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## **The Effects of Standards-Based Grading and Strategies for Implementation: A Review of Literature**

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The Effects of Standards-Based Grading and Strategies for Implementation: A Review of  
Literature

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A Literature Review Presented

in Partial Fulfillment of the Requirements

For the Degree of Master of Education

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### **Abstract**

Grading systems in many secondary schools often follow a traditional system where students accumulate points from many different components in class which are then weighted to equate to one letter grade representing everything. More school leaders are beginning to recognize faults that traditional grading can have in lacking clarity, coherence, and validity in what grades report of student learning in a course, and therefore, are turning to a standards-based grading system. Transforming an entire grading system in a secondary school is a major undertaking that can have many implications. However, it is challenging for school leaders to be prepared for what to expect with grading reform and understand if it would be highly beneficial for their school. This review examines why schools are choosing to implement such a major change, beneficial strategies that other schools have employed in this transition, challenges that may appear in the transition, and the effects seen after implementing a standards-based grading system.

### **The Effects of Standards-Based Grading and Strategies for Implementation**

The topic of grading in education has been and is still being highly debated amongst educators. The number of different perspectives about grading processes and procedures between educators is vast, though all may very well be justified in the argument that they believe their grading system truly is best for student learning. Often times, teachers do not have classes about grading in their teacher-preparatory programs, so they end up relying on traditional practices or however a mentor or co-teacher guided them (Gullen, Gullen, & Erickson-Guy, 2012). While there is legitimacy in the fact that grading should have some variation between different subjects as well as different age groups, the truth of the matter is that the varying practices within grading systems utilized in schools across the United States show just how disunified teachers are in understanding what grades are for and recognizing fully what is best for student learning. In fact, high school teachers' grading practices are rarely evaluated (Link, 2020). This disunification ends up creating more confusion than necessary for all stakeholders of a school and it is up to school leaders to establish systems that result in excellent educational practices. The problem is that schools do not have the time needed to gain the understanding, expertise, and essential communication in order to undertake the immense task of a complete grading reform. Many educators and parents will not want to pursue change if there is a general notion that things are going well within their school.

The most prominent discussion occurring over the past two decades regarding grading is that of standards-based grading versus traditional grading systems. A typical traditional grading system generally consists of a teacher giving points, often allocated to several weighted categories, to a student for a variety of components that he or she demonstrates in a class. These components may include formative and summative assessments, group work, homework, extra

credit, participation, effort, and whatever else the teacher wants to add to that list. While it is probable that teachers who utilize traditional grading systems still may align their curriculum well with the state or national standards, their grading tends to reflect more than just a student's learning of those standards and therefore is, in essence, a compilation of academic and nonacademic components all in one percentage grade for the course.

Proponents of a standards-based grading system on the other hand argue that traditional grading methods do not reflect fairness or validity in what the grade for the course communicates about a student's learning (Guskey, 2013). Standards-based grading seeks to eliminate the nonacademic factors, like effort or behavior, from students' final grades and primarily reflects a student's mastery of the standards for the course (Brookhart, 2011). This system typically holds the belief that students can attain more proficiency of a standard over time and, therefore, should be given the opportunity to demonstrate that growth and have that knowledge be reflected in the grade. While the other components of behavior or growth are not calculated in the actual grade, teachers still may provide a separate report of these categories.

As more research continues to be published about standards-based grading and as more school leaders are learning about the benefits of this system, there is an increasing number of schools that are implementing a standards-based grading system (Lamarino, 2014). Therefore, providing a review of the recent literature that is available about this subject seems fitting in order to help advise other school leaders in this pursuit. Even though there is an increasing amount of research about this topic, there are still gaps in the compilation of literature and empirical evidence about the implementation process and effects of standards-based grading, especially for secondary schools. Overall, the purpose of this literature review is to gather the recent research about standards-based grading reform and the effects of it into one place in order

to better equip school leaders along with teacher leaders wanting to make this transformation happen in their own schools. This gained knowledge will help the reform process go smoother and give leaders an idea of what to expect with this big of a change. Since elementary educators tend to align their grading practices with elements of standards-based grading more so than secondary educators (Link, 2018) and often more resistance is found in the implementation of it at secondary schools (Scarlett, 2018), there will be more of a focus on the secondary level rather than the elementary level in this literature review.

The research questions being answered in this review include: how can secondary school leaders implement a standards-based grading system in a beneficial way for their school and all stakeholders impacted by this change, and what are the positive and negative effects of standards-based grading systems?

This literature review begins with an overview and presents the recent history of the standards-based grading system. Insight is given into what the standards-based grading system entails which incorporates reasoning as to why schools choose to reform their grading system to a standards-based system. Recommended strategies and the anticipated challenges when a school changes to a standards-based grading system are presented along with the positive and negative effects that the implementation process can have on a school. With an understanding of the various strategies and challenges to the reform process as well as the aftereffects of this reform, school leaders will be able to make the best decisions about how to progress their school towards educational transformation.

## **Review of the Literature**

### **Why are schools choosing standards-based grading?**

Standards-based grading is becoming increasingly prevalent in schools in the U.S. as more schools are moving away from the traditional system of aggregating points towards one letter grade per subject and implementing separate grades for student learning and work habits (Bisaha, 2019, as cited in Townsley & Buckmiller, 2020). Some states have also developed policies requiring schools to utilize some aspects of the standards-based grading system (Colette, 2015, as cited in Townsley & Buckmiller, 2020). Townsley, Buckmiller, and Cooper (2019) further examined the increase of schools beginning standards-based grading in their recent exploratory descriptive study where they gathered data through surveys from Iowa high school principals about their standards-based grading implementation plans for the future. These surveys included three Likert-scale questions and one open-ended question which were then analyzed through coding by themes. Of the total 100 responses received, the results indicated that a strong majority (79%) of principals were planning or strongly planning to implement standards-based grading in the next five years (Townsley, et al., 2019). The findings of this study concluded that a considerable amount of school leaders are examining standards-based grading options while they are questioning the traditional grading system being used.

A traditional grading system commonly using percentage grades is seen as coming about not through research on grading or by educators, rather mainly from technology conveniences and those who developed the online systems (Guskey, 2013). Even though it is typically acceptable for a student to receive a zero on an assignment for one reason or another, more educators are recognizing the mathematical inaccuracy of this and how much it distorts a student's grade (Guskey, 2013; Campbell, 2012). Hunter Brimi (2011) explored the reliability of



grading through conducting a study on 90 high school teachers, who all received the same training regarding grading, and asked them to grade the same English research paper with a total of 100 points possible. The high school teachers created their own rubric to guide their grading and of the 90 participants, 73 returned grades that were acceptable for the requirements of the study. Of all the grades given on this same paper, there were 30 different numbers, ranging from 50 points to 96 points (Brimi, 2011). This lack of reliability is seen in teachers' judgments not being aligned and this can drastically change the outcome of a student's grade.

