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Navigating Math Grading Reforms: Key Considerations for Educational Leaders

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As grading reform efforts such as standards-based grading and grading for equity gain popularity, school leaders play a key role in supporting mathematics teachers' implementation efforts. This paper describes what mathematics leaders need to know about grading reform and what mathematics leaders should do to support teachers in implementing grading reform. By developing teachers' deeper understanding of curriculum, instruction, and assessment, assisting teachers in shifting mindsets from quantifying learning to qualifying learning, and improving math proficiency communication, leaders can better navigate grading reform in their schools. With proper support and guidance, teachers can assign grades that better reflect students' mathematical knowledge and skills.

In their 1913 study entitled *Reliability of Grading Work in Mathematics*, Starch and Elliot asked 138 high school mathematics teachers to grade the same Geometry paper. The results were astounding: the median score was 70%, with a low of 28% and a high of 95%. While the study is over 100 years old, contemporary researchers continue to argue that teachers' grading practices are in dire need of improvement (Link & Guskey, 2022; Townsley, 2022). Indeed, a comprehensive review of recent research suggests that K-12 teachers' grading practices continue to be inconsistent from classroom to classroom and school to school (Brookhart et al., 2016). An "A" in one math classroom does not guarantee a student has demonstrated an equivalent level of learning as a student with an

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"A" in a math classroom across the hall, within the same county or across the state.

In this traditionally accepted and enacted model of grading, students accumulate points based on a combination of non-cognitive factors such as assignment completion and participation and cognitive factors such as achievement. Townsley (2022) referred to this as a *model of point accumulation learning* in which points are assigned to nearly every instructional and non-instructional activity and then "points are totaled and often converted to a percentage to determine the final grade" at the end of the reporting period (p. 89). This phenomenon has caused some educational measurement experts to describe divergent grading practices using phrases such as "hodgepodge" grading (Brookhart, 1991, p. 36) and throwing "everything but the kitchen sink" into the grade book (Cizek et al., 1995). A growing number of empirical studies support that teachers' grading practices vary greatly (Brookhart et al., 2016; Cheng et al., 2020; Guskey & Link, 2018; Kunnath, 2017b). For example, Guskey and Link (2018) surveyed 943 K-12 teachers in a southeastern state and found that anywhere from 10-20% of teacher-assigned grades comes from non-cognitive factors. While this percentage may initially appear to be small, Guskey and Link (2018) point out that including these non-cognitive factors results in the equivalent of a one or two letter grade difference for teachers using a typical percentage-based grading system. Among scholars who have studied teachers' grading practices, they have historically done so within grade-level bands (e.g., McMillan, 2001; McMillan et al., 2002) and even when considering the subject area taught, there is "considerable variation among teachers" (McMillan, 2019, p. 96).

Valid grades that communicate what students have learned, rather than what they have earned, are important in K-12 schools because they can be a contributing factor in educational decisions such as math course placement (Tyson & Roksa, 2017) and college admissions (Hochbein & Pollio, 2016) as well as predicting K-12 dropouts (Bowers, 2010).

Mathematics leaders should prioritize grading reform, as it significantly impacts the understanding and clear

communication of students' proficiency in mathematical content. Failure to address deficiencies in students' mathematical schema, irrespective of their past grades, could impede preparedness for advanced math courses and necessitate remedial post-secondary coursework. Leaders can play a key role in helping the educators in their schools implement reforms that result in grades that more accurately reflect what students have learned in mathematics.

Leadership for Grading Reform

Tackling grading reform has been called the “third rail” in education because it is often a delicate topic stemming from the long-held beliefs and personal experiences for stakeholders (Erickson, 2010). This may be why grading reform is often lost in instructional leadership conversations (Guskey & Link, 2019). Changing grading practices is a last touched bastion often due to the strong emotional attachment to familiarity and tradition.

Astute math leaders considering grading reform can benefit through learning from the mistakes and mishaps of the past. For example, secondary students have expressed frustration when grading reform is implemented inconsistently or in a way that causes uncertainty related to their postsecondary preparation (Peters et al., 2017). Implementers of grading reform have voiced concerns related to the functionality of electronic grade books, pace of implementation, communicating both within and outside the school walls, and appropriate ways to involve teachers in the change process (Percell & Meyer, 2021; Peters & Buckmiller, 2014; Townsley & Buckmiller, 2020; Townsley & Knight, 2020). The leadership challenges and resolutions identified so far in the grading reform literature have often been content neutral. This paper describes what *mathematics leaders need to know* about contemporary grading reform and what *mathematics leaders should do* to support teachers in implementing grading reform.

