STANDARDS-BASED GRADING:

TEACHER PERCEPTIONS OF THE IMPLEMENTATION OF AN

EDUCATIONAL INNOVATION AT THE GREEN SCHOOL

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A Capstone Project

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by

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Abstract

Standards-based grading systems are gaining popularity in American schools (Iamarino, 2014; Schiffman, 2016; Scriffney, 2008). Proponents of standards-based grading claim that it promotes academic mastery, a growth mindset towards learning, intrinsic motivation for learning, and equitable grading practices (Brookhart & Nitko, 2008; Feldman, 2018; Guskey, 2014). Yet at The Green School, which adopted standards-based grading in 2019, teachers have indicated significant doubt in the school's standards-based grading system. Why? How do teachers understand and articulate the goals of the school's standards-based grading program? In what ways (if any), do they perceive those goals as being fulfilled or not fulfilled? What supports do they perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading? These questions, in addition to a review of the literature on standards-based grading, frame a qualitative exploratory case study that uses focus groups and semi-structured interviews to gather data about Green School teachers' perceptions of the school's standards-based grading system, and then develops findings and recommendations based on the data.

Keywords: standards-based grading, educational innovation, grading and assessment

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Approval of the Capstone

This Capstone (Standards-Based Grading: Teacher Perceptions of the Implementation of an Educational Innovation at The Green School) has been approved by the Graduate Faculty of the School of Education and Human Development in partial fulfillment for the degree of Doctor of Education.

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Date: _____

Table of Contents

Figures

DEDICATION

To the Hamiltons,

lifelong learners and true friends.

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This Capstone would not exist were it not for the help and encouragement of others too numerous to thank. But I do want to express my gratitude to:

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Chapter 1

Introduction

Statement of the Problem

Grading has long been an under-considered topic in the field of education, especially among practicing teachers (Brookhart & Nitko, 2008; Feldman, 2018; Guskey, 2014). In fact, Green and Emerson (2007) assert that "Grading is one of the least liked, least understood and least considered aspects of teaching" (p. 495). In recent years, however, empirical research on grading in American schools has increased significantly, highlighting problems with traditional grading practices (Brookhart et al., 2016; Munoz & Guskey, 2015).

Since the 1940's, students in America's schools have largely received grades of A-F based on a 100-point scale (Alex, 2022). Yet survey results from hundreds of teachers and thousands of students reveal that, within that system, grading practices vary widely (Cross & Frary, 1999), resulting in what Munoz and Guskey (2015) call "hodgepodge" practices that lack validity and reliability (p. 67). Others claim that these hodgepodge practices result in a grading system that is inconsistent and subjective (Reeves, 2008), not communicating accurate or meaningful information that students can use to understand and improve their performance (Brookhart & Nitko, 2008). In fact, traditional grades can have a negative impact on students' future academic and affective outcomes, particularly for underrepresented and historically marginalized student populations (Klapp, 2015; Link & Guskey, 2019; Quinn, 2020). Therefore, it should come as no surprise that there are repeated calls for grading reform in American education (Feldman, 2018; Guskey, 2014; Jaschick, 2009; Kohn, 1999; Peckham, 1993).

The standards-based grading movement has emerged as a leading reform effort (Iamarino, 2014; Schiffman, 2016). Standards-based grading is a system of grading focused on

assessing and reporting student mastery of a defined set of learning goals (Feldman, 2018; Guskey, 2014; Tomlinson & McTighe, 2006). In a traditional grading system, teachers score assignments. In a standards-based system, teachers rate students' mastery of specific skills or content standards, which are assessed across multiple assignments. Proponents of standards-based grading claim that implementing this reform can be "transformative" for students, as it results in a system where grading "can be accurate, not infected with bias, and can intrinsically motivate students to learn" (Feldman, 2018, p. xxiii).

While this vision is stirring, it is largely theoretical, with relatively few empirical studies focusing on the implementation and impact of standards-based grading (Hany et al., 2016; Knight & Cooper, 2019; Slavit & deVincenzi, 2019). The research that has been conducted has generated conflicting findings. For example, Knight and Cooper (2019) found that the implementation of standards-based grading in five high schools resulted in significant benefits for both students and teachers, making learning more "focused, effective, and enjoyable" (p. 65). Yet when Hany et al. (2016) and Schiffman (2016) conducted similar studies in different contexts, they found that both students and teachers expressed significant frustration with standards-based grading, and that teachers' understanding and implementation of standards-based grading practices varied widely, even within the same school.

Problem of Practice

Despite these tensions in the literature, reform-oriented schools continue to adopt standards-based grading – and The Green School[1] is one of them. This independent school, which opened in 2017 in a Midwestern state, adopted standards-based grading in 2019 because, in the words of its FAQ on Grading and Assessment, "we want to center student learning rather

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[1] The Green School is a pseudonym, used at the request of the institution. Information from the school's guiding documents is not cited to preserve the anonymity of the institution.

than the accumulation of points. The learning goals and ratings provide students with more specific information about their progress," resulting in "specific information that will shed light on the path to self-improvement." The FAQ also emphasizes that a standards-based system can "promote a growth mindset" among students, as well as greater "consistency and transparency" within teacher grading practices, especially when assessing students of color. Yet evidence indicates that Green School teachers – the "professionals most responsible and most intimately involved with grading students" (Feldman, 2018, p. 9) – doubt the effectiveness of standards-based grading. On surveys at the end of the 2020-21 and 2021-22 school years, they rated standards-based grading as the area of the academic program most in need of improvement. When asked to rate their confidence in the system on a Likert scale, approximately 40% of teachers said they "neither agree nor disagree" or "disagree" that standards-based grading has a positive impact on student learning. Over 50% said they "neither agree nor disagree" or "disagree" that standards-based grading has a positive impact on their own practice as educators.

Purpose of the Study

Clearly, a gap exists between The Green School's goals and its teachers' belief in the value of those goals and the practices associated with them. The purpose of this study is to investigate Green School teachers' perspectives on the school's standards-based grading program. If The Green School wants to build a valid and reliable grading system that communicates student mastery of learning goals and positively impacts both students and teachers, then more must be known about how teachers perceive the implementation and impact of standards-based grading at The Green School.

Therefore, this paper documents the development, design, and results of a case study conducted in July and August of 2023 that addressed the following three research questions:

- RQ1: How do Green School teachers understand and articulate the goals of the school's standards-based grading program?

- RQ2: According to Green School teachers, in what ways (if any) are those goals being fulfilled? In what ways (if any) are those goals not being fulfilled?

- RQ3: What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?

Theoretical Framework

This paper presents a study of teacher perceptions of and responses to standards-based grading at The Green School. More broadly, however, it is a study of how teachers at The Green School perceive and respond to changing ideas and practices in education. After all, standards-based grading represents a marked departure from traditional grading practices, and it can be difficult for teachers to adapt to such changes, especially when their previous practices stem from long-held beliefs or have long-established histories in classrooms (Guskey, 2014; O'Connor et al., 2018; Tyack & Cuban, 1995). Therefore, it makes sense to conduct research on standards-based grading through the framework of Hall and Hord's (1987, 2020) Concerns-Based Adoption Model, a theory of educational change.

Based on Hall and Hord's (1987) research on school change efforts in the 1970's and 1980's, the Concerns-Based Adoption Model assumes that educational innovation generates concern among its intended users, who are first and foremost the teachers whose job it is to implement the innovation in their classrooms. Hall and Hord (1987) emphasize that "change is a process, not an event" (p. 8), and that the success of this process depends on how effectively the change facilitators (e.g., school leaders) partner with and support the intended users (e.g.,

teachers). Any successful innovation effort depends on the people both leading and implementing it: "To change something, someone has to change first" (Hall & Hord, 1987, p. 10).

The Concerns-Based Adoption Model includes four components: Stages of Concern, Levels of Use, Innovation Configurations, and Intervention Taxonomy (Hall & Hord, 1987, 2020). In Stages of Concern and Levels of Use, Hall and Hord (1987, 2020) recommend gathering data from teachers regarding their concerns about the educational innovation and the ways in which they are (or are not) using the educational innovation. This recommendation aligns with this study, which was prompted by data indicating that Green School teachers have concerns about the school's standards-based grading system, and which aims to consider how those concerns might impact the ways teachers perceive and implement standards-based grading practices.

Rationale

The Concerns-Based Adoption Model (Hall & Hord, 1987, 2020) is an apt framework for this study for several reasons. Firstly, it is a theory of change that focuses on educational sites that have recently introduced an innovation, as is the case with The Green School and standards-based grading. Secondly, the model aligns with my research questions, as both focus on teacher perspectives and the implementation process. Relatedly, Hall and Hord (1987, 2020) recognize that implementing an educational innovation is an ongoing and dynamic process, in that teacher perspectives and change facilitator goals are complex and can shift during the implementation process. Finally, the Concerns-Based Adoption Model is a well-regarded framework that has been used to study school change across the globe, in settings ranging from

America to Australia, New Zealand, and China (Haines, 2018; Hollingshead, 2009; Saunders, 2012; Wang, 2014).

It is also worth noting that the Concerns-Based Adoption Model suits the researcher's positionality. In distinguishing between school leaders and teachers, the Concerns-Based Adoption Model is more hierarchical than, for example, a purely constructivist approach to change. Given my position as a change facilitator at The Green School – as the Dean of Faculty, I lead the institution's standards-based grading efforts, and also directly supervise at least half of the proposed participants in this study – it is valuable for me to operate under a framework that reminds me of my own position within The Green School's hierarchy and centers the perspectives of the teachers actually implementing standards-based grading in their classrooms.

Conceptual Framework

The Concerns Based Adoption Model provides a valuable framework for understanding how teachers and school communities navigate change. However, it is not specific to this study and does not address all the elements underlying The Green School's problem of practice and the research questions that guide my inquiry into the problem of practice. Therefore, I developed the following conceptual framework (see Figure 1.1), which illustrates my orientation to the problem of practice, as well as the elements that inform my research questions.

Figure 1.1

Conceptual Framework
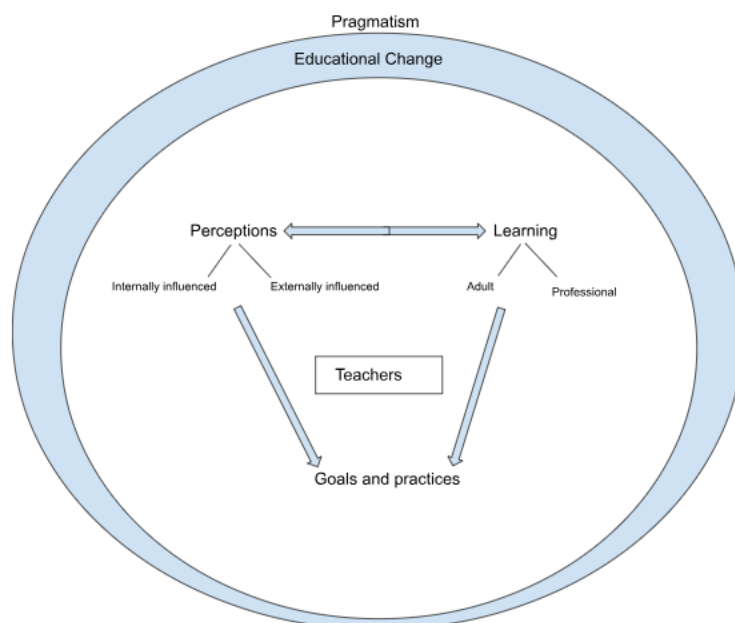
The following sections explain the relationships between the elements of my conceptual framework, while also connecting them to the Concerns Based Adoption Model and the literature on standards-based grading (see Chapter 2).

Pragmatism

Pragmatism describes my research paradigm, which frames my approach to this study. Pragmatism "offers a practical and outcome-oriented" approach to problems of practice, an approach "that is based on action and leads, iteratively, to further action" (Johnson & Onwuegbuzie, 2004, p. 17). When investigating a problem of practice, the goal of pragmatic researchers is to understand the lived experience of key stakeholders and develop a "workable solution" that responds to that experience (Johnson & Onwuegbuzie, 2004, p. 18).

That is my intention in conducting research on standards-based grading at The Green School. In my role as Dean of Faculty at The Green School, I lead all efforts in curriculum, instruction, and assessment – including the standards-based grading program. However, I

assumed this position in July of 2021, years after the school's standards-based grading system had been adopted and formalized. I have not made any changes to the system and therefore have no personal stake in the system's adoption, implementation, or effectiveness. Rather, I view it as my role to help the school navigate the system it has adopted. This means synthesizing external perspectives (i.e., research) on standards-based grading with internal perspectives (i.e., those of teachers) to develop "workable solutions" that hopefully lead to positive outcomes for teachers, students, and the school as a whole (Johnson & Onwuegbuzie, 2004, p. 18).

Educational Change

In my conceptual framework, teachers swim in a sea of educational change. That is why Hall and Hord's (1987, 2020) theory of educational change is an appropriate theoretical framework for this study. Standards-based grading represents a departure from the traditional grading system that Green School teachers experienced as students, and that many of them practiced as educators before joining The Green School. Green School teachers are not only responding to the specific goals and practices of standards-based grading (which are detailed in Chapter 2), but to the destabilizing nature of change itself (Guskey, 2014; O'Connor et al., 2018; Tyack & Cuban, 1995). And as they respond to change, they are often also being asked to adopt new goals and implement new practices in their classroom.

Teachers

Teachers are the primary intended users of standards-based grading, the catalyst of educational change in this study. Their implementation of the standards-based grading mediates how students, the secondary intended users, experience the system. As Feldman (2018) emphasizes, teachers are the "professionals most responsible and most intimately involved with grading students" (Feldman, 2018, p. 9). As they swim in the sea of educational change, their

perceptions of standards-based grading and their learning process impact the mindset and practices they adopt as they implement standards-based grading in their work with students.

Perceptions

As the research questions indicate, this study focuses on Green School teachers' perceptions of the school's standards-based grading system. That is because individuals' perceptions of a phenomenon impact their response to it (Ferguson & Bargh, 2004). Perceptions of a phenomenon are influenced by both internal and external forces (Giannotta, 2022).

Internal Influences. There is "general consensus" in the field of cognitive psychology that individuals' previous knowledge, values, beliefs, and experiences significantly shape their perception of a phenomenon (Ferguson & Bargh, 2004, p. 33). In essence, individuals do not approach a phenomenon as a blank slate, but rather with a host of unique *a priori* conceptions that influence their perception of the phenomenon. Those who perceive the phenomenon as aligned with their pre-existing knowledge, values, beliefs, and experience are more likely to perceive it positively, and vice versa (Ferguson & Bargh, 2004; Giannotta, 2022). Factors that can develop teachers' internally influenced perceptions of standards-based grading include, but are not limited to: 1) previous experience, as a student or teacher, with grading systems (Feldman, 2018; Guskey, 2014; Knight & Cooper, 2019; Wisch et al., 2018); 2) previous professional training in and experience with the practices associated with standards-based grading (MacCrindle, 2017; McMunn et al., 2003); and 3) personal values and beliefs about topics such as equity, classroom management, homework, and deadlines (Peters & Buckmiller, 2014; Wisch et al., 2018). However, internal influences are not fixed and can change over time, especially during the learning process that often accompanies the implementation of an educational innovation such as standards-based grading (Hall & Hord, 1987, 2020).