The issue of teacher subjectivity in grading is not a new occurrence. Susan Brookhart found even back in 1994 that teachers' perceptions of grading presented many inconsistencies (as cited in Brookhart, et al., 2016) and since that year, many studies show teachers choosing to incorporate achievement, effort, behavior, improvement, and attitudes all into their grades (Brookhart, 2011). The accumulation of points through factors not related to student learning is a characteristic of a traditional grading system which leads to grades not being meaningful (Muñoz & Guskey, 2015; Guskey, 2013; Guskey, 2011) and even counterproductive (Wegwert, 2012).

Rick Wormeli (2018) believes that allowing teachers to choose this compilation of grading does not provide an accurate picture of student learning (as cited in Lehman, et al., 2018). Gullen, Gullen, and Erickson-Guy (2012) furthered this notion even more when he produced a framework that guided conversations in schools contemplating the grading reform process. The researchers determined that the first step needed was to make it apparent to teachers how much their grading systems differ from their colleagues so Gullen, Gullen, and Erickson-Guy (2012) gave groups of teachers in the same school survey questions to answer. The survey questions were asked aloud while the teachers were required to raise their hands to answer the questions. The teachers were encouraged to look around to observe the differences portrayed

from their colleagues during the survey question response time. The findings from this experiment concluded that the inaccuracy of grades had negative implications for colleagues who were expecting a certain level of understanding from students as depicted from letter grades (Gullen, et al., 2012). The vast difference of grading procedures between teachers from the same school resulted in student stress and confusion for students.

Recognizing the faults of traditional grading systems and understanding that a standards-based grading system provides a solution for these faults is why many schools are looking to reform their grading systems. The creation of common state standards and the pressure to align curriculum with those standards has pushed some schools to adopt a new grading system that better accomplishes that task (Muñoz & Guskey, 2015; Welsh, et al., 2013). Where a traditional grading system combines points and percentages from various categories, and usually emphasizes student effort (Brookhart, 2011), a standards-based system has been defined as essentially a reflection of what students learn and the knowledge achieved based on the standards of a course (O'Connor, 2017, as cited in Guskey, Townsley, & Buckmiller, 2020; Brookhart, 2011; Beatty, 2013, Duker et al., 2015, Elsinger & Lewis, 2019, Lewis, 2019, Stange, 2018, as cited in Townsley & Schmid, 2020; Muñoz & Guskey, 2015), hence, affirming that all the work in a course is purposeful (Kunnath, 2017). This standards-based grading system entails the common components of allowing students multiple opportunities to demonstrate their understanding (Townsley & Schmid, 2020), taking homework out of the grade and using it primarily for feedback opportunities (Wilcox, 2011, as cited in Townsley, 2019) as well as extra credit being eliminated since it misrepresents the grade's reflection of student mastery of standards (Hanover Research, 2014, as cited in Lehman, et al., 2018). Even back in 2006, Marzano promoted the belief that this concept of standards guiding grading combined with

providing frequent feedback allows for grades to accomplish their most important purpose (as cited in Lehman, et al., 2018).

The reporting side of standards-based grading generally is expected to look different than a traditional grading system. Multiple researchers affirm that GPAs do not include any nonacademic factors but those behavior aspects, such as effort, responsibility, attendance, and attitude, can still be included through reporting on the multiple categories that separates academic achievement from behaviors (Guskey, 2006; Guskey & Bailey, 2010, as cited in Guskey & Jung, 2012; Muñoz & Guskey, 2015; Brookhart, 2011). To resolve the issue of inaccuracy with traditional percentage grades and eliminate the inability to recover from a zero grade, a standards-based system does not use the 100-point scale, which is a scale that has more levels of failure, but rather incorporates a 0-4 scale (Guskey, 2013).

With a grading system that reports very differently from a traditional one that most people are used to seeing, the reactions may be diverse. Muñoz & Guskey (2015) affirm that educators need to ensure that grading and reporting is reliable and Bourgeois and Boberg (2016) consider that traditional grading reports do not provide effective communication (as cited in Muñoz & Guskey, 2015). Swan, Guskey, and Jung (2014) sought to better understanding teachers' and parents' perceptions of standards-based report cards compared to traditional report cards. Their exploratory mixed methods study was conducted through surveying teachers and parents of 3<sup>rd</sup>-6<sup>th</sup> graders at one school in a mid-sized district. The teachers from this school were 24 volunteers who agreed to pilot a standards-based grading report card. Each parent survey used a scale to rate the report cards on amount, quality, clarity, and ease in understanding the information provided along with a section for open-ended comments. The survey was also given to teachers from two other school districts who were considering implementing standards-based

grading. The teachers producing the report cards were asked via a separate survey about the amount of time it took to complete the reports. The parent group had a 45% response rate, the considering teachers a 59% response rate, and 100% response rate came from the teachers who created the standards-based report cards. Overall, both the parents and the implementing teachers had positive responses that were not statistically different about each category of information given in the report cards. The teachers considering implementing standards-based grading responded positively about the amount and quality of information, however, they had considerably fewer positive responses than the parents in the categories of clarity and ease of understanding the information. Though positive about the information displayed, 13 of the 47 comments given by parents stated that they still would like to see a number percentage displayed on the report card. The implementing teachers conveyed that the standards-based report cards definitely took more time to complete than the previous traditional report cards, though they still found them valuable (Swan, Guskey, & Jung, 2014).

### **Implementation of standards-based grading**

A school choosing to completely revamp its grading system is not a common occurrence, so it can be challenging for school leaders to know how to go about that change well. Gullen, Gullen, and Erickson-Guy (2012) advises school leaders to begin with learning from other schools and Vogel (2012) encourages schools to make in-person visits to other school districts employing a standards-based system to see first-hand how the implementation process works. This recommendation of exploring what other schools have experienced and enacted in their own grading reform processes supports the goal of this section of the literature review which is for school leaders to understand what the research says about the transition to and implementation of

a standards-based grading system already initiated by other schools in order to better design and guide their own reform process.