What do mathematics leaders need to KNOW about grading reform?

Mathematics leaders should seek to deepen their understanding of the dilemmas presented by traditional grading practices as well as commonly implemented solutions to these problems. These solutions include grading reform efforts such as standards-based grading (SBG) and grading for equity (Feldman, 2018, 2019; Link & Guskey, 2022; Townsley & Wilcox, 2024). Mathematics leaders will benefit from understanding why traditional grading practices are problematic as well as common solutions to these problems, as they seek to better support teachers in improving their grading practices. One common dilemma is the mathematical flaw underlying traditional grading practices.

Mathematical flaws of traditional grading practices

Mathematics leaders should understand three mathematical flaws that often serve as the foundation of traditional grading practices. First, using an arithmetic mean (average) to compute a grade dilutes and distorts the accuracy of a final grade because it equally weighs early attempts at demonstrating understanding of a learning goal (e.g., skill, standard, or competency) with later more recent learning demonstrations. Because students learn at different rates, it makes little sense to average multiple attempts at learning the same mathematical concepts over time. Rose (2017) argued in *The End of Average* that the relentless reluctance to use the arithmetic mean can foster the illusion of accuracy; but in fact, disguise what a student knows or does not know. Guskey (2002) illustrated this point through an analogy; a dojo master would never give a black belt karate student a gray belt because they once upon a time started as a white belt. In contrast to using measures of central tendency, contemporary grading reform efforts prioritize the most recent demonstration of proficiency thus eliminating the use of averaging altogether and the diluting effects it can have on the accuracy of a student grade (Townsley & Lang, 2023).

Second, the persistence of percentage scales in traditional grading is also a flawed mathematical grading practice. While most traditional grading scales have five levels of performance (A, B, C, D, & F) they are often carelessly assigned based upon a 100-point percentage scale. The 100-point percentage scale is problematic because it indicates a level of preciseness of achievement that is difficult to explain, justify, or differentiate between learning levels. A student who scores a 61% on a trigonometry assessment knows 61% of specifically what? Moreover, the use of a percentage scale provides an even larger challenge in explaining what 39% of trigonometry concepts the student does not yet understand. In other words, 101(0-100) levels of learning are associated with five performance indicators, only one of which comprises 60% of the 100 point scale, F. Meanwhile, the intervals of performance between all of the others are standardized at 10 point differences (Reeves, 2004). Modern grading reform systems use a simplified scale of equal intervals of performance, such as 4, 3, 2, 1, and 0, leaving the determination of "passing", "remediation", "exceptionality", and "failure" to a local decision. When needed, these equal interval scales can be converted to letter grades for scholarship and college applications (O'Connor, 2018; Townsley & Wear, 2020).

Lastly, the mathematical consequences of using zeros when averaging in a percentage-based grading system are detrimental to the mathematical accuracy of the overall grade. Consider the following two hypothetical math students in 8th grade Algebra. Jared scored the following on math assignments and assessments: 80, 80, 75, 70, 0, 80 (an average of 61%, a D- or failing in most traditional grading scales). Alex, on the other hand, had the following scores on math assignments and assessments: 60, 75, 60, 70, 90, 65 (an average of 71%, a C- on most traditional grading scales). While Jared outscored Alex on every gradebook entry except the zero, he received a substantially lower overall course grade. Often zeros are utilized as placeholders for missing assignments or assessments (Reeves, 2004). Using zeros when averaging may be precise in its calculation but inaccurate in the student's demonstration of 8th grade Algebra principles. This example demonstrates the

disproportionate effect zeros can have on a percentage-based grade (Reeves, 2004). The use of zeroes exacerbates the mathematical flaws of traditional grading because it suggests that grades have been calculated with finite precision (Guskey, 2002; Reeves, 2004). To improve the accuracy of grades, experts recommend teachers use fewer levels of performance in the grade book or report card, such as a scale from 1 to 4, in which each integer represents a distinct level of student achievement such as "Beginning", "Developing", "Nearly Proficient", and "Proficient" (Guskey, 2013; O'Connor, 2018). Using zeros and the arithmetic mean in percentage-based grading systems can drastically distort a student's overall math grade, and should be replaced by prioritizing the most recent evidence and communicating learning using equal-interval performance scales.