External Influences. External influences are equally as important as internal ones in shaping an individual's perception of a phenomenon (Giannotta, 2022). External influences often emerge from an individual's social environment, and especially include the attitudes and behaviors of others (Ferguson & Bargh, 2004). Essentially, the way others seem to perceive a phenomenon can impact how an individual perceives a phenomenon. The external influences that can impact teachers' perceptions of standards-based grading include, but are not limited to: 1) student attitudes and behaviors (Knight & Cooper, 2019; Rosales, 2013; Schiffman, 2016); 2) parent attitudes and behaviors (Franklin et al., 2016; Knaack et al., 2012); 3) their colleagues' attitudes and behaviors (Knight & Cooper, 2019; Schiffman, 2016); 3) their administration's attitudes and behaviors (Peters & Buckmiller, 2014); and 4) professional learning experiences (MacCrindle, 2017; McMunn et al., 2003). As with internal influences, external influences are not fixed and can change over time, especially during the learning process that often accompanies the implementation of an education innovation such as standards-based grading (Hall & Hord, 1987, 2020).

Learning

As previously discussed, adopting and implementing standards-based grading requires significant change on the part of teachers. This means that teachers are asked to approach the implementation of standards-based grading with the posture of a learner, regardless of their initial perceptions of the grading system (Brookhart, 2011; Brookhart & Nitko, 2008; Link & Guskey, 2022). The learning experience can change their perceptions of standards-based grading, and can also be either a support or an impediment to the implementation of the system (MacCrindle, 2017; McMunn et al., 2003). In considering teachers as learners in this sea of change, two constructs are important to consider: adult learning and professional learning.

Adult Learning. Adult Learning Theory, or andragogy, posits that adults are fundamentally different learners than children (Knowles, 1980). In particular, adults enter into learning experiences with strong perceptions formed by significant experience with internal and external influences (Collins, 2004). In recognition of that fact, five fundamental assumptions must be respected: 1) adult learners are self-directed; 2) adults bring rich and valuable experience to the learning process; 3) adults are most ready to learn when the learning is relevant to a meaningful need or goal in their life; 4) adult learners are problem-centered; and 5) adult learners are best motivated by internal factors (Knowles, 1980). These assumptions have been used as a framework to understand how to best support teachers as they learn and grow in their practice (Cox, 2006; Drago-Severson, 2009; Glicken, 2004; Kelly, 2017; Lawler, 2003; Terehoff, 2002). Therefore, conditions aligned with Adult Learning Theory may emerge as a support for Green School teachers as they implement standards-based grading, while conditions misaligned with Adult Learning Theory may emerge as an impediment.

Professional Learning. While andragogy refers to an overarching theory of adult learning and the conditions that best foster it, professional learning refers to the specific experiences and opportunities designed to facilitate adult learning within a professional setting such as a school. Effective professional learning experiences, according to Webster-Wright (2009), is "continuing, active, social, and related to practice" (p. 2). A school's adoption of standards-based grading is often accompanied by an investment in professional learning related to the goals and practices of the new grading system (MacCrindle, 2017; McMunn et al., 2003), but these professional learning experiences and opportunities may not meet the criteria listed in Webster-Wright's (2009) definition and may not be effective (Hill et al., 2013; MacCrindle, 2017; McMunn et al., 2003; TNTP, 2015). Therefore, professional learning can emerge as either

a support or an impediment in the implementation of standards-based grading. It can also act as an external influence that impacts teachers' perceptions of the new grading system.

Goals and Practices

In accordance with the pragmatic paradigm, this study is interested not only in teacher perceptions, but in the practical implications of those perceptions on the implementation of standards-based grading. As the conceptual framework (see Figure 1.1) illustrates, teacher perceptions and teacher learning impact the ways in which teachers experience, engage with, and eventually implement the concrete goals and practices of an educational change. Examining how teacher perceptions and teacher learning inform one another, and how both impact the ways in which Green School teachers enact the goals and practices of standards-based grading, will allow me to develop "workable solution[s]" that responds to the teacher concerns at the heart of (Johnson & Onwuegbuzie, 2004, p. 18).

Significance of the Study

Prior qualitative research has been conducted on the adoption and implementation of standards-based grading in specific school sites (e.g., Frechette, 2017; Knight & Cooper, 2019; MacCrindle, 2017; Schiffman, 2016; Slavit & deVincenzi, 2019). However, the research presented in this study differs in two key ways.

First, this study took place in a school that adopted standards-based grading over five years ago and had since invested in ongoing professional learning – including book clubs, in-service sessions, workshops, and mentorship pairings – to support the development of teachers' understanding and practice of the new grading system. Given the relative newness of standards-based grading as a phenomenon, previous research typically occurred in schools that had only recently (within 1-2 years) adopted and begun implementing a standards-based grading

system (e.g., Frechette, 2017; Knight & Cooper, 2019; MacCrindle, 2017; Schiffman, 2016, Slavit & deVincenzi, 2019). In one such study, Knight and Cooper (2019) theorized that the adoption of standards-based grading was likely to include an "initial implementation dip" (p. 65) impacting student work habits and teacher practices, followed by a fulfillment (or partial fulfillment) of standards-based grading goals and an effective implementation (or continuously improving implementation) of practices. The Green School provided the opportunity to test that theory and, more broadly, to gather data about what has and hasn't worked, from teachers' perspectives, over the course of five years of sustained investment in the school's standards-based grading program.

Secondly, this study focuses on teacher perceptions of the standards-based grading program at their school. Previous research has certainly included teachers as participants (c.f., Frechette, 2017; Knight & Cooper, 2019; MacCrindle, 2017; Schiffman, 2016; Slavit & deVincenzi, 2019). However, that research frequently included other primary stakeholder groups, such as students, school leaders, and parents. These studies focused on the impact of standards-based grading on students, asking participants from all stakeholder groups about their perception of student learning and behaviors under the system. While student outcomes are important data points in drawing conclusions about the effectiveness of standards-based grading, it is also important to remember that teachers mediate the relationship between standards-based grading and student outcomes. Their perceptions of and responses to standards-based grading are important areas of inquiry because their perceptions and responses can shape how students experience a standards-based grading system. Therefore, this study not only focuses only on teachers, but also asks broad questions of its teacher participants, allowing them to drive the data that emerged.

This study was therefore positioned to generate data, findings, and recommendations for teachers and school leaders interested in the longer-term change process catalyzed by the adoption of standards-based grading in a school community. In doing so, it centered teachers as essential and active agents of the change process – agents whose voices should be listened to and whose perspectives should shape the ongoing implementation of standards-based grading at The Green School.

Key Terms and Definitions

Traditional Grading System: For the purposes of this study, a traditional grading system is defined as one where students receive grades of A-F based on a 100-point scale, and where teachers report scores on assignments rather than on specific skills (e.g., after Unit Test 1, the teacher enters into the gradebook a score of 85/100). This is by necessity a simplified definition, as grading practices, even within those parameters, vary widely (Cross et al., 1999; Munoz & Guskey, 2015). In fact, it is important to note that teachers and schools operating within that definition can share goals and implement practices commonly associated with standards-based grading.

Standards-Based Grading System: Standards-based grading is a system of grading that focuses on assessing and reporting student mastery of defined academic skills or standards (Guskey, 2014; Feldman, 2018; Tomlinson & McTighe, 2006). In practice, standards-based grading has three hallmarks: ratings (typically on a scale with 3-5 proficiency levels) aligned to clear academic objectives; multiple opportunities, both formative and summative, to receive feedback and demonstrate proficiency; and a clear delineation between academic mastery and behaviors/work habits (Beatty, 2013). In a standards-based grading system, teachers report ratings on students' mastery of specific skills or content standards, which are assessed across

multiple assignments (e.g., after Unit Test 1, the teacher enters into the gradebook ratings of 3 for

Computational Fluency, 2 for Conceptual Understanding, and 2 for Critical Thinking).

Chapter 2

Literature Review

Standards-based grading is a system of grading that focuses on assessing and reporting student mastery of defined academic skills or standards (Guskey, 2014; Feldman, 2018; Tomlinson & McTighe, 2006). As noted in Chapter 1, standards-based grading has three hallmarks: ratings (typically on a scale with 3-5 proficiency levels) aligned to clear academic objectives; multiple opportunities, both formative and summative, to receive feedback and demonstrate proficiency; and a clear delineation between academic mastery and behaviors/work habits (Beatty, 2013).

Chapter 1 identified a problem of practice at The Green School: the school wants to build a valid and reliable grading system that communicates student mastery of learning goals and positively impacts both students and teachers, but teachers doubt the effectiveness of standards-based grading. This study aims to investigate that problem of practice by addressing three research questions:

- RQ1: How do Green School teachers understand and articulate the goals of the school's standards-based grading program?

- RQ2: According to Green School teachers, in what ways (if any) are those goals being fulfilled? In what ways (if any) are those goals not being fulfilled?

- RQ3: What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?

In posing these questions, Chapter 1 also developed a conceptual framework (see Figure 1.1) illustrating the relationship between key constructs underpinning these questions. This literature

review synthesizes empirical research on standards-based grading that further develops those constructs and also informs the study's research questions. The first section of the literature review covers the goals of standards-based grading. The second section examines pedagogical practices associated with standards-based grading, including teacher will and skill to implement these practices. The third section examines the learning environment and experiences that can support teachers in implementing standards-based grading. Throughout, the literature review details the challenges associated with implementing standards-based grading and teacher perceptions (and the internal and external influences contributing to them) as teachers engage in the implementation process.

Goals of Standards-Based Grading

The rationale for these practices stems from five core goals of standards-based grading. They are to promote: 1) academic mastery; 2) a growth mindset towards learning; 3) intrinsic motivation for learning; 4) equitable grading practices; and 5) curricular and instructional change. This section of the literature review defines each goal and examines the empirical research surrounding it.

Academic Mastery

A major principle of the standards-based grading movement is that grades should be based on academic mastery of clear learning targets (Beatty, 2013). Traditional grading systems often factor student behaviors or work habits – such as homework completion, class participation, behavioral compliance, and on-time work submission – into grades (Brookhart & Nitko, 2008; Feldman, 2018; Guskey, 2014; Scriffney, 2008). This can obscure a student's academic mastery, as Vatterott (2015) explains: "A student can compensate for low understanding of the content and standards by maintaining perfect attendance, turning in

assignments on time, and behaving appropriately in class. A different student may understand content and standards perfectly well but receive a low grade because he or she is late to class, fails to turn in assignments on time or acts inappropriately" (p. 63-64). The goal of standards-based grading is to accurately and effectively communicate academic mastery and, in so doing, promote academic mastery (Iamarino, 2014; Wormeli, 2011). If students, teachers, and families have clear sightlines into students' strengths and areas for growth, they can more effectively target those growth areas, which presumably should lead to higher student achievement.

This claim is largely theoretical, but there is empirical evidence to support it. Clear learning targets, an integral part of standards-based grading's focus on academic mastery, are correlated with significant gains in student achievement (Haystead & Marzano, 2009). A few studies have tried to empirically test that claim in relation to standards-based grading, specifically. Haptonstall (2010) and Polio and Hochbein (2015) measured the correlation between teacher grades and state tests in multiple large public schools in 16 total districts across America. Both found that standards-based, as opposed to traditional, grades were significantly more predictive of performance on state tests. This supports the idea that standards-based grading more accurately communicates academic mastery, though it is impossible to determine from the data if students' academic mastery improved more under standards-based grading. Similarly, parents, students, and teachers report that standards-based grading provides a better understanding of learning goals and student strengths and areas for growth (Knaack et al., 2012; Knight & Cooper, 2019). Students also report being more likely to ask for additional support from teachers employing standards-based grading (Knaack et al., 2012). This may support the theory that standards-based grading not only better communicates academic mastery, but also

promotes it, as it is reasonable to believe that students who seek extra support likely reach higher levels of achievement. However, that implication is as yet unproven.

Overall, there is evidence to support the theory that standards-based grading more effectively communicates academic mastery, but none to directly support the theory that it promotes academic mastery – as even leading proponents of standards-based grading acknowledge. In their most recent publication, standards-based grading champions Link and Guskey (2022) clearly state, "No evidence indicates that SBG improves students achievement" (p. 3). In fact, they go even further, emphatically asserting that "*No grading system by itself improves student learning*" (Link & Guskey, 2022, p. 3). These words are a fitting conclusion to the literature regarding standards-based grading and academic mastery. Standards-based grading may be able to more accurately and effectively communicate student progress towards clearly defined learning goals, though research in this area is limited. But no grading system can improve learning on its own. It can only promote conditions for students and teachers to more effectively cultivate mindsets and practices that are correlated with enhanced academic achievement.

Growth Mindset Towards Learning

The impact of student mindset on academic behaviors and outcomes has become a prominent topic in education (Boaler, 2013). A mindset is the perceptions and beliefs people hold, especially about themselves (Dweck & Leggett, 1988). In the field of education, Dweck (1986, 1999, 2003, 2006) popularized the idea that students can have either a fixed or a growth mindset in regards to their intellectual abilities. Students with a fixed mindset view their intellectual abilities as innate and predetermined, incapable of being changed. They might make comments like, "I'm just not good at math" or "Writing just isn't for me." In contrast, students

with a growth mindset view their intellectual abilities as malleable and changeable through effort. These students are more likely to tackle challenging tasks (Dweck & Leggett, 1988; Hong et al., 1999), as well as exhibit perseverance when they encounter setbacks (Nussbaum & Dweck, 2008; Moser et al., 2011). These growth-oriented behaviors can positively impact students' academic achievement, as measured by grades and standardized test scores (Blackwell et al., 2007; Molden & Dweck, 2006).

Proponents of standards-based grading believe in the value of a growth mindset and explicitly cite developing one as an intended student outcome of implementing new grading practices (Brookhart & Nitko, 2018; Feldman, 2018; Franklin, 2016; Manly, 2019; Vatterott, 2015). The link between standards-based grading and growth mindset is best seen in the arguments supporting four key standards-based grading practices: 1) emphasizing a mastery-based approach to learning; 2) providing students with multiple ungraded opportunities to practice new skills; 3) allowing retakes on assessments to demonstrate growth; and 4) weighting assessments completed later in the term (when students have had more opportunity to grow) more heavily than assessments completed earlier in the term (Guskey, 2014; Guskey & Brookhart, 2019; Wormeli, 2011). In regards to the first practice, Dweck (1986) claims that "mastery-oriented" patterns of learning lead to growth-oriented behaviors, including seeking out academic challenges and persevering in the face of setbacks (p. 1040). The latter three practices, together with a mastery-based approach to learning, message that learning is challenging and encourage students to focus on the growth they can make over time through effort, in clear alignment with mindset theory (Brookhart & Nitko, 2018; Dweck & Leggett, 1988; Feldman, 2018; Franklin, 2016; Vatterott, 2015; Wormeli, 2011).

Little empirical research has been done to substantiate the claim that standards-based grading fosters a growth mindset in students (Lewis, 2022; Link & Guskey, 2022). However, in a comprehensive survey of grading practices across America, Haynes et al. (2016) found that schools that have adopted standards-based grading overwhelmingly do create policies to incorporate the four practices identified above into their grading system. And emerging research indicates that these policies can be successful in promoting a growth mindset among students. Franklin (2016) surveyed 423 middle school students – approximately half learning under a traditional grading system and half under a standards-based grading system – and found that students under the standards-based grading system were more likely to report having the characteristics of a growth mindset, and more likely to report growth in those characteristics over the course of a school year. Teachers implementing standards-based grading similarly report that students are more willing to take risks, learn from failure, and seek feedback under a standards-based approach (Knight & Cooper, 2019; Schiffman, 2016).