While there are many scholarly words of advice for implementing standards-based grading, there are not many empirical studies on the standards-based implementation process. The few studies related to this topic come to conclusions of various themes that are seen as needed with grading reform. Knight and Cooper (2019) conducted a qualitative, phenomenological study of seven high school teachers from five different schools that were all using standards-based grading practices in their classrooms. The researchers found that only one teacher was reporting behaviors separate from the academic grade, three teachers used a small percentage to report particular behaviors, two did not report at all on behaviors, and one applied 21<sup>st</sup> century skills as the curriculum. Interview transcripts, researchers' observations, and documents were all analyzed and coded, using both the software program NVivo and the researchers own notes. Through several rounds of coding and narrowing down what multiple teachers shared common thoughts on, 8 main themes were observed. These overarching themes primarily pertained to effects seen after implementing standards-based grading, which will be reviewed in a later section, however, within these themes were various reflections on the need for support while implementing standards-based grading. The reflection data suggested the need for administration to listen to teachers and meet them in their hesitations with standards-based grading and provide solutions to barriers, as well as the need for more teacher collaboration time (Knight & Cooper, 2019). Multiple other scholars affirm this notion that teachers ought to be able to share their grading practice beliefs in a safe, honest way (Campbell, 2012) while letting these conversations lead to an agreement to try out some standards-based practices (Brookhart, 2011; Peters & Buckmiller, 2014). A major theme that appeared was needing to compromise

between new standards-based grading practices and the traditional grading practices, particularly with reporting systems (Knight & Cooper, 2019). Even though traditional letter grades are not considered as truly reflecting standards-based grading, some schools decided that in order to please stakeholders, they would still translate the standards-based grades into letter grades for the reporting process (Proulx, Spencer-May, & Westerberg, 2012; Knight & Cooper, 2019; Peters & Buckmiller, 2014). Also noted within the themes of the study was the need for teachers to be given ample time for learning about standards-based grading, working towards implementing it in the classroom, as well as professional development related to standards-based grading (Knight & Cooper, 2019).

Proulx, Spencer-May, and Westerberg (2012) provided reflections from their minimal quantitative study observing the variations of grades of high school students within their own school district from a traditional grading system over a 2-year period while implementing a standards-based grading system. The researchers from the study noted key factors that are essential for a school district's reform process which included: proactive communication to the stakeholders, training on standards-based grading for both administrators and teachers, and having adequate time for curriculum and assessment development (Proulx, Spencer-May, & Westerberg, 2012).

Sarah Bonner, Camila Torres Rivera, and Peggy Chen (2018) conducted a mixed methods study through surveying and interviewing secondary teachers from an urban school district about standards-based instruction along with state tests and assessment preferences due to the fact that this district's state requires students to pass standardized state tests in order to graduate. There were 155 usable surveys from teachers teaching grades 7-12 and 11 of the 27 teachers were personally interviewed. Data was gathered and analyzed into three different

clusters: those who did not like external testing and preferred more alternative testing, those who supported external testing and used state standards to guide instruction, and those who did not support external testing and did not prefer alternative testing methods nor have much alignment with standards-based instruction. The first cluster, those who did not like external testing and preferred more alternative testing, represented 33% of teachers, the second, those who supported external testing and used state standards to guide instruction, had 39%, and the final one, those who did not support external testing and did not prefer alternative testing methods nor have much alignment with standards-based instruction, had 28% of respondents. Even in the midst of a standards-based system within the state, the researchers found that though some teachers were integrating standards with their instruction, not one of the teachers interviewed perceived a standards-based system as supporting their own professional beliefs and practices. The teachers in the study expressed a strong desire for professional autonomy and for integrating their own professional beliefs about teaching practices that did not align with the standards-based system (Bonner, et al., 2018). In the earlier study by Knight and Cooper (2019), the same acknowledgement of the need for teacher autonomy was concluded.

Due to the limitation of there being few empirical studies focused on the implementation process of standards-based grading, numerous dissertations have concentrated on this topic. One of the studies of this nature looked into the standards-based implementation process at three different Wisconsin high schools that have aligned with standards-based grading (Pritzl, 2016). The researcher, Pritzl's (2016) goal was to discover the strategies utilized by leaders in successful implementation of the standards-based system. Pritzl (2016) conducted a qualitative study through semi-structured interviews of three school leaders from each school, then coded and analyzed the data through sorting it into categories from Fullan's five components of

leadership framework. The beneficial strategies observed were that the leaders demonstrated proactive and open communication that let teachers' voices be heard and still pushed for growth in the process. The school leaders also found that it took two years of preparations for the standards-based system to be implemented well, plenty of professional development as well as collaborative opportunities for teachers (Pritzl, 2016). Each of these themes referring to effective communication, adequate time, collaboration, and professional development affirm what Knight and Cooper (2019) and Proulx, Spencer-May, and Westerberg (2012) concluded. One further strategy noted by the school leaders in Pritzl's (2016) study was the importance of having all the teachers on the same page regarding their beliefs regarding student capabilities of achievement and through the entire implementation process.

### **Challenges to implementation**

Many of the barriers observed within the literature with implementing standards-based grading prompted the results of recommendations for implementing, as articulated in the previous section, in order to avoid these barriers. The rest of the barriers that can be expected lie primarily in the resistance from stakeholders, specifically with teachers and from students and parents.

Teachers are in a field where change is inevitable and expected, yet teachers can be the ones who present a lot of resistance to change. Part of this resistance is due to teachers having varying beliefs about grading practices (Guskey & Jung, 2012). Kunnath (2017) affirms that the fact that teachers typically want autonomy with grading makes this issue quite a controversial one. A review of the past century of research about grading, found that even though there have been limited studies conducted on teachers' perceptions of grading, teachers still overall desire a fair system of grading even though fairness can be interpreted differently from teacher to teacher



(Brookhart, et al., 2016). From quantitative data gathered from 167 surveyed California teachers, Campbell (2012) found that the majority of teachers did not follow standards-based grading procedures in that they incorporated nonacademic factors into the grade, averaged all scores, used zeros for missing work, and rarely allowed test retakes. Since standards-based grading involves specific criteria for grading procedures, teachers' varying beliefs about grading influenced the path of implementation, potentially in a negative way.

