using SBG: feedback. Though standards-based grading is used for summative assessments; SBG is a tool used mainly in formative assessments and giving feedback to determine what a student has learned along the way. In the study the standardized tests were summative, not formative and not used for learning. Summative assessments are mainly for “evaluative declarations and sorting students”
(O’Connor & Wormeli, 2011). Similarly, another study noted the adaptation of SBG had increased GPA’s for core subjects but decreased for non-core subjects (Gogerty, 2017). They found their grades better aligned with state scores, though their overall achievement scores had not improved. The researchers discovered teachers needed more supports for better achievement such as: a working environment supportive of change, collaboration, Professional Development, and a SBG-configured grade book (Gogerty, 2017).

**Growth mindset and motivation**

Another study compared SBG with growth mindset and discovered students demonstrated significant growth mindset in the areas of effort in math, beliefs about intelligence, and goal setting (Franklin, 2017). It is not only the core subjects that are seeing value in SBG (Shippy, Washer, & Perrin, 2013). There are physical education, family and consumer science educators that are seeing the positive benefits of SBG. Family consumer science educators have noticed their curriculum is already majority standards-based, as well as other vocational classes. The most positive piece of SBG is that it provided a clear end goal for students. Telling students where they were headed in the lesson helped them master the standard. As students are “assessed against competencies, they can see their progress over each concept as the unit, semester, or year progresses” (Shippy et al., 2013, p.15). This, in turn, motivated and encouraged students because they could see the concepts they grasped.

The students in the study experienced intrinsic motivation the clearer the end goal became (Shippy et al., 2013). During this process, one could suggest they experienced heutagogy as they were motivated and took ownership of their learning. In a heutagological approach, learners are highly autonomous and self-determined; therefore, they become better prepared for the workplace (Blaschke, 2012). Career and technical education classes highly
emphasize students to begin taking ownership of their learning early on, but especially in high school. The Tennessee Department of Education believes “in an increasingly complex global economy, all students must be prepared with intellectual, technical, and social skills needed to compete and contribute meaningfully to their communities” (Tn.gov, 2017). According to the Self-Determination Theory, when a student feels more competent, connected, and autonomous, they become self-determined and able to be intrinsically motivated (Cherry, 2017). When people are authentically motivated they have more confidence which has been seen in better performance and persistence (Ryan & Deci, 2000). By using standards-based grading to produce more competence, autonomy, and connectedness, such as the examples in the P.E. and Family Consumer Science class, more students would be able to take ownership, become more intrinsically motivated, and more heutagogical. They would find higher success in the classroom and later in the workplace (Ryan and Deci, 2000).

Post-Secondary concerns

In some districts where SBG has been adopted, small but vocal groups have often gone to great lengths to contest its implementation. Perhaps the largest concern mainly expressed by parents at the secondary level was the possible threat SBG initiatives might pose to their children’s post-secondary opportunities (Peters, et al., 2017). There was validity in the negative component that most high school students realized they will not be greeted with SBG in college; however, that did not mean SBG was not preparing them for college content (Peters, et al., 2017). For many years, the main objective of higher education was to make students knowledgeable within a particular subject. However, recent developments within society, such as the increasing production of new scientific knowledge, as well as the use of modern communication technology, have encouraged educational leaders to implement new methods that
coincide with these developments (Nowacki, 2013). These new methods, such as case-based and problem-based learning, are directed toward producing highly knowledgeable individuals, stressing problem-solving skills, professional skills, and learning in real-life contexts (Nowacki, 2013). To adapt, many institutions and classrooms have adopted competency-based assessment systems such as portfolios and project-based learning in post-secondary settings.

**Transitioning**

When districts were transitioning over, the most problematic areas identified in the SBG literature was a lack of understanding and/or support by community members (O’Connor & Wormeli, 2011; Pijanowski, 2011). Therefore, it was crucial for schools and districts to have public, published policies, and procedures that all teachers were expected to follow and be held accountable just in case there were any concerns from stakeholders (O’Connor & Wormeli, 2011; Pijanowski, 2011). Even after a school or district had made the decision to adopt standards-based grading, there were still obstacles to successful and systemic implementation.

A Georgia school district realized, like so many educators, that their assessment, grading, and reporting practices were not always logical (Pijanowski, 2011). At the heart of their investigation, they realized they needed to clarify their purpose of grades. In doing so, they realized, like other schools altering their grading systems, that they must deal with stakeholders’ prior beliefs, perceptions, and practices with regard to grading (Peters, et al., 2017; Pijanowski, 2011). Because of most parents past experiences with grades involving norm-referenced grading, educators experienced more frustration when they transitioned to SBG and used comparative labels such as: below average, average and superior (Guskey, 2004). Another way that helped parents transition was to show them student work that exemplified the new performance levels. According to Guskey (2004) whatever labels a school or teacher chooses for
SBG reports, they must be chosen to convey honest, meaningful, and useful information to all stakeholders. Once parents and students understood the intent of the standards-based report card everyone was better able to work together (Gogerty, 2017).

The traditional A-F grading has been used for decisive tools for positions such as honor roll, valedictorian, and athletic eligibility. However, this does not make competency-based grading systems impossible to use. These stumbling blocks have resulted in predictable implementation dips because of resistance and lack of compliance. In one example of a district transitioning, the school leadership team was intentional in its approach to helping the community understand SBG. District officials hosted multiple information sessions, they created a SBG conference, and still, despite their efforts, there was a “disconnect” for some parents and students (Peters, et al., 2017). What made transitioning especially hard was when teachers reported that they supported such grading reforms, yet they also reported still using grading practices that mixed effort, improvements, or motivation with academic achievement (Cox, 2011; McMunn, Schenck, & McColskey, 2003). Although, the study conducted that still had teachers with mixed achievement and non-academic factors, indicated that the reform effort had made progress (Cox, 2011). This was not an uncommon theme as teachers, schools, and districts transitioned (Donen, 2010; McMunn et al., 2003). Interesting enough, students were known to perceive the transition even when their teachers may not have clearly transitioned simply because grading policies were known to have effects on mindsets (Thiele, 2017). According to a study in an urban midwestern middle school, it was assumed that if a student did not fully understand the grading policy then their mindset would not change. However, the study revealed the inconsistencies between student perceptions of the grading practices and the schools actual grading policy did not stop students from gaining a growth mindset. In fact, the students did
understand the meaning of their grades even though traditional grading and SBG were intertwined through the transition (Thiele, 2017).

On the contrary, in a case study entitled “It’s Just Not Fair!,” secondary students were interviewed to get their opinion on SBG and how they felt about their transition which discovered the opposite of the previous study. The data resulted in five themes: students were most concerned with the SBG implementation process, grading issues, preparation for university and future employment, social issues, and issues related to teaching, learning, and motivation (Peters, et al., 2017). The implementation process was perhaps the most concerning, according to the students’ responses. The students seemed very concerned with inconsistencies across courses and departments mainly because the teachers did not implement the rules, they did not communicate the same, nor did all of the teachers even do SBG when they said they would. Another frustrated peer shared that not every teacher understood how it worked, and so they failed to do it the same way. More students discussed the need for teachers to have the opportunity to plan together to get on the same page, especially about retaking assessments. An administrator participating in the study remarked how beginning teachers were never taught about the fairness of grading. He explained how teachers set up the grade book the way they want, without any conversation about how important it is or what they are really doing. “Such misconceptions about the process of learning unsurprisingly interferes with students’ acceptance of research-based teaching strategies” (Peters, et al., 2017, p. 22).

Often teachers that used traditional grading practices, particularly at the secondary level, saw grades as a means of control or coercion to differentiate students rather than enhance learning (Guskey, 2009). However, there was no research to support the idea that low grades prompted students to try harder (Peter et al., 2017). They often prompted students to withdraw
from learning. Although, the same argument could be made against SBG. Sometimes students tried to protect their self-image, and since retaking tests can possibly shine the spot light on them, they did not like it even though it was exactly what they needed to learn the material.

Transitioning from traditional grading to a more competency-based approach is not hopeless; though, students needed time, understanding, and explicit coaching (Knight, 2017). Eventually they will internalize the “new” reality that the primary function of grading is to “describe how well they have achieved specific learning targets based on evidence gathered from assignments, assessments, or other demonstrations of learning” (Peters, et al., 2017, p. 22). More students’ have been known to acquire more of a growth mindset rather than fixed (Franklin, 2017; Knight, 2017; Thiele, 2017). This concept was a paradigm shift for almost everyone who has gone to school, because it challenged the traditional practice of giving equal weight to all assignments in a grading period, regardless of whether it was submitted at the beginning or the end of the learning process (Franklin, 2017; Peters, et al., 2017).

**Teachers’ Transition**

Teachers have found success by adopting new grading policies. They have found this process involved much more communication inside and outside of the classroom with all stakeholders in order to be effective (Miller, 2013). Within the classroom, one grading technique required students earning points for engagement in the process of learning. A part of that was individually conferencing with the teacher going over their progress of mastery of standards in their student log, portfolio, exam, and essay. Teachers felt they could help students understand the idea of quality work and gave them a higher degree of self-sufficiency by moving from traditional grading to a new measurement of grading (Hanover Research, 2011).

**De-emphasis on grades; more feedback**
When teachers lessened the weight of formative assessments to put more emphasis on summative assessments, students scored better on the summative. Even though the teachers thought the students might stop completing daily work because it was not worth as many points, they did not. In fact, teachers have transitioned students from caring less about grades and more about learning by grading less. Some educators believe a de-emphasis on frequent grading assignments could produce an increase in student motivation. Teachers that have spent more time conferring with students and giving feedback rather than bookkeeping to record grades saw students score better on tests proving they had learned more (Miller, 2013). What was interesting was that teachers varied in the way they implemented SBG practices (Cox, 2011). Some teachers accepted late work with no penalty and allowed students to retest and replace poor scores with new retest scores (Brookhart, et al., 2016). One case study from a rural high school in Wisconsin that transitioned to SBG concluded that participants and students worked well together to create authentic assessments and provided clear, concise rubrics (Hoernke, 2015). The teachers who participated used clear, timely, and frequent communications to help students move toward achieving academic standards.

**Teachers’ needs**

Some educators hold the belief that today’s grading practices mirror those of the early 1900s, despite the research suggesting these practices are invalid, unreliable, and a hindrance to student learning (Knight, 2017). More and more teachers are choosing SBG to remove behavior influences from the academic grade (Simon et al., 2010; Sun & Cheng, 2013; Tierney et al., 2011), and allow students multiple opportunities to demonstrate proficiency (Marzano & Heflebower, 2011). A qualitative phenomenological study was conducted to explore seven high school teachers’ perceptions of the effects of SBG on instruction, planning, assessment,
environment, as well as students’ characteristics and behaviors. After interviews, and observations, many themes emerged from the data analysis. Planning, instruction, and assessment had become more purposeful; communication had become clearer. Yet, old habits seemed to die hard as teachers struggled to transition from TGP to SBG. Even still, SBG created an environment conducive to learning that also met students’ needs. Teachers had to find new ways to promote desirable behaviors. The students had shifted towards a growth mindset with SBG. Most importantly noted was that students’ accountability started off decreasing but later it changed, giving students the desire to take more ownership of their learning. The study noted that teachers needed Professional Learning Communities to discuss past beliefs on grading and long-term benefits from SBG to help withstand the initial implementation dip (Knight, 2017).

Administration involvement was most valued in transitioning from one grading system to another. Teachers who were given assurance and non-judgmental support by administration and other teachers found trust within their community of educators in their school. There were necessary resources for transitioning according to a study involving twelve teachers (Urich, 2012). They expressed that they specifically needed professional development synchronized with the inclusion of teacher choice and readiness. They included that they needed professional readings and research from numerous experts along with Professional Development focused on the formative assessment process, flexible grouping, as well as differentiated strategies. Most of the teachers attributed their success to the time the teachers committed working together to learn the curriculum, identify essential learnings, and generate rubrics to align with the standards. The teachers in the study, as well as other studies, utilized professional learning communities heavily at their school, which was when they realized in order to transition successfully they needed more instructional resources (Knight, 2017; Urich, 2012). They also leaned on their instructional
coach to collaborate, reflect, and discuss new practices to help their own practices in the classroom. These particular educators piloted a variety of organization systems to report grades. Some managed a folder for each student with their progress of the standards while others used an electronic system called Evernote. As a county in Georgia transitioned grading practices they realized that “changes in assessment, grading, and reporting must begin with classroom teachers” (Pijanowski, 2011). They credited involvement of teacher leaders throughout the process as the reason their district had been able to make the shift. Overall, one of the most important components that helped all stakeholders effectively transition from traditional grading to a new practice was simply time (Urich, 2012).

**Resistance to change**

Teachers have desired to change their grading and may have even been told to change by their district; however, transitioning to a new grading system can be difficult (Provini, 2014). Teachers in one study reported they had to relearn that learning is a continuum, and it is hard to label that with a letter grade (Urich, 2012). Sometimes high school teachers have reached a point that information is plenty, but application is confusing, and they have needed direction (Webster, 2013). In a survey seeking recommendations, teacher leaders reported they earnestly struggled with grading, desired a different grading system away from A-F, but have had little training to change their grading practices. In the same study, teacher resistance was strong, and they made recommendations for principals. They suggested principals to “learn about grading practices, lead conversations about grading, and create a safe environment” (Webster, 2013, p. 1).

**School Districts Transition**

The Clear Creek Independent School District in Texas was just one of many school districts transitioning over to standards-based grading and standards-based report cards. Their
website specifically describes to parents, students, and stakeholders, the differences in traditional grading and standards-based grading. To them, traditional was when teachers combined many elements to determine a student’s grade. Those elements included: test scores, quizzes, completed homework, classroom participation, attendance, and extra credit. Then, those elements were averaged together to equate a percentage that correlates with a specific letter grade. Their website further explained how standards-based grading separates all of those elements, and they believed that all of those categories should be addressed; however, their parents could see where their child specifically needed academic help and where they may have just needed to learn to turn work in on time. It was clear on the website that in their county standards-based grading served the purpose of measuring a student’s mastery of grade-level standards by prioritizing the most recent and consistent level of performance (CCISD, 2017).

The Clear Creek School District, like many others today, saw the benefits of standards-based grading for students, parents, and teachers. For students, the learning targets were clearly defined and aligned with state standards. Students were offered multiple opportunities and ways to demonstrate proficiency. Students monitored their own progress toward the achievement of specified target goals. The specific feedback on progress helped build self-esteem, pride, and motivation for students. For parents, report card grades were less mysterious and had more meaning. Parents were aware of exactly what their child knew, was able to do, and their child’s next steps for progress. Parents were empowered to increase their child's confidence and help their student set goals for their future. Other studies found some of the same positive responses from parents as their school district transitioned to SBG (Wheeler, 2017). For teachers, assessment results helped them determine when students needed extra help and when they needed more challenging work. Teachers of the same courses had aligned expectations and
standards for their students. Teachers knew exactly where students stood in their progress and what support were needed to make it easier to be successful (CCISD, 2017; Wheeler, 2017).