However, research on growth mindset is not universally accepted. Empirical research supporting mindset theories is limited, with Burgoyne et al. (2020) going so far as to say, "The claims [about growth mindset] appear stronger than the evidence" (p. 258). One weakness in the evidence base is replicability. Researchers have had difficulty replicating studies on the malleability of student mindsets and the impact of mindset on academic achievement (Burgoyne et al., 2020; Kirschner et al., 2022; Li & Bates, 2019; Sisk et al., 2018). Another weakness in the evidence base relates to validity and reliability. Growth mindset is a construct, rather than an observable phenomenon. It is typically measured through student self-reports on a quantitative scale, but it is difficult to conceptualize, operationalize, and quantify constructs, just as it is difficult to draw conclusive conclusions from self-reported data (Erdley & Dweck, 1993; Levy &

Dweck, 1999; Midkiff et al., 2017; Troche & Kunz, 2020). These weaknesses in the evidence

base have led to significant debate in the literature, with even growth mindset's foremost

proponent, Dweck (1986, 1999, 2003, 2006), jumping into the fray to pen an article on the

"growth mindset controversies" (Yeager & Dweck, 2020, p. 1269).

Evidence surrounding the relationship between standards-based grading and growth

mindset is also conflicted. Even though schools that implement standards-based grading

overwhelmingly adopt policies designed to promote a growth mindset (Haynes et al., 2016),

teachers admit to compromising those policies, either because they struggle to adapt to the

changes required by standards-based grading or because they have tried the new standards-based

policies and judged them to have a negative impact on student behaviors and learning (Knight &

Cooper, 2019; Schiffman, 2016). This tension may simply indicate that standards-based grading

is in its infancy and that work needs to be done to equip teachers to effectively implement new

policies that will, in fact, have positive impacts on student mindset, behaviors, and learning

outcomes (Iamarino, 2014; Link & Guskey, 2022). Or it may indicate that there are flaws in

either mindset theory or how the standards-based grading movement understands and applies

mindset theory, and that teachers – the "professionals most responsible and most intimately

involved with grading students" (Feldman, 2018, p. 9) – register those flaws and adjust

accordingly.

In sum, the research on growth mindset, and on the relationship between growth mindset

and standards-based grading, is as yet limited and inconclusive. Despite the tensions in the

literature, the goal of promoting a growth mindset towards learning is a fundamental principle of

standards-based grading (Brookhart & Nitko, 2018; Feldman, 2018; Franklin, 2016; Manly,

2019; Vatterott, 2015). Thus, more research is needed to better understand the construct of

growth mindset itself, as well as the impact of standards-based grading on student mindset and the academic outcomes that student mindset may impact.

Intrinsic Motivation for Learning

As with growth mindset, the development of intrinsic motivation for learning is viewed as an intended and desired outcome of standards-based grading. Intrinsic motivation is the desire to engage in a task for the inherent satisfaction of the task itself (Deci, 1975; Ryan & Deci, 2020; Vallerand, 1997). This definition stems from studies conducted in the 1970's, primarily by Deci (1971) and Lepper et. al (1973), and remains significant in the field of education. Research indicates that intrinsically motivated students are more active learners who are more likely to demonstrate a growth mindset and less likely to display frustration and anxiety when faced with academic challenges (Docan, 2006; Heyman & Dweck, 1992). Research also links intrinsic motivation to higher academic achievement and standardized test scores (Heyman & Dweck, 1992; Lepper et al., 2005).

Intrinsic motivation is often positioned in opposition to extrinsic motivation: the desire to engage in a task to achieve a separate goal, such as receiving rewards or avoiding punishment (Ryan & Deci, 2020; Vallerand, 1997). This, too, stems from research conducted in the 1970's. Both Deci (1971) and Lepper et al. (1973) examined the role of extrinsic motivational tools—such as money, awards, and verbal praise—on intrinsic motivation and found that extrinsic reinforcement diminishes intrinsic motivation. Based on these findings, Harter (1981) constructed a scale of motivation that placed intrinsic and extrinsic motivation on opposite sides of a linear spectrum. Harter's (1981) scale became widely used in motivation research (Lepper et al., 2005), and the concept of intrinsic and extrinsic motivation as antithetical constructs persists, including among teachers (Hulleman & Barron, 2013; Wiesman, 2012).

However, more recent research indicates that intrinsic and extrinsic motivation might be interdependent rather than oppositional. In fact, Lepper et al. (1997) pointed out a flaw in Harter's (1981) scale: "Because Harter's scale presumes that intrinsic and extrinsic motivation are negatively correlated, indeed that they are mutually exclusive, a child who scores high on one index will necessarily score correspondingly low on the other" (p. 32). Accordingly, Lepper et al. (2005) modified Harter's (1981) scale, deconstructing it into two scales, one assessing intrinsic motivation and the other extrinsic motivation. In administering the modified scales to 797 third through eighth graders, Lepper et al. (2005) found that intrinsic and extrinsic motivation were "only moderately negatively correlated" (p. 189), indicating that intrinsic and extrinsic motivation are "two largely orthogonal constructs, rather than opposite ends of the same spectrum" (p. 189). Similarly, Vallerand (1997) and Ryan and Deci (2000, 2020) suggest that extrinsic motivational strategies can lead to internalized motivation that eventually becomes intrinsic.

Testing theories of motivation through empirical research is a complex process. Like growth mindset, motivation is a construct, not an observable phenomenon (Lepper et al., 2005; Lawson, 2017). Researchers must decide how to operationalize intrinsic and extrinsic motivation in order to study the relationship between the two (Deci, 1971; Lepper et al., 1973; Lawson, 2017), and it is difficult to ensure the validity of those operationalized metrics (Lawson, 2017). It is even more difficult to then study the degree to which learning under standards-based grading impacts the development of intrinsic motivation in students.

Despite the complexity of motivation research, and the tensions that already exist within the field, proponents of standards-based grading cite the development of intrinsic motivation for learning as a primary intended outcome of implementing the new grading system (Feldman,

2018; Guskey, 2014). Standards-based grading systems are designed to diminish the impact of grades as external reinforcements, specifically by not factoring formative assessments, work habits, and behaviors into student grades. According to proponents of standards-based grading, grading these elements of the learning process stymies students from internalizing the motivation to develop the habits necessary to achieve academic success. When students are no longer extrinsically incentivized to practice academic skills and the habits and behaviors that lead to growth, they can instead develop intrinsic motivation to engage in those practices – which they will continue to develop when their ungraded efforts result in learning and growth (Brookhart, 1997; Brookhart & Nitko, 2008; Feldman, 2018; Guskey, 2014; Heyman & Dweck, 1992).

As standards-based grading gains traction in American education, empirical research to evaluate those theoretical claims is emerging. Frechette (2017) conducted a year-long case study of one school transitioning to a standards-based grading system and found that both teachers and students reported significantly higher intrinsic student motivation under the standards-based system. However, Frechette's (2017) study focused on fifth and sixth grade classrooms. One clear trend in motivation research is that elementary-age children are more likely to demonstrate intrinsic motivation than their high-school counterparts (Corpus et al., 2009; Gottfriend et al., 2001; Harter, 1981; Lepper et al., 2005; Otis et al., 2005). Accordingly, Schiffman (2016) conducted a study similar to Frechette's (2017) – a case study of a single school that had transitioned to standards-based grading five years prior – but with a high school as his research site. Teachers in the school reported that standards-based grading practices had a "negative and neutral effect on student motivation" (Schiffman, 2016, p. 130).

Schiffman (2016) acknowledges that his study depends on teacher perceptions of student motivation, rather than classroom observation or student self-reporting, but other research

corroborates his findings. In a randomized control trial conducted in two Algebra II classrooms within the same high school, one with a traditional grading system and the other with a standards-based system, students under the standards-based system reported being less motivated than the control group to complete formative work, study for tests, and turn work in on time because their work habits and behaviors did not impact their grades (Rosales, 2013). Similarly, students interviewed by Knight and Cooper (2019) admitted to finding ways to "cheat" and "abuse" standards-based grading policies designed to promote intrinsic motivation (p. 84). However, Knight and Cooper also note that student work habits and behaviors, while experiencing an "initial implementation dip" (p. 65), improved over the course of the study as students became more acclimated to the new grading system and experienced the impact that their ungraded work habits and behaviors had on their later, graded summative assessments. They conclude that there is reason to believe that standards-based grading does, in fact, appear to promote the development of intrinsic motivation in students, although that process takes time and requires teachers to adjust to the idea that, for some students, an initial dip in work habits and behaviors may be part of the students' long-term growth.

In sum, the research on intrinsic motivation and standards-based grading is in its infancy and as yet inconclusive. Furthermore, teacher perceptions of the impact of standards-based grading on student motivation may be influenced by both internal and external factors, such as the teacher's own beliefs about motivation, their prior training and experience, their students' attitudes and behaviors, and their colleagues' attitudes and behaviors (Feldman, 2018; Guskey, 2014; Knight & Cooper, 2019; MacCrindle, 2017; McMunn et al., 2003). Therefore, there is significant room for more research in this area, especially examining the long-term impacts of standards-based grading on students' motivation.

Equitable Grading Practices

Educational equity is a key concern of 21st century education in America (Burke & Whitty, 2018). According to the Organization for Economic Cooperation and Development (2012), an equitable education is both fair and inclusive: "personal or social circumstances such as gender, ethnic origin or family background, are not obstacles to achieving educational potential (fairness) and . . . all individuals reach at least a basic minimum level of skills (inclusion)" (p. 9).

In general, teachers want their grading practices to be both fair and inclusive (Brookhart, 1994; Tierney et al., 2011). However, teachers, like other members of the general population, often have implicit biases (Greenwald et al., 1998; Kang & Lane, 2010, Dee & Gershenson, 2017; Worrell, 2022): unconscious attitudes or stereotypes about groups of people that impact judgments and behaviors (Stanford Encyclopedia of Philosophy, 2019). According to proponents of standards-based grading, traditional grading practices are tainted by implicit bias, effectively penalizing underrepresented and historically marginalized student populations who are most likely to be negatively impacted by biased judgments (Feldman, 2018).

This claim rests on two well-documented phenomena. First, teachers' expectations for student achievement are often biased. Teachers in America – over 80% of whom are White (The Education Trust, n.d.; National Center for Education Statistics, 2018) – tend to hold lower academic expectations for students of color (McKown & Weinstein, 2008; Rojas & Liou, 2017; Smith, 2005). This is significant, as higher teacher expectations are linked to increased motivation, more regular attendance, and higher academic performance for students (Centre for Education Statistics and Evaluation, 2020). Proponents of standards-based grading claim that traditional grading practices exacerbate the problem of differential expectations, as traditional

grading practices are often subjective and untethered to clear learning targets, making it easier for teachers to hold different academic expectations for different students (Cross & Frary, 1999; Feldman, 2018; Munoz & Guskey, 2015; Reeves, 2008).

Second, teachers' judgments of student behavior are often biased. Students of color are more likely to be labeled as disruptive, inattentive, or negligent in completing assignments – even when their behaviors are similar to those of White students (Dee, 2005; Downey & Pribesh, 2004). Classrooms are fast-paced, complex environments, and teachers must make judgments about many student behaviors in the course of a day, or even a class period (Shavelson, 1976). However, student behaviors – and teacher judgments of those behaviors – are influenced by cultural background, gender, socio-economic status, and neurological profile, among other factors (Feldman, 2018; Okonofua & Eberhardt, 2015; Staats, 2014). Therefore, including behavioral components in grades, as many traditional grading practices do, is problematic, as teachers are more likely to penalize underrepresented or historically marginalized students through their grading practices. In fact, in a statistical analysis of 795 traditional grades at one school, Griffin (2020) found significant correlations between race, socioeconomic status, disability and behavioral grade components, with final grades for underrepresented and historically marginalized students falling by as much as 18% due to behavioral penalties. This is important, as low grades can have a negative impact on students' future academic and affective outcomes (Klapp, 2015; Link & Guskey, 2019; Quinn, 2020).

Overcoming implicit bias to create more equitable educational opportunities requires intentional effort (Stevens & Abernathy, 2017). Proponents of standards-based grading claim it includes two practices intentionally designed to mitigate the impact of implicit bias on grading (Feldman, 2018). First, standards-based grading emphasizes measuring student performance

against clearly defined learning goals that are applied to all students. Second, standards-based grading separates academic mastery from work habits/behaviors. While standards-based reports may include feedback on behaviors, behaviors are not factored into student grades (Beatty, 2013). Proponents of standards-based grading also emphasize that, in addition to these two practices, standards-based grading systems are designed to provide teachers with more accurate information about students' individual academic mastery (Iamarino, 2014; Wormeli, 2011). Teachers are therefore more equipped to design individualized educational interventions for at-risk students, who are statistically more likely to belong to underrepresented or historically marginalized groups (Marbouti et al., 2016; Polio & Hochbein, 2015).

As is the case with other standards-based grading philosophical frameworks, there is as yet little empirical research to support these claims. In fact, I could find no empirical studies designed to test the impact of standards-based grade reforms on equity within school communities. The arguments outlined above make logical sense, and it is reasonable to believe that standards-based grading systems can be both fairer and more inclusive than traditional grading systems, but much work must be done to test those claims in real classrooms and schools.

Curricular and Instructional Change

The standards-based grading movement clearly aims to reform traditional grading and assessment practices (Guskey, 2014; Iamarino, 2014; Schiffman, 2016). Yet standards-based grading is also seen as a "launchpad" for teachers to reform their practices in the areas of curriculum and instruction (Scriffney, 2008, p. 73). It is difficult for teachers to change their curricular and instructional practices, especially when those practices stem from long-held beliefs or have long-established histories in classrooms (Guskey, 2014; O'Connor et al., 2018;

Tyack & Cuban, 1995). But based on his experience as a principal and district administrator, Feldman (2018) affirms that implementing standards-based grading "didn't just change how teachers graded. It changed their beliefs about themselves, about teaching and learning" – and, therefore, their curricular and instructional practices (p. xxvii).

This belief is aligned with Ormrod's (2008) framework for interconnected teaching, which states that curriculum, instruction, assessment, and grading are interdependent domains of practice. Thus, a significant change to one domain creates a ripple effect that results in changes to the other domains. According to Hargreaves (2000), structural changes – namely, changes to a school's infrastructure and policies – are the most significant, as they can compel change amongst even the most resistant teachers, or amongst practices within the most long-established educational traditions. Standards-based grading is a significant structural change, and its proponents claim it leads to similarly significant changes in the areas of curriculum and instruction. Currically, standards-based grading focuses teachers' attention on planning for student skill development, rather than content coverage (Brookhart & Nitko, 2008; Feldman, 2018; Rinkema & Williams, 2018). Instructionally, standards-based grading provides teachers with more accurate information about student progress towards learning goals, allowing them to make more informed instructional decisions centered on individual students' needs (Brookhart & Nitko, 2008; Iamarino, 2014; Rinkema & Williams, 2018).

Research does indicate that adopting standards-based grading can lead to changed practice in the areas of curriculum and instruction. In a popular practitioner-facing article, Scriffney (2008) narrates her and her colleagues' experience implementing standards-based grading and concludes with seven reasons why standards-based grading is a beneficial reform, two of which center on the changes it catalyzes in other areas of teacher practice. Scriffney's

(2008) work, though influential amongst teachers, lacks methodological rigor, as it is largely

based on her own experience, without articulated data collection and analysis procedures.