Contemporary Grading Reform Efforts

During the emergency-remote learning caused by COVID-19, state departments of education issued temporary grading guidance to local school districts, including implementing pass/fail grading systems, providing additional flexibility in grading, and considering various alternative grading practices (Townsley & Kunnath, 2022). Amid these turbulent and unprecedented times, experts suggested that schools adopt a variety of grading practices such as separating feedback and grades for non-cognitive behaviors (e.g., meeting deadlines, taking notes, participating in synchronous virtual lessons), if at all, and incorporating additional flexibility with deadlines (Brookhart, 2020; Guskey, 2020).

The extent to which these newly adopted grading practices carried over through the years or were dropped following COVID-19 is still unknown. And yet, news headlines continue to suggest that school leaders are beginning to adopt contemporary grading reform efforts such as *standards-based grading* (SBG) and *grading for equity* during recent school years (Kuhlmann & Taylor, 2023; Randazzo, 2023). While these two grading reform efforts have similarities in addressing the dilemmas presented by traditional grading practices, subtle

differences are noteworthy (Feldman, 2019). Change leadership experts DuFour and Fullan (2012) remind school leaders that "clarity precedes competence" (p. 13); therefore, mathematics leaders should seek to develop a deep understanding of common grading reform efforts and the challenges they are likely to face moving forward. Reformed grading practices can enhance equity among students (Feldman, 2018; Griffin & Townsley, 2022) and better align grades with standards and competencies (Kunnath, 2017a; O'Connor, 2017). The following paragraphs provide mathematics leaders with research-informed definitions and insights to enhance their understanding of these two grading reform efforts.

Standards-based grading

Standards-based grading is the term used to describe grading systems that prioritize communicating *what* a student has learned (e.g., mathematics content standards) rather than *how* they learned it (e.g., an end-of-unit assessment). Other names used for this type of grading include standards-referenced grading, competency-based grading, and proficiency-based grading (Link & Guskey, 2022; Schimmer et al., 2018). Defining criteria for SBG include the following: 1) grades based upon students current understanding of local, state, or national standards rather than accumulating points or percentages, 2) providing students with multiple opportunities to demonstrate their learning; and 3) using evidence from summative assessments and excluding homework and formative assessments when grading (Knight & Cooper, 2019; O'Connor, 2018; Townsley & Wear, 2020). Figure 1 illustrates a sample standards-based gradebook in a middle school mathematics classroom. The student has demonstrated a *proficient* level of understanding of two Common Core standards and a *beginning* level of understanding for one standard. Mathematics leaders seeking resources for helping their teachers get started with the three defining criteria of SBG may benefit from practical guides written by Schimmer and colleagues (2018) and Townsley and Wear (2020).

Standards-based grading differs significantly from the traditional grading practices many of today's parents and educators experienced when they were K-12 learners. Resulting from stakeholders' lack of understanding and, at times, the system being inconsistently defined, parents and community members have not always understood the benefits of SBG (Franklin et al., 2016; Link & Guskey, 2022; Townsley & Lang, 2023). Raising awareness and providing clear information about the advantages of SBG can bridge the gap of understanding among parents and community members, fostering a more supportive educational environment for students.

Figure 1 - Sample 7th grade mathematics standards-based grade book

Math 7		
Date	Standard	Level of Learning
9/16	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers	*Beginning*
10/15	Use properties of operations to generate equivalent expressions.	*Proficient*
11/12	Use proportional relationships to solve multistep ratio and percent problems.	*Proficient*

Recent evidence suggests that implementing SBG in secondary schools may present unique challenges (Buckmiller et al., 2020; Peters et al., 2017; Townsley & Knight, 2020). In a survey of 100 high school principals in a Midwestern state, Buckmiller and colleagues (2020) concluded that while SBG was growing in implementation, a slow and methodical implementation plan will be needed to avoid, or at least minimize, the inevitable challenges that will arise during this complex change. When possible, incorporating teachers' voices is also essential during the change process (Townsley & Buckmiller, 2020; Townsley & Knight, 2020). For example, Townsley and Knight (2020) recommend that high school leaders establish regular communication feedback loops with

teachers to understand implementation barriers they are experiencing, and to transparently communicate which new decisions have been made resulting from teacher feedback. Resulting from this feedback, school leaders should be aware there are dozens of detailed implementation decisions to make within the three defining SBG criteria. Understanding which "hills to die on" may be wise as conceding to convention in some ways may be a pathway forward for school leaders (Peters & Buckmiller, 2014).