The standards-based report card was very simple; they used 1-4 to show where the student was with mastering that standard. The grade level target for each learning standard was a 3. When a 3 was earned, the student had met the grade level expectation for that specific topic. These numbers did not equate to A-F. A level 4 did not mean “A”, it meant that the student could demonstrate understanding and performance beyond the expected proficiency as well as exceeded the standards (CCISD, 2017). Level 4s were challenging and were not achieved often.

“Student report card grades are an integral part of K-12 education, and grading is an important teacher responsibility, but experts are in agreement that grades largely fail to accomplish their main purpose of communicating student academic achievement” (Kunnath, 2017, p. 68). Therefore, teachers and schools are transitioning to better communicate. However, parents have sometimes found new report cards hard to understand, and students have had to adjust from being accustomed to receiving letter grades. It is possible, though, and it can become a huge success for one’s educational district (Pijanowski, 2011).

In Georgia, one county chose teacher teams each year to help design new ways to report grades as well as assessment procedures (Pijanowski, 2011). The district asked their teachers to implement changes in their own classroom and then report with feedback. Each year they began to create and test pilot report cards, so they could redesign them prior to full implementation. The teachers involved in the pilot year served as ambassadors across the district. The report cards the district created actually included categories such as Assignment Completion, Participation, Responsibility, and Interpersonal skills. The report card should have had clear communication that grades represented knowledge; however, character, responsibility, and life
skills in general were still important too (Work, 2014). Once the middle school successfully created their report card, the elementary and high school adopted it too. They all wanted to provide continuity for students and parents to communicate clear expectations as students transitioned from grade to grade. In transitioning to new grading practices, whether in the classroom, school, or district, communication is key. An educator should never underestimate the importance of informing stakeholders about changes in grading and why they are changing throughout the entire transition (Pijanowski, 2011).

As a part of changing into standards-based grading, another school district solely focused on the summative assessments and used formative ones to communicate with parents regularly about their child’s progress (Hanover Research, 2011). The school districts that did not accurately communicate the changes taking place were slandered on social media. Hawaii was another state that heavily challenged their own grading system, and when they sought to change it, they allowed a five-year plan to properly inform all stakeholders of the transition to prevent backlash (Muir, 2005).

Often educational leaders wonder how to make such a large transition from TGP to SBG. One dynamic qualitative research study identified 12 principals from eight states who had previously led their schools to SBG to discover the best leadership practices to guide other administrators (Carter, 2017). The researchers identified 78 best leadership practices from the questionnaires, which then allowed for the panel of participants to condense these to eight best practices. The leadership practices included establishing a sense of urgency and communicating heavily. The leaders were suggested to develop a changed vision and stakeholder buy in. Building coalitions and broad-based actions were said to be beneficial, as well as, generating
short term wins and continuing processes. Lastly, they suggested leaders to encourage incorporation of change into the school culture (Carter, 2017).

“The most carefully articulated curriculum and best-aligned assessment will make little difference if school policies stand in the way of implementation” (Guskey, 2000, p.20).

According to Guskey (2000) there were four main school policies that held schools and districts back from transitioning to any standards-based reform. Grading on the curve, selecting valedictorians, using grades as punishment, and using zeros in grading were considered the four policies that hindered success. Sometimes school districts were not successful because of the hinderances that appear when transitioning. A Florida school district attempted to transition over a 3-year period, but a study reported that their level of change did not meet the district’s expectations (McMunn et al., 2003). On another note, educational researchers found that it was difficult for many districts and schools to create a professional culture where teachers were viewed as reflective learners because of the federal and state policy initiatives that ignored the districts role in the changing process. Hopefully this study will contribute to making these types of transitions easier.

Summary

The history of grades told a story of transition and confirmed why old habits seemed to die hard (Knight, 2017). As educational researchers have investigated grading, some educators’ beliefs have changed too. Grades have had numerous meanings and have been used for a multitude of purposes (Bowers, 2009, Brookhart et al., 2016; Wormeli, 2012). However, the majority of educational reform in the past decade has pushed for grades to represent academic achievement instead of both achievement and non-academic factors (Pijanowski, 2011; Simon et al., 2010; Sun & Cheng, 2013; Tierney, 2011). There are other grading options outside of
traditional-based grading practices, grade books, and report cards to accomplish this reform.

One possible option for an educator is to shift to more competency-based approaches such as standards-based grading. When students feel competent, autonomous, and connected in the classroom they are more prone to become intrinsically motivated to learn (Deci & Ryan, 2008). Outcome-based approaches, are thought to have increased supports for student motivation and possibly to have increased perception of the extent and depth of learning, but to what extent is not well known. Elementary schools seemed to have always had a type of standards-based or mastery learning system, but middle school and high school are lacking (Guskey, 2009). Many options have been established for elementary and secondary educators to shift their grade books to represent student achievement, such as the 1-4 scale; non-mastery, initial mastery, mastery, and advanced mastery, or 65 below proficient, 75 almost proficient, 85 proficient, 95/100 advanced (Donen, 2010; Guskey, 2013; O’Connor & Wormeli, 2011). Standards-based grading has provided more consistent feedback that has affected student learning and motivation (McMillan, 2017). Smooth transitioning is affected by many factors: teachers being committed, proactive communication to all stakeholders, and support from leadership (Cox, 2011; McMunn et al., 2003; Miller, 2013).

When transitioning into a new grading philosophy, teachers in middle schools and high schools could benefit in knowing what specifically changes the results of motivation and perceived learning in their students. When teachers transition to a competency-based grading practice, there is a de-emphasis on grades and more on learning, which is not an easy transition for neither student nor teacher. In fact, plenty of schools, districts, and teachers, often experience difficulties in transitioning and implementing SBG (Cox, 2011; Hay & Macdonald, 2008; McMunn et al., 2003; M. Simon et al., 2010; Tierney et al., 2011).
It is not clear whether these practices benefit the motivation and perceived learning in one subject or all subjects. Teachers also vary in the way they implement SBG practices (Cox, 2011). However, it is not changing the fact that teachers across curricula are again establishing new trails in the history of grading. Not only teachers, but entire school districts and states are changing to more competency-based grading systems, as well as report cards. The results of the study have the potential to demonstrate that transitioning to competency-based grading is not as overwhelming as it may seem and can possibly create more trusting and dependable relationships among colleagues (Gogerty, 2017).
CHAPTER THREE

Research Methodology

Chapters One and Two displayed research and theories behind motivation, student learning, the negative impact of traditional grading, and the positive influences of competency-based grading practices. Chapter Three aims to characterize whether motivation increased with competency-based grading systems in two high school history classes as well as the effects on students and teachers’ perception of the extent and depth of learning that occurred. The researcher conducted a case study based on Robert Yin’s approach because Yin is an advocate of combined qualitative and quantitative research (Yazan, 2015). The following was a quantitative study with qualitative insights, and these were the questions researched: Does moving to competency-based grading practices increase student motivation? How does moving to competency-based grading practices increase student and teacher perception of the extent and depth of learning that occurred?

The chapter was set up to first describe why the study was a quantitative study with qualitative insights. Next, the research approach was explained. Then, an explanation of the participants was given as to why they were chosen. A timeline showed the data collection procedures which consisted of: surveys, interviews, observations, and journaling. The research steps explained in sequence how the research will be conducted. Next, data analysis is described. Issues of trustworthiness and ethics were addressed, then researcher positionality was explained. Delimitations and limitations are laid out, followed by a summary of Chapter Three.

Methods

For this study, the researcher used a quantitative approach with qualitative insights to seek understanding of the effects competency-based grading can have on motivation and
learning. The study explored how and what so the researcher could get accurate insight on transitioning grading systems. The researcher used a quantitative approach for data regarding student responses in motivation through surveys. Quantitative research explains phenomena by collecting numerical data (McMillan, Mohn, & Hammack, 2017). Qualitative research is a situated activity that can locate the observer in the world, which was fitting for this study. The qualitative researcher studied things in their natural settings, “attempting to make sense of or interpret phenomena in terms of the meanings people bring to them” (Denzin, & Lincoln, 2017, p. 3). This approach was chosen because “qualitative researchers deploy a wide-range of interconnected interpretive practices, hoping always to get a better understanding of the subject matter at hand” (Denzin, & Lincoln, 2017, p. 4). Through each approach the researcher examined history teachers on the high school levels as they experienced implementation of competency-based grading. This was an in-depth analysis on a small group of students and teachers.

**Research Approach**

The driving methodology for this research was a case study. The advantage of the case study approach is the close collaboration environment between the researcher and the participant, while they enable the participants to tell their own stories (Wiebe, Durepos, & Mills, 2010). Although Robert Stake’s approach to case studies are more favorable because of their flexibility, as a novice researcher I needed more of a “detailed roadmap” as such in the Yin approach, so I would not get lost in the process (Yazan, 205, p. 141). Yin’s perspective is that a case study design should precede data collection; whereas, Stake does not have a preference. Yin is an advocate of the combination of qualitative and quantitative evidentiary sources because he views them equally instrumental; however, Stake does not agree. The goal was to present
evidence in the case study “with sufficient clarity to allow the reader to judge independently” my interpretation of the data (Yazan, 2015, p. 12).

**Participants**

The researcher chose the two high schools in her county where she worked because of their convenience and closeness. Also, both had two history teachers willing to participate in the study. Each school had between 700-800 students, in a rural southeastern county of Tennessee. Both schools had the same rules and procedures because of their location in the same county. Both schools had 96% White population, 2-3% Hispanic, and 1% Black population. Crush County high school had 15:1 student to teacher ratio, while Swanson had 16:1 (PublicSchoolsK12, 2016). The researcher noted Crush County High received Title 1 services because of their percentage of students eligible for free lunch. Crush County High had 36% eligible for free lunch, Swanson had 23%. Crush County had 8% eligible for reduced lunch and Swanson had 7% (PublicSchoolK12, 2016).

The participants included two history teachers; one from two different high schools within the county. The teachers responded to an email the researcher sent to the history teachers in both schools. Mr. E and Mrs. M had both taught for seven and a half years with a passion for history. Mr. E had a history of working in an alternative school setting with behavioral issues among students; whereas, Mrs. M had mainly taught in the current setting. During the study the researchers gave the teachers pseudonyms to protect their anonymity.

The student participants were chosen after they took the survey in the teachers’ class. The researcher picked six students from each class based on their levels of motivation for learning and each received a pseudonym. The researcher chose two low-motivated students, two moderately motivated, and two highly motivated students from each classroom. When students
answered with 9-12 responses of 1 (strongly disagree) and 2 (disagree) the researcher considered the student lowly motivated. When students answered with 9-12 responses of 3 (undecided) and 4 (agree) the researcher considered them moderately motivated. When students answered with 9-12 responses of 4 (agree) and 5 (strongly agree) the researcher considered them highly motivated. The researcher chose participants based on convenience sampling which is a type of nonprobability sampling. In this case, people were sampled simply because they were convenient sources of data for the researcher, given they taught in the same county and were not far away (Lavrakas, 2008).

**Research Steps**

The timeline of data collection procedures was as follows: The chart abbreviations are for teachers (T), students (S), and parents (P). The chart is meant to provide an illustration then the description follows.

<p>| Week 1: | Emails were sent (see appendix F &amp; J) &amp; T’s were chosen- T’s chose class period-sent home permission form to P’s- (see app. E)- gave class the survey (see app. B &amp; C)- Chose 6 S’s based on low, middle, high motivation- T’s took survey-Interviewed T’s (see app A &amp; D)-T’s got journal (see app.G)- we planned SBG lessons &amp; assessments-explained member check to T’s |
| Week 2: | Met with chosen S’s from survey- interviewed students-(See appendix D) gave them journal- (see appendix G)-explained member check. Member checks completed when necessary and at availability |
| Week 3: | Observed Mr. E’s students one day and wrote notes-observed Mrs. M’s kids one day and wrote notes |
| Week 4: | Interviewed Mr. E’s students one day- interviewed some of Mrs. M’s kids one |</p>
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<th>Week 5:</th>
<th>(the week after spring break) Observed &amp; interviewed the rest Mr. E’s one day, then interviewed them one final time along with the final survey. Did the same for Mrs. M’s. I interviewed Mrs. M and Mr. E a final time to compare to their first interview. Member checks were completed during that time.</th>
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The steps were conducted so all stakeholders understood what the researchers’ motives and intentions were.

1. **First week (after already receiving permission from the IRB, Carson-Newman University, and the school district to research):** In seeking participants, the researcher emailed the history teachers from the two high schools in the district allowing them the opportunity to respond to the case study opportunity, informing them of the interviews, observations, and survey. An email was sent to their principals to allow the researcher access into the building.

2. **Seeking students:** the principal’s email also granted permission for the researcher to send home a permission letter to the chosen students in each of the participant’s classes for consent and assent.

3. **Seeking peer debrief partner:** the researcher emailed the principal of her school to ask if the principal was willing to allow the Academic Specialist from the school to be an objective peer debrief partner after observations and interviews. Once the principal responded the Academic Specialist was emailed and asked to be a peer debrief partner for the researcher.
4. Once the teachers accepted to be participants, having signed their consent form, the teachers chose the class period to conduct the study in and reported back to the researcher. Then teachers sent permission letters home that the researcher created. The letter asked parents to let their students be surveyed, observed, and interviewed for the case study.

5. Upon receiving the parent permission forms, teachers and students took the survey by clicking on the link in their email that connected them to Microsoft Forms.

6. Based on the survey results, the researcher chose six students from each teachers’ class based on their motivation levels. Two students from each category were chosen: little, moderately, and highly motivated. When students answered with 9-12 responses of 1 (strongly disagree) and 2 (disagree) the researcher considered the student lowly motivated. When students answered with 9-12 responses of 3 (undecided) and 4 (agree) the researcher considered them moderately motivated. When students answered with 9-12 responses of 4 (agree) and 5 (strongly agree) the researcher considered them highly motivated.

7. The researcher interviewed teachers with open ended questions about motivation and perception of learning but also from the LOGO assessment (See appendix D) which provided insight into whether the teachers were more learning oriented or goal oriented. They were only asked the LOGO questions upon first interview and last interview. This information was used in Chapter Four and Five to determine if it made a difference in students’ motivation whether or not their teacher was learning oriented or goal oriented. The researcher audio recorded and transcribed (Upon
analyzing the teachers’ responses, the researcher met with peer debrief partner afterward.)