However, another empirical study affirms her claims. Teachers across five high schools in the

central United States report engaging in more purposeful curricular planning and selection of

instructional techniques after adopting standards-based grading (Knight & Cooper, 2019). They

were also more likely to report differentiating instruction, as the data generated by

standards-based grading provided them with clearer sightlines into students' individual needs

(Knight & Cooper, 2019).

Knight and Cooper's (2019) findings are far from conclusive, however. Document

analyses within the same study also found that teachers significantly compromised

standards-based grading policies as they implement the new system – for example, by continuing

to factor work habits and behaviors into student mastery ratings (Knight & Cooper, 2019). Thus,

it is possible that teachers' self-reported perception of change is not an accurate representation of

the change that actually occurs. A study on the implementation of standards-based grading in a

Florida school district supports this idea. Over three years, the 241 teacher participants

overwhelmingly reported making significant changes to their curriculum and instructional

practices as they implemented standards-based grading (McMunn et al., 2003). However,

classroom observations and document analyses conducted by the researchers did not corroborate

teachers' self-reported changes in practice (McMunn et al., 2003). The dissonance between

teachers' self-reported data and the researchers' observations and data analyses casts doubt on

the power of standards-based grading to catalyze curricular and instructional changes.

It is worth noting, however, that these studies, like so much of the empirical research on

standards-based grading, focus on sites that have recently adopted standards-based grading and

are still in the early stages of implementation. Even the staunchest proponents of standards-based grading acknowledge that the change process is challenging, that teacher understanding and implementation of the new system is uneven in the early stages of implementation, and that it will take time to see the full impact of standards-based grading on teacher practice (Link & Guskey, 2022).

Practices Associated with Standards-Based Grading

The goals of standards-based grading can only be realized if schools and teachers implement aligned practices in their classrooms (Link & Guskey, 2022). Proponents of standards-based grading tend to highlight three fundamental practices: 1) formative assessment; 2) the use of rubrics; and 3) redos and retakes on assignments and assessments. After a brief description of criterion-referenced standards, which undergird all three practices, this section of the literature review defines each practice, examines the empirical research surrounding it, and connects that research to the goals of standards-based grading.

Criterion-Referenced Standards

Standards-based grading stems from the standards-based reform movement that gained momentum in the 1990's. In education reform, standards "specify the desired outcomes that drive classroom, assessment tests, lesson plans, and curricular designs" (Moore et al., 2009, 83.1). In other words, standards are statements of intended learning outcomes. Importantly, standards are criterion-referenced, not norm-referenced. Student performance is measured against the standard itself, not against the performance of peers (Shepard, 1979).

It is worth noting that the definition of the term *standards* is broad, acting as an umbrella term that encompasses different approaches to articulating intended learning outcomes. For example, there can be a difference between content standards, which tend to focus on what

students are expected to know, and performance standards, which tend to focus on what students are expected to be able to do (U.S. Department of Education, 2003). Standards can also vary in their level of specificity, with some standards articulating broad learning outcomes – such as, "students should be able to communicate effectively" – and others expressing narrower outcomes, such as "students should know the advantages and disadvantages of the city-manager form of government" (McLaughlin & Shepard, 1995, p. 29). These differences are significant, but I could not find any research to indicate whether differences in the scope and specificity of standards seem to have any impact on teacher practice or student outcomes.

Though the definition of the term *standards* varies, proponents of standards-based grading agree that criterion-referenced standards are intended to guide the development of practices associated with standards-based grading, such as formative assessments, rubrics, and redo/retake policies (Brookhart & Nitko, 2008; Feldman, 2018; Guskey, 2014).

Formative Assessment

The distinction between formative and summative assessment is widely recognized in education (Brookhart & Nitko, 2008). Formative assessment measures a student's progress towards mastery during the learning process, providing feedback to students and teachers before a summative assessment, while summative assessment measures a student's mastery at the end of the course of study (Dixson & Worrell, 2016). Proponents of standards-based grading emphasize the importance of formative assessment, recommending that students have multiple opportunities to formatively demonstrate and receive feedback on their progress before a summative assessment – and also emphasize that formative assessments should be ungraded (Beatty, 2013; Feldman, 2018; Guskey, 2014).

Formative assessment was first popularized by Black and Wiliam (1998), who initially defined formative assessment as: "All those activities undertaken by teachers, and/or their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged" (p. 7-8). Black and Wiliam (2009) later revised their definition, focusing it more precisely on student achievement:

> Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers to make decisions about next steps in instruction that are likely to be better, or be better founded, than the decisions they would have taken in the absence of evidence that was elicited. (p. 9)

In other words, while formative assessment does consist of classroom activities that inform decisions around future teaching and learning activities, that is not enough. The formative activities must be intentional practice aligned to clear learning targets, so that they generate valid data about student progress that teachers and learners can use to make informed decisions about the future teaching and learning activities that can best advance student achievement.

Evidence indicates that formative assessment can significantly enhance student achievement. In their seminal meta-analysis of over 250 empirical studies of formative assessment, Black and Wiliam (1998) demonstrated that research "shows conclusively that formative assessment does improve learning," and that the gains in achievement associated with formative assessment were "amongst the largest ever reported" (p. 61). Subsequent research indicates that while the impact of formative assessment might not be as large as Black and Wiliam (1998) claimed, the use of formative assessment in the classroom does have a positive and significant impact on student learning (Moyosore, 2015; Ruiz-Primo & Furtak, 2006; Stull et al., 2011; Thompson et al., 2004; Wiliam et al., 2004; Wininger, 2005).

However, evidence also indicates that teachers do not always use formative assessment effectively (Brookhart et al., 2008; Moss & Brookhart, 2019). Moss and Brookhart (2019) identify a common misconception about formative assessment: that "any practice that gathers information for the purpose of improving programs or improving teaching is a part of formative assessment" (p. 15). While it is true that teachers can use a wide variety of practices to gather data that informs instruction, not all of those practices effectively promote student achievement. Formative assessments that promote student achievement share five qualities: 1) they are aligned to learning goals; 2) they occur in class; 3) they are low-stakes; 4) they require an independent response from every student; and 5) they allow teachers to give prompt feedback on discrete skills related to the learning goals (Black & Wiliam, 1998; Cauley & McMillan, 2009; Feldman, 2018; Guskey, 2014; Leahy et al., 2005; Lee et al., 2020; Popham, 2008). In a critical review of the use of formative assessment in classrooms, Bennett (2011) found significant variation in teachers' formative assessment practices, resulting in disparate impacts on student learning. Similarly, Johnson et al. (2019) studied the use of formative assessment in three school districts and concluded that even master teachers only implemented some elements of formative assessment effectively. Based on their study of teacher professional development on formative assessment, Andersson and Palm (2018) suggest that teachers often do not understand *how* and *why* formative assessment can positively impact learning, and therefore often do not implement it effectively.

Proponents of standards-based grading emphasize the central role formative assessment plays in achieving the goals of the grading system (Beatty, 2013; Feldman, 2018; Guskey, 2014). Formative assessments aligned to criterion-referenced standards can promote academic mastery by providing students and teachers with multiple opportunities to measure student progress and

respond accordingly. Furthermore, the fact that formative assessment is ungraded – as

proponents of standards-based grading insist it should be (Brookhart & Nitko, 2008; Feldman,

2018; Guskey, 2014; Scriffney, 2008) – can theoretically promote a growth mindset and intrinsic

motivation in students (Knight & Cooper, 2019). Theoretically, ungraded formative assessment

allows students to see themselves grow over time, and not be penalized for that growth process,

thus developing confidence in their abilities to improve their academic skills through hard work.

Furthermore, because formative assessment is not weighted in grades, students theoretically

learn the value of completing it for its own sake, rather than for an extrinsic motivator such as a

grade.

Another goal of the standards-based grading movement is to prompt curricular and

instructional change. As the literature shows, teachers do not always use formative assessment

effectively (Brookhart et al., 2008; Moss & Brookhart, 2019). By highlighting the importance of

formative assessment, perhaps the standards-based grading movement can prompt schools and

teachers to engage in professional learning that enhances the implementation of formative

assessment in classrooms. Thus far, however, little research exists examining a possible link

between the implementation of standards-based grading and the effective use of formative

assessment, just as no conclusive research exists to validate the theoretical links between

formative assessment, growth mindset, and intrinsic motivation. These are areas worthy of

further inquiry.

Rubrics

A rubric is a scoring guide that identifies and describes a set of possible student

performance levels (Wolf & Stevens, 2007). Strong rubrics have three essential qualities: 1)

assessment criteria aligned with criterion-referenced standards and learning targets; 2) clearly

delineated levels of performance; and 3) robust descriptions of what it means to achieve at each level (Sadler, 1989).

One of the goals of employing rubrics in the classroom is to make learning targets clearer to students (Wolf & Stevens, 2007). If students – especially students who are novices with regard to a particular skill or task (Bresciani et al., 2004) – know the learning targets, they are more likely to meet them (Stiggins, 2001). This is perhaps especially true for students from historically marginalized and underrepresented populations, who may not be aware of the implicit expectations that can exist in classrooms (Andrade & Du, 2005; Ragupathi & Lee, 2020). Well-designed rubrics can also make learning targets clearer to teachers, as well. Proponents of rubrics recommend that teachers design their rubrics in advance, making sure that their performance criteria align to standards, and then reference the rubrics throughout the course of an instructional unit to check the alignment between their enacted curriculum and the learning targets (Bresciani et al., 2004; Ragupathi & Lee, 2020; Wolf & Stevens, 2007). However, Bharuthram's (2015) survey of 40 teachers found that the teachers largely considered rubrics tools for students to better understand learning targets, not for the teachers themselves to better assess the alignment of their curriculum and instruction with learning targets. Though this study features a relatively small sample size (n = 40), it is worth noting. After all, if teachers do not use rubrics to assess the clarity and alignment of their instructional practices, students will have more difficulty clarifying their own understanding of the learning targets they are expected to master.

A second goal of employing rubrics in the classroom is to achieve greater fairness and consistency in measuring student performance against learning targets (Andrade, 2000). Based on their meta-analyses of empirical research on rubrics, Brookhart and Chen (2015) and Jonsson and Svingby (2007) both conclude that there is strong reason to believe that using rubrics does

improve the reliability of teaching grading, especially test-retest reliability and inter-rater reliability. Students also report that they perceive teacher grading as more consistent when teachers use rubrics (Andrade & Du, 2005). However, it is less clear whether rubrics help teachers more effectively measure learning targets – in other words, whether rubrics help teachers achieve greater validity in their grading. Jonsson and Svingby (2007) found that the use of rubrics had little to no impact on the validity of teacher grades on individual assessments, while Brookhart & Chen (2015) found significant variation in the evidence regarding validity and concluded that more research is necessary to determine the impact of rubric use on the validity of teacher's grading practices. Given the importance that standards-based grading programs place on accurately assessing student performance against clear learning targets, this is an important area for further investigation.

A third goal in employing rubrics in the classroom is to cultivate student agency in the learning process. Rubrics help build a sense of agency in students by enabling them to self-assess their work, develop their own growth goals, and plan specific action steps to pursue those goals (Andrade & Du, 2007; Panadero & Jonsson, 2013; Zimmerman, 2000). Students also report receiving more helpful feedback from their teachers when rubrics are used in the grading process (Andrade, 2000). Teacher engagement in professional learning around rubric creation and implementation led to stronger teacher-student partnerships and a rise in students' self-reported pride in their work and commitment to completing work in the manner necessary to achieve their desired level of academic achievement, according to an action research study conducted at an American high school (Picon Jacome, 2012). There is evidence that these positive outcomes are amplified when teachers involve students in the construction of rubrics (Abdul Ghaffar, 2021; Picon Jacome, 2012).

However, evidence also indicates that teachers do not always design rubrics effectively (Brookhart & Chen, 2015; Dawson, 2015). Dawson (2015) analyzed 100+ rubrics and found significant divergence in the definition, format, and quality of teacher-generated rubrics. Similarly, Brookhart and Chen (2015), in their meta-analysis of research around rubrics, found that teachers often confuse checklists – which lack clearly delineated levels of performance and descriptions of what it means to achieve mastery – with rubrics. Proponents of standards-based grading emphasize the central role rubrics plays in achieving the goals of the grading system (Beatty, 2013; Feldman, 2018; Guskey, 2014). Rubrics can help students and teachers focus their efforts on academic mastery and develop a growth mindset towards learning, as well as make grading fairer, more consistent, and more equitable. However, professional learning focused on developing and implementing rubrics might be necessary to equip teachers to effectively leverage rubrics for the goals of standards-based grading.

Redos and Retakes

Proponents of standards-based grading recommend allowing students to redo or retake assignments and assessments multiple times, without any penalty to their final grades (Brookhart & Nitko, 2018; Feldman, 2018; Guskey, 2014; Wormeli, 2011). As Wormeli (2011) says in his staunch defense of this practice: "The goal is that all students learn the content, not just the ones who can learn on the uniform time line [sic]. Curriculum goals don't require that every individual reaches the same level of proficiency on the same day, only that every student achieves the goal" (p. 22). According to Frisancho et al. (2016), this practice is especially important for students from historically marginalized or underrepresented populations, who exhibited "large learning gains" when allowed to retake competitive year-end exams in Turkey (p. 120). In Wormeli's (2011) experience, allowing – or even requiring – students to redo or

retake assignments and assessments holds *all* students to higher academic standards, as they are

expected to demonstrate mastery of the criterion-referenced standard, rather than move on

without demonstrating mastery. Redo and retake policies might also impact student mindset: in a

survey of 429 high school teachers in 17 different schools, teachers who allowed retakes were

more likely to report that their students demonstrated a growth mindset towards learning (Wisch

et al., 2018). These findings are clearly aligned with the emphasis on academic mastery, growth

mindset, and equity within the standards-based grading movement.

However, redos and retakes are controversial among teachers, parents, and students

(Franklin et al., 2016; Peters et al., 2017; Wisch et al., 2018). Even in schools that have adopted

standards-based grading and developed redo and retake policies, individual teacher practices

regarding redos and retakes vary widely (Peters et al., 2017; Wisch et al., 2018). Based on

open-ended survey responses from 429 teachers, Wisch et al. (2018) concluded that teachers'

practices were influenced by their internal attitudes towards two topics: 1) the importance of

deadlines; and 2) the most effective ways to enhance student ownership of the learning process.

Teachers who did not implement redo and retake policies largely believed that doing so would

diminish students' motivation to complete work and prepare for assessments in a timely and

responsible manner (Wisch et al., 2018). In semi-structured interviews, three parents at one

standards-based grading school agreed based on the external influence of their child's attitude

and behavior, saying that retake opportunities had a negative impact on their child's motivation

to do well on an assessment the first time, and that retake opportunities gave their child a false

sense of the kind of ownership and accountability that would be expected of them in the real

world (Franklin et al., 2016). Though this study's sample size was small, the parents' perceptions

were corroborated in Peters et al.'s (2017) analysis of over 500 open-ended survey responses

from students at a school in its first year of standards-based grading implementation. A significant number of students admitted to not studying well before assessments, making statements like, "I can just reassess later" (Peters et al., 2017, p. 19). Both parents and students said that they felt like teachers' expectations were lower, not higher, under standards-based grading (Peters et al., 2017; Wisch et al., 2018).