The location of a school and the grade level that a teacher teaches are factors that influence grading practices. In Laura Link's (2018) quantitative study, she examined grading preferences among teachers to understand how those preferences influence their grading practices and how much of an impact a teacher's preparatory program has in forming those grading preferences. The researcher conducted surveys in both an urban district and a suburban district with teachers of both elementary and secondary levels. The surveys gathered demographic data as well as Likert-scale responses. Of the 8,750 total full-time teachers, 2,996 provided usable responses. Of those responses, 56% were teachers from the urban school district and 87.9% were teachers that had received traditional training in their preparatory program. Results from this study found that the secondary educators were more likely to grade on behavior factors, by including zeros in grades, and had less collaboration and consistency with other teachers regarding grading. Data revealed that the elementary educators were more likely to allow multiple attempts on assessments and view grading as a formative process. Furthermore, this study found contrasts based on the location of the school. Compared to the suburban teachers, teachers in the urban district preferred to incorporate more subjectivity in their grading and rewarding students for their effort put forth. Also observed in the data was that secondary teachers who received a non-traditional preparation program, in which more were found in the

urban district, were more likely to incorporate nonacademic factors in students' grades, such as student behavior and homework completion. The researcher thus concluded that having a higher population of non-traditionally trained teachers in urban, secondary settings may result in students in those settings obtaining lower achievement scores as there is a greater likelihood of those teachers using noneffective grading practices and penalizing for negative behaviors versus solely grading on academic achievement (Link, 2018).

Michael, Webster, Patterson, Laguna, and Sherman (2016) conducted a study on P.E. teachers across the state of California and discovered that many teachers were using standards-based assessment alignment, but not necessarily standards-based grading practices, which did not represent a complete standards-based grading system. Of the teachers surveyed, 74.1% of teachers used the standards to inform instruction and assessment with 94.2% using traditional report cards. This barrier to implementation was associated primarily with a lack of professional development and training for the teachers to understand how to use the standards. Teachers have the role of carrying out a grading reform process for a school and thus, need to be equipped well from the start (Michael, et al., 2016).

School leaders not only have to anticipate challenges with teacher resistance, but also with student and parent resistance to a grading system change. A mixed-method study conducted by Peters, Kruse, Buckmiller, and Townsley (2017) obtained an understanding of the themes of student resistance towards standards-based grading from surveys of 9<sup>th</sup>-12<sup>th</sup> grade students at a high school that already had a standards-based grading system in place. Data was gathered from previously conducted surveys at the beginning of the school year and at the end. Of the 478 total students, 376 provided responses in the fall and 230 submitted responses in the spring. The researchers determined that the quantitative data from the Likert scales on the surveys were not

fully valid or reliable so the analysis focus was on the coding of open-ended responses on the surveys. Even though positive reactions towards standards-based grading was noted in the surveys, the researchers were focused on the themes of student resistance rather than the amount of resistance towards the grading system. Five themes emerged from the results. First of all, there were concerns with implementation, particularly in students seeing teachers being resistant to the change and having inconsistent procedures. Secondly, there were grading concerns such as seeing less A's, viewing the 4-point scale as too limiting, students not testing well and wanting their work done on homework to be graded. Beatty (2013) discovered this to be the case as well with his own first-year university level students the surveys he conducted. Students acknowledged that they were not as self-motivated with completing work they weren't receiving credit for (Beatty, 2013). The third theme discovered by Peters, Kruse, Buckmiller, and Townsley (2017) was a concern of the negative impacts that standards-based grading would have on students' preparation for college. Fourth were a few social concerns, specifically in that some students complain too much about their grades and others don't care enough as well as students feeling more stressed in studying for all classes. Finally, the fifth theme observed was issues related to teaching, learning, and motivation in that students admitted having decreased motivation and needed more clarity in what they needed to know for improving. The results of the study concluded that challenges to implementing a standards-based grading system include inconsistency amongst teachers and students coming into the standards-based grading process with many misconceptions about both learning and grading as well as post-high school implications. Therefore, the researchers suggest adequate time for students to process the standards-based grading implementation changes and space provided for the students to share feedback on the grading system (Peters, Kruse, et al., 2017).

Parent resistance involved similar themes throughout the research, primarily demonstrating a fear of the unknown with the new grading system (Townasley & Varga, 2018; Peters & Buckmiller, 2014) and a fear of how it will impact students' post-secondary opportunities (Guskey, Townasley, & Buckmiller, 2020; Peters & Buckmiller, 2014). In Townasley and Buckmiller's (2020) overview of a school's implementation of standards-based grading, the researchers determined that parents generally agreed with retakes of assessments being given to demonstrate learning but did not feel the same about homework being omitted from the final course grade. Townasley, Buckmiller, & Cooper (2019) affirm that regular communication with parents is key to implementing standards-based grading.

One of the reasons for parent resistance is the expectation that students will develop poor habits with the standards-based system, and therefore, not prepare students well for college (Guskey, Townasley, & Buckmiller, 2020). In Peters and Buckmiller's (2014) qualitative study, one of the three schools observed by the researchers reported that implementation of standards-based grading proceeded well during students' middle school years, but upon reaching high school, the board did not approve the grading system because of parent concerns with the types of grades that would impact their child's post-secondary options since the standards-based grade would be different than that of the traditional grading system. The researchers combatted this argument in finding that one university director said they deal with applications holistically when there is not class rank given and by citing two other studies (Riede, 2018; Buckmiller & Peters, 2018) that found university officials claiming to assess both types of report cards (standards-based grading and traditional) equally (Peters & Buckmiller, 2014). Such a big change for a school, like grading system reform, has the potential to create a lot of tension between school

leaders and stakeholders, which, if not handled well, can result in more disunity than camaraderie and more negative effects rather than positive ones.

### **Effects of standards-based grading**

Both positive and negative effects have been observed from the implementation of standards-based grading, though the empirical studies conducted on these effects still remain few (Knight & Cooper, 2019; Peters & Buckmiller, 2014). Some of the major implications of the standards-based system pertain to teachers, specifically regarding their instructional strategies and how they guide students in their learning. Knight and Cooper (2019) conducted a qualitative, phenomenological study, as previously mentioned in strategies for implementation, of seven teachers from five different high schools to discover teachers' perceptions of the effects of standards-based grading. Each of the teachers were already implementing a standards-based grading structure, though the structures varied a bit amongst these participants. Only one teacher had a separate behavior grade from the academic grade, two teachers did not include behavior in reporting, three teachers included behavior as a small percentage in the grade, and the final teacher's curriculum was all about 21<sup>st</sup> century skills. Data was collected through teacher interviews and various notable themes emerged pertaining to the effects of this system. One theme noted was directed towards classroom pedagogy where teachers noted that their instruction and assessments became more purposeful especially in the facts that they were meeting more individual students' needs and the environment created more of a focus on learning as failure was unacceptable. The other notable theme that emerged was related to teachers' instructional strategies where teachers had to figure out different ways to encourage desirable behaviors from students such as taking responsibility, completing work on time, and not cheating or plagiarizing. Although one of the consequences from students included them

demonstrating less accountability in the beginning, over time the teachers noticed students taking more responsibility and adopting mindsets focused more on growth. A final theme observed was that the standards-based grading system provided increased clarity in communication to students and parents (Knight & Cooper, 2019).