Mathematics leaders should be mindful of Link and Guskey's (2022) suggestion that "no grading system, on its own, enhances student learning" (p. 408). Instead, grading is merely a way of communicating about what students have learned which can then "be used as a *basis for making improvements*" (p. 408). Researchers have sought to understand the impact of SBG on middle level students' math anxiety (Fergus & Smith, 2022), and the potential impact for grading shifts to enhance students' motivation (Morris & Barton, 2022). These benefits for students should propel mathematics leaders to implement grading reform beyond any immediate impact on student achievement outcomes.

Scholars have suggested that there is a dearth of research describing SBG implementation unique to the needs of educators in their respective content areas (Townsley & McNamara, 2021). Emerging research has provided frameworks and implementation considerations for K-12 educators in content areas such as music (Myers, 2021; St Pierre & Wuttke, 2017), family and consumer sciences (Shippy et al., 2013), and physical education (Townsley & McNamara, 2021). Within mathematics, the available resources for grading reform have largely emphasized broader strategies for teachers to implement grading changes, as demonstrated by the work of Kanold et al. (2018). Most known prior scholarly literature has not considered the mindset shifts and technical changes required in mathematics classrooms for teachers to effectively implement SBG practices, and in particular the *leadership actions needed to support mathematics teachers.*

Grading for equity

In 2019, Joe Feldman wrote the first edition of the book, *Grading for Equity*, in which he contends equitable grading practice includes three pillars: mathematically accurate, bias-resistant, and motivating for students. The mathematically accurate pillar includes moving away from the 0-100 point scale because it "disproportionately weighted toward failure and therefore sends the message that failure is more likely than success" (Feldman, 2019, p. 80). That is, failing scores encompassing 0-59 percent are nearly two thirds of the 100-point scale. Feldman (2019) believes that educators often continue to use a 100-point scale, including assigning zeroes for missing work, because it may help students "feel their consequences for not performing" (p. 84). The 100-point scale and its use of zeroes instead punishes students in a way that makes it nearly impossible to recover from failure on earlier assignments when averaging is employed for grade calculations (Guskey, 2013).

According to Feldman (2019), bias-enabling grading practices include the following: providing extra credit points, penalizing late submission of assignments, and including homework in the determination of a grade. Rather than focusing on students' behaviors such as submitting daily homework assignments or turning in projects on time, bias-resistant grades provide "accurate reflections of a student's level of content mastery" (Feldman, 2019, p. 112). Bias-resistant grading practices emphasize what students have learned rather than the timing of their learning. Feldman (2019) emphasizes that by removing these biased elements of traditional grading, "we're detoxifying our grades of the information that contributes to inequitable grading and instead protecting the grade against biases and ensuring that it only represents what a student knows" (p. 124). Instead of assigning points for activities such as extra credit and homework, results from Quinn (2020) suggest that teachers should use rubrics to mitigate the potential for bias in grading. Predetermined rubrics or proficiency scales buttress equity in grading because they establish the expected level of

proficiency for all students regardless of subgroup (Williams, 2022).

The third and final pillar of equitable grading is ensuring that grading practices motivate students (Feldman, 2019). While some authors have suggested that K-12 schools should eliminate grades entirely to better motivate students (see Kohn, 2011), equitable grading practices that motivate students include permitting students opportunities to retake and redo assignments, including reassessment. Feldman (2019) believes that retakes, when mandatory for all learners, enable students regardless of their home lives to experience success and begin to see themselves as capable learners. Some critics believe that providing students with multiple opportunities to demonstrate their understanding undermines the realities of life; however, Wormeli (2011) challenges this idea by stating that students learn at different paces and "the best preparation for the world beyond school is to learn essential content and skills well" (p. 25).

While limited known empirical research has investigated the impact of all three *grading for equity* pillars, Griffin and Townsley (2022) found that including traditional grading components such as math homework scores when determining a grade can create a divide between white students and African American / Hispanic students. One possible explanation of this divide is white students having stronger parent and guardian supports at home. This is important because research has documented other such biases known to negatively affect marginalized groups in high stakes standardized tests, too (Au, 2022; Knoester & Au, 2017). Mathematics leaders embarking upon grading reform with an emphasis on equity may consider using data from building or district-wide action research to evaluate the local impact on subgroups of students.