In sum, redos and retakes are an important practice associated with standards-based grading (Brookhart & Nitko, 2018; Feldman, 2018; Guskey, 2014; Wormeli, 2011). Proponents of redos and retakes claim that they help teachers hold high expectations for academic mastery, promote equitable assessment practices, and help students cultivate a growth mindset. While there is some evidence to support these claims (Frisancho et al., 2016; Knight & Cooper, 2019; Wisch et al., 2018), there is also evidence that redo and retake policies can diminish student motivation and agency, as well as teachers' expectations for students (Franklin et al., 2016; Knight & Cooper, 2019; Peters et al., 2017; Wisch et al., 2018). It is worth noting that the data regarding these perceptions were collected in the early years of standards-based grading implementation at the research sites. It is possible that student habits and teacher expectations may experience an initial implementation dip, but that the goals of standards-based grading can be achieved in the long term, as students and teachers adjust (Knight & Cooper, 2019; Link & Guskey, 2022). This is further proof that there is more research to be done regarding the long-term impact of practices associated with standards-based grading on student mindsets and behaviors – and regarding the professional learning experiences that can equip teachers to implement these practices effectively.

Adult Learning Theory

Before discussing the literature on professional learning and standards-based grading, it is necessary to consider the broader topic of adult learning. Knowles (1980) developed Adult Learning Theory, or andragogy, to distinguish the philosophy and practice of teaching adults from the philosophy and practice of teaching children. According to Knowles (1980), adults have distinct needs as learners, primarily because they become more independent and self-directed as they mature. Therefore, it is especially important for adults to "feel accepted, respected, and supported" as they learn, and for there to be "a spirit between teachers and [adult] students as joint inquirers" (Knowles, 1980, p. 47). Thus, Adult Learning Theory largely describes the environment in which adult learning should take place, in recognition of the needs of adult learners (Merriam, 2008). Given the importance proponents of standards-based grading place on teacher learning during the implementation of standards-based grading (Feldman, 2018; Link & Guskey, 2022), this environment can act as an external influence shaping teacher perceptions of the grading system.

To cultivate an effective environment for adult learners, five fundamental assumptions must be respected: 1) adult learners are self-directed; 2) adults bring rich and valuable experience to the learning process; 3) adults are most ready to learn when the learning is relevant to a meaningful need or goal in their life; 4) adult learners are problem-centered; and 5) adult learners are best motivated by internal factors (Knowles, 1980). These assumptions are not without their critics, with the most vocal contending that Knowles' (1980) assumptions apply to *all* learners, not just adult learners (Hanson, 1996; Merriam et al., 1996). Yet this critique does not nullify the value of Adult Learning Theory, and it often is used as a framework in research on best practices in developing effective professional learning for teachers (Cox, 2006; Drago-Severson, 2009; Glicken, 2004; Kelly, 2017; Lawler, 2003; Terehoff, 2002).

Professional Learning and Standards-Based Grading

While andragogy refers to an overarching theory of adult learning and the conditions that best foster it, professional learning refers to the specific experiences and opportunities designed to facilitate adult learning within a professional setting such as a school. There is an overwhelming consensus that implementing standards-based grading requires significant professional learning on the part of teachers (Brookhart, 2011; Brookhart & Nitko, 2018; Feldman, 2018; Guskey, 2014; Link & Guskey, 2022; O'Connor et al., 2018; MacCrindle, 2017; McMunn et al., 2003; Peters & Buckmiller, 2014). After all, one of the goals of the standards-based grading movement is to catalyze curricular and instructional change. The adoption of standards-based grading requires teachers to grapple not only with their grading practices, but with their lesson/unit planning, homework policies, classroom management, and beliefs about learning (Peters & Buckmiller, 2014). Yet it is difficult for teachers to change their curricular and instructional practices, especially when those practices stem from long-held beliefs or have long-established histories in classrooms (Guskey, 2014; O'Connor et al., 2018; Tyack & Cuban, 1995).

There is little research on professional learning that is specific to the implementation of standards-based grading (Peters & Buckmiller, 2014), and the research that does exist is mixed. There is evidence that professional learning opportunities – such as school-based professional development sessions and ongoing engagement with instructional coaches – are an external influence on teachers' perceptions of standards-based grading. Participation in professional learning is correlated with change in teachers' mindsets towards learning, with teachers expressing greater belief in the goals and practices of standards-based grading after one year of professional learning (MacCrindle, 2017; McMunn et al., 2003). Yet there is also evidence that

these professional learning opportunities have little to no impact on teachers' practices in the classroom (McMunn et al., 2003). It is worth noting that standards-based grading is still a relatively new phenomenon. Much of the research on standards-based grading – including that of MacCrindle (2017) and McMunn et al. (2003) – has taken place in schools that had only recently implemented the system and thus had little time for teachers to engage in professional learning, rather than in schools that have committed to sustained professional learning over the course of years. Indeed, such schools might be few and far between (Peters & Buckmiller, 2014).

Given the limited research on professional learning specifically geared towards standards-based grading, it is worth considering the principles of effective professional learning more broadly. According to Webster-Wright (2009), effective professional learning is "continuing, active, social, and related to practice" (p. 2). Definitionally, continuing professional learning consists not of isolated hour-long (or even day-long or week-long) professional development sessions, but rather of ongoing learning opportunities embedded within the life of a school (Garet et al., 2001; Wilson & Berne, 1999). These learning opportunities typically require active engagement from the learner, often through critical reflection that links theory to practice (Kothargen, 2017). And they should occur with other members of the school community, and with explicit opportunities to link the learning to their daily work, as these qualities are more likely to foster lasting learning (Garet et al., 2001; Wilson & Berne, 1999). Professional learning that is continuing, active, social, and related to practice not only aligns with Knowles' (1980) assumptions for adult learning, but also can result in what Mezirow (2000) calls transformational learning: learning where the learner's mental schema is changed and so are their practices.

Darling-Hammond et al.'s (2017) meta-analysis of empirical research on professional learning supports Webster-Wright's (2009) definition. They reviewed the literature on

professional development and professional learning through the spring of 2017, selecting thirty-five studies that demonstrated a positive link between professional learning activities and student outcomes, and found that these professional learning experiences shared several qualities: active learning, opportunities for reflection, collaboration with colleagues on issues relevant to their regular practice, and sustained duration (Darling-Hammond et al., 2017). Yet many professional learning activities in American schools do not follow this model (Hill et al., 2013; TNTP, 2015).

The relationship between professional learning and standards-based grading is a complex topic of inquiry. Implementing standards-based grading often requires teachers to change their curriculum and instructional practices, along with their mindset towards learning – and this is one of the goals of the standards-based grading movement (Brookhart, 2011; Brookhart & Nitko, 2018; Feldman, 2018; Guskey, 2014; Link & Guskey, 2022; O'Connor et al., 2018; MacCrindle, 2017; McMunn et al., 2003; Peters & Buckmiller, 2014). Yet it is difficult for teachers to enact these kinds of changes (Guskey, 2014; O'Connor et al., 2018; Tyack & Cuban, 1995). Teachers are more likely to be open to the changes standards-based grading requires if they play a role in and support the adoption of the new system, rather than having it unilaterally thrust upon them (Peters & Buckmiller, 2014). And there is reason to believe that effectively designed professional learning can result in changed mindsets and practices for teachers (Darling-Hammond et al., 2017). But more research must be done on teacher perceptions of professional learning related to standards-based grading, as well as on the form that learning takes and the long-term impact it has on schools.

Conclusion

In sum, the literature on standards-based grading is far from conclusive. There is widespread consensus among proponents of standards-based grading regarding the goals of adopting this new grading system: to promote 1) academic mastery; 2) a growth mindset towards learning; 3) intrinsic motivation for learning; 4) equitable grading practices; and 5) curricular and instructional change (Beatty, 2013; Brookhart & Nitko, 2008; Feldman, 2018; Guskey, 2014). However, the link between these intended outcomes and the adoption and implementation of standards-based grading is largely theoretical.

Empirical research has generated conflicting findings regarding the effectiveness of standards-based grading and the practices commonly associated with it, such as formative assessment, rubrics, and redos/retakes. On the one hand, teachers implementing standards-based grading similarly report that students are more willing to take risks, learn from failure, and seek feedback under a standards-based approach (Knight & Cooper, 2019; Schiffman, 2016). On the other, students, parents, and teachers express concern that standards-based grading demotivates students and holds them to lower academic standards (Franklin et al., 2016; Knight & Cooper, 2019; Peters et al., 2017; Schiffman, 2016; Wisch et al., 2018). Teacher perceptions of standards-based grading are influenced by internal factors, most often personal beliefs and prior experience/training, and external factors, most often student attitudes and behaviors.

The effectiveness of standards-based grading can only be tested if teachers effectively implement the practices associated with it (Link & Guskey, 2022). Yet standards-based grading requires significant change on the part of teachers, and it can be challenging for teachers to change their grading practices, especially when those practices stem from long-held beliefs or have long-established histories in classrooms (Guskey, 2014; O'Connor et al., 2018; Tyack & Cuban, 1995). In fact, when a school adopts standards-based grading, teachers often modify the

new practices and policies they are supposed to implement, compromising them with more

traditional methods (Knight & Cooper, 2019; McMunn et al., 2003; Schiffman, 2016; Wisch et

al., 2018). This may occur because teachers oppose the new practices (Wisch et al., 2018). But it

may also occur because the professional learning experiences designed to equip teachers to

implement standards-based grading have not yet been effective at equipping teachers to change

their practices, even if they are willing to do so (MacCrindle, 2017; McMunn et al., 2003).

The latter point is important to consider. After all, one of the qualities of effective

professional learning is that it is sustained over time (Darling-Hammond et al.'s, 2017;

Webster-Wright, 2009). Yet standards-based grading is a relatively new phenomenon, and one

limitation of much of the research is that the research sites are typically schools that only

recently (i.e., within 1-2 years) adopted standards-based grading. There is little research on the

long-term impacts of adopting standards-based grading on student and teacher attitudes,

behaviors, and outcomes. There is, however, reason to believe that long-term impacts might

differ from short-term ones. Knight and Cooper (2019) studied the impact of newly adopted

standards-based grading policies at five schools and found that, after an "initial implementation

dip" (p. 65), student work habits and behaviors improved over the course of the school year as

students became more acclimated to the new grading system and its expectations. Perhaps

teachers, too, experience a similar "implementation dip" as they adapt to standards-based

grading. Only research at school sites that have invested in standards-based grading for years can

begin to explore that possibility, as well as longer-term impacts of implementing standards-based

grading in a school community.

This makes The Green School a research site well-positioned to contribute to the

literature on standards-based grading. The school's teachers first began to employ

standards-based grading practices in 2017, and the school formally adopted standards-based grading in 2019. At the time of this study, the school had spent five years articulating the goals of its standards-based grading program and developing professional learning experiences to equip teachers to effectively implement practices associated with standards-based grading, including formative assessment, rubrics, and redos/retakes. Studying teachers' perceptions of the system's effectiveness, of the supports that have been most helpful to them, and of the impediments that have been most challenging can not only address The Green School's problem of practice. It can also meaningfully contribute to a new body of research on sustained efforts to effectively implement standards-based grading in school communities.

Chapter 3

Methods

This study was designed to investigate teacher perceptions of The Green School's standards-based grading program, particularly focusing on the following research questions:

- RQ1: How do Green School teachers understand and articulate the goals of the school's standards-based grading program?

- RQ2: According to Green School teachers, in what ways (if any) are those goals being fulfilled? In what ways (if any) are those goals not being fulfilled?

- RQ3: What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?

Chapter 1 introduced and contextualized the problem of practice prompting these questions. Chapter 2 synthesized the literature informing the problem of practice, focusing on the goals of standards-based grading, pedagogical practices associated with standards-based grading, and the professional learning experiences that can equip teachers to implement standards-based grading. A conceptual framework (see Figure 1.1) illustrates my own orientation to the problem of practice, as well as the elements that inform my research questions – namely, teacher perceptions and teacher learning, both of which can impact teacher implementation of standards-based grading goals and practices in the classroom.

This chapter presents an aligned methodology and includes an explanation of the study design; descriptions of the research site, participants, and sampling procedures; an overview of data collection and analysis procedures; a consideration of the study's trustworthiness and ethical implications; and a discussion of the study's delimitations and limitations.

Research Design

This study employed a qualitative exploratory case study approach to research. Qualitative research aims to understand how people describe, interpret, and make meaning of their experiences (Merriam & Tisdell, 2015). In doing so, "Qualitative research seeks to probe deeply into the research setting in order to obtain understandings about the way things are, why they are that way, and how the participants in the context perceive them" (Gay & Airasian, 2000, p. 16). The Green School had already gathered quantitative data regarding teacher perceptions of standards-based grading, in the form of surveys indicating that teachers considered standards-based grading as the area of the school's academic program most in need of improvement, and that 40-50% of teachers doubted that standards-based grading has positively impacted student outcomes and teacher practice. A qualitative approach was an appropriate next step, as it would allow for deeper probing into teacher perceptions of the goals of standards-based grading, their concerns about the grading system, and their use of the grading system and practices associated with it.

Case studies are deep, focused investigations of experiences located within a specific context and bounded by space and time (Hancock & Algozzine, 2017). As a general rule, case studies are "richly descriptive," aiming to gather data from "deep and varied" sources, such as focus groups, interviews, surveys, and documents (Hancock & Algozzine, 2017, p. 16). In an exploratory case study, in particular, the data are used to develop an initial understanding of the case, and often results in the development of further questions for future study (Hancock & Algozzine, 2017). An exploratory case study was an appropriate framing for this study. Though quantitative survey data indicated that Green School teachers doubt the effectiveness of the school's standards-based grading system, no concerted effort had yet been made to further

understand the teachers' perceptions of standards-based grading. This study represents an initial attempt to understand how teachers perceive standards-based grading within the specific context of The Green School and at a specific moment five years into the implementation of the school's standards-based grading system.

Case

This study examined teacher perceptions of the standards-based grading program at a specific site: The Green School. The Green School is an independent school (grades 6-12) located in a Midwestern state. It opened in 2017 with approximately 50 students. By the 2022-23 school year, the school had grown to approximately 305 students. The school's mission is to "provide a balanced and challenging education" for *all* students in its region. The school has a well-resourced financial assistance program and offers an average tuition discount of 60%. Over 40% of the student body pays less than $5,000 in tuition, and 33% of the student body consists of students of color. Students enter The Green School from over 90 different feeder schools, including public schools, charter schools, virtual schools, home schools, and other independent schools.

The Green School's faculty community also represents a diversity of backgrounds and experiences. In 2017, the school employed eight full-time faculty members, growing to 40 full-time faculty members in the 2022-23 school year. On average, the faculty have approximately eight years of experience teaching in a K-12 classroom, with the least experienced faculty members having less than one year of experience and the most experienced having over 20 years. Approximately 80% of the faculty have earned a master's degree, with approximately 20% holding a doctorate degree. Twelve of the faculty members have taught only at The Green School. Therefore, their sole experience implementing a system of grading and assessment has

been under the school's standards-based grading program. The remaining 28 faculty members had experience working under a traditional grading system before joining The Green School.

The Green School encouraged teachers to implement standards-based grading from its inception. During the 2017-18 and 2018-19 school years, the school adopted a standards-based report card that reported student ratings (on a scale of 1-4) for specific skills in each of their courses. However, many teachers maintained a traditional gradebook and translated their traditional, points-based grades into standards-based ratings only for the purposes of the report card. During the 2019-20 school year, the school formally adopted standards-based grading and mandated that each teacher maintain a standards-based system of grading and assessment on the school's learning management system.