As a school shifts grading systems, teacher instructional procedures will have implications. In the interest of understanding these effects, Corzine (2016) conducted a qualitative, phenomenological study of 11 educators from K-8 grades within five different school districts in rural Illinois who have been using standards-based grading for at least one year. The majority of respondents were elementary teachers. The researcher concentrated on learning how the implementation prompted the modification of teaching methods, influenced the content taught, changed the amount of differentiated instruction, and affected formative assessments. Through the coding of interviews as well as document analysis, the researcher found six prominent themes appear corresponding to those four categories. Regarding teaching methods, results showed that instruction gradually became less direct and more student-centered which made teachers do less pre-planning of lessons but instead focused on individual student needs. Observed within the category of content taught, teachers gained awareness and understanding of the course standards and therefore, better aligning course content directly to the content standards. Each teacher participant in the study agreed that differentiation had increased with the standards-based grading system which was largely manifested through various formats of student grouping. The teacher participants in the study showed consensus in that their use of formative assessments had increased as more movement of students between the groups allowed. Noted within these interviews was that conferencing with students individually was seen as more viable in an elementary classroom than a middle school classroom (Corzine, 2016). These themes

demonstrate instructional methods shift as the implementation of standards-based grading procedures takes place.

Many of these instruction-based themes have been affirmed by teachers from other school districts. Vogel (2012) examined a school district's strategies for implementing standards-based grouping in the classroom and the perceptions of the school leaders and teachers that were a part of that transition of instructional methods. Data was collected from this qualitative study through interviews with 24 teachers, 10 principals and 3 administrators and the interviews were text coded and analyzed. The school district that participated in the study began standards-based grading system initiatives six years prior to this study so the implementation process was not a new process for the school district. In relation to the effects of standards-based grading, the themes produced from this research study resulted in a few positives as well as various challenges. The positive themes identified in this study included a greater focus on the Essential Learning Outcomes (or standards) of a course and more student tracking and awareness of their own performance with those Essential Learning Outcomes. The challenges from the implementation of the standards-based grading system identified through this study included limited resources, scheduling, lesson planning with new standards, increased differentiation, and students did not move much between the differentiated groups. Needing to complete more data entries for grades was a challenge that was not alleviated by the district's electronic gradebook system. Though these themes were the primary ones perceived by the majority of respondents in the district, it was noted that some challenges were even greater for the high school teachers than the elementary teachers (Vogel, 2012).

Classroom implications of standards-based grading conclude that teachers need to communicate students' grades differently than in a traditional grading system. Utilizing rubrics

for assessing students with standards-based grading in providing clarity where students are in terms of the content standards, provided the rubric is well designed (Proulx, et al., 2012; Muñoz & Guskey, 2015; Peters & Buckmiller, 2014). The Quality Criterion Reference rubric is recommended for standards-based grading because the rubric clearly communicates student performance directly related to content standards (Griffin, 2014, as cited in Gundlach & Dawborn-Gundlach, 2020). In order to understand the perceptions and effects of using this different type of rubric fit for a standards-based grading system, Gundlach and Dawborn-Gundlach (2020) conducted a mixed method, phenomenological study including 21 English teachers through collecting data through the use of surveys and coding of the responses. The teachers included in the research were all a part of the same high school and the administration required the use of rubrics to assess student work at their school. The researchers gave the teachers two different rubrics to examine; one that followed the rules for a Quality Criterion Referenced rubric and one that did not. Feedback was given in the surveys on participants' perceptions on the abilities of these rubrics to assess a student's ability with an oral task in English. The quantitative demographic data confirmed that the teachers in this study varied in age, gender, and number of years teaching. The researchers observed through the data that teachers had more confidence in using a Quality Criterion Referenced rubric to assess students versus one that was not of this style. The majority, 76% of teachers, saw the rubric design rules as useful. The qualitative data revealed that several teachers desired to have space for more feedback, such as written comments or conversations with students, and even a recognition of the effort shown by students whereas these rubrics did not allow for more communication. While there was disagreement on whether rubrics should be used to assess English tasks, all participants agreed on the fact that the rubrics did unify the teachers with a set of standards



(Gundlach & Dawborn-Gundlach, 2020). With standards-based grading requiring different grading procedures and the determination of what proficiency of the standards looks like, teachers may have a difficult time even after implementation to get on the same page with aligning their grading in a standardized way. Consequently, there can be many factors affecting students' grades within a standards-based grading system.

Various quantitative studies have been conducted to observe how standards-based grading is reflected in the data of students' grades and how those grades correlate to state standardized assessments. Proulx, Spencer-May, and Westerberg (2012) analyzed Omaha public school district's high school student grades over a three-year period to see if they changed at all from the traditional grading system after implementation of the standards-based grading system. The first year observed included traditional grades with the following two years having standards-based grading implemented. The researchers worked with a student population of over 18,000 each year, and they did not look at grades from every class but rather just selected courses. In comparison to the first year observed, the number of A's went down both the second and third year and after the third year there was a 5% difference from the amount with traditional grading. The number of B's saw an increase both the second year and third years to end up totaling a 4.9% change. Similar changes were seen in the increase of C's, though more drastic, with a 12.6% increase by the third year. The D grades had a differing pattern in that those went up 2.6% the second year but then fell back down to 5.8% below the traditional grades amount. The number of F's did decrease each year to a total of 6.9% lower than the amount with the traditional grading system. Two reasons the researchers attribute to these patterns of grades observed are that students used to rely on extra credit with traditional grading to get their grade up and with the switch to a standards-based grading system focused on higher-level teaching and

assessments, extra credit was no longer an option for students (Proulx, et al., 2012). The decrease in the letter grades of D's and F's were beneficial for the school, however, there were also less letter grades of A's and Peters and Buckmiller (2014) state that the outcome of less A's may entail more resistance from the more affluent parents who desire the best post-secondary opportunities for their children.

Research has been conducted with the aim of determining the effects of standards-based grading versus traditional grading through the lens of comparing state standardized assessment scores affirming there are mixed results of the standards-based grading system (Townsend, 2019). Pollio and Hochbein (2015) employed a quasi-experimental, non-equivalent control group design with their study through analyzing data of grades and state assessment scores from 11 different high schools within a large school district in Kentucky. The two content areas observed were math and science with a little over half of the students being a part of a standards-based grading model and the other students being a part of a traditional grading system. Researchers discovered that the grades from students within a standards-based system had a greater association to the Kentucky state standardized assessment than those within a traditional grading system. In fact, 75% of students within the traditional grading system that reported grades of As or Bs scored below the proficient level on the state assessment. The achievement averages on the standardized assessments were greater among those with standards-based grading compared to those from the traditional system. That said, the researchers determined that the relationship between grades and standardized assessment scores from either category proved to not be statistically significant. This study analyzed the correlation of scores from minority and disadvantaged students within a standards-based system to those in a traditional system and found that there was a greater association for those students in a standards-based system than the traditional one (Pollio &

Hochbein, 2015). This research demonstrates that in certain districts, one effect of standards-based grading is that it can provide more accurate and valid grades in its reporting of how well a student is understanding material than a traditional grading system may provide.