What should mathematics leaders DO to support grading reform?

Mathematics leaders play an important role in supporting their teachers implementing, maintaining, or sustaining grading reform. Within the NCSM (2020) essential actions framework,

mathematics leaders are called upon to enact a vision to "designand implement structures that support high-quality mathematics teaching and learning by every teacher." Indeed, increasing teachers' capacity to teach and assess their state or national standards is a prerequisite for grading reform. The final section of this paper describes three mathematics leadership implications: 1) Support mathematics teachers in their deeper understanding of curriculum, instruction and assessment, 2) Assist mathematics teachers in shifting away from *quantifying* learning and towards *qualifying* learning, and 3) Enhance math proficiency communication among students, teachers, and parents. Figure 2 illustrates these three key implications for mathematics leaders navigating grading reform.

Support mathematics teachers in their deeper understanding of curriculum, instruction and assessment

Guskey (2021) warns that too often grading reform efforts fail because school leaders focus time and energy on shifts in grading without first ensuring that teachers deeply understand curriculum, instruction, and assessment. Mathematics leaders should prepare to support teachers in a variety of ways, meeting them where they are at in their current understanding of curriculum, instruction and assessment.

Teacher professional development should enhance mathematics teachers' understanding of curriculum, instruction, and assessment, as a prerequisite for implementing SBG and equity grading. Knight and Cooper (2019) conceptualized the interconnected effects of SBG on teaching, learning, and assessment. Through their exploration of teachers from various backgrounds and levels of experience with SBG, they concluded that SBG will require teachers to redesign their assessment, instruction, and classroom feedback strategies. In doing so, these teachers "believed it made their planning, instruction, assessment, and environment more purposeful and successful" (Knight & Cooper, 2019, p. 89). When mathematics teachers see curriculum, instruction and assessment as separate playbooks, they may not be able to implement grading reforms with a high level of fidelity.

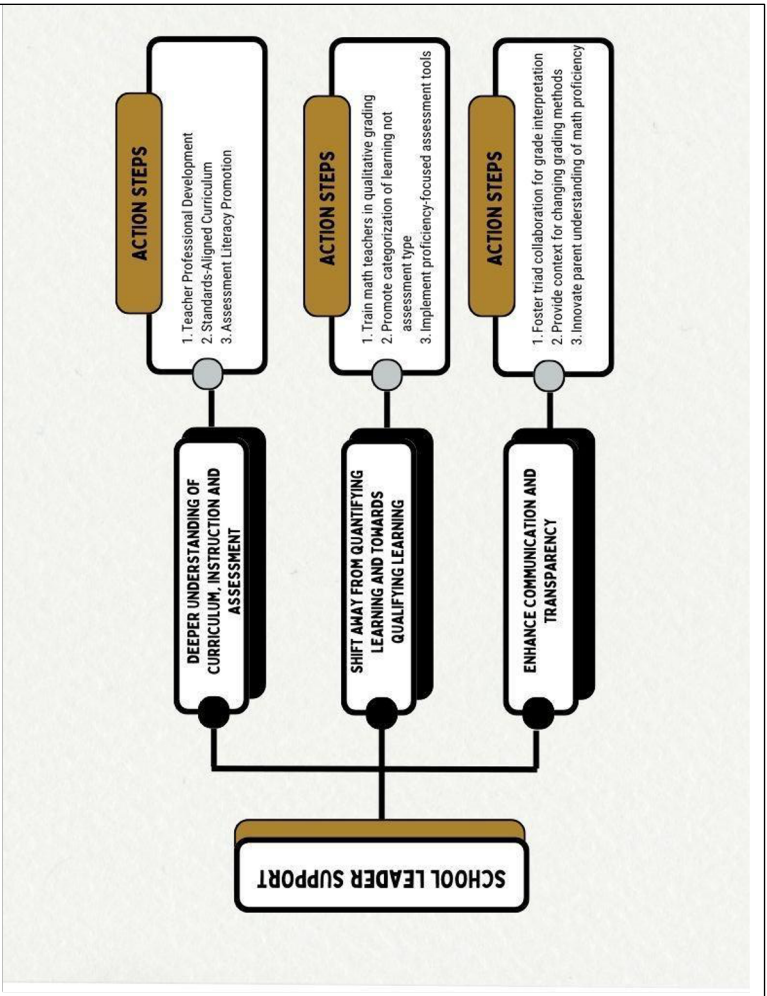

Figure 2 - Key implications for mathematics leaders navigating grading reform.