8. Teachers were given *How It’s Going* journals and told to reflect each week on how it is going, meaning frustrations, fears, thoughts, and questions. They were told they would be able to refer to them when the researcher comes to observe and interview students.

9. The researcher and teachers discussed the teacher’s current grading practices at that time and then reviewed the best way for them to transition. They were given two options to use to reflect their competency-based grading system in their classroom and on student work. Option 1: 1 Below Proficient (65 in grade book), 2 Approaching Proficient (75 in grade book), 3 Proficient (85 in grade book), 4 Excels (95-100 in grade book).

10. The numbers 1-4 would be written on graded work and the appropriate number grade to match would go in the grade book to reflect each standard. Option 2: NM: NonMastery (65 in grade book), IM: Initial Mastery (75), M: Mastery (85 in grade book), ADV: Advanced (95-100 in grade book). The letters NM, IM, M, and ADV would be written on graded work and the appropriate number grade to match would go in the grade book to reflect each standard.

11. The teachers and researcher discussed the standards the teacher would be teaching in the next five-weeks and how best to lay out their new competency-based assessments using those standards.
12. The researcher explained to the teachers what a member check meant. The researcher wanted to be clear that it is an opportunity for participants to check or approve aspects of the interpretation of the data they provided (Carlson, 2010).

13. Week two: the researcher met with the six chosen students from each teachers’ class that were chosen based on their motivation levels.

14. These chosen students were interviewed with some open-ended questions but also ones from the LOGO assessment (See appendix D) which provided insight into whether the students were more learning oriented or goal oriented.

15. The students received their How It’s Going journal from the researcher. The researcher explained this was the place to write down any questions or concerns during the week, so it could be referred back to when the next interview occurred.

16. The researcher explained member check to the students, so they understood that what they were saying was going to be taken seriously; however, if there were times they got way off topic, the researcher would not be using that information for the case study. The researcher expressed that all relevant material they wrote would be used in the study. Also, that sometimes it is odd to hear one’s own words or voice, but to not let it distract them from being honest. They were told they would be offered the option of being read the key sections of the interview the researcher wrote, aloud (Carlson, 2010).

17. The Friday of that week, the researcher used the member check on the students and teachers from their first interviews when necessary.

18. Week three: The researcher observed the six students from Mr. E’s class on Wednesday during the appropriate class period. The researcher took notes and
observed emotional reactions, body language, class participation, and completion of work.

19. The researcher observed the six students from Mrs. M’s class during the appropriate class period. The researcher took notes and observed emotional reactions, body language, class participation, and completion of work.

20. The researcher used their reflexive journal to express any thoughts or frustrations.

The researcher used their peer debrief partner as they began to analyze data from the journals, interviews, and observations.

21. Week four: the researcher interviewed Mr. E’s six students. The researcher asked the same questions as the first time, this time the researcher looked for any differences in motivation or perception of learning from their first interview.

22. The researcher interviewed Mrs. M’s six students. The researcher asked the same questions as the first time, this time the researcher looked for any differences in motivation or perception of learning from their first interview.

23. Week five: the researcher observed Mrs. M’s six students a final time.

24. The researcher observed Mr. E’s six students a final time.

25. The researcher interviewed Mrs. M, the teacher, a final time asking the same questions as the first interview. The same day, the final survey was given to Mrs. M’s whole class again to conclude the study.

26. The researcher interviewed Mr. E, the teacher, a final time asking the same questions as the first interview. The same day, the final survey was given to Mr. E’s whole class again to conclude the study.
27. The Friday of that week, the researcher used the member check on the students to check their third and final interview. The same was done with the teachers to check their second, and final interview, and to conclude the collection of data. The researcher met with their peer debriefer as she analyzed the data.

**Data Collection Procedures**

The researcher used interviews, surveys, observations, and journaling to have “confirmatory evidence,” evidence from two or more different sources (Yazan, 2015; Yin, 2004, p. 21). Of Yin’s six case study data gathering tools, the researcher used direct observations, interviews, physical artifacts and documentation (Yin, 2004). She used documentation by using notes from observations, interviews, and her reflexive journal. Physical artifacts were created by the students and teachers’ *How It’s Going* journals (Yin, 2004).

**Interviews**

Individual one-on-one interviews conducted by the researcher with teachers and students created a more comfortable environment to share thoughts and opinions. This prevented others from influencing their decisions on motivation, learning, and the supports they needed in their transition from TGP to CBG. I asked both the students and the teachers some open-ended questions regarding motivation and perception of learning, as well as questions from the LOGO assessment to determine if they were more learning-oriented or grade-oriented (Eison, James, Pollio, Howard, Milton, & Ohmer, 1983). They were only asked the LOGO questions upon first interview and last interview. The teachers and students also kept their own *How It’s Going* journal during the case study and asked themselves how it’s going on a weekly basis to refer to during the interviews if the students or teachers wanted to talk about something that came up during the week. The students and teachers were asked to respond in interviews about what
motivated students look like and what they particularly look and act like when motivated to learn. They were asked about their level of competence, autonomy, and relatedness in relation to the Self-Determination Theory (Riley, 2016). The students and teachers were asked what the purpose of grades were. The two interviews with teachers allowed them to expand on their thoughts about the journey of where, when, and how they came to their new grading system in their classroom.

The interviews were audio-taped in person using the researcher’s iPhone to allow the researcher to accurately hear the teachers’ and students’ responses as to not misconstrue their words. The researcher transcribed key sections of the interviews; however, the majority was transcribed from the audio recorded. The researcher interviewed the teachers two times over the five-week period and interviewed the students three times. On Fridays of the interview weeks, if the researcher had any need to clarify interviews, she used a member check that asked the participants to verify that the notes transcribed from the audio were correct. The researcher used a reflexive journal on the computer to document any bias thoughts or feelings that may have occurred after an interview, so they did not conflict with the participants’ perspectives. After week four and five, the researcher used their peer debrief partner to gain another objective opinion as she began analyzing and interpreting the data from the interviews and observations.

Surveys

The students completed a survey about motivation and perceived learning at the beginning and end of the study. The survey was a version of the survey the Centre for the Study of Learning and Performance (CSLP) at Concordia University in Montreal, Quebec used for a study they conducted about a writing program about teachers’ approach to teaching and students approach to learning (Abrami, Wade, Pillay, Aslan, Bures, & Bentley, 2008). The survey at the
beginning and end was conducted through Microsoft Forms online for both the students and teachers in Likert scale format. The Likert scale, an instrument composed of statements that permit responses along an ‘agree….disagree’ continuum (Best & Kahn, 2003, p. 156). The online survey had a link sent to students through email, as well as to the teachers. The survey was not delivered through the teacher for the student, so the information was not at risk of being tampered with. The self-reported numbers given by the students on the survey, gave the researcher a base to determine if motivation or perception of the extent and depth of learning had changed over the five-week period. The results of the survey were also compared to the last LOGO interview to note any correlations between changes of motivation for learning versus grades.

Observations

The researcher observed the participants while keeping a reflexive journal. Reflexivity is the idea that a person’s thoughts and ideas tend to be inherently biased (Amankwaa, 2016). The researcher went on two different occasions to observe the teacher in action and observe the students as they responded to the instruction. The researcher had access to the students’ work and was able to observe the students’ academic progress and motivation in their efforts such as emotional displays, body language, and completion of work. The researcher was given the opportunity to observe the student in their element noticing how they responded to the transition from TBG to CBG and how they acted in general in the classroom setting. The researcher took notes to document the differences in the low, moderately, and highly motivated students while also noting their relatedness to the teacher and peers.

Reflexive Journals
The researcher made use of a reflexivity journal on her computer. A reflexivity journal is a type of diary where the researcher makes regular entries during the research process, documenting any thoughts to check they do not interfere with what participants have shared (Amankwaa, 2016). All researchers, quantitative and qualitative have personal biases that can influence their interpretation of data (Carlson, 2010). “Researcher bias is not necessarily viewed as problematic in qualitative research as long as the researchers bring their pre-conceived beliefs into the dialogue” (Carlson, 2010, p.1104). Therefore, the researcher told the participants of her experience with transitioning in her own classroom to stay transparent and explain why member checks and peer debriefs are necessary.

Data Analysis

Through interviews, surveys, observations and journals, the researcher referred to Yin’s techniques for data analysis. Examining, categorizing, tabulating, pattern matching, and explanation building were all options Yin suggested to cycle the data through (Yazan, 2015). Pattern matching specifically means when the researcher attempts to link two patterns together: a theoretical pattern and an observed pattern (Yazan, 2015). The theory could originate as a hunch; however, the observation was in the form of direct observation, impressions, field notes and other formal objective measures. The researcher’s purpose in pursuing pattern matching in the data analysis was to produce validity. The researcher continued using the reflexive journal in order to keep track of pattern matching.

The case study began and ended with a survey to gauge their level of motivation. The researcher used a dependent, or paired samples T-Test. A dependent T-Test is one example of a within subjects or repeated measures statistical test (LundResearch, 2013). The researcher wanted to know if competency-based grading improved student motivation; therefore, she used a
dependent T-Test because of the two related groups. The first related group consisted of the participants prior to the implementation of competency-based grading. The second group had the same participants, but they were given the same survey after experiencing competency-based grading. The survey used a Likert scale of five values, so the measurement scale was ordinal. The independent variable was implementing competency-based grading, and the dependent variable was the increased motivation score on the survey. The researcher aimed to examine whether the independent variable resulted in a change in the dependent variable.

The interviews had open-ended questions allowing 30 minutes for the students to explain the progress of their transition and any changing beliefs about themselves or their learning and grades. Some interviews were conducted after school for the sake of not interrupting the school day and preventing students from feeling rushed. The researcher interpreted all the interviews through the lenses of the theoretical framework of the study.

The researcher compared the LOGO results of students to their level of motivation that was depicted on their survey. The researcher also considered the possibility of their teacher being learning, or grade-oriented as a determinant of how the student changed or did not change over the course of the study. The researcher examined the interview notes and observations for key themes from Crush County and Swanson high students that were relative to competency, autonomy, and relatedness to the class or subject.

Coding is the process of organizing and sorting data (Impact, 2012). This served as a way to label, compile, and organize the data. This helped to summarize and synthesize what happened in the data. The ideas, concepts, and themes from the data were coded. In this case study, the researcher chose the following pre-established codes: effort, completion, competence,
not learning, autonomy, relatedness, and not related, post-secondary, grades, and personality to categorize and organize the data interview questions.

**Issues of Trustworthiness and Ethics**

Increasing trustworthiness of the research study is the large objective (Carlson, 2010). “Trustworthiness is gained when researchers show that their data were ethically and mindfully collected, analyzed, and reported” (Carlson, 2010, p. 1110). Triangulation was used to increase trustworthiness: gathering and analyzing data in more than one way, collecting from different groups at different times and different places (Amankwaa, 2016; Carlson, 2010). The premise was that, if the researcher could substantiate various data sets with each other, the interpretations and conclusions drawn from them would likely be trustworthy (Carlson, 2010).

In order to ensure credibility and validity, the researcher was compelled to view the world through the eyes of the participants without asserting her own assumptions and opinions by using reflexive journals, peer debriefs, and member checks (Amankwaa, 2016). It is important for members to check the researchers’ interpretation of the data (Carlson, 2010). The researcher explained to the participants that she would use partial transcripts leaving out filler words and fixing grammatical concerns. She explained they might need to verify the key sections that were transcribed from notes if the researcher needed clarity. The expectations of the member check were noted in the parental consent form.

During the peer debriefs, the following questions were always asked: did you focus on the low motivated more because you think they will benefit most? Did you sit in the same place of the room as before? Did you ask any extra questions? Taking details notes in observations and interviews helped with peer debriefing but also produced an audit trail which increased validity and trustworthiness (Carlson, 2010). By using pseudonyms, as well as providing a
signed commitment, each participant controlled the anonymity of his/her identity and, as a result, confidentiality of the information he/she shared.

Ethical issues involved in the use of human subjects in research primarily deal with the impact on the subjects, confidentiality, coercion, and consent (Roberts, 2004). It was critical for the researcher to ensure all parental consent forms were returned and confidentiality was honored as students expressed their position on motivation and learning. Student data were not shared with their other teachers to prevent any judgment or criticism from occurring towards the student. Also, the risk was minimal to be a participant in the study because there was nothing different that occurred other than what normally occurs in a public high school setting.

**Researcher Positionality**

It was imperative that the researcher controlled her own bias when collecting and interpreting interview, observation, and survey responses. The researcher had 11 years of experience in educational practices. The last seven years had been heavily influenced by a passion for changing traditional grading practices to competency-based grading, specifically standards-based grading. She had presented at all three middle schools and one high school in the district on the topic of standards-based grading. Her strategy to control her bias included stepping away from the data during the anticipated moments of internalization to focus on the participants’ experiences rather than her own. She made use of a reflexivity journal on her computer, peer debriefing, and member checks. Similarly, the atmosphere she created with the participants during the interviews invited openness and honesty as she allowed them to share their journal reflections and opinions. She extended formal permission for their true responses in spite of potential negativity towards the experiences they described. The researcher’s intentions were to help students and teachers enhance and motivate learning through grading practices.
Delimitations and Limitations

There were delimitations in the study that narrowed its scope. The study was only aimed at high school students in the subject of history. The focus was on the effect of the student’s and teachers’ perception of the extent and depth of learning that had occurred and not actual scores showing their extent and depth of learning. The researcher only invited participants from schools in the rural southeastern district she worked in. The study took place from the beginning of March to the beginning of April.

A few limitations existed in this case study that could have negatively affected the results of the study (Best & Kahn, 2003; Roberts, 2004). There is a possibility of observer bias anytime data are obtained from observations (Roberts, 2004). Sometimes teachers and students acted differently when being observed and possibly were not their normal selves. Other limitations included the differences in age and maturity between the two history classes.

Summary

Chapter Three was composed in order of an introduction of research, description of participants, and data collection procedures, research steps, data analysis, issues of trustworthiness, ethics, and bias, then described limitations and delimitations. The purpose of the study was to investigate whether transitioning from traditional grading practices to competency-based grading practices, increased student motivation and how it affected the perception of the extent and depth of learning that occurred. Data were collected using qualitative and quantitative methods. Interviews, surveys, and classroom observations were utilized for data collection. A reflexive journal was used for the researcher and participants used the How It's Going journal. The participants were based in a high school history classroom setting. The researcher tried to guarantee validity and trustworthiness through triangulation, peer debriefs, and member checks.
Data were analyzed for trends such as pattern matching, leading to relationships between increased intrinsic motivation to learn and the effects of the perceptions of the extent and depth of learning that occurred. The questions researched were: Does moving to competency-based grading practices increase student motivation? How does moving to competency-based grading practices affect student and teacher perception of the extent and depth of learning that occurred?