There are several elements of The Green School's standards-based grading system that are unique to the school and are important to note because they are referenced in the data and subsequently developed findings (see Chapter 4). First, the school organizes its learning targets under the umbrella of six transdisciplinary learning goals: Factual Knowledge, Procedural Technique, Conceptual Understanding, Critical Thinking, Communication, and Creativity & Originality. On report cards, teachers report out student ratings (on a scale of 1-4) for each transdisciplinary learning goal. These ratings are the average of the student's ratings in the individual learning targets categorized under each transdisciplinary learning goal. Second, upper school students (grades 9-12) receive letter grades in addition to ratings on their report cards. Though the school aims to minimize the impact of letter grades, letter grades are reported for the purpose of creating a legible transcript for the college admissions process. The school recognizes that the use of letter grades is a compromise with the ideals of standards-based grading but

believes that letter grades are necessary at this moment in the school's development, as it is a young school still building its reputation.

Since the formal adoption of standards-based grading, the school developed resources – such as rubric banks, formative assessment exemplars, and an Frequently Asked Questions primer on grading and assessment – and invested in professional learning experiences – including book clubs, in-service sessions, workshops, and mentorship pairings – to support teachers in implementing standards-based grading.

Participants and Sampling

In case study research, the researcher aims to gather "richly descriptive" data from "deep and varied" sources (Hancock & Algozzine, 2017, p. 16) Therefore, I gathered data from two different participant groups: full-time Green School faculty members and a member of the school's academic leadership team.

Full-Time Faculty Members. Full-time faculty members at The Green School were the primary participant group. Using a purposive sampling method based on length of teaching experience, professional backgrounds and role on the faculty, tenure at The Green School, and assigned discipline, I selected 10 faculty members representing 25% of the school's total full-time faculty population. I emailed the 10 faculty members to invite their participation in the study (see Appendix A), and all ten agreed to participate. Figure 3.1 presents the faculty participants and their characteristics.

Figure 3.1

Faculty Participants

Pseudonym	Years at Green School	Years teaching, total	Division (middle or upper school)	Academic discipline
Shauna	1	9	Middle	World Language

Ben	1	10	Middle	History
Margaret	2	8	Upper	Math
Colton	3	15	Upper	Science
Charity	4	7	Middle	History
Ruth	4	7	Upper	English
Nora	4	4	Middle	World Language
Sanford	5	5	Upper	English
Jay	5	5	Upper	Math
Annie	6	20	Middle	Science

School Leadership. The second participant group consisted of the Founding Head of School: Dr. S, the leader of The Green School's academic leadership team. Before joining The Green School, Dr. S was an upper school English teacher in an independent school for seven years and a professor and administrator at a university for 13 years. He joined The Green School as its Founding Head of School in 2015. As his title indicates, he founded the school and therefore has been present for (and engaged with) the inception, implementation, and continued development of The Green School's standards-based grading program. His historical and current understandings and perceptions of the program allowed for data triangulation, creating a more robust picture of the context within which teachers experienced standards-based grading at The Green School. See Appendix B for an email inviting the Founding Head of School's participation in the study.

Data Collection

An exploratory case study aims to deeply and accurately describe a variety of participants' experience of a particular phenomenon, within a particular time and space. To gather these data, I employed three phases of data collection: a semi-structured interview with

the Founding Head of School, semi-structured focus groups with faculty participants, and select semi-structured follow-up interviews. These forms of data collection enabled me to gather rich, thick data from varied participants and develop a robust picture of teachers' perceptions of The Green School's standards-based grading program, the ways in which those perceptions have been informed by professional learning, and how perceptions and learning experiences impacted the implementation of standards-based grading goals and practices in their classrooms.

Phase 1: Semi-Structured Interview with the Founding Head of School

The first phase of data collection consisted of a semi-structured interview with the Founding Head of School. The purpose of interviewing the Founding Head of School was to allow for triangulation with the data to be collected from faculty participants, creating a more robust picture of the context within which teachers have experienced standards-based grading at The Green School. It was important for this phase of research to be conducted first, so that faculty participants would not fear that their responses in the focus groups and interviews would be reported to the Founding Head of School.

The interview with the Founding Head of School was conducted in accordance with a semi-structured protocol (see Appendix C). I interviewed the Founding Head of School one-on-one for 60 minutes. The interview was recorded, with the participant's permission, and held in person in the Founding Head of School's office at The Green School, so as to make him feel comfortable. Immediately after the interview, I recorded field notes to document my thoughts and noticings from the interview (see Appendix F).

Phase 2: Semi-Structured Faculty Focus Groups

Semi-structured focus groups are a specific type of qualitative interview that provide a method for understanding the perspectives of groups of people, making them ideal for

exploratory and descriptive research of phenomena seen through a variety of viewpoints (Aurini et al., 2016). In a semi-structured focus group, the researcher develops a questioning protocol, featuring largely open-ended questions aligned to the study's area of inquiry and research questions, and then uses those questions flexibly to gather data from participants (Merriam & Tisdell, 2015). A semi-structured focus group allows the researcher to gather the specific information required by the study's research questions and to "respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic" (Merriam & Tisdell, 2015, p. 111).

Semi-structured focus groups were an effective initial method of engaging with faculty participants this study, as they allowed me to gather data describing a wide variety of teacher perspectives on The Green School's standards-based grading program, specifically its goals, the ways in which those goals are (or are not) being fulfilled, and the supports and impediments most germane to teachers' experience with standards-based grading at the school. The semi-structured nature of the focus groups ensured that the research questions were addressed, but also allowed the participants to drive the conversation and discuss areas of importance to them that the researcher may not have known about beforehand.

I conducted two hour-long focus groups, each consisting of five of the Green School faculty participants (see Figure 3.1). The focus groups were composed based on participants' schedules. Focus Group 1 consisted of Ben, Colton, Charity, Nora, and Annie. Focus Group 2 consisted of Shauna, Margaret, Ruth, Sanford, and Jay. Focus groups were recorded, with the participants' permission, and held in person, with the location for each interview being a classroom at The Green School, so as to make the participant feel comfortable. The proposed focus group protocol, which is aligned to my research questions and the constructs depicted in

my conceptual framework (see Figure 1.1), is available in Appendix D. I recorded field notes

after each focus group to document my thoughts and noticings (see Appendix F).

Phase 3: Semi-Structured Follow-up Interviews

After conducting both focus groups, I selected six faculty participants with whom to

conduct follow-up interviews that allowed for greater exploration into specific teachers'

experiences with and perceptions of The Green School's standards-based grading program.

Interview participants were selected on the basis of their responses during their focus group. I

documented the rationale behind my selection process in the reflexive memos that I wrote after

reviewing the field notes and transcripts from the focus groups (see Appendix I for a sample).

These interviews, like the focus groups, were semi-structured. I developed an interview

protocol based on the data I gathered in the focus groups (Appendix E). The rationale behind the

development of new questions was recorded in the reflexive memos I wrote after reviewing the

field notes and transcripts from the focus groups (see Appendix I). Each participant selected for a

follow-up interview was interviewed one-on-one for 60 minutes. Interviews were recorded, with

the participant's permission, and held in person, with the location for each interview being the

participant's classroom at The Green School, so as to make the participant feel comfortable.

After each interview, I recorded field notes to document my thoughts and noticings (see

Appendix F).

Data Analysis

In qualitative research, data collection and analysis are simultaneous activities: "Analysis

begins with the first interview, the first observation, the first document read" (Merriam & Tisdell,

2015, p. 191). Accordingly, I analyzed the data generated by each phase of data collection on an

ongoing basis, in accordance with the content analysis protocols set forth below.

Phase 1: Semi-Structured Interview with the Founding Head of School

The interview was audio recorded using Audacity, a free downloadable audio software, and transcribed using Scribie, a fee-based online transcription service. After the interview, I transferred the transcript into a Microsoft Excel document to organize, categorize, and code the data. I also analyzed and coded my field study notes from the interview. I developed a set of *a priori* codes derived from the key constructs of my conceptual framework (see Figure 1.1) and the literature related to each construct (see Chapter 2). Figure 3.2 summarizes the *a priori* codes I identified within each construct.

Figure 3.2

A Priori Codes

Construct from Conceptual Framework	Codes Derived from the Literature
Goals of standards-based grading	Academic mastery Growth mindset Intrinsic motivation Equitable grading practices Curricular and instructional change
Practices associated with standards-based grading	Formative assessment Rubrics Redos/retakes
Perceptions	Internally influenced Externally influenced
Learning	Adult learning theory Professional learning

No emergent codes were added in the coding process. A codebook containing the names and definitions of the interview codes, plus inclusionary and exclusionary criteria, can be found in Appendix G. A sample excerpt of a coded transcript can be found in Appendix H. Throughout the data analysis process, I wrote reflexive memos (see p. 71) to document and interrogate my emerging understandings.

Phase 2: Semi-Structured Faculty Focus Groups

The focus groups were audio recorded using Audacity and transcribed using Scribie. After the focus group, I transferred the transcript into a Microsoft Excel document to organize, categorize, and code the data. I also analyzed and coded my field study notes from the focus group. I developed a set of *a priori* codes derived from the key constructs of my conceptual framework and the literature related to each construct (see Figure 3.2 for a summary of the *a priori* codes). No emergent codes were added in the coding process. A codebook containing the names and definitions of the interview codes, plus inclusionary and exclusionary criteria, can be found in Appendix G. A sample excerpt of a coded transcript can be found in Appendix H. Throughout the data analysis process, I wrote reflexive memos (see p. 71) to document and interrogate my emerging understandings.

Phase 3: Semi-Structured Faculty Follow-Up Interviews

The focus groups were audio recorded using Audacity and transcribed using Scribie. After the interview, I transferred the transcript into a Microsoft Excel document to organize, categorize, and code the data. I also analyzed and coded my field study notes from the interview. I developed a set of *a priori* codes derived from the key constructs of my conceptual framework and the literature related to each construct (see Figure 3.2 for a summary of the *a priori* codes). No emergent codes were added during the coding process. A codebook containing the names and

definitions of the interview codes, plus inclusionary and exclusionary criteria, can be found in Appendix G. A sample excerpt of a coded transcript can be found in Appendix H. Throughout the data analysis process, I wrote reflexive memos (see p. 71) to document and interrogate my emerging understandings.

Trustworthiness

Lincoln and Guba (1985) established trustworthiness as essential to qualitative research, with credibility, transferability, dependability, and confirmability playing important roles in demonstrating trustworthiness. I do not claim that this study is transferable: it examines a context-specific phenomenon and its findings specifically apply to The Green School. Furthermore, the study examines the perceptions of Green School teachers at a specific moment in the school's process of implementing standards-based grading, and the findings therefore might not be consistent and repeatable (i.e., dependable). However, I did aim for the study to be credible and confirmable.

Credibility

For a study to be credible, there must be a high degree of confidence in the truth of its findings. This can be established through triangulation and member checking (Lincoln & Guba, 1985).

Triangulation. Triangulation involves using multiple data sources to generate findings. In this study, I collected data from multiple participants – 10 full-time Green School faculty members and one member of its academic leadership team – and in multiple settings, including focus groups and one-on-one interviews. This form of data triangulation allowed me to synthesize the perceptions, perspectives, and understandings of a variety of participants to develop a robust understanding of the case of standards-based grading at The Green School.

Member Checks. Member checking involves testing the accuracy and interpretation of data with the participants who generated the data. I incorporated member checking into each focus group and interview, frequently articulating my understanding of a participant's words and asking if my understanding was accurate (see Appendices C, D, and E for the interview protocols, which reference member checks). If a participant indicated that my understanding was incomplete or inaccurate, I asked follow-up questions and continued member checking until my understanding was complete and accurate.

Confirmability

For a study to be confirmable, there must be a high degree of confidence that the findings are shaped by the participants, not by researcher bias or influence. This can be established through reflexivity and consideration of the researcher's positionality (Holmes, 2020; Lincoln & Guba, 1985).

Reflexivity. A reflexive researcher creates a system for regularly recording ongoing methodological and logistical decisions, emerging understandings, and the personal attitudes and beliefs that could impact data interpretation (Lincoln & Guba, 1985). To create regular opportunities for reflexivity, I wrote reflexive memos after each data analysis session that I conducted. Each memo will have two parts: 1) my own interpretations, both of the individual data and of connections to previously collected data; and 2) an investigation of any biases or personal opinions that could be informing my emerging understandings. Stahl and King (2020) recommend that qualitative researchers be "relentless in questioning their own findings" (p. 27), and that was my goal in these reflexive memos. See Appendix I for a sample excerpt from a reflexive memo.

Positionality. My position in this study was that of a practitioner-researcher. I am the Dean of Faculty at The Green School and lead all efforts related to curriculum, instruction, and assessment – including standards-based grading. I assumed this position in July of 2021, years after the school's standards-based grading system had been adopted and formalized. I did not make any changes to the system and therefore have no personal stake in the system's adoption, implementation, or effectiveness. However, for two years prior to this research I was responsible for handling every problem associated with standards-based grading. This involved listening and responding to regular questions and complaints about standards-based grading from parents, students, and teachers. Occasionally, parents and teachers were heated in expressing their issues with the grading system. I acknowledge that this took a toll on me and could have biased me against standards-based grading, potentially influencing my interpretation of data. I tried to counteract my own potential bias by explicitly naming it, actively seeking out research that disconfirms it (e.g., Guskey, 2014; Feldman, 2018; Frechette, 2017; Scriffney, 2008), employing member checking to ensure that I accurately heard and understood participants, and reflecting on my own biases and opinions in regular reflexive memos.

As Dean of Faculty, I am also a member of The Green School's senior leadership team and am the direct supervisor of all upper school teachers. Therefore, it is possible that my position could have influenced the faculty participants' responses to the study. I hope that my behaviors, actions, and attitudes prior to the study mitigated those feelings once the study began. I have always invited constructive discourse around standards-based grading and admitted my own doubts about aspects of the system. For example, in a standards-based book club that I led in the spring of 2023, I shared research questioning the book's claim that removing grades builds intrinsic motivation. Similarly, in in-service sessions I always emphasize that teachers should

trust their professional judgment when making decisions about how to implement standards-based grading into their practice.

Still, given my position, teachers might have felt uncomfortable sharing their honest thoughts about standards-based grading during this study, fearing negative repercussions. To mitigate these feelings, I explicitly addressed my positionality when soliciting participation in the study and at the beginning of each focus group or interview, explaining that I was conducting the interview as a doctoral student, not as Dean of Faculty, and inviting honest responses (see Appendices A and B). I also made it clear that teachers were free to skip any question they chose in the interview. I hope that these efforts mitigated the influence of my position on the study's data collection protocols, making the findings confirmable and trustworthy.

Ethical Considerations

This study involved human participants and therefore it was important for it to be conducted ethically. According to Sanjari et al. (2014), the most important ethical dimensions to consider in qualitative research are informed consent, anonymity, and confidentiality. In these areas, I acted in accordance with the protocols approved by the University of Virginia's Institutional Review Board (IRB) for Social and Behavioral Sciences. Before agreeing to participate, each participant was informed of the study's purpose, design, benefits, and risks. I anonymized all data through the use of pseudonyms for both participants and the research site. All pseudonymized data was stored in a password-protected account. All original participant information was stored in a separate password protected account. See Appendix J for the full Data Management Plan.