A similar study that corroborated these findings was completed by Lehman, De Jong, and Baron (2018). Their goal was to determine if there was a relationship between students' grades in math from both a traditional grading system and a standards-based grading system and their scores on the Scholastic Math Inventory assessment. These researchers used a non-experimental, causal-comparative, ex-post facto research design as they examined data from five different middle schools within the same school district. Four of the schools were using a traditional grading system while one school used the standards-based grading system. The grades and scores observed were from sixth, seventh, and eighth grade students at the end of the school year. A moderate correlation was found between the final grades from a traditional grading system and the math assessment scores from all three grade levels. The correlation between the final grades from a standards-based system and the math assessment scores was strong for 6<sup>th</sup> and 8<sup>th</sup> graders but moderate for 7<sup>th</sup> graders. Overall though, the correlation was higher between the scores and grades of all three grade levels of students from the standards-based grading system than that of all three grades from the traditional one (Lehman, et al., 2018).

Not all studies have proven that standards-based grading systems have more positive effects than that of a traditional grading system. One major assessment that many high school students around the country complete is the ACT which consists of an English, reading, math, science, and an optional writing component. Researchers Townsley and Varga (2018) examined the relationship between student GPAs and ACT assessment scores within a standards-based system compared to a traditional grading system. Their quantitative study using a quasi-

experimental research design compared data of students over the span of two years from two different, but very similar demographically, rural Midwestern high schools. One of the schools was using a traditional grading system while the other had already implemented standards-based grading and was seen as an exemplar school for this system. Data was narrowed to focus solely on English, math, and composite GPAs and each of their counterparts of ACT scores. Regarding GPA differences, the researchers found no statistically significant difference in English, math, or composite GPA numbers between the two schools which suggests that the two different grading systems do not have an effect on students' GPAs. When it came to ACT scores, there was a significant difference observed for all three categories. English, math, and composite ACT scores were significantly higher for students within the traditional grading system than those from the standards-based system (Townesley & Varga, 2018). Although different variables not closely looked into, such as student motivation and adjustment to grading systems (Townesley & Varga, 2018), could be affecting this study's results, it does contradict the previous studies in that reported grades from a standards-based system may be similar to those from a traditional system, but students may not have as much acquired knowledge as those from a traditional grading system.

With how grading generally differs in elementary classrooms from secondary classrooms, it is possible that the effects of standards-based grading may show unique results within an elementary school. The correlation rates between grades and state assessments were examined at the elementary level by Welsh, D'Agostino, and Kaniskan (2013) through a mixed method study. The setting of their study was one southwestern district consisting of 11 different elementary schools in which teachers were in their third year of using standards-based reporting. At this level, the students received standards-based progress reports instead of letter grades like the

secondary level students. These researchers gathered quantitative data from 3<sup>rd</sup> and 5<sup>th</sup> grade students' progress reports, since those were the grade levels for which the state assessment scores were available, as well as the students' state assessment scores to understand the rate of correspondence between the two. This data focused on the subjects of math, reading, and writing since those were the subjects on the state assessment. Qualitative data was obtained through interviews with 37 of the 67 elementary teachers to better understand teachers' implementation of standards-based procedures in mathematics. Overall, the researchers noted a moderate to weak correspondence between the progress reports and state assessment scores. The weakest correlation was seen in the subject of writing as the student grades were more consistently higher than the state assessment scores obtained. The math grades were more consistently lower than what the students achieved on the state assessment. The teachers also showed the most accuracy in the grades for students who met proficiency and the least amount of accuracy for students who fell far below the proficiency line. This study analyzed the variation between teachers' rates and concluded that due to little variation, the standards-based procedures promoted the most consistency in grading (Welsh, et al., 2013). A grading system not only has effects on teachers, their instructional methods, and grades' association to standardized assessments, but also on students' lives.

Going beyond the effects seen in the grades students achieve through their displayed levels of understanding, students that are a part of a standards-based grading system in high school may even experience effects in their transition to college level education. Guskey, Townsley, and Buckmiller (2020) conducted an exploratory, mixed method study to obtain a better understanding of high schools' implementation of standards-based grading and the longer-term effects of this system on students after high school. Their study asked all 750 first-year

students at one private, Midwest college to participate in the study if they had experienced standards-based grading in high school. There were 18 responses and 13 of those met the criteria of receiving at least two of the three defining characteristics of standards-based grading. These 13 students completed a survey that provided both quantitative and qualitative data regarding demographics, rating of their high school's use of standards-based grading, and reflection on the impact it had on the transition to college. Overall, the majority of these respondents were positive about their experience with standards-based grading. The three major themes that appeared concerning the challenges in transitioning to college included being away from friends and family, getting involved and meeting new people, and time management. The researchers furthered their study with seven of the participants volunteering to complete an interview after receiving their first semester college grades. Although these participants met the researchers' criteria for experiencing a standards-based grading system, of these seven students, it was revealed that only one came from a system classified as having high fidelity, three from one of moderate fidelity, and three from one of low fidelity. Even with different degrees of standards-based grading, this system did not appear to be a detriment to students' levels of achievement at the college level. These seven students had received GPAs of 3.76 or higher during high school and their first semester grades revealed to the researchers that they were still reaching a high level of achievement in their classes (Guskey, Townsley, & Buckmiller, 2020).