More specifically, mathematics leaders should enhance teachers' understanding of standards-aligned curriculum. For over a decade, policies in most states have required educators to *teach* math standards, and yet the extent to which mathematics textbooks are using curriculum materials *aligned* to these standards is not promising (Kaufman et al., 2020; Polikoff, 2015). Mathematics leaders should continue to support the adoption of standards-aligned curriculum materials that will enable teachers to meaningfully teach and assess the standards

in which they will be grading students. With finite instructional time and long lists of state math standards, school leaders and teachers alike must have a process that assists in prioritizing standards that best take into consideration criteria such as readiness, endurance, leverage, and whether the standards are externally assessed (Ainsworth, 2013).

Teachers' understanding of standard complexity, scaffolding, and cognitive rigor has implications for both student practice, instructional alignment, and summative assessment design. The NCSM (2020) Framework for Leadership in Mathematics Education includes supporting teachers' mathematics curriculum knowledge. Supporting mathematics teachers towards a deeper understanding of the standards is imperative because recent research has demonstrated that teachers implementing SBG in other content areas have expressed a need to better understand their disciplinary academic standards (Townsley & McNamara, 2021). As teachers adopt more equitable grading practices and assessment design, gaining a thorough understanding of the curriculum standards helps ensure assessments are aligned with those standards.

Finally, mathematics leaders may draw upon the frameworks of Wellberg (2023) in promoting teachers' assessment literacy. Within the context of grading reform, this includes analyzing classroom assessments based upon criteria such as their alignment with standards, cognitive complexity, and clarity. Without assessments that are valid, mathematics teachers may struggle to communicate grades based upon standards. Furthermore, mathematics teachers reclaiming the purpose of formative assessment as feedback rather than points (Kanold et al., 2018; Shepard et al., 2018), may initially observe students struggle with motivation; however, it may also assist in their willingness to persist in more cognitively demanding tasks such as problem solving (Beesley et al., 2018). Reforming grading practices will only be attainable for mathematics leaders when the teachers they support possess a strong level of assessment literacy.

Assist mathematics teachers in shifting away from quantifying learning and towards qualifying learning

Mathematics teachers should be trained in qualitative grading. Tom Schimmer (2020) contends that reforming grading practices includes changing teachers' mindsets from quantifying learning (e.g., counting individual questions right, wrong or partial credit) and towards distinguishing the quality of student learning. Teachers need support in establishing grading philosophies and policies, as well as navigating software programs that allow for flexibility to communicate students' achievement by mathematics standard and not by how it was assigned (e.g., homework, participation, quizzes, and tests). This training should model principles such as breaking from traditional practices of assigning arbitrary points to both academic (e.g., math knowledge) and non-academic skills (e.g., worksheet completion) and how to foster an intrinsic environment for student learning rather than the extrinsic carrot-and-stick approach associated with points-based grading (Iamarino, 2014; Pink, 2011; Townsley & Lang, 2023). In mathematics, studies have demonstrated a clear correlation between intrinsic motivation and achievement (Aunola et al., 2006; Luo et al., 2011). Ample professional development offerings may be necessary as mathematics teachers may hold strong feelings about including non-cognitive factors (e.g. assignment completion) within the grading process, which contrasts with the defining criteria of SBG (Huey et al., 2022).

Mathematics leaders should seek to promote categorization of learning rather than assessment modality. Adding to this need, recent research suggests pre-service teachers may not be fully prepared to immediately enact grading reforms (Battistone et al., 2019). Within professional development, leaders can support a philosophical shift to help mathematics teachers transition from prioritizing the modality (how we measure the learning) and instead towards the mathematics standards (what students are learning). All teachers, regardless of their years of experience, should be able to understand how to organize grade books and report cards by learning goals (e.g., mathematics standards) rather than assessment modality (e.g., extra credit,

worksheet, quizzes, projects, and tests). Guidance from O'Connor (2022) suggests that teachers can benefit from co-creating rubrics containing success criteria for each level of learning, so they can communicate *by the standard* to parents and students. Brookhart (2024) warns that too often rubrics mistakenly include "directions for the assignment" (p. 111) such as using appropriate labels; therefore, training for mathematics teachers should include how to develop performance-oriented rubrics that do not depend upon points, percentages or mere compliance with teacher instructions. Shifting towards *qualifying* learning allows teachers to focus more on providing students with feedback on their mathematical proficiency and less on grades, which are known to positively impact student learning (Kuepper-Tetzel & Gardner, 2021).