Chapter Four presented the findings from the data gathered by the researcher. The case study analyzed for patterns and themes surrounding the topic of motivation and the effects of student and teacher perception of the extent and depth of learning that occurred. The data were analyzed from the T-Test and the interview questions. During the case study, the researcher was looking through the lenses of the Self-Determination Theory to relate any signs of competency, autonomy, and relatedness to the students’ motivation to learn.
CHAPTER FOUR

Findings

The purpose of the study was to research the topic of motivation and the effects of student and teacher perception of the extent and depth of learning that occurred during the course of the study. Through the lens of the Self-Determination Theory, I related any signs of competency, autonomy, and relatedness to the students’ motivation to learn. The following research questions drove the study: Does moving to competency-based grading increase student motivation? How does moving to competency-based grading affect student and teacher perception of the extent and depth of learning that has occurred?

Research Process

The goal of this research was to survey, interview, and observe via convenience sampling two high school history teachers and 12 students within two high schools in a Middle Tennessee school district. Due to time limitations, I visited each class five times for the purpose of either interviews or observations.

Data

The data collected were divided into three different categories. The first category relates specifically to the change in motivation through the Likert survey that was given to determine the 12 students that were picked for the study. The students and teachers took the survey a second time at the end of the five-week period. I analyzed the survey results by compiling the descriptive statistics into bar graphs and then completing two 2-tailed T-tests. Student and teacher interviews and journals were used to support the data from the survey. The second category of data were sorted according to the theoretical lens of the Self-Determination Theory, which was divided into three categories: levels of competence, autonomy, and relatedness to the
real world and to the teacher. The bar graph showed the change in both teachers’ levels of competence, autonomy, and relatedness, as well as students’ levels of competence, autonomy, and relatedness. The third category of data was based on motivation levels in connection with levels of competence, autonomy, and relatedness (relatedness to real life and teacher), expressed as the acronym CARR. I interviewed participants before and after in order to measure the change in motivation levels. Participants also kept How It's Going journals which gave insight into how their motivation levels changed in relation to their CARR results. In the last section of Chapter Four, I synthesize the three categories of data to answer the following research questions:

1. Does moving to competency-based grading (CBG) practices increase student motivation?
2. How does moving to CBG affect student and teacher perception of the extent and depth of learning that has occurred?

I used all forms of data collections, journals, interviews, and motivation levels from the survey to increase triangulation and report the findings relative to the questions that drove the study.

**Null Hypothesis**

H₀: p=0

H₁: p≠0

The null hypothesis was that the student and teacher’s motivation was not affected by CBG. The null hypothesis of population correlation equalizing zero was not rejected at the .05 level. A Pearson Product Moment Correlation was conducted to determine if a relationship existed between CBG and student motivation. According to Cohen (1988), the resulting (r) of .80 indicates a strong correlation. Table 1 and Table 2 display the summative descriptive
statistics of the entire study group. Table 3 and Table 4 narrow in specifically on question 3 of the Likert scale survey because this question most directly addresses how CBG affected motivation levels.

Table 1

Summative 1st and 2nd survey Paired Samples Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>St. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
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<td>12</td>
<td>.9374</td>
<td>.2706</td>
</tr>
<tr>
<td>2nd survey</td>
<td>44.833</td>
<td>12</td>
<td>.834</td>
<td>.2408</td>
</tr>
</tbody>
</table>

Table 2

Summative 1st and 2nd survey Paired Samples T-test

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st-2nd survey</td>
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<td>4.33</td>
<td>1.25</td>
<td>1.022</td>
<td>11</td>
</tr>
</tbody>
</table>

p < .05

There was a statistically significant difference in the scores on the student motivation survey after implementation of competency-based grading, t= 1.022, p<.05. Specifically, this test indicated that student motivation scores were significantly lower after implementation of CBG. These results led me to reject the null hypothesis and the hypothesis that CBG would affect motivation in a positive way.

Table 3

Question 3 “I am motivated to learn” Paired Samples Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>St. Deviation</th>
<th>Std. Error Mean</th>
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<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>t</th>
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<tr>
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<td>.799</td>
<td>.2307</td>
<td>.6916</td>
<td>11</td>
</tr>
</tbody>
</table>

p < .05

I pulled out question 3 from the student motivation survey because it specifically addressed student motivation. There was a statistically significant difference in the scores between the first and second survey scores for this question. The descriptive data indicate a negative change and the results of the Pearson Product Moment Correlation (r) of .70 indicates a strong correlation between CBG and student motivation.

**Change in Motivation**

The 12 student participants completed the Likert scale survey at the beginning of the case study to determine their level of motivation. If they had between 9-12 responses in the 1 (strongly disagree) and 2 (disagree) categories, they were categorized in the low motivation group. If the students had between 9-12 responses in the 3 (undecided), or 4 (agree) categories, then they were labeled moderately motivated. If the students had between 9-12 responses in the 4(agree) and 5 (strongly agree) categories, then they were labeled as highly motivated. At the start of the case study, four were labelled high, four were moderate, and four low motivated. After the completion of the same survey at the end of the case study, there were five highly
motivated, six moderate, and one low motivated student. The students that had the most significant changes varied in their reasoning.

**Individual Students Change in Motivation**

Student 1 shifted from moderately to highly motivated. He was a sophomore and was considered learning oriented from the LOGO assessment in his interview. From his first interview to his second, his score increased in relatedness to the real world and relatedness to the teacher but went down in autonomy. According to his journal, he was not a big fan of standards but said they helped him know what he learned and did not learn. His biggest frustration was with his classmates clowning around in class. He thought the transition to competency-based grading was “a waste of time because the class clowns are not going to change” (Student 1, Journal). Although he lacked autonomy, his passion for history increased his motivation.

Student 10 shifted from lowly motivated to moderately motivated. He was a junior that was grade-oriented according to his LOGO assessment in his interview. From his first interview to his second, his relatedness to the real world and to the teacher increased. His scores in autonomy and competence stayed the same; however, his journal reported that competency-based grading helped him know what he had learned, and he liked the way the test was sectioned out. He noted in his interview that although his overall grade went down he still liked competency-based grading and that it was not confusing.

Student 7 shifted from low motivated to moderately motivated. He was a junior and was considered grade-oriented by his LOGO assessment in his interview. From his first interview to his second, his competency level increased; however, his level of autonomy and relatedness to both outside of the classroom and teacher decreased. His competence and autonomy were
identifiable in his journal too when he said competency-based grading “could help you understand what you got wrong and let you fix it when you can retake it” (Student 7, journal).

Student 6 shifted down from highly motivated to moderately motivated. He was a freshman that was learning-oriented according to his LOGO assessment in his interview. In his interview, all of his levels in competency, autonomy, and relatedness stayed the same; however, the major question he went down in on the survey was question 3. Question 3 specifically stated, “In my class I am motivated to learn.” However, student 6 explained himself when he reported about confusion in his journal. He thought the new grading scale rounded students’ scores down and that it did not accurately reflect what a student had learned. Once he understood that it did not purposely lower student’s grades he reflected that he thought the system worked better.

Student 2 was the only student that stayed in the low motivated category of the 12 participants. He was a freshman, grade-oriented, and scored lower in all three areas of competency, autonomy, and relatedness on the interview. He went down significantly in autonomy but noted in his journal how Mr. E started doing more “hands on stuff” in class and reported in his interview that he got tired of taking notes every day.

Two of the 12 students reported an increase on motivation from question 3 on the survey. Student 11 was a junior, learning-oriented, and increased in his level of autonomy on his second interview. He reported in his journal that competency-based grading was simple, had improved his grade, and “breaks down each topic to really fine detail” (Student 11, journal). Student 3 was a freshman and shifted from being grade-oriented to learning-oriented by the second interview. She increased in competency but went down in autonomy and relatedness to the real world. She expressed frustration and confusion in her journal when she questioned the repetitiveness of the
criteria and the lack of explanation about the content and change. The autonomy became obvious as she began making teaching suggestions in her journal for her teacher.

**Classes’ Change in Motivation**

Figure 1 and Figure 2 display the average scores of each teacher’s kids from the first and second motivation survey, as well as the teacher’s results. The Likert scale was designed as 1 (strongly disagree) 2 (disagree) 3 (undecided) 4 (agree) and 5 (strongly agree). The student change is represented in pink and the teacher change is represented by maroon. The questions that showed the most significant differences were one, six, seven, eight, nine, and ten. Each of those questions correlated with autonomy or relatedness, two of the three requirements for motivation in the Self-Determination Theory. On question 1, “In my class I set my own learning goals (I decide what I need to learn)”, Mr. E’s students’ scores went down but Mrs. M’s students went up. Question 1 correlated with autonomy as a student felt they could set their own learning goals. On question 6, “In my class I modify (correct) strategies that are not helping me achieve my goals”, Mr. E’s students dropped a minimal amount; however, Mrs. M’s students dropped significantly. Question 6 addressed autonomy as students felt they could identify strategies that did not help them and correct them. On question 7, “In my class I use comments from my teacher to improve on my work”, Mr. E’s students dropped; however, Mrs. M’s increased. Question 7 exemplifies relatedness to the teacher. On question 8, “In my class I use comments from my classmate to improve on my work”, Mr. E’s students dropped significantly, and Mrs. M’s dropped but not as much. Question 8 related more to classroom environment which was also connected to relatedness to the teacher and determined whether a student felt comfortable enough talking to the teacher about classmates’ comments. On question 9, “In my class I revise versions of my work to improve them”, Mr. E’s students had no change in response; however,
Mrs. M’s dropped in score. Question 9 related to autonomy and how students took ownership to improve their work or did not take ownership to improve their work. On question 10, “In my class I evaluate my own work (I look at my work to see if it is good or needs improvement)”, Mr. E’s students had no change; however, Mrs. M’s dropped in score. This question also addressed student autonomy in their ability to take ownership and improve their work. Question 3, “In my class I am motivated to learn”, did not drop significantly; however, it decreased and was the leading question in the survey.

Figure 3 displays the classes averages combined on the first and second survey. The pink represents the total change from both classes combined. Question 2, “In my class I identify strategies for achieving my goals” had the highest increase of scores from first and second surveys in both classes. Question 2 correlates with autonomy as students could identify strategies to help achieve their academic goals with competency-based grading. Question 8, “In my class I use comments from my classmates to improve on my work” had the highest decrease of scores from the first and second surveys in both classes. Question 8 related more to classroom environment which was also connected to relatedness to the teacher and determined whether a student felt comfortable enough talking to the teacher about classmates’ comments.

**Teachers Change in Motivation**

Mr. E was learning-oriented based on his LOGO assessment in his interview and low motivated in his approach to teaching according to the survey. He reported significant changes on questions 1, 2, 5, and 12. On question 1, “In my classroom I teach students how to set their own goals towards mastery”, Mr. E reported a lower level than the first time he answered the question. This question related to teaching student autonomy. In his journal, Mr. E reported he was trying to also change his teaching strategies and transition from only lecture and notes to
more hands-on activities. His level of autonomy also went down from his first interview to second. He reported a lower score on question 2, “In my classroom I teach students how to identify strategies for achieving their goals.” Even though he expressed his thoughts on competency-based grading as being positive in his journal, as he said, this grading system fits because “it is always nice to show students we are working toward mastery of ability and knowledge-not a grade, per se” (Mr. E, journal). Although the new grading system frustrated him he said the frustration encouraged him and motivated him to improve. He expressed a desire to continue competency-based grading in his class although it caused him to think more than he has in years. His scores increased significantly on question 5, “In my classroom I teach students how to adjust their actions on their own to achieve goals” and question 12, “In my classroom I teach students how to work well with other students.” The students in Mr. E’s class also scored lower on question 1 but not question 2. The students had no changes on question 5 but decreased on question 12 where Mr. E increased.

Mrs. M was learning oriented based on her LOGO assessment in her interview and started off moderately motivated in her approach to teaching but then later became highly motivated. Her levels of competency, autonomy, and relatedness all stayed the same. She reported all the same scores except for her increase on question 12, “In my classroom I teach students how to work well with other students.” Her journal expressed excitement with competency-based grading because her students did well academically for the most part, and she was able to identify which standards they needed a little more support on. She was motivated by the transition and expressed a desire to continue competency-based grading because she saw trends had developed among her students’ test scores which helped her clearly understand their level of competency.
**Figure 1**

Mr. E's Class Likert Scale Scores

**Figure 2**

Mrs. M's Class Likert Scale Scores

**Figure 3**
Self-Determination Theory

Deci and Ryan (2008) addressed three significant psychological needs that must be present for an individual to foster self-motivation: competence, autonomy, and relatedness. Figure 4 displays the averages of Mr. E and his students’ competence, autonomy, and relatedness levels. Both times the students and teachers were interviewed they were asked to report their competence, autonomy, and relatedness levels based on a scale of 1 (65%) 2 (75%) 3 (85%) and 4 (95-100%). From this graph, I noticed the biggest decrease was in autonomy at -36% and the biggest increase was in relatedness to the teacher with 28%. The competence level slightly decreased by -4% as some students reported clarity of what they had learned and not learned in their journals and interview responses. Student 2 thought he knew at least 85% worth of the standards for the past unit until he saw he made a 65% on all three standards and then reported a lower competency level on the second interview. As a class the relatedness to outside of the classroom increased by 12%. Student 1 and 4 reported higher levels of relatedness to outside of
the classroom when student 4 stated she discussed the content with her military parent and student 1 did his own studies outside of class. Relatedness to the teacher increased by 3% and was noticeable in observations as students mostly held eye contact, while at least three of the six were always listening and trying to follow instructions.