While a grading system is highly about the grades that students receive, there may also be psychological effects on students within a standards-based grading system. Lewis (2020) examined whether there was a relationship between standards-based grading methods and student anxiety in his and three of his colleagues' college-level math courses at the University of South Alabama. There were 218 sophomore-level math students that participated in this mixed

method study via surveys at the beginning and end of two semesters that incorporated a Likert scale and some open-ended questions in the end of the semester surveys. The researcher did not report on all the open-ended answers due to many of the open-ended questions proving to have been poorly worded. Correlations between test anxiety, math anxiety, and communication apprehension with standards-based grading and reassessments were analyzed. Over the semester, survey data revealed that math anxiety and communication apprehension did not change significantly, but test anxiety did significantly increase even though students thought it decreased according to the open-ended answers. Higher test anxiety appeared to have a relationship with less standards being mastered. The researcher discovered that test anxiety had a weak positive correlation with reassessments while communication apprehension had a weak negative correlation with reassessments. Lewis (2020) interpreted that due to test anxiety and communication apprehension being associated, students with anxiety may not be pursuing as many reassessments out of that fear. The four professors in this study used different types of reassessment with two using oral assessments and two using written assessments. Therefore, the researcher observed if there was a relationship between the type of reassessment and number of students completing them. Although more attempts were made on the written reassessments than the oral reassessments, there was not a statistically significant difference between the two types (Lewis, 2020). Since assessments carry a greater weight in a standards-based grading system, student anxiety on tests is bound to increase compared to a traditional grading system in which students can rely on nonacademic factors to boost their grades. In determining whether a standards-based grading system will be beneficial for a school, the varying results of studies on the effects of this grading system reveal that it cannot be categorized as entirely positive or negative.

There are still quite a few gaps in research for both the implementation of standards-based grading and its effects, therefore, more studies will need to be conducted about the standards-based grading system after more secondary schools implement it with high fidelity and after having been utilized for many years. This review provides a detailed overview for school leaders to understand what to expect when reforming their school's grading system to a standards-based one. An increasing number of schools are seeing the need for a cohesive grading system that clearly communicates how a student is understanding the standards of a course which a standards-based grading system provides. School leaders can observe, through the experiences of other schools, certain beneficial strategies to employ when making this change which can also guide them in preparing for the expected challenge of resistance from other stakeholders. While some studies prove that standards-based grading has favorable effects, other studies indicate that traditional grading has more positive effects.



## Conclusion

The goal of this literature review was to help equip secondary school leaders wanting to make a grading system change by presenting the recent research about standards-based grading reform strategies and the effects of this grading system. The research questions discussed in this review included: how can secondary school leaders implement a standards-based grading system in a beneficial way for their school and all stakeholders impacted by this change, and what are the positive and negative effects of standards-based grading systems?

The overview of standards-based grading found that this system of grading takes all of the nonacademic factors out of a student's final grade so that the grade is based solely on the achievement of the course standards. Many schools with a standards-based system utilize separate grades for reporting on nonacademic factors such as behavior, effort, and homework completion. Oftentimes, in a traditional grading system the teachers' grading practices differ greatly which creates confusion for students and doesn't provide clarity to how well the students understand the content.

For a school implementing standards-based grading, strategies revealed to be useful within other schools included having effective communication with all teachers, parents, and students, including space for these stakeholders' voices to be heard, allowing sufficient time for the reform process, and giving teachers opportunities for collaboration and plenty of professional development, yet still letting teachers have enough autonomy in their classrooms.

It was determined that the implementation of standards-based grading will likely face challenges of resistance from teachers, parents, and students. Teachers often have varying preferences and beliefs about grades that guide how they set up their classrooms and it is more

common for secondary teachers to incorporate nonacademic behaviors into students' grades. These factors were shown to result in teachers being opposed to the new system before implementation and having inconsistency with standards-based practices after their school implemented the system. Parent and student resistance was seen in their fear of the unknown, uncertainty with how the system change would affect post-secondary opportunities, and still desiring homework to be included in the grade so that poor habits with time-management and motivation would not form.

The results of the effects seen with standards-based grading show that this system is not an entirely perfect one in due to the fact that there were both positive and negative effects portrayed. Many teachers noted that much of their lesson planning to accommodate this grading system became more purposeful, differentiated, and student-centered, although it also resulted in more work required from them. Teachers also saw more clarity given to students in their grades and much of this could be accomplished through the use of rubrics. Some of the data showed positive correlations between standards-based grading and state assessment scores whereas other data demonstrated better correlations between traditional grading and state assessment scores. The transition to college for students coming from a standards-based system in high school proved to have very few negative effects, however, one negative psychological effect observed from the system was increased student anxiety when it came to tests.

Even though grading on standards is not a new concept, the standards-based grading system is relatively new meaning that not a ton of schools are producing research about the system. There are many scholars who have written up their own recommendations for implementing standards-based grading, but there are not many empirical studies completed about this process or the effects of this type of grading (Brookhart, et al., 2016). Gaps in literature were

also seen in the fact that not all schools are implementing standards-based grading in the same exact way which does not provide for a consistent control factor in comparing the research. Much of the research observed included data primarily from the core classes of math, English, and science, along with one study on physical education, but there were limited observations from other subject areas typically found in secondary schools.

Future research should seek to understand recommendations for implementing standards-based grading within all content areas to see if they are comparable or if other content areas require different strategies for working with this grading system. Analyzing the effects of this system within the content areas that do not have corresponding state assessments would provide more recognition to how much this system helps or hinders the broad educational scope of secondary education. As more time goes on, empirical studies on the long-term effects of standards-based grading within high schools will be vital along with looking into any schools that may have chosen to stop standards-based grading after trying to implement it. In considering future research on a smaller scope, researchers should look into various approaches for dealing with students who cannot pass enough standards for a course and the implications of this within high school standards-based settings.

For schools leaders leaning to implement standards-based grading, all of the research presented in this review should be considered, but at the forefront of the decision should be a full recognition of the context of their school and determining what is best for their own students. Since each school differs in many ways, mirroring exactly what another school has done for its implementation process may not work with the various logistical differences between each school. As more research is conducted and shared, school leaders will be able to gain a more extensive understanding of how to best carry out grading reform.

Standards-based grading has been defended by many scholarly researchers as the better method to traditional grading which is important to consider. Teachers within a school system that allows for much teacher autonomy in grading should pursuing implementing some standards-based practices within their own classrooms and revising these each year after learning what works well and what does not in each specific context. Since the effects of standards-based grading are not proven to be entirely positive, incorporating a grading system that is not completely standards-based grading and instruction, yet include some essential components of standards-based grading, can provide clarity of grades, not punish students in their grades for poor behaviors, and may encourage students to have a growth mindset and a desire to continue learning.