Promoting a shift away from the conventional practice of grading every student exercise in math, and instead, emphasizing the importance of offering constructive feedback using proficiency-focused assessment tools, fosters an environment conducive to improving mathematical reasoning, problem-solving abilities, and the willingness to embrace challenges (Brookhart, 2024). This transformative learning culture stands in contrast to the previous deficit-oriented, risk-averse, points-based system, where students tended to prioritize grades over valuable feedback. Assessments designed to elicit evidence of student proficiency rather than totaling up points or calculating percentages may be a new exercise for some mathematics teachers, and may therefore involve modeling, trial, error, and feedback loops from mathematics leaders. Coupling these proficiency-focused assessment tools with rubrics is paramount to guiding mathematics teachers towards qualifying learning.

Enhance math proficiency communication among students, teachers, and parents

Townsley and Lang (2023) advise grading communication should take place in a triad among teachers, parents, and students. Beyond mere assignment completion, triad communication should include the meaning of grades,

symbols, and marks associated with math standards. Parents may need ample opportunities to understand grading reform changes which are different from their own educational experience as students when grades were often associated with being the "currency of learning" (Franklin et al., 2016). School leaders should create an informative atmosphere to explain to parents that grading reform benefits students by making it more equitable and fairer (O'Connor et al., 2018). In his 2016 book, Reeves refers to these student benefits as F.A.S.T. grading, emphasizing fairness, accuracy, specificity, and timeliness.

In addition, mathematics leaders should provide context for changing grading methods. The historical connection between student, parent, and school communication has traditionally revolved around grades or report cards. It is important to note that the origins of these communication tools were primarily in response to the needs of higher education institutions seeking standardized information about prospective students (Schinske & Tanner, 2014; Schneider & Hutt, 2023). Prior to the electronic age, one-directional communication about a child's academic progress was often relegated to a solitary mark, score, or grade associated with a general subject. Both the description of actual learning standards or objectives and the presumed meaning of the grade were absent in school-to-home communication and often only known by the teacher. The advent of electronic gradebooks alongside the standards-based education movement, has significantly transformed the precision, specificity, and frequency with which student math proficiency is conveyed. Although the traditionally accepted method of communicating assignment completion and assessment scores using points and percentages may appear to be more convenient, it provides a "myth of objectivity" (Guskey, 2002) that does not actually enable parents to see their students' math strengths and areas for improvement.

Building upon context, mathematics leaders should also innovate parent understanding of mathematics proficiency. This can include hosting informational events for parents, distributing flyers, creating FAQ videos, and providing comparisons between past and current practices, as well as showcasing examples of F.A.S.T. grading practices. Within this

communication, parents should be advised that even when high school grades are based upon standards, a final course grade and cumulative grade point average can be listed on the transcript for university admissions and scholarship needs (Townsley & Wear, 2020). On a more frequent basis, home-to-school communication can be strengthened when students track their progress towards proficiency on mathematics standards using a teacher-created paper-and-pencil or digital template, and sharing these tracking tools with their caregivers.

Summary

This paper provides a primer for mathematics leaders navigating contemporary grading reform efforts such as SBG and grading for equity which aim to make grades more meaningful, reliable, accurate, and equitable. As these reforms gain popularity, school leaders play a key role in supporting teachers' implementation efforts. By developing teachers' deeper understanding of curriculum, instruction, and assessment, assisting teachers in shifting mindsets from quantifying to qualifying learning, and improving math proficiency communication, leaders can lead effective grading reform in their schools. With proper support and guidance, mathematics teachers can assign grades that better reflect students' mathematical knowledge and skills. Though grading reform faces challenges, the potential benefits for students and teachers make it a worthwhile endeavor. With thoughtful leadership and collaboration, grades can become a more valid communication tool for understanding, reporting, and improving student learning in mathematics.

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