Delimitations and Limitations

This study contained both delimitations and limitations that impacted the collection and interpretation of data, as well as the generation of findings and conclusions.

Delimitations

Delimitations are choices made by the researcher to set boundaries on what to include and exclude in a study's research design. The most significant delimitation of this study deals with the sampling. Though The Green School offers robust programs in the arts, physical education, and its own signature programs, I chose to include only teachers of core academic disciplines – English, History, Math, Science, and World Languages – as participants. This excluded 11 of The Green School's 40 full-time teachers from the study's population. Though these teachers doubtless have their own unique perceptions of the school's standards-based grading program, they teach a limited subset of The Green School's student population – namely, those students who elect into their classes. I chose to focus on the experiences of teachers whose courses make up the required course of study for all students throughout their middle and upper school careers.

Limitations

Limitations are weaknesses in the research design that can impact the interpretation of data and generation of findings. This study contains two significant limitations. The first was my own positionality as a researcher. I had relationships with all of the participants in this study, which may have influenced data collection and analysis processes. Furthermore, my relationship with the faculty participants was colored by my professional authority over them, especially in the case of the upper school faculty members whom I directly supervise. Faculty members might have hesitated to share their candid perspectives with me, either because they feared repercussions or because they were trying to protect my feelings, as I am responsible for the

standards-based program at the school. As discussed earlier, I employed mitigation measures, but those measures could not completely control for or erase the impact of my positionality, and therefore this remains a limitation of my research.

The second limitation was the timing of data collection. Data collection took place in July and August of 2023, when teachers were on their summer break from school. Their distance from the work of the school year – including the work of assessing and grading under The Green School's standards-based grading system – may have made key elements of the system, or its impact on teachers and students, less salient. If data had been collected at a different point in the year (for example, at the end of a trimester), the data may have presented a different narrative. Therefore, it is important to remember that this study represents the perceptions of teachers at a specific moment in time.

Conclusion

This chapter has outlined the methods for a qualitative exploratory case study of teacher perceptions of The Green School's standards-based grading program. In alignment with these methods, I conducted focus groups with 10 Green School teachers, follow-up interviews with 6 of the teachers, and an interview with the Founding Head of School to generate rich, thick descriptions of teachers' perceptions of standards-based grading, the learning experiences that informed those perceptions, and the ways in which their perceptions and learning experiences impacted the implementation of standards-based grading goals and practices in their classrooms. I used a qualitative coding method to analyze the data generated by the focus groups and interviews, thereby enabling me to generate the findings and recommendations that will be presented in Chapters 4 and 5 of this study. Throughout, I followed protocols to protect

participant privacy and implement strategies – such as triangulation, member checks, and

reflexive memos – to ensure that the research process was both ethical and trustworthy.

Chapter 4

Findings

This inquiry into teacher perceptions of standards-based grading at The Green School was guided by three research questions:

- RQ1: How do Green School teachers understand and articulate the goals of the school's standards-based grading program?

- RQ2: According to Green School teachers, in what ways (if any) are those goals being fulfilled? In what ways (if any) are those goals not being fulfilled?

- RQ3: What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?

My understanding of these questions was guided by a conceptual framework emphasizing the importance of internal and external influences, as well as ongoing learning, on teacher perceptions, especially during the change process necessitated by the adoption of an educational innovation such as standards-based grading.

To explore these questions, I conducted two focus groups with a total of ten Green School faculty participants, six individual follow-up interviews, and an interview with the Green School's Founding Head of School (mostly for the purpose of triangulation). Analysis of the data generated by these sources led me to identify the following research findings, which address my research questions and align with the constructs of my conceptual framework:

- Finding 1: Green School faculty largely articulate a shared understanding of the goals of standards-based grading, but the depth of their understanding varies based on the goal and the teacher.

- ○ Sub-finding 1.1: Teachers' own internal influences largely shape how they perceive the goals of standards-based grading.

- ○ Sub-finding 1.2: There is concern that shared goals can erode as new faculty members enter the institution.

- Finding 2: Green School teachers perceive the goals of standards-based grading as largely fulfilled, although they articulate specific ways in which each goal is not being fulfilled.

- Finding 3: Teachers perceive a tension between the goals of standards-based grading and the practical application of standards-based grading within the context of the school.

    - ○ Sub-finding 3.1: Green School teachers simultaneously perceive their practices as aligned with standards-based grading and question the value and practical application of specific practices associated with standards-based grading.

- Finding 4: Green School teachers perceive themselves as participating in a supportive and growth-oriented learning community, which could be enriched by more formal professional learning experiences.

This chapter elaborates on each of the above findings and concludes with a discussion that synthesizes the findings in preparation for the commendations and recommendations presented in Chapter 5.

Finding 1: Green School faculty largely articulate a shared understanding of the goals of standards-based grading, but the depth of their understanding varies based on the goal and the teacher.

This finding aligns with RQ1: How do Green School teachers understand and articulate the goals of the school's standards-based grading program? When asked about the goals of standards-based grading at The Green School, participants' answers varied, but consensus

emerged around four goals: to promote 1) academic mastery; 2) a growth mindset towards learning; 3) intrinsic motivation for learning; and 4) equitable opportunities for all students. The following sections detail the data related to each goal, in support of Finding 1.

Academic Mastery

The goal of promoting academic mastery was perhaps the most significant goal that emerged in focus groups and interviews. When faculty participants were asked in focus groups to articulate the goals of The Green School's standards-based program, promoting academic mastery was always the first goal named, and each individual participant volunteered their own articulation of the goal, elaborating on the comments of their peers.

Faculty participants focused on how the school's standards-based grading system aims to report student progress on discrete skills, so that students have a clear sense of the learning targets they have mastered and have yet to master. In Focus Group 2, Sanford opened the discussion of the school's goals for its standards-based grading program by saying:

> It's my understanding that standards-based grading is intended to provide students with a legible framework for actionable feedback focused on specific skills. So we break apart the kinds of grades that I used to receive – an A, a B, a C – which were opaque and didn't really communicate anything to me other than, "You're doing great, you're doing good, you're not doing good." So standards-based grading, I feel like it gives students an ability to see their skills more clearly so that they can take action to improve certain skills, to first identify which skills need work and to then improve on them based on the feedback provided by their teacher. (para. 8)

In Focus Group 1, Nora opened the discussion with a similar comment:

I think the purpose [of standards-based grading] is to give a more specific set of feedback

related to student performance. With standards-based grading, the performance is not

measured by a single number the way it would be on a zero to 100 scale. Instead, it's

broken down into multiple proficiencies . . . so it helps students track their own

performance across different classes and disciplines and also it shows them which skills

they need to be working on most and which they already excel in. (para. 14)

In both focus groups, other participants then added on to these comments with their own

understanding. For example, Jay continued to focus on reporting student progress with clear and

specific feedback, saying:

I think part of [the goal of standards-based grading] is clarity, specifically in precision,

being more detailed in the feedback that we give to students. So I think the hope is that

instead of them seeing, "Oh, I got an 88% or I have an A- or whatever" they see more

specific information about what it is that they actually were able to show that they could

do and what they need to do in order to improve those skills. (Focus Group 2, para. 13)

In her interview, Shauna also emphasized precision and specificity, saying that the essence of

standards-based grading is "the specifics of a skill. I need to be able to tell students how they are

doing on this skill specifically" (para. 16).

Like Sanford, Nora, and Jay, Colton contrasted the single data points of traditional

grading with the deconstructed reporting of standards-based grading. He did so with a metaphor,

comparing students' academic mastery to a suit of armor:

With traditional grading, it's pretty easy to . . . it's very doable to get a high level of

achievement, so to speak, while having some significant chinks in your armor or some

significant flaws [in your learning] that can just not be big enough to hold you back

overall. And when you break things down skill-set by skill-set, it's easier to shed light on those deficiencies in learning. (Focus Group 1, para. 35)

Margaret added new insight by emphasizing the importance of distinguishing between academic mastery and non-academic factors in The Green School's standards-based grading program. As she said:

I think a big part of [standards-based grading at the school] is also taking out from the grade anything that is not reflecting what the student knows. So another big goal of it is really giving the kids an idea of where they're at as far as skill development and content knowledge in a course. And none of the: *Did you do your homework or are you acting properly in class?* It's really all about what do they know, what learning has happened? (Focus Group 2, para. 12)

To Margaret, the school's standards-based grading program aims to promote academic mastery not only by communicating student progress in specific skill areas, but also by eliminating non-academic factors from grades. Though Margaret's response here focuses on clearly communicating "what the student knows," it also connects to the goal of providing equitable opportunities for all students, which will be discussed later in Finding 1.

These representative quotes demonstrate that the faculty participants have a shared understanding that a major – if not *the* major – goal of standards-based grading at The Green School is to promote academic mastery by providing students with specific feedback on their progress towards discrete skills – and that this feedback should be separated from feedback on work habits, class behavior, and other non-academic factors. All participating teachers clearly articulate that in doing so, students are better equipped to move towards mastery because they can clearly see where they need to improve. As Charity summarized, "I think ultimately we want

students to know where they're at. That should never be a surprise. So they know where they're at and they know how to get where they want to be" (Focus Group 1, para. 15).

The Green School's Founding Head of School, Dr. S, also indicated that promoting academic mastery was a foundational goal of the school's standards-based grading program. He noted that the adoption of standards-based grading at the school was based on "a fundamental belief that in order to promote a culture of growth and learning, you need to give students something that is legible. And that lights the way for self-improvement" (Interview, para. 18).

Yet Dr. S's description of this goal differed from those of the faculty participants. The faculty participants focused on how students could act on the information provided by standards-based grading to promote their own academic mastery. Dr. S acknowledged the important of student action, but focused more on the teacher's role in providing actionable information for students:

> The standards-based grading, part of the value of it is that it forces the teacher to think more precisely about where the learning opportunities are for the student and to be clear with them. . . . And that might be a way of thinking about whether standards-based grading is helping the teachers see the kid more clearly, not just helping the student see themselves and their work more clearly. (Interview, para. 60)

Overall, the data indicate that teachers and administration understand promoting academic mastery to be a key goal of standards-based grading at The Green School. But while teachers emphasize the student's role in learning from the clarity of communication that standards-based grading should provide, administration emphasizes the teacher's role in "thinking precisely" and generating clear, specific feedback that can equip students to pursue academic mastery.

Growth Mindset Towards Learning

Clear consensus also emerged in focus groups and interviews that promoting a growth mindset towards learning is a key goal of The Green School's standards-based grading system. Dr. S highlighted the importance of developing a culture of growth by noting that the school was founded upon "a fundamental belief that in order to promote a culture of growth and learning, you need to give students something that is legible. And that kind of lights the way for self-improvement" (Interview, para. 16). Here, Dr. S connects the goal of promoting academic mastery to the goal of promoting a growth mindset towards learning. To him, if students are provided with legible communication about the skills they have and haven't mastered, they will better understand how to improve, thus cultivating a culture oriented towards growth.

Faculty participants also explicitly identified the promotion of a growth mindset as a goal of the school's standards-based grading system. As Colton said in Focus Group 1, "I think a lot of [the purpose of standards-based grading] also is to build a framework that promotes and supports a growth mindset so the students know that it's about the learning and what they have learned at the end of the course or the end of whatever time period it is, rather than just accumulating numbers" (para. 17). Colton's words emphasize the student mindset that he perceives the school as aiming to cultivate: a mindset where students focus on growth over time rather than the immediate accumulation of points that he associates with a traditional grading system.

In Focus Group 2, Jay was more detailed in explaining how that mindset can develop through the school's standards-based grading practices. He said:

> And I think part of [the purpose of standards-based grading] is that students can see the story of their learning, both their failures and their successes. I think students who do well with it, at least, gain confidence in the learning process. They see themselves [as] . .

. start[ing] off with lower skill ratings than they want and they implement changes and

get higher skill ratings later on and they say, "Oh, look, I learned." And then the next

time they go to learn and the next time they encounter a challenge, they can remember

their past experience of, "Oh, this was hard at first and then became easy." (para. 31)

Though Jay does not explicitly mention the term *growth mindset*, he articulates a mindset shift

where the hypothetical student in his example comes to view their intellectual abilities as

malleable and changeable through effort, and thus seems more likely to tackle challenging tasks

and exhibit perseverance when they encounter setbacks. Like Dr. S, Jay connects the promotion

of academic mastery to the promotion of growth mindset. As students receive and act on clear

feedback regarding their progress on specific learning targets, they can "implement changes" that

result in academic improvement, thus leading to a belief in their ability to grow.

Unlike in the discussions of academic mastery in each focus group, other participants in

the group did not elaborate on these definitions or perceptions of growth mindset. They nodded

or voiced agreement, but quickly moved on to robust discussions about whether or not the goal

of promoting a growth mindset in students was being fulfilled (see Finding 2). In doing so, they

seemed to demonstrate a strong shared understanding of the goal.

Intrinsic Motivation for Learning

Promoting intrinsic motivation for learning was identified as a goal of The Green

School's standards-based grading program by participants, but it emerged as a less salient goal.

Dr. S did not identify intrinsic motivation as a distinct goal of standards-based grading, but

instead referenced it in connection with growth mindset. He noted that in "the standards-based

grading philosophy writ large," the grading system is "operating on students in ways they may

not even appreciate" (Interview, para. 28). One of those ways, he then clarified, is in the

development of "high levels of intrinsic motivation," to where "these kids actually care about their learning and are intrinsically motivated" (Interview, para. 29). Though Dr. S did not explicitly identify the promotion of intrinsic motivation as a goal of the school's standards-based grading program, his words indicate that he perceives it as a positive outcome of the system.

Faculty participants seemed to similarly view intrinsic motivation as a less salient goal of The Green School's standards-based grading program, and one closely connected to growth mindset. Only Focus Group 1 identified the development of intrinsic motivation as a goal, with Nora saying:

> [Standards-based grading] is just trying to make [learning] a more intrinsic experience for [students] instead of an extrinsic motivator of earning points. We want them to have that mindset shift of, "This is benefitting me. This work aids me in the future and I'm not doing it for the teacher, I'm not doing it for my parents, I'm doing it because it is my learning. And I think ultimately it helps them. . . . It helps students take ownership of their learning, which is what we want to send them off into the world with. (para. 130)

Other participants in Focus Group 1 agreed that the development of intrinsic motivation was a goal of the school's standards-based grading program, saying "Yeah" or "Yes" as Nora spoke (Focus Group 1, para. 131-132). However, they did not elaborate except to connect it to growth mindset, with Colton noting that both contribute to "an overall mindset towards learning" that The Green School aims to cultivate through standards-based grading (Focus Group 1, para. 136). In his interview, Ben explained his understanding of the connection between intrinsic motivation and academic mastery. To him, it is motivating for students to realize, "I don't only get one shot at this" (Interview, para. 41). He went on to say, "If you know you have several attempts and chances that you're being prepped for in a formative manner and built up to in this moment,

maybe a student feels more confident and motivated about it" (Interview, para. 41). Though Ben articulated a plausible connection between the development of academic mastery and the development of intrinsic motivation, his use of the word "maybe" implies some hesitation about the link between the two goals, and specifically about the development of intrinsic motivation.