## References

- Beatty, I. D. (2013). Standards-based grading in introductory university physics. *Journal of the Scholarship of Teaching and Learning, 13*(2), 1-22.
- Bonner, S. M., Torres Rivera, C., & Chen, P. P. (2018). Standards and assessment: Coherence from the teacher's perspective. *Educational Assessment, Evaluation and Accountability, 30*(1), 71-92. <https://doi.org/10.1007/s11092-017-9272-2>
- Brookhart, S. M. (2011). Starting the conversation about grading. *Educational Leadership, 69*(3), 10-14.
- Brookhart, S. M., Guskey, T. R., Bowers, A. J., McMillan, J. H., Smith, J. K., Smith, L. F., Stevens, M.T., & Welsh, M. E. (2016). A century of grading research: Meaning and value in the most common educational measure. *Review of Educational Research, 86*(4), 803-848. <https://doi.org/10.3102/0034654316672069>
- Campbell, C. (2012). Learning-centered grading practices: It's a matter of fairness: Students' grades should accurately reflect what students know and are able to do. Inconsistencies across schools, classrooms and departments can lead to inequities for students. *Leadership, 41*(5).
- Corzine, E. (2016). *Standards-based grading: Effects on classroom instruction* (Publication No. 10190457). [Doctoral dissertation, McKendree University]. ProQuest Dissertations Publishing.
- Gullen, K., Gullen, J., & Erickson-Guy, N. (2012). Conversations about grading. *Principal Leadership, 12*(8).

- Gundlach, H., & Dawborn-Gundlach, M. (2020). Teacher perceptions of quality criterion referenced rubrics in practice. *Literacy Learning: The Middle Years*, 28(3).
- Guskey, T. R. (2011). Five obstacles to grading reform. *Educational Leadership* 69(3), 16-21.
- Guskey, T. R. (2013). The case against percentage grades. *Educational Leadership*, 71(1), 68-72.
- Guskey, T. R., & Jung, L. A. (2012). Four steps in grading reform: As standards-based curricula and assessments are implemented, grading practices must also change to be meaningful and fair. *Principal Leadership*, 13(4), 22-28.
- Guskey, T. R., Townsley, M., & Buckmiller, T. M. (2020). The impact of standards-based learning: Tracking high school students' transition to the university. *NASSP Bulletin*, 104(4), 257-269. <https://doi.org/10.1177/0192636520975862>
- Knight, M., & Cooper, R. (2019). Taking on a new grading system: The interconnected effects of standards-based grading on teaching, learning, assessment, and student behavior. *National Association of Secondary School Principals. NASSP Bulletin*, 103(1), 65-92. <https://doi.org/10.1177/0192636519826709>
- Kunnath, J. (2017). Creating meaningful grades. *Journal of School Administration Research and Development*, 2(1), 53-56.
- Lehman, E., De Jong, D., & Baron, M. (2018). Investigating the relationship of standards-based grades vs. traditional-based grades to results of the scholastic math inventory at the middle school level. *Education Leadership Review of Doctoral Research*, 6, 1-16.
- Lewis, D. (2020). Student anxiety in standards-based grading in mathematics courses. *Innovative Higher Education*, 45(2), 153-164. <https://doi.org/10.1007/s10755-019-09489-3>

- Link, L. J. (2018). Teachers' perceptions of grading practices: How pre-service training makes a difference. *Journal of Research in Education, 28*(1), 62-91.
- Link, L. J. (2020). Effective grading practices: Creating a culture of achievement. *Principal Leadership, 21*(2).
- Michael, R. D., Webster, C., Patterson, D., Laguna, P., & Sherman, C. (2016). Standards-based assessment, grading, and professional development of California middle school physical education teachers. *Journal of Teaching in Physical Education, 35*(3), 277-283.  
<https://doi.org/10.1123/jtpe.2015-0162>
- Muñoz, M., & Guskey, T. (2015). Standards-based grading and reporting will improve education. *The Phi Delta Kappan, 96*(7), 64-68.
- Peters, R., & Buckmiller, T. (2014). Our grades were broken: Overcoming barriers and challenges to implementing standards-based grading. *Journal of Educational Leadership in Action, 2*(2). <https://www.lindenwood.edu/academics/beyond-the-classroom/publications/journal-of-educational-leadership-in-action/all-issues/previous-issues/volume-2-issue-2/our-grades-were-broken-overcoming-barriers-and-challenges-to-implementing-standards-based-grading/>
- Peters, R., Kruse, J., Buckmiller, T., & Townsley, M. (2017). "It's just not fair!" Making sense of secondary students' resistance to a standards-based grading. *American Secondary Education, 45*(3), 9-28.
- Pollio, M., & Hochbein, C. (2015). The association between standards-based grading and standardized test scores in a high school reform model. *Teachers College Record, 117*(11), 1-28.

- Pritzl, J. (2016). *Leadership strategies in implementation of high-school standards-based grading systems* (Publication No. 10124095). [Doctoral dissertation, Edgewood College]. ProQuest Dissertations Publishing.
- Proulx, C., Spencer-May, K., & Westerberg, T. (2012). Moving to standards-based grading: lessons from Omaha. *Principal Leadership, 13*(4).
- Scarlett, M. H. (2018). "Why did I get a C?": Communicating student performance using standards-based grading. *InSight: A Journal of Scholarly Teaching, 13*, 59-75.
- Swan, G. M., Guskey, T. R., & Jung, L. A. (2014). Parents' and teachers' perceptions of standards-based and traditional report cards. *Educational Assessment, Evaluation and Accountability, 26*(3), 289-299. <https://doi.org/10.1007/s11092-014-9191-4>
- Townsley, M. (2019). Considering standards-based grading: Challenges for secondary school leaders. *Journal of School Administration Research and Development, 4*(1), 35-38.
- Townsley, M., & Buckmiller, T. (2020). Losing as and fs: What works for schools implementing standards-based grading? *Educational Considerations, 46*(1), 1-11.
- Townsley, M., Buckmiller, T., & Cooper, R. (2019). Anticipating a second wave of standards-based grading implementation and understanding the potential barriers: Perceptions of high school principals. *NASSP Bulletin, 103*(4), 281-299. <https://doi.org/10.1177/0192636519882084>
- Townsley, M., & Schmid, D. (2020). Alternative grading practices: An entry point for faculty in competency-based education. *Journal of Competency-Based Education, 5*(3), 1-5. <https://doi.org/10.1002/cbe2.1219>



- Townsley, M., & Varga, M. (2018). Getting high school students ready for college: A quantitative study of standards-based grading practices. *Journal of Research in Education, 28*(1), 92-112.
- Vogel, L. R. (2012). A leader's journey: The challenges of implementing standards-based student grouping. *NASSP Bulletin, 96*(4), 323-349. <https://doi.org/10.1177/0192636512467675>
- Wegwert, J. C. (2012). Grading and student learning: Ideas for practice. *Childhood Education, 88*(6), 413-414.
- Welsh, M. E., D'Agostino, J. V., & Kaniskan, B. (2013). Grading as a reform effort: Do standards-based grades converge with test scores? *Educational Measurement: Issues and Practice, 32*(2), 26-36. <https://doi.org/10.1111/emip.12009>