*Figure 4*

![Graph showing C.A.R.R. Levels](image)

Figure 5 displays the averages of Mrs. M and her students’ competence, autonomy, and relatedness levels. From this graph, I noticed the only slight decrease was in autonomy with -4%. Three of the six students reported in their interview that although they only did notes in Mrs. M’s class, they know if they asked for a change she would listen to them. Overall, their competence level increased by 14% and was noticeable in their journals as five out of six stated competency-based grading helped them see clearly what they knew and did not know and what their strengths and weaknesses were. Their level of relatedness to the teacher increased by 28% and was noticeable in observations as students always held eye contact with Mrs. M while teaching, actively took notes, and were engaged enough to ask questions.
Motivation and Competence, Autonomy, and Relatedness Levels

Upon the students’ completion of the Likert Scale Survey, they were divided into motivation levels of high, moderate, and low. The students were interviewed, and their competence, autonomy, and relatedness levels were documented based on a scale of 1 (65%) 2 (75%) 3 (85%) and 4 (95-100%). Figure 6 represents the first interview with highly motivated students by the color green, the moderately motivated by yellow, and the low motivated by the color red. The second interview colors are the darker shades to represent the students’ self-reported levels after competency-based grading had been implemented. All motivational levels increased in competence. Autonomy decreased significantly in the low and moderately motivated group, by one whole level, and it increased in the highly motivated by one whole level. The relatedness of content to the real world increased for all categories, but especially in the highly motivated students. All categories increased in the relatedness to the teacher level, especially in the low motivated students. Overall, the highly motivated students increased in all
categories. The moderately motivated increased in three of the four: competency, relatedness to real world, and to the teacher. The low motivated also increased in three categories except autonomy. In the first interview, there were 4 highly motivated and all were learning-oriented except for one, she was both learning and grade-oriented. Three of the four moderately motivated were learning-oriented, the fourth was both learning and grade-oriented. Of the four low motivated, all were grade-oriented except one, she was both grade and learning-oriented. By the second interview, the one low motivated student was grade-oriented, the moderately motivated were all learning-oriented, and the highly motivated were all learning-oriented except for one.

Figure 6

Research Question 1

Does moving to competency-based grading practices increase student motivation?

The Self-Determination Theory stated that if a student felt competent, autonomous, and had relatedness they would be more intrinsically motivated. The results of the motivation survey displayed a decrease in motivation. However, in each data collection competence levels increased, relatedness increased but autonomy decreased in two of the three groups. The post interview revealed students in all categories of low, moderately, and highly motivated increased in competence and relatedness to real life and to the teacher; however, they did not all increase in autonomy.
Additionally, the students’ first interview responses allowed them to define motivated students. I recorded how many times the students’ definitions related to the coded terms: effort, completion, competence, not learning, autonomy, relatedness, not related, post-secondary, grades, and personality. In the initial interviews students named two terms relative to autonomy (goal oriented, cares about outcome); however, in the second interview the students named zero terms related to autonomy. In the first interview, students reported 12 times that motivated students were ones that showed effort. After CBG, the students reported five times that motivated students were ones that showed effort. In the initial interview students also reported nine times that motivated students were those that completed work. After CBG, students only reported one time that motivated students were those who completed work. The first interview reported only two times that motivated students were those that tried to learn (gain competence). After CBG, the students reported eight times that motivated students were those that tried to learn (gain competence). This was the most significant increase of the coded definitions. In the initial interview, students reported twice that motivated students were autonomous. After CBG, there were zero reports that motivated students were autonomous. Autonomy was the only category referenced to on the first interview by students but not again on the second.

The student How It’s Going journals from Mr. E’s students reflected the most autonomous thoughts of all of the participants. Student 1 (moderately motivated that increased to highly motivated with a 2-autonomy level) reported an instance when Mr. E allowed struggling students to report to his desk for feedback on their work to help students share their thoughts and help them redirect their learning on their own. However, student 1 said he personally thought that most of the social struggling students were “just acting dumb and stupid and not paying
attention” although “some may have been struggling”, he said. He further mentioned, “all this is a waste of time because the class clowns are not going to change” (Student 1, journal).

Student 2 in Mr. E’s class (low motivated and stayed low motivated with a 1 autonomy level) noted that he liked competency-based grading because they “started doing more hands-on stuff” (Student 2, journal). He was referring to the new activities that were based on standards and allowed more student interaction.

Student 3 (moderately motivated that stayed moderate with a 1 level of autonomy) expressed frustration about the quick of pace of learning, but also learning the same criteria repeatedly. She felt the lessons were too simple and said, “there could at least be different types of work we do, we do the same types of workbook pages, work sheets, same work every new standard we learn, it should change some” (Student 3, journal). She reported that Mr. E’s diagram activity didn’t really teach her anything; however, student 4 (highly motivated and stayed highly motivated with a 2-autonomy level) reported in her journal that “looking information up and putting it into a Venn diagram was very different but helpful and new” (Student 4, journal).

Mrs. M’s students reported less about autonomy and more about competence levels in their interviews and How It’s Going journals. When student 8 (highly motivated and stayed highly motivated with a 3-autonomy level) was asked to explain her autonomy level after CBG had been implemented, she stated that, “for the most part, Mrs. M has everything planned out but if we suggest something she will take it into consideration” (Student 8, interview). All of Mrs. M’s students’ that were interviewed a second time stated a version of student 8’s statement about autonomy.

Research Question 2
How does moving to competency-based grading affect student and teacher perception of the extent and depth of learning that has occurred?

**Student Perception**

As shown in Figure 6, when all 12 students were divided up by motivation level, each level increased in competency, the low, moderately, and highly motivated. However, when divided up by classes, Mr. E’s students decreased in competency by -4% and Mrs. M’s students increased by 14%. Although, all participants expressed a new clarity during their interviews after competency-based grading was implemented. Student 9 from Mrs. M’s class said she loved that it showed her strengths and weaknesses. The students felt clarity about what they learned and did not learn because of competency-based grading, according to their answers to question 1 on their interview about the extent and depth of learning from the past unit. Their journals gave more insight into their thoughts on learning.

Mr. E’s student 2 (low motivated and stayed low motivated, grade-oriented) stated that he now knows what he missed and even said that he would retake it if given the chance. However, he went down from a 2 (75) to a 1 (65) on his competence level because he realized he did not have the knowledge he thought he did after the test was broken down by standards.

Mrs. M’s students were very detailed in their *How It’s Going* journal about their increase of competence levels. Student 7 (low motivated but moved to moderately motivated, grade-oriented) went up from a level of 3 (85) to 4 (95-100). He wrote, “I like the grading system. It could help you understand what you got wrong and let you fix it when you can retake it.” (Student 7, journal). Student 8 (highly motivated and stayed highly motivated, was both but moved to grade-oriented) went from a level 3 (85) to a 4 (95-100) competence level. She expressed in her journal that when learning the standards, it’s easier to go back and see which
standards you did well and which ones you did not do well on. Student 9 (moderately motivated and stayed moderately motivated, learning oriented) kept her level of 4 (95-100) competence level from the first interview to the second. She wrote in her journal that she liked it because it made her grade go up and made her understand where she went wrong, because she wanted to know what she missed and why. Student 10 (low motivated to moderately motivated, grade-oriented) and student 11 (highly motivated and stayed highly motivated, learning oriented) both mentioned in their journals that competency-based grading helped them understand what they were learning.

All student participants were asked what the purpose of grades were when they were interviewed to determine if there was a correlation between CBG and perspective on grades along with a change in the students’ perspective of learning. I recorded how many times the students’ definitions related to the coded terms: effort, completion, competence, not learning, autonomy, relatedness, not related, post-secondary, grades, and personality. Prior to CBG, students reported a grade’s purpose revolved around five main topics: competence, effort, post-secondary, completion, and grades for the sake of grades. After CBG, students more frequently reported that the purpose of grades was to show competence or what the student had learned or mastered. The students reported once in the second interview that the purpose of grades was to show how much effort a student gave. After CBG, they also only reported once that the purpose of grades was to show how much a student completed work.

**Teacher Perception**

Each teacher was interviewed before and after the implementation of competency-based grading. Mr. E’s competence level went from a 4 (95-100) to a 3 (85) while Mrs. M’s stayed the same level of 4 (95-100). Both teachers reflected in their *How It’s Going* journal, but their
responses were very different. Mr. E expressed more frustration as his autonomy level also
decreased because he felt ignorant about not knowing what to do sometimes. He mentioned
having to think much more and changing lesson plans. Mrs. M reflected that the competency-
based grading showed her students’ strengths and weaknesses and that she could see where she
needed to reteach which increased her autonomy as a teacher. She began to see trends in her
students’ work. Mr. E saw things differently because his journal also reported that not only was
he transitioning to competency-based grading, but also to more hands on, interactive activities
rather than just lecture and notes. In the amount of time the study was conducted, Mrs. M had
adapted, and created two tests that were divided up by standards with a box where the grade was
written clearly per standard. In the same amount of time, Mr. E gave one test divided up by
standards and gave a grade per standard but forgot the box and instead wrote the grade on the
test. Both teachers reported they found more clarity of what the student grades represented and
wanted to continue using the grading system even after the study.

**Summary**

In this chapter I explored motivation levels of students and teachers before and after
competency-based grading was implemented. After conducting the Likert Scale survey, it was
concluded that the 2-tailed T-test results displayed lower student motivation scores after the
implementation of competency-based grading. The interviews conducted gave every student and
teacher their competence, autonomy, and relatedness levels which connected to the Self-
Determination Theory: if a student feels competent, autonomous, or related they will experience
increased motivation. The CARR levels of the students and teachers revealed an increase in
competence, and relatedness, but a significant decrease in the autonomy level which impacted
the motivation level. The following two questions drove the study: Does moving to competency-
based grading (CBG) practices increase student motivation? How does moving to CBG affect student and teacher perception of the extent and depth of learning that has occurred? The results of the motivation survey and the CARR results demonstrated that CBG does not increase student motivation if the student’s autonomy level is low. The autonomy level was low in both classes that were observed; however, it was the lowest in Mr. E’s classroom.

Data collected from interviews, observations, and journals provided insight into the second research question since students and teachers reported the effects of competency-based grading on their extent and depth of learning. There was more of an increase in the perception of the extent and depth of learning in Mrs. M’s class than Mr. E’s. The research questions were analyzed using the Self-Determination Theory and are used in the next chapter to determine the conclusions and broader theoretical issues in relation to this study.
CHAPTER FIVE

Conclusions

Research Design

A quantitative design with qualitative insights was utilized for this study. The principal research instruments were a Likert survey with 12 questions and 4 interview questions. Subsequently, observations and journals were used for further triangulation and pattern matching. The study was conducted in a Middle Tennessee school district, where two high school history teachers and 12 students served as the sample population. Convenience sampling was utilized, and participation was entirely voluntary.

Population

Two high school history teachers from one Middle Tennessee school district were asked to focus on teaching their content standards more in depth. They were asked to begin their lessons with an introduction of the standard and explain to the students that the standards were the learning targets over which they would be assessed. The teachers were encouraged to transition their formative assessments but were not required to do so. Teachers transitioned their summative assessments to competency-based grading by dividing them into standards then assigning students a grade per standard in the grade book. Twelve of their students were chosen to observe, survey, and interview as they experienced the transition. The district was chosen for the study for several reasons, primarily because it afforded me the opportunity to conduct convenience sampling. Additionally, I am employed by this district and am passionate about helping both students and teachers become more successful. Some of the teachers in the district have already transitioned from traditional grading to competency-based grading; however, the majority of teachers have not. There is little research about high school teachers transitioning to
competency-based grading practices. The sample population was high school history teachers and twelve of their students that volunteered. The research was conducted over a five-week time frame.

**Overview of the problem**

The purpose of the study was to determine whether transitioning from traditional grading practices to competency-based grading practices increases student and teacher motivation and affects the student and teacher perception of the extent and depth of learning that occurred. This quantitative study was conducted out of the need for a common purpose of grades in the rural district I have served in for the past 10 years.

**Review of the Methodology**

This was a quantitative study with 12 students and two teacher participants. The survey consisted of 12 Likert scale questions for students, concerning their perspectives on their motivation and participation in their class. The teachers’ survey consisted of 17 Likert scale questions concerning their perspectives of how low, moderate, or highly motivating they are in the classroom. The twelve students were chosen based on their motivation levels, four highly motivated, four moderately, and four low motivated. At the end of the study, the participants took the same survey again. The students and teachers were interviewed twice to determine their perspective of the extent and depth of learning that had occurred in their class, before and after the implementation of competency-based grading. Part of the interview was a LOGO test which determined if the student or teacher was more learning or grade-oriented. The participants were observed twice in the classroom and asked to document their experience in a *How It’s Going* journal.

**Discussion of Findings**
Research Question 1

Does moving to competency-based grading practices increase student motivation?

The results in Chapter Four indicated that the student motivation level decreased after implementation of competency-based grading. The common theme throughout the results was that although the competence and relatedness levels increased, the autonomy level had decreased amongst the students. Since all students lacked autonomy, I compared the two teachers’ transition differences. I also reported the students’ definitions of a motivated student and how they decreased in the autonomy category. Lastly, the connections from research and past studies explained the effects CBG had on motivating performance-approach students, grade-oriented students, and the influences on growth mindsets and implementation dips.

Lack of Autonomy

Mr. E reported in his journal that he not only transitioned from traditional grading to competency-based grading but also from lecturing and notes to more hands-on activities. In doing so, he overwhelmed himself and confused some of the students. His intentions were to create more activities that directly related to the standard, such as creating Venn diagrams. For another assignment, he allowed the students to create a brochure by allowing them to choose their own pictures and design to show mastery of the standard. However, students reported confusion about the expectations because of the detail in the instruction. I observed confusion and complaints from some students. Mr. E’s students originally lacked relatedness to him but after his transition to competency-based grading the students were able to speak more in class and some increased their connectedness to him. His students were younger and did not normally partake in discussion during his lecture and notes; therefore, some struggled to feel comfortable
around him. In observations, I noticed some students’ reacted to Mr. E and expressed they were not comfortable asking him for items such as, a pencil.

Mrs. M did not change her classwork during her transition, she continued with lecture and notes; however, she already had higher levels of relatedness to her students. They were older and participated more in lecture and notes; therefore, they never complained about her teaching strategies but still recognized they lacked autonomy in the class. She focused more on giving clear expectations of what she wanted them to learn from the standards and she focused on creating tests that evenly divided up the content standards.

**Definition of Motivated Students**

Question 2 of the interview asked students to define a motivated student. The number of times their definition correlated to certain topics was documented. From the first interview to the second, the four main topics effected were effort, completion of work, competence (learning), and autonomy. Definitions that involved effort went from 12 to 5, completion of work went from 9 to 1, competence went from 2 to 8 and autonomy went from 2 to 0. The way the participants defined motivated students changed after the implementation of competency-based grading because of the teachers’ focus and vocabulary. Both teachers changed their vocabulary from grades to learning through the transition; therefore, the competence (learning) topic increased. However, in order to “try” to learn, students still heard effort; therefore, students’ definitions continued to mention the effort topic. Neither teacher focused on completion of work as much during this time; therefore, there was a decrease in the amount of times it was mentioned in the final interview. Lastly, neither teacher stressed the word autonomy, choice, or acknowledged student’s feelings through this transition to CBG though they desired their
students to attain autonomy. In fact, Mr. E expressed in his first and second interview that a motivated student was one that took ownership of his or her learning.

**Extrinsic to Intrinsic Motivation**

According to McMillan’s (2017) research, students can be extrinsically motivated by being performance-approach goal-oriented and stay determined to take on new tasks to outwardly demonstrate their abilities. In this case, the grade-oriented students were more extrinsically motivated by grades; however, after the implementation of competency-based grading, they were able to see clearly what standards they had demonstrated or not which increased learning. For example, student 3 changed from grade-oriented to learning-oriented. She was moderately motivated and stayed moderately motivated; however, she went up a level on survey question 3, “I am motivated to learn” and she went up a level in competency. Similarly, the majority of the grade-oriented students who stayed grade-oriented, went up in their competency level the same as the learning-oriented students did. Another study indicated that performance-approach students had the ability to become mastery goal-oriented students once the students gained competence, their focus shifted from grades to an intrinsic desire to demonstrate their knowledge (McMillan, 2017). In the same way, the grade-oriented participants in this case study experienced a shift as they reported in their second interviews and journals, that grades were more about learning than for a score or post-secondary experiences. With more time, the performance-approach goal-oriented students, who were also grade-oriented, may have become mastery-goal oriented and become more intrinsically motivated to learn.

Student 2 (low motivated initially and low motivated after the study) and student 7 (low motivated initially and moderately motivated after the study) gained more of a growth mindset
and moved towards being mastery-goal oriented through the implementation of CBG. Although both were grade-oriented and stayed grade-oriented, they were the only two to express a desire to retake the assessment if given the opportunity because they knew they could do better. Neither teachers, nor the other ten participants had mentioned retakes; both students were impacted by the effects of seeing the exact standards they missed and innately desired to demonstrate their knowledge again if allowed to do so. Interestingly, similar to a study by Thiele (2017), even though neither teacher transitioned completely, (they did not leave out all past traditional grading nor did they explain CBG perfectly), the students still had an increase in growth mindset. When student 6 was interviewed for the second time, he had misinterpreted the competency-based grading scale that Mr. E had implemented. However, he figured out through the transition that CBG was about gaining clarity of what had or had not been learned. According to many studies, more students’ have been known to acquire more of a growth mindset with CBG rather than fixed (Franklin, 2017; Knight, 2017; Thiele, 2017).

Students’ in a past study showed a decrease in accountability at the start (implementation dip) but later changed, giving students the desire to take more ownership of their learning (Knight, 2017). My research demonstrated that being grade-oriented contributed to an implementation dip. In their initial interview, these particular students were more hesitant about how the grading system would affect their grade. According to their first interview, they did not particularly like doing assignments for the sake of learning if there was no grade. It was not surprising to discover that four out of five grade-oriented students still answered yes on question 6 of the LOGO assessment the second time they took it. The question asked: “Are written assignments (homework, projects, etc.) that are not graded a waste of a student’s time?” Mrs. M, though learning-oriented, also said yes to question 6 in the initial and second interview. Her first
entry in her journal was “My biggest concern is that competency-based grading will negatively affect my students’ overall grade. I worry that some of them may see a dramatic drop in their overall grade” (Mrs. M, journal). Three of the remaining five grade-oriented students were in Mrs. M’s class. Although, through the transition, the grade-oriented students experienced an increase in their competence levels, relatedness levels, and even one in their autonomy level. It took them longer to gain clarity that CBG was helpful but when they began to make connections that their grade was an expression of what they had learned, they caught on quickly and had positive feedback. Student 8 (highly motivated, stayed grade-oriented) reported that when “the test was divided by more bold standards it was more obvious than before…when learning the standard, it is easier to go back and see which standards you did well on as opposed to ones you didn’t do well on” (Student 8, journal). Student 10 (low motivated, changed to moderately motivated, stayed grade-oriented) stated, “I like the way the test was sectioned out, it felt like more questions…it was clearer to show what I know and don’t know” (Student 10, journal). Because of these results, I was led to believe that CBG can raise competency, relatedness, and if given enough time, autonomy. This would increase motivation in all students whether grade-oriented or learning-oriented.

**Research Question 2**

How does moving to competency-based grading affect student and teacher perception of the extent and depth of learning that has occurred?

**Learning Reflected by Traditional and Competency-Based Grades**

The traditional grade book has been known to oversimplify a student’s performance. It is much harder to pinpoint the skills a student needs to address if they are all lumped together in one grade per assessment (Goff, 2015). Student 11 (student of Mrs. M’s) reported in his second
interview that it was clear what they had learned “because it’s not all jumbled up into one” test (student 11, interview). Student 4 (student of Mr. E’s) also reported this way was better than “cramming tons of information into one giant test” (Student 4, journal). Mrs. M also reported in her journal, like one previous study (Peters et al., 2017), that “it was great to see which standards the majority did poor on” to determine what to spend more time on. Mrs. M stated in every lesson from the start of the study what the learning standards were; therefore, her students had a clearer understanding of the expectations much like other studies conducted in subjects like family and consumer science as well as physical education (Shippy, Washer, & Perrin, 2013). Mrs. M’s students found their new grades more meaningful because the grades showed their strengths and weaknesses (as student 9 reported in her journal), which is also what O’Connor and Wormeli (2011) found to be true in their previous study as well. Mrs. M’s students also had more time to consider how much they had learned with the implementation of CBG because she started the transition immediately.

**Teacher Grading Beliefs Effect Learning**

Mr. E’s transition was slower as he struggled with his professional judgement in his decisions of how to teach and assess a standard and with what detail. Mrs. M had been teaching the current content for four years; however, Mr. E was in his first year at a non-alternative school setting. Where Mrs. M just divided up her previous tests into standards, Mr. E struggled with trying to find a completely objective way of assessing the standards. According to some educational researchers, though, a completely objective procedure does not exist, nor should it (Brookhart et al., 2016). Being objective is the goal for most teachers’, but it is not likely that they will remove their professional judgment, which allows them their own autonomy as the classroom teacher. A teacher’s beliefs regarding grades effect their decision making on grades
which effects student grades and learning (McMillan, 2017). In this study, Mr. E’s students reported less competence which could be related to Mr. E’s combination of transitioning to CBG while also changing teaching strategies and figuring out his own beliefs on grading. He believed grades should be as objective as possible and should not be assessed with using multiple choice questions. He believed they gave students clues to the answers. Therefore, he brainstormed for a longer amount of time on how he wanted his competency-based graded test to look; meanwhile, his students did not see competency-based grading until the end of the study. I told him he could use any form of questioning and that it was up to his professional judgment to choose whichever style of questioning showed mastery best, but in his efforts to do it effectively, he continued his debate. Mr. E eventually chose multiple choice questions for his competency-based graded test, and Mrs. M chose multiple choice questions with one essay question.

A Change in the Purpose of Grades

In Brookhart’s (2011) Starting the Conversation about Grading, she made clear points about common differing opinions of grades that teachers have had which could affect student learning depending on the class they attended. Teachers have had many opinions on the purpose of grading, but there are three main common opinions. First, there are educators that have cared more about grades reflecting academic meaning than anything else. Another type of educator has predominately addressed the importance of effort, work ethic, and completion as equally valued as academics. Lastly, Brookhart reflected on the teacher that always considered the motivational aspect of grades. They made sure the student maintained hope; otherwise, the teacher feared they would lose the student (Brookhart, 2011). In this study, both teachers began like Brookhart’s first two teachers with the purpose of grades being about mastery of learning and also effort, work ethic, and completion.
In the initial interview, Mr. E compared the purpose of grades to his previous military experience. He stated, “The grade is saying to the teacher, I have earned this grade because this is what you wanted and this is what I produced” (Mr. E, Interview 1). He saw grades initially as a paycheck that “indicates how well you have done the job” (Mr. E, Interview 1). After explaining the comparison of grades to a paycheck, he said “So it is a paycheck in some ways, but in others it indicates mastery. The whole edu-speak thing: it indicates mastery of an ability, skill or standard” (Mr. E, Interview 1). In Mrs. M’s initial interview, she proclaimed, “The purpose of grades is to know whether or not a student is mastering what you teach them. In a perfect world we wouldn’t have grades, we would just sit in here and talk” (Mrs. M, Interview 1). Her past experiences from teaching middle school and high school with state testing led her to recall grades are also “for the purpose of preparing for an EOC or state test” (Mrs. M, Interview 1).

In the end, both teachers wound up being like the first teacher that Brookhart mentioned, focused on the academic meaning more than anything else. The biggest difference was Mr. E who began with the belief that grades were what you earned for showing up and completing work, later referred to grades as an indicator of whether a student had mastered the standard or not. He noted “and if not, then grades serve as a ticket to identifying what else needs to be done for the student to retake an assessment and then master the standard” (Mr. E, Interview 2). In the second interview, Mrs. M stated that the purpose of grades was “to evaluate students academically to see where they are and where I need to get them…more like a check to see what they know, still need to know, and what they have already mastered” (Mrs. M, Interview 2). Neither teacher mentioned earning or completing work in the final interview, but instead reported grades were for the academic purpose of mastering the standards.
Qualitative data collected through interviews, observations, and journals supported the second question because students and teachers did report the effects of competency-based grading on their extent and depth of learning. Students in Mrs. M’s class noted more of an increase in learning than students in Mr. E’s class noted. One trend that could have affected Mrs. M’s higher rate of learning was that more of her students were grade-oriented. When her students reported in their journals, they either claimed they liked the grading system because their grade was clearer to understand or their learning level was higher. This indicated that they were more attentive to grades during this study. Mrs. M’s students also saw more clarity in their mastery of the standards during this study because they became more familiar with the grading system. Mrs. M administered two tests during the study in order to assess student mastery of the standards she had been teaching. She did this so students were not as overwhelmed with a large number of graded assignments and were able to focus on mastery. Mrs. M’s relatedness levels were higher, as previously stated, but were also easier to observe as there were more signs of listening, asking questions, and eye contact.

**Recommendations for Teachers, Administrators, and School Districts**

Sometimes high school teachers have reached a point that information is plenty, but application is confusing, and they have needed direction (Webster, 2013). Therefore, the specific recommendations resulting from the study are:

1. When teachers begin to transition to competency-based grading it is important to identify what their purpose of grades are and have a personal philosophy of grading, so students are not confused when transitioning (c.f. Tierney et al., 2011). Then, clearly state that purpose and philosophy with all stakeholders. In doing so, this would increase consistency across a school district (cf. CCISD, 2017; c.f. Pijanowski, 2011).
2. When teachers transition it is best that only one thing is transitioned at a time. Ms. M was more conservative in her approach but managed a more effective transition.

3. Schools need professional development training, professional learning communities, instructional coaches, and teacher leaders to provide support in the transition (c.f. Knight, 2017; c.f. Urich, 2012). Some teachers are quick to adapt like Mrs. M and some have a lot of other thoughts they are trying to accomplish like Mr. E. They are both effective educators, but one needed more one on one time than the other to help the transition along. Taking time to implement teacher and administrator training through professional development sessions and professional learning communities will be necessary to insure proper implementation of CBG across a school and to allow for consistency in grading practices.

4. Patience is necessary for all stakeholders. They need to be reminded that the sense of choice and acknowledgement of student feelings, produces autonomy which produces the motivation (c.f. Riley, 2016). Also, to be patient through an implementation dip at the start (c.f. Knight, 2017) for grade-oriented students. I noticed this phenomenon with my study. I also noticed a decrease in student motivation. Further research with a larger sample group, as well as more time for observation and implementation, would yield data that are more accurate.

5. Administration needs to understand CBG and communicate with teachers about the progress being made, big or small, staying supportive and flexible (Knight, 2017; Urich, 2012).

6. To help teachers transition effectively, they should start with implementing three changes immediately. First, separate non-academic factors from academics to ensure grades reflect achievement (c.f. Guskey, 2000). In the study, both teachers eliminated extra credit,
participation, and behavior grades. Secondly, teachers should emphasize summative grades more than formative (c.f. Duncan & Noonan, 2007). Mr. E had previously allowed students to use notes on summative assessments because he felt that was more relative to the real world and work ethics, but realized it hindered his knowledge of what information the students knew independently. Lastly, teachers should offer relearn and recovery opportunities to demonstrate learning over time (c.f. Marzano & Heflebower, 2011; c.f. Miller, 2013). After the case study, both teachers reminded the students they could retake their assessments to further prove their mastery of the standards. Both Mrs. M and Mr. E implemented these three suggestions; however, each teacher understood the process differently. By providing ample training opportunities for teachers prior to implementing CBG, problems could be averted and the transition to CBG would be more effective.

Suggestions for Further Research

Research has shown there were statistically significant differences in students of autonomy-supportive teachers and were seen as more self-determining and intrinsically motivated to learn while they also exhibited higher levels of self-esteem (Deci et al., 1981; Riley, 2016). Having an autonomy supportive classroom has been known to not only encourage intrinsic motivation but also help students’ curiosity and a desire for challenges (Ryan, & Deci, 2000). Choice, acknowledgement of feelings, and opportunities for self-direction have been known to enhance intrinsic motivation because students had more autonomy. This study showed the importance of having all three categories of the Self-Determination Theory: competency, relatedness, but especially autonomy. Although two of the three were present in the participants, they needed to experience all three categories to be more intrinsically motivated. In general, it is difficult to see ownership or responsibility in students when the classroom is teacher-centered
rather than student-centered. Giving students great choice and voice in the classroom is paramount to creating this sense of ownership and responsibility among students. How to help teachers create a more autonomy-supportive classroom could be a topic for future research. Further studies could focus on different subjects and grades, with educators from states other than Tennessee.

Research in this case study would have been more definitive with more achievement data. Further research could be conducted with a quantitative study to look at changes in achievement scores by comparing two grade books: one traditional and one competency-based. This case study lacked achievement data which would be important to determine how CBG affects GPA and class ranking.

Mr. E showed an interest in project-based learning but was not sure how to grade projects using CBG. Further research could use a qualitative study with journals and observations to document how other outcome-based approach methods can work in sync with CBG to display students’ mastery of standards.

**Concluding Remarks**

In this study, I examined how competency-based grading affects student motivation and the perception of learning by using the Self-Determination Theory. According to the theory, three significant psychological needs must be present for an individual to foster self-motivation: competence, autonomy, and relatedness. The results indicated that a student must obtain all three needs or intrinsic motivation will decrease. The results of the study indicated autonomy as the keystone in Deci and Ryan’s Self-Determination Theory. Children are naturally driven by a need for competence (Deci & Ryan, 2008) which explains why competency was the category with the highest increase. Competency was the most noted category in the *How It’s Going*
journals as it was the easiest change for students to notice in the transition to competency-based grading.

In Stanley and Plucker’s (2008) previous study, relatedness to an educator or their outside community was vital for motivation and graduation rates to increase. It only takes one educator to make a student feel connected (Stanley & Plucker, 2008) which is why student relatedness increased in this study. Because of interviews which addressed teachers’ relatedness to students and their ability to relate the content to real life, teachers reported they were more conscientious. Mr. E increased his relatedness level from the initial interview to the second which was reflected in his students’ responses as they increased in both relatedness categories. Mrs. M was confident in her ability to connect with her students as well as connecting the content to real life; therefore, her relatedness level stayed at the highest level from the initial interview to the second. Her students also increased in both relatedness categories.

Feelings of intrinsic satisfaction were enhanced in multiple studies when an individual was given a sense of choice (autonomy), an acknowledgement of feelings, or an opportunity for self-direction (Deci, Schwartz, Sheinman, and Ryan, 1981; Rigby et al., 1992; Riley, 2016). However, in this study educators did not provide students with enough autonomy support. Students were not provided with learning opportunities that took into “consideration a student’s personal interests” or choice (Riley, 2016, p.3). Therefore, the teachers did not “reap the benefits of intrinsic motivation in their students” (Riley, 2016, p.3).

Competency-based grading can offer better feedback than traditional multi-dimensional grades by evaluating how well students have met measurable milestones and objectives. CBG helps increase student competency levels and relatedness levels. As teachers gain better training on how to acknowledge student feelings and choice, student autonomy should increase too.
When a student feels competent, autonomous, and related, they will be motivated intrinsically to learn whatever content the educator has to offer. Teachers, school districts, as well as post-secondary institutions can all benefit from more motivated, self-determined young adults in this world.
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Appendices
Appendix A

Teacher Survey

Teacher survey

1. strongly disagree 2. disagree 3. undecided 4. agree 5. strongly agree

1. In my classroom I teach students how to set their own goals towards mastery
2. In my classroom I teach students how to identify strategies for achieving their goals
3. In my classroom I teach students how to identify strategies for achieving their goals
4. In my classroom I teach students how to revise goals when necessary
5. In my classroom I teach students how to be motivated to learn
6. In my classroom I teach students how to articulate what is expected of them
7. In my classroom I teach students how to document the processes they use when working on tasks
8. In my classroom I teach students how to monitor their progress towards achieving mastery goals
9. In my classroom I teach students how to adjust their actions on their own to achieve goals
10. In my classroom I teach students how to modify strategies that are unsuccessful
11. In my classroom I teach students how to give constructive feedback to their peers
12. In my classroom I teach students how to use feedback from their teachers to improve on work
13. In my classroom I teach students how to use feedback from their peers to improve on their work
14. In my classroom I teach students how to revise versions of their work to improve on them
15. In my classroom I teach students how to reflect on their process of achieving their learning goals
16. In my classroom I teach students how to evaluate their own work
17. In my classroom I teach students how to work well with other students
Appendix B
Student Survey

**Student Survey** When students answered with 9-12 responses of 1 (strongly disagree) and 2 (disagree) the researcher considered the student lowly motivated. When students answered with 9-12 responses of 3 (undecided) and 4 (agree) the researcher considered them moderately motivated. When students answered with 9-12 responses of 4 (agree) and 5 (strongly agree) the researcher considered them highly motivated.

**student survey**

1. **strongly disagree** 2. **disagree** 3. **undecided** 4. **agree** 5. **strongly agree**

1. In my class I set my own learning goals (I decide what I need to learn).
2. In my class I identify strategies for achieving my goals.

3. In my class I am motivated to learn.
4. In my class I check my progress towards achieving my goals.
5. In my class I modify (correct) my actions on my own to achieve my goals.
6. In my class I modify (correct) strategies that are not helping me achieve my goals.
7. In my class I use comments from my teacher to improve on my work.
8. In my class I use comments from my classmate to improve on my work.
9. In my class I revise versions of my work to improve them.
10. In my class I evaluate my own work (I look at my work to see if it is good or needs improvement).
11. In my class I make connections between the amount of time I spend on my work, and my achievement.
12. In my class I work well with other students.
Appendix C

Microsoft Forms Visuals

Microsoft Forms Visual of Teacher Surveys

Microsoft Forms Visual of Student Survey
Appendix D

Teacher and Student Interview Questions

Teacher/Student Interview Questions & LO-GO interview questions

The researcher and student sit in the hallway or the side conference room to answer the following questions. The students will bring their How It's Going journal too for any other comments to discuss from their week in class.

1. **Teachers/students:** What is your perception of the extent and depth of learning that has occurred in your class?
2. **Teachers/students:** What do motivated students and teachers look and act like?
3. **Teachers/students:** What is your level of competence, autonomy, and relatedness in this classroom, or in this subject?
4. **Teachers/students:** What are the purpose of grades?

**QUESTIONS:** LO (Learning-oriented) GO (Grade-oriented)

Only asked on 1st & last interview (I will ask these questions allowed and they will answer with yes or no, allowing brief explanations if necessary)

1. Are you more concerned about seeing which questions you missed than you are with finding out your test grade?
2. Do you dislike courses which require ungraded out-of-class activities?
3. Do a teacher's comments on an essay test mean more to you than your actual test score?
4. Do you not find studying at home to be interesting or pleasant?
5. Do you find the process of learning new material fun?
6. Are written assignments (i.e., homework, projects, etc.) that are not graded a waste of a student's time?
7. Do you stay after interesting classes to discuss material with the instructors?
8. Do you try to find out how easy or hard an instructor grades before signing up for a course?
9. Do you participate in out-of-class activities even when extra-credit is not given?
10. When looking at a syllabus on the first day of class, do you turn to the section on tests and grades first?
11. Do you try to keep all your old textbooks because you like going back through them after the class is over?
12. Do you get irritated by students who ask questions that go beyond what we need to know for exams?
13. Do you do optional reading that your instructors suggest even though you know it won't affect your grade?
14. Are you tempted to cheat on exams when you’re confident you won’t get caught?
Appendix E

Parent and Student Participant Informed Consent Document (ICD)

Carson Newman University

Parent and Student Participant Informed Consent Document (ICD)

I am currently pursuing my Doctor of Education degree at Carson-Newman University and I am conducting research in order to gather information for my dissertation. This Informed Consent Document will explain about letting your child be a participant in a research study. It is important that you read this material carefully and then decide if you want to let your child be a volunteer.

PURPOSE:
The purpose of this research study is/are as follows:

To determine if there is an increase in motivation as students and teachers transition from traditional grading practices to competency-based grading practices.

To determine how does moving to competency-based grading affect student and teacher perception of the extent and depth of learning that has occurred?

DURATION:
Your student will be asked to complete a survey twice, be observed twice in their history class, and interviewed a total of three times. Interviews will not last longer than 30 minutes, though sometimes might require staying after school.

PROCEDURES:
The survey will involve the student logging onto their email, clicking on the survey monkey link. The observations will involve the researcher coming to the student’s class and observing their behavior in class. The individual interview will involve the student sitting outside of the
classroom being asked questions by the researcher. The teacher is fully aware and will make accommodations, so the students is in no way punished for class they miss. The student is asked to keep up with a *How It’s Going* journal where they can write down thoughts, questions, concerns and talk about them to the researcher at interview or observation times. The researcher will conduct a member check meaning they will ask the student to verify the key sections of what the researcher transcribed is correct to eliminate miscommunication.

**ALTERNATIVE PROCEDURES/TREATMENTS:**

There are no alternatives at this time.

**POSSIBLE RISKS/DISCOMFORTS:**

There are no known or expected risks or discomforts associated with your student participating in the interview, survey, or observation.

**POSSIBLE BENEFITS:**

The possible benefits of your student participating are the results of the study.

**FINANCIAL COSTS:**

There are no financial costs associated with your child’s participation with this study.

**VOLUNTARY PARTICIPATION:**

Participating in this study is voluntary. You may refuse to allow your child to participate. They can quit at any time. You may have them quit by calling Audra Fowler at 615.604.3084.

**CONTACT FOR QUESTIONS:**

If you have questions or problems at any time, you may call Audra Fowler at 615.604.3084. If you have questions about research and would like to make it independently of the researcher, you may contact the IRB department at Carson-Newman University at [irb@cn.edu](mailto:irb@cn.edu).

**CONFIDENTIALITY:**
Every attempt will be made to keep the study confidential. A copy of the records for this study will be kept by the researcher for at least five years following the study. The results of the study may be published and/or presented at meetings without naming your child as a subject. By signing below, you confirm you have read this document or you have had this document read to you. You will be given a copy of the signed document. You have been given the chance to ask questions. You freely and voluntarily choose to allow your child to be in this research project.

_______________________________________________                          ________________
Signature of Parent of participant                          Date

_______________________________________________                          ________________
Signature of participant                          Date

_______________________________________________                          ________________
Printed name of Parent of participant                          Date

_______________________________________________                          ________________
Signature of Researcher                          Date
I am currently pursuing my Doctor of Education degree at Carson-Newman University and I am conducting research in order to gather information for my dissertation.

This Informed Consent Document will explain about being a participant in a research study. It is important that you read this material carefully and then decide if you want to be a volunteer.

PURPOSE:
The purpose of this research study is/are as follows:

To determine if there is an increase in motivation as students and teachers transition from traditional grading practices to competency-based grading practices.

To determine how does moving to competency-based grading affect student and teacher perception of the extent and depth of learning that has occurred?

DURATION:
You will be asked to complete a survey twice, be observed twice in your history class, and interviewed two times. Interviews will not last longer than 30 minutes, though sometimes might require staying after school.

PROCEDURES:
The survey will involve you logging into your email, clicking on the survey monkey link. The observations will involve the researcher coming to your class and observing your behavior and the students’ behavior in class. The individual interview will involve being asked questions by the researcher. You are fully aware that some students will pulled out of your class to be
interviewed and will make accommodations, so the student is in no way punished for class they miss. You are asked to keep up with a *How It’s Going* journal where you can write down thoughts, questions, concerns and talk about them to the researcher at interview or observation times. The researcher will conduct a member check meaning they will ask you to verify if what the researcher transcribed from the audio recording is correct to eliminate miscommunication.

**ALTERNATIVE PROCEDURES/TREATMENTS:**

There are no alternatives at this time.

**POSSIBLE RISKS/DISCOMFORTS:**

There are no known or expected risks or discomforts associated with you participating in the interview, survey, or observation.

**POSSIBLE BENEFITS:**

The possible benefits of participating are the results of the study.

**FINANCIAL COSTS:**

There are no financial costs associated with your participation with this study.

**VOLUNTARY PARTICIPATION:**

Participating in this study is voluntary. You may refuse to participate. You can quit at any time. You may quit by calling Audra Fowler at 615.604.3084.

**CONTACT FOR QUESTIONS:**

If you have questions or problems at any time, you may call Audra Fowler at 615.604.3084. If you have questions about research and would like to make it independently of the researcher, you may contact the IRB department at Carson-Newman University at irb@cn.edu.

**CONFIDENTIALITY:**
Every attempt will be made to keep the study confidential. A copy of the records for this study will be kept by the researcher for at least five years following the study. The results of the study may be published and/or presented at meetings without naming you as a subject. By signing below, you confirm you have read this document or you have had this document read to you. You will be given a copy of the signed document. You have been given the chance to ask questions. You freely and voluntarily choose to be in this research project.

_______________________________________________                           ________________
Signature of participant                           Date

_______________________________________________                           ________________
Printed name of participant                           Date

_______________________________________________                           ________________
Signature of Researcher                           Date
Appendix G

How It’s Going journal

How It’s Going Journal

Teachers: Use this journal to reflect in each week (daily, every other day) as you transition from traditional grading to competency-based grading. Jot down your fears, worries, and concerns. List your positive findings. List your negative findings. Explain what makes it hard to transition and what part of your old strategies are the hardest to let go of. Describe how you think the kids are adapting.

Students: Use this journal to reflect in each week (daily, every other day) as you experience a different grading practice in your history class. Jot down anything you are confused about, or do not understand. List any positive things about this change. List any negative things about this change.
Appendix H

Institutional Review Board Approval

From: IRB
Sent: 3/15/18, 7:42 PM
To: Brian Sohn
Subject: RE: application for Audra Fowler
This request is approved

In His service,

Gregory A. Casalenuovo, PhD,
APRN, FNP-BC, FNP-C
Professor of Nursing
Carson-Newman University
C-N Box 71883
Jefferson City, TN 37760

Office: Heritage Hall #11
Phones: (865) 471-4574, fax
Appendix I

District Permission to Research

From: Dr. Cathy Beck
<cathy.beck@ccstn.org>
Sent: Tuesday, February 27, 2018 4:54 PM
Subject: Re: Request research project approval
To: Audra S Fowler
<asfowler@cn.edu>

Audra Fowler has my permission to complete her research entitled, “Transitioning to Competency-based Grading.” Dr. Cathy Beck

Sent from my iPhone
Hello History teachers!!

I know everyone has had a long week! I am sending all of you this email to ask you to participate in a case study. As some of you already know, I am working on my doctorate at Carson-Newman University and I am in the process of collecting data for my dissertation about transitioning from traditional grading to competency-based grading. I have received permission from Dr. Cathy Beck to do some research with high school history teachers.

The interviews and observations would be conducted in your classroom and a survey would be sent through Microsoft Office Forms. The initial meeting would require us coming together for me to ask questions about your current grading practices and how we can transition your grade book and assessments. I can come out to your school and meet with you and it would take a little over an hour.

Please email me back and let me know if you would be willing to participate. I know the next few weeks are busy for all of you, but I would like to come out the week of February 26th. If there is a day in that week from 3:30-4:45 that absolutely does not work for you, if you could let me know.

Thanks so much for your help in advance! I look forward to working with all of you!

Audra Fowler
Dean of Students
Cheatham County Central High School

This email may contain privileged, confidential, or other legally protected information. If you are not the intended recipient (even if the email address above is yours), you may not use, copy, or re-transmit it. If you have received this by mistake please notify us by return email, then delete.
## Appendix K

### Student Information

<table>
<thead>
<tr>
<th>First survey</th>
<th>2nd survey</th>
<th>In my class I am motivated to learn.</th>
<th>Learning or Grade Oriented</th>
<th>2nd time</th>
<th>Competency</th>
<th>Autonomy/2nd time</th>
<th>Relatedness to teacher/2nd time</th>
<th>17-18 Absences</th>
<th>17-18 Discipline Infractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-H</td>
<td>H</td>
<td>5</td>
<td>L</td>
<td>L</td>
<td>4-4</td>
<td>2-3</td>
<td>2-2</td>
<td>4-4</td>
<td>11</td>
</tr>
<tr>
<td>8-H</td>
<td>H</td>
<td>5</td>
<td>L</td>
<td>L</td>
<td>4-4</td>
<td>1-2</td>
<td>3-4</td>
<td>3-4</td>
<td>5</td>
</tr>
<tr>
<td>8-M</td>
<td>M</td>
<td>4</td>
<td>L</td>
<td>L</td>
<td>3-3</td>
<td>2-2</td>
<td>3-3</td>
<td>3-3</td>
<td>0</td>
</tr>
<tr>
<td>8-H</td>
<td>H</td>
<td>5</td>
<td>both</td>
<td>G</td>
<td>3-4</td>
<td>2-3</td>
<td>3-3</td>
<td>4-4</td>
<td>11</td>
</tr>
<tr>
<td>8-M</td>
<td>M</td>
<td>5</td>
<td>G</td>
<td>L</td>
<td>3-4</td>
<td>3-1</td>
<td>3-2</td>
<td>3-3</td>
<td>0</td>
</tr>
<tr>
<td>1-M</td>
<td>M</td>
<td>5</td>
<td>5</td>
<td>L</td>
<td>4-4</td>
<td>3-2</td>
<td>3-4</td>
<td>3-4</td>
<td>10</td>
</tr>
<tr>
<td>9-M</td>
<td>M</td>
<td>5</td>
<td>3</td>
<td>L</td>
<td>4-4</td>
<td>3-3</td>
<td>4-4</td>
<td>4-4</td>
<td>11</td>
</tr>
<tr>
<td>12-M</td>
<td>M</td>
<td>5</td>
<td>2</td>
<td>L</td>
<td>? Absent</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>5-L</td>
<td>H</td>
<td>5</td>
<td>both</td>
<td>? Absent</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>5-L</td>
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<td>5</td>
<td>5</td>
<td>L</td>
<td>3-3</td>
<td>3-1</td>
<td>4-3</td>
<td>4-3</td>
<td>11</td>
</tr>
<tr>
<td>10-L</td>
<td>M</td>
<td>3</td>
<td>G</td>
<td>G</td>
<td>3-1</td>
<td>3-1</td>
<td>1-2</td>
<td>2-3</td>
<td>11</td>
</tr>
<tr>
<td>7-L</td>
<td>M</td>
<td>5</td>
<td>G</td>
<td>3-3</td>
<td>3-2</td>
<td>4-3</td>
<td>4-3</td>
<td>11</td>
<td>12</td>
</tr>
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</table>
## Appendix L

### Coded Interview Question 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
<th>Evidence from the data (12 interviews with students—how many times referenced)</th>
<th>Mr. E</th>
<th>Mrs. M</th>
<th>Evidence from the data (12 interviews with students—how many times referenced)</th>
<th>Mr. E</th>
<th>Mrs. M</th>
</tr>
</thead>
<tbody>
<tr>
<td>(E) Effort</td>
<td>They perceived they had learned in depth when they tried, or put in effort.</td>
<td>1x</td>
<td>1x</td>
<td>1x</td>
<td></td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>(C) Completion</td>
<td>They perceived they had learned in depth when they completed work.</td>
<td>1x</td>
<td>1x</td>
<td>1x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(CP) Competence</td>
<td>They perceived they had learned in depth in this class when it was clear what they were learning</td>
<td>9x</td>
<td>1x</td>
<td>1x</td>
<td>10x</td>
<td>1x</td>
<td>2x</td>
</tr>
<tr>
<td>(-CP) Not Learning</td>
<td>They perceived they had either not had many in depth learning experiences or none.</td>
<td>3x</td>
<td>1x</td>
<td></td>
<td>3x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A) Autonomy</td>
<td>They perceived in depth learning was attributed to their ownership or choice in learning</td>
<td>1x</td>
<td></td>
<td></td>
<td></td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>(R) Relatedness</td>
<td>They perceived they had learned in depth when the content was related to something else.</td>
<td>4x</td>
<td>1x</td>
<td>1x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-R) Not Related</td>
<td>They perceived they had not learned in depth when the content was not related to something else.</td>
<td>2x</td>
<td></td>
<td></td>
<td></td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>(PS) Post-Secondary</td>
<td>They perceived they learned in depth because of post-secondary</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(G) Grades</td>
<td>They perceived they learned in depth because of grades</td>
<td>0</td>
<td></td>
<td></td>
<td>1x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(P) Personality</td>
<td>They perceived they learned in depth because of personality</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix M

Coded Interview Question 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
<th>Evidence from the data (12 interviews with students—how many times referenced)</th>
<th>Mr. E (about students)</th>
<th>Mrs. M (about students)</th>
<th>Evidence from the data (12 interviews with students—how many times referenced)</th>
<th>Mr. E (about students)</th>
<th>Mrs. M (about students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(E) Effort</td>
<td>They used terms involving effort.</td>
<td>be challenged, try, put effort in, participate (talks) xxx, good attendance xxx, ready to go</td>
<td>ask questions</td>
<td>good attendance</td>
<td>ask questions</td>
<td>awake, prepared for class, listens, pays attention</td>
<td>hardworking</td>
</tr>
<tr>
<td>(C) Completion</td>
<td>They used terms involving completing work.</td>
<td>On track, doesn't procrastinate, does notes, does what teacher says xxx, gets work done</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(CP) Competence</td>
<td>They used terms involving learning.</td>
<td>Ready to learn, wants to learn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-CP) Not Learning</td>
<td>They used terms involving not learning.</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A) Autonomy</td>
<td>They used terms involving ownership or choice.</td>
<td>They care about the outcome, goal oriented</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(R) Relatedness</td>
<td>They used terms involving relatedness.</td>
<td>none</td>
<td>interested</td>
<td></td>
<td></td>
<td>wants to relate content to outside class</td>
<td></td>
</tr>
<tr>
<td>(-R) Not Related</td>
<td>They used terms involving lack of relatedness.</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(PS) Post-Secondary</td>
<td>They used terms involving post-sec.</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(G) Grades</td>
<td>They used terms involving grades.</td>
<td>They care about grades, ready to do whatever for a grade, maintains good grades</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(P) Personality</td>
<td>They used terms involving personality traits.</td>
<td>Smart, happy, energetic, passionate, responsible, outgoing, active, helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


### Appendix N

**Coded Interview Question 4**

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
<th>Evidence from the data with 12 interviews. (How many times)</th>
<th>Mr. E</th>
<th>Mrs. M</th>
<th>Evidence from the data with 12 interviews. (How many times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(E) Effort</td>
<td>The purpose of grades are to show the effort a student puts in.</td>
<td>4x</td>
<td>1x</td>
<td>0</td>
<td>1x</td>
</tr>
<tr>
<td>(C) Completion</td>
<td>The purpose of grades are to show a student completed the work.</td>
<td>3x</td>
<td>1x</td>
<td>0</td>
<td>1x</td>
</tr>
<tr>
<td>(CP) Competence</td>
<td>The purpose of grades are to see how competent a student is, or what they have learned</td>
<td>7x</td>
<td>1x</td>
<td>1x</td>
<td>16x</td>
</tr>
<tr>
<td>(CP) Not Learning</td>
<td>The purpose of grades have nothing to do with learning.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(A) Autonomy</td>
<td>The purpose of grades are based on autonomy</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(R) Relatedness</td>
<td>The purpose of grades are based on relatedness</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(R) Not Related</td>
<td>The purpose of grades are not based on relatedness</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(PS) Post-Secondary</td>
<td>The purpose of grades are to get into a good college, make a better future.</td>
<td>3x</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(G) Grades</td>
<td>The purpose of grades revolve around making good grades for the sake of grades.</td>
<td>3x</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(P) Personality</td>
<td>The purpose of grades are based on personalities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
## Appendix O

Coded Mr. E Observation 1

<table>
<thead>
<tr>
<th>Student</th>
<th>Motivation level &amp; LOGO</th>
<th>Body Language</th>
<th>Ask questions</th>
<th>Follow instructions/complete work</th>
<th>Relatedness to teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Middle Learning</td>
<td>on task until chatting with S2</td>
<td>No</td>
<td>Yes, until chatting with S2 and not caring about what Mr. E said</td>
<td>Level 3 on interview-respect is given most of the time</td>
</tr>
<tr>
<td>2</td>
<td>Low Grade</td>
<td>Digging in bag, distracted, avoiding teacher, staring down</td>
<td>No-needed to ask for pencil but refused to ask teacher</td>
<td>No- barely worked on study guide once he got pencil, still did not finish work</td>
<td>Not a lot of relatedness-Level 2 on interview-doesn’t feel comfortable asking the teacher for a pencil</td>
</tr>
<tr>
<td>3</td>
<td>Middle Grade</td>
<td>Ready for instruction, not very engaged</td>
<td>No</td>
<td>Yes-and finished study guide</td>
<td>Level 3 on interview-doesn’t make eye contact with teacher ever</td>
</tr>
<tr>
<td>4</td>
<td>High Learning</td>
<td>Came in late &amp; that bothered her</td>
<td>Yes-to make sure she got materials</td>
<td>Yes-got to work right away but didn’t get finished</td>
<td>Level 3 on interview-seems to care more about content than teacher</td>
</tr>
<tr>
<td>5</td>
<td>Low Both</td>
<td>Got organized, made the work look easy by getting done quick</td>
<td>No</td>
<td>Yes, finished early before others</td>
<td>Level 1 on interview-just wants to get the work done, has no interaction with teacher</td>
</tr>
<tr>
<td>6</td>
<td>High Learning</td>
<td>Engaged, hanging on every word</td>
<td>No</td>
<td>Yes, finished early</td>
<td>Level 3 on interview-respectful with eye contact</td>
</tr>
</tbody>
</table>
Appendix P

Coded Mr. E Observation 2

<table>
<thead>
<tr>
<th>Student</th>
<th>Motivation level &amp; LOGO</th>
<th>Body Language</th>
<th>Ask questions</th>
<th>Follow instructions/complete work</th>
<th>Relatedness to teacher-up or down from Obs.1 to 2?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High</td>
<td>Into the lesson, was teaching his partner about content.</td>
<td>Asked 3 ?'s- Answered 7 ?'s</td>
<td>Yes-with details! He &amp; partners made ppt with pics and lots of detail</td>
<td>Level 3 to 4 on interview-responds well to ?'s and being challenged. Listens and gives eye contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Never looks at Mr. E. Doesn’t help partners with work, messes with whatever in</td>
<td>Answered 2 ?’s under his breath and no one heard him</td>
<td>Responded to quick challenge ?’s: “google this”- otherwise was not on task the entire time</td>
<td>Level 2 to 2 on interview-giggles when Mr. E talks, was told to listen twice &amp; pay attention, to put his phone up.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Middle</td>
<td>Works diligently, but doesn’t care much during class</td>
<td>Asked 1 question to clarify</td>
<td>Yes, completes assignment and follows directions</td>
<td>Level 3 to 3 on interview- talks while Mr.E talks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Very focused, she is doing the majority of work w/partner</td>
<td>Grace asked 2 ?’s and answered a few questions</td>
<td>Yes, completes assignment and follows directions</td>
<td>Level 3 to 4 on interview-listens whole time and looks at Mr. E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>High</td>
<td>Absent</td>
<td>absent</td>
<td>absent</td>
<td>Level 1 on interview-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Both</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Middle</td>
<td>Trying to focus but S.2 &amp; other were distracting</td>
<td>Didn’t ask any ?’s</td>
<td>He did the whole assignment w/out help from S.2 &amp; other kid</td>
<td>Level 3 to 3 on interview-Listened &amp; gave eye contact</td>
</tr>
</tbody>
</table>
## Appendix Q

### Coded Mrs. M Observation

<table>
<thead>
<tr>
<th>Student</th>
<th>Motivation level &amp; body language</th>
<th>Ask questions</th>
<th>Follow instructions/complete</th>
<th>Relatedness to teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Low grade Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Level 4 on interview</td>
</tr>
<tr>
<td>8</td>
<td>High reserved, not bored but not totally engaged</td>
<td>No</td>
<td>committed to notes whole time &amp; listening</td>
<td>Level 4-continues listening when others check out</td>
</tr>
<tr>
<td>9</td>
<td>Both middle Learning Watches Mrs. M whole time, takes notes, doodles on notes</td>
<td>3x</td>
<td>Off task talking when done with notes, gets snack out while Mrs. M talks</td>
<td>Level 4-eye contact, listening, engaged in questioning, hangs on every word</td>
</tr>
<tr>
<td>10</td>
<td>Low learning Bored, hands in head, legs stretched out</td>
<td>No</td>
<td>Stays committed to notes, listening</td>
<td>Level 2-respects teacher with note taking but is bored</td>
</tr>
<tr>
<td>11</td>
<td>High learning Leans on desk intensely taking notes-school sports gear</td>
<td>1x</td>
<td>Puts notes up when done, gets out snack while still listening</td>
<td>Level 4-he cares about the notes and pleasing teacher when she says look here or there or raise your hand</td>
</tr>
<tr>
<td>12</td>
<td>Middle learning Struggles looking from notes to screen to take notes &amp; keep up</td>
<td>No</td>
<td>Stays committed to notes, listening &amp; catching up from missing yesterday</td>
<td>Level 3- trying to do everything she asks of him- when she says look here or there or raise your hand</td>
</tr>
</tbody>
</table>
Appendix R

Coded Mrs. M Observation 2

<table>
<thead>
<tr>
<th>Student</th>
<th>Motivation Level &amp; LOGO</th>
<th>Body Language</th>
<th>Ask ?'s</th>
<th>Follow Instruction(s)/Complete work</th>
<th>Relatedness to teacher-up or down from Obs.1 to 2?</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Middle/Grade</td>
<td>ABSENT</td>
<td>absent</td>
<td>absent</td>
<td>Level 4 to 3</td>
</tr>
<tr>
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</tr>
<tr>
<td>8</td>
<td>High/Grade</td>
<td>none</td>
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<tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Middle/Learning</td>
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<tr>
<td>10</td>
<td>Middle/Grade</td>
<td>none</td>
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</tr>
<tr>
<td>11</td>
<td>High/Learned</td>
<td>absent</td>
<td>absent</td>
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<td>Level 4 to 4</td>
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<tr>
<td>12</td>
<td>Middle/Learned</td>
<td>absent</td>
<td>absent</td>
<td></td>
<td>Level 3</td>
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