In follow-up interviews, participants from Focus Group 2 were told that Focus Group 1 identified intrinsic motivation as a goal of standards-based grading and asked if they agreed. All three of the participants from Focus Group 2 who were interviewed – Margaret, Shauna, and Ruth – agreed that intrinsic motivation was a goal of the school's standards-based grading system. Margaret's explanation clearly links standards-based grading to the development of intrinsic motivation:

> I really like the idea of the student knowing themselves as a learner . . . I find it really valuable for [students] to be able to see, "Oh, hey, I haven't done any of my homework and I bombed this quiz." Or, "Hey, for my formative entrance tickets, I have been terrible. Obviously I'm not doing what I need to be doing." . . . So, learning themselves as a learner, and then within that I think you get that intrinsic motivation when you find success and you are able to understand yourself. Obviously, if I sit in the classroom and I am like, "Okay, I know exactly what I need to do to succeed, I know the parts that are going to be hard, I know the parts that are easy, and I know how to improve," then I'm more motivated to do that when I know what I need to do because I'll see the results I want and that motivates me. I think [standards-based grading] builds intrinsic motivation in that sense, for sure. (Interview, para. 67)

Margaret's response is very similar to Jay's when he described how standards-based grading aims to promote a growth mindset, in that both link clear communication of academic mastery with the development of a productive and constructive mindset towards learning.

Ruth and Shauna also affirmed the development of intrinsic motivation for learning as a goal of standards-based grading, but their reasoning was less specific. Ruth simply said, "I think describing what they're learning instead of just, 'This is your grade,' hopefully they'll want to learn more. But I don't know" (Interview, para. 94). Shauna said that standards-based grading facilitates the development of intrinsic motivation for students because "knowing that they're able to master a skill and transfer it into a different context would be something that students were feeling success with and could be motivated to move forward with" (Interview, para. 26). While both Ruth and Shauna identified intrinsic motivation as a goal of standards-based grading when prompted, their wording – especially the word "hopefully" for Ruth and "could" for Shauna – reveals slight hesitation about the goal. Perhaps their hesitation indicates that they had not thought of intrinsic motivation as a goal of standards-based grading before being prompted to do so, or that they view intrinsic motivation as a potential byproduct of the grading system, rather than an explicit goal. The data make it difficult to tell to what degree they truly perceive the cultivation of intrinsic motivation as an intended goal of standards-based grading.

Given the variation in participant responses regarding intrinsic motivation, it may be helpful to present them in visual form. Figure 4.1 summarizes each participant's understanding of the goal of promoting intrinsic motivation for learning.

Figure 4.1

Promoting Intrinsic Motivation for Learning: Participant Understandings

Participant	Statement Demonstrating Understanding

Directly Identified Intrinsic Motivation as a Goal	
Nora	"[The system is] trying to make [learning] a more intrinsic experience for [students] instead of an extrinsic motivator of earning points," so that students understand, "I'm not doing it for the teacher, I'm not doing it for my parents, I'm doing it because it is my learning" (Focus Group 1, para.130)
Colton	"[The development of intrinsic motivation] contributes to an overall mindset towards learning" that The Green School aims to cultivate through standards-based grading (Focus Group 1, para. 136).
Margaret	"You [students] get that intrinsic motivation when you find success and you are able to understand yourself. Obviously, if I sit in the classroom and I am like, 'Okay, I know exactly what I need to do to succeed, I know the parts that are going to be hard, I know the parts that are easy, and I know how to improve,' then I'm more motivated to do that when I know what I need to do because I'll see the results I want and that motivates me. I think [standards-based grading] builds intrinsic motivation in that sense, for sure" (Interview, para. 67)
Agreed with Another Participant's Direct Identification of Intrinsic Motivation as a Goal	
Annie	"Yeah," in agreement with Nora (Focus Group 1, para. 131)
Charity	"Yes," in agreement with Nora (Focus Group 1, para. 132)
Indirectly Implied Intrinsic Motivation as a Goal	
Dr. S	Did not explicitly identify intrinsic motivation as a goal, but does see "high levels of intrinsic motivation" among Green School students, to where "these kids actually care about their learning and are intrinsically motivated" (Interview, para. 29)
Expressed Hesitation about Intrinsic Motivation as a Goal	
Ben	"If you know you have several attempts and chances that you're being prepped for in a formative manner and built up to in this moment, maybe a student feels more confident and motivated about it" (Interview, para. 41)
Ruth	"I think describing what they're learning instead of just, 'This is your grade,' hopefully they'll want to learn more. But I don't know" (Interview, para. 94)

Shauna	"knowing that they're able to master a skill and transfer it into a different context would be something that students were feeling success with and could be motivated to move forward with" (Interview, para. 26)
Did Not Comment on Intrinsic Motivation as a Goal	
Jay	Intrinsic motivation was not identified as a goal in Focus Group 2; no opportunity for follow-up interview
Sanford	Intrinsic motivation was not identified as a goal in Focus Group 2; no opportunity for follow-up interview

Figure 4.1 helps clarify that, overall, participating faculty and administration did identify the promotion of intrinsic motivation for learning as a goal of The Green School's standards-based grading program, but it was not as salient for them as the promotion of academic mastery or a growth mindset, as evidenced by the fact that Focus Group 2 did not independently identify it as a goal. Furthermore, participants' articulated understanding of the goal was less universal, with two faculty participants demonstrating a hesitance to articulate the relationship between the grading system and the development of intrinsic motivation. Participants who did articulate an understanding of the goal largely perceived intrinsic motivation in relation to the larger goals of promoting academic mastery and a growth mindset. To at least five of the eleven participants, intrinsic motivation develops as students see their path to academic mastery more clearly, and it works with growth mindset to develop an overall orientation towards learning that the school aims to cultivate through standards-based grading.

Equitable Opportunities for Students

Promoting equitable opportunities for students was identified as a goal of The Green School's standards-based grading program, but it emerged as a less salient goal, especially for faculty participants. To Dr. S, however, providing equitable opportunities for students is

fundamental to the mission of the school, and to the grading system. He noted that, in the founding years of the school, "There was a book – the *Grading for Equity* book – and other writings out there that just resonated with us, that to create a truly accessible, inclusive, and diverse school community, this kind of approach to assessment was going to be most mission-aligned" (Interview, para. 18). He further described the nature of the equitable opportunities the school hoped standards-based grading would provide by saying:

> We recognize that just by the very nature of our indexed tuition program, by the nature of having students coming from so many different schools with so many backgrounds, we didn't want anyone to feel penalized by starting further back, at earlier stages in the development of one skill or another, but rather create a feeling that with hard work, with seriousness of purpose, you could improve over time and you would ultimately be evaluated on where your skills were by the end of the year, not necessarily where they started. (Interview, para. 18)

To Dr. S, promoting academic mastery and a growth mindset towards learning is a way to provide equitable opportunities for students, as students who "start further back" – and it is implied that "starting further back" is often a function of the student's socio-economic status or background – can receive specific feedback on their progress and develop a mindset that equips them to grow based on that feedback. The school's grading system is designed to reward that growth, presumably through ungraded formative assessment and a decaying average that gives greater weight to more recent demonstrations of learning.

Faculty participants also identified providing equitable opportunities for students as a goal of The Green School's standards-based grading program, but it was a less salient goal for them. Initially, only Focus Group 2 identified it as a goal, with Margaret saying:

I think equity is a piece of [the purpose of standards-based grading], too. Some traditional

grading systems, like if [students] are getting graded on their homework and one of the

students has a busy night because they're taking care of siblings as opposed to someone

who has a bunch of support at home, they get a lower grade just because they didn't have

time for the homework. So it's . . . I think part of it is leveling the playing field for the

students whenever you come down to just, "What do you know?" (para. 25)

When describing the goal of promoting academic mastery, Margaret noted that it was important

to distinguish academic performance from non-academic factors such as homework completion

and classroom behavior. Here, Margaret makes it clear that a non-academic data point like

homework completion can not only obscure communication of academic mastery, but also

penalize students for circumstances beyond their control. To Margaret, providing equitable

opportunities for students is less about recognizing where students start their learning journey

and more about recognizing the current factors – which are also implicitly connected to a

student's socio-economic status or background – that might impinge on their learning. Like Dr.

S, however, she perceives the grading system as promoting equitable opportunities by not

penalizing students for factors beyond their control.

Among Margaret's fellow Focus Group 2 participants, Jay and Sanford agreed that

providing equitable opportunities for students is a goal of the school's standards-based grading

program, saying "Yes" and "Yeah" as Margaret spoke (Focus Group 2, para. 26-27). When asked

to explain their understanding of the goal, both Jay and Sanford had difficulty explaining how

standards-based grading offers more equitable opportunities than traditional grading. Jay spoke

first, saying, "I think [standards-based grading] more broadly lays the foundation for a culture of

equity within the school" (Focus Group 2, para. 53). Sanford then admitted, "It's one of those

things where it's like, I've heard others who are smarter than me say, 'Yeah, it's part of it. It's built in.' And I'm like, 'Yeah, okay, cool. I trust you.' But I haven't . . . I don't know if I've consciously thought about it" (Focus Group 2, para. 185). Sanford also noted that he intentionally tries not to "think very much in terms of how much money their parents make or what sort of opportunities they have" (Focus Group 2, para. 174).

Ruth shared her thoughts on equity in her follow-up interview. When asked if she agreed that providing equitable opportunities for students was a goal of standards-based grading, she said, "I think so" (Interview, para. 215). She then attempted to explain the relationship between standards-based grading and equity:

> If the grade is just a percentage, if it's just, 'This is your 80' and you don't know where it's coming from, then you could construe that 80, you could believe that 80 is 'Oh, well, I didn't have parents to help me. They're not at home.' . . . The amount of time and help kids have at home is so different. (Interview, para. 215, 217)

While Ruth's explanation is similar to Margaret's in that it emphasizes the importance of "leveling the playing field" for students (Margaret, Focus Group 2, para. 25), it is also difficult to follow, perhaps indicating that Ruth's understanding of this goal is unclear. Based on these three responses, it is difficult to tell if Jay, Sanford, and Ruth truly view providing equitable opportunities for students as a goal of standards-based grading, or if they simply view equity as somehow related to standards-based grading.

In follow-up interviews, participants from Focus Group 1 were told that some participants from Focus Group 2 identified equity as a goal of standards-based grading and asked if they agreed. All three of the participants from Focus Group 1 who were interviewed – Annie, Colton, and Ben – agreed. Like Margaret, Annie focused on how standards-based grading does

not factor homework completion into grades, saying, "Homework is not an equitable piece of the schooling system. Homework really is, 'Do you have someone at home to support you?'" (Interview, para. 29). Colton more fully elaborated on his understanding, noting:

> Because if kids have got, you know, stuff is going on at home, they've got instability there, they're dealing with stereotype threat, they're dealing with whatever of the myriad of things we do to children. Standards-based grading does not penalize mistakes the way traditional grading does. And that grace, I have got to think, is helpful. And the rich kids who know how to play the game are already getting all the available grace. And so if we can extend a little more grace to a little bit more of a diverse population, that would seem like a good thing. (Interview, para. 30)

Colton's understanding seems to be very similar to Margaret's, in that he articulates how standards-based grading aims to not penalize students for current factors that can impinge on their learning. Yet while Margaret perceives standards-based grading as "leveling the playing field" by focusing grades on academic mastery (Focus Group 2, para. 25), Colton perceives it as offering grace for mistakes and extending privileges – which he perceives as already available to certain populations – to more diverse populations.

Ben offered a different understanding of how standards-based grading provides equitable opportunities for students, emphasizing that the grading system requires him to look at more elements of each student's performance, thereby making it more likely that he will notice and give credit for what each student does well. As he said:

> I think the equity at play in this style would be more about thinking about the holistic, like what's the best fit? If I'm evaluating a student in procedural technique, and I'm going to look at how they took notes, how they listed their bibliography, their sources, and

another aspect of how well they used in-text footnotes. So I can look at all these different

things, evaluate all three and think, okay, what is the best fit for where that student's at?

(Interview, para. 45)

To Ben, traditional grading systems are not as intentional in evaluating all aspects of a student's

skill development, and students of all backgrounds might be penalized for their mistakes without

receiving credit for the skills they have mastered. This explanation of the relationships between

equity and standards-based grading seems more tenuous than the explanations provided by

Margaret, Annie, and Colton. It is possible that Ben, like Jay and Sanford, views equity more as

a possible byproduct of standards-based grading, rather than as an intentional goal.

Given the variation in participant responses regarding equity, it may be helpful to present

them in visual form. Figure 4.2 summarizes each participant's understanding of the goal of

providing equitable opportunities for students.

Figure 4.2

Providing Equitable Opportunities for Students: Participant Understandings

Participant	Statement Demonstrating Understanding
Directly Identified Equitable Opportunities as a Goal	
Dr. S	"To create a truly accessible, inclusive, and diverse school community, this kind of approach to assessment was going to be most mission-aligned . . . by the nature of having students coming from so many different schools with so many backgrounds, we didn't want anyone to feel penalized by starting further back, at earlier stages in the development of one skill or another, but rather create a feeling that with hard work, with seriousness of purpose, you could improve over time" (Interview, para. 18)
Annie	"Homework is not an equitable piece of the schooling system. Homework really is, 'Do you have someone at home to support you?'" (Interview, para. 29)

Colton	Because if kids have got, you know, stuff is going on at home, they've got instability there, they're dealing with stereotype threat, they're dealing with whatever of the myriad of things we do to children. Standards-based grading does not penalize mistakes the way traditional grading does. And that grace, I have got to think, is helpful. And the rich kids who know how to play the game are already getting all the available grace. And so if we can extend a little more grace to a little bit more of a diverse population, that would seem like a good thing. (Interview, para. 30)
Margaret	"I think equity is a piece of [the purpose of standards-based grading], too. Some traditional grading systems, like if [students] are getting graded on their homework and one of the students has a busy night because they're taking care of siblings as opposed to someone who has a bunch of support at home, they get a lower grade just because they didn't have time for the homework. So it's . . . I think part of it is leveling the playing field for the students whenever you come down to just, 'What do you know?'" (Focus Group 2, para. 25)
Expressed Hesitation about Equitable Opportunities as a Goal	
Ben	I think the equity at play in this style would be more about thinking about the holistic, like what's the best fit? If I'm evaluating a student in procedural technique, and I'm going to look at how they took notes, how they listed their bibliography, their sources, and another aspect of how well they used in-text footnotes. So I can look at all these different things, evaluate all three and think, okay, what is the best fit for where that student's at? (Interview, para. 45)
Jay	"I think [standards-based grading] more broadly lays the foundation for a culture of equity within the school" (Focus Group 2, para. 53)
Ruth	"I think so. . . . If the grade is just a percentage, if it's just, 'This is your 80' and you don't know where it's coming from, then you could . . . believe that 80 is 'Oh, well, I didn't have parents to help me. They're not at home.' . . . The amount of time and help kids have at home is so different" (Interview, para. 215, 217)
Sanford	"It's one of those things where it's like, I've heard others who are smarter than me say, 'Yeah, it's part of it. It's built in.' And I'm like, 'Yeah, okay, cool. I trust you.' But I haven't . . . I don't know if I've consciously thought about it" (Focus Group 2, para. 185)
Did Not Comment on Equitable Opportunities as a Goal	
Charity	Equity was not identified as a goal in Focus Group 1; no opportunity for follow-up interview

| Nora | Equity was not identified as a goal in Focus Group 1; no opportunity for follow-up interview |
| Shauna | Did not comment on equitable opportunities as a goal in focus group or follow-up interview |

Figure 4.2 helps clarify that, overall participating faculty and administration did identify providing equitable opportunities for students as a goal of The Green School's standards-based grading program. But while it was a very salient goal for the Founding Head of School, it was a less salient goal – or perhaps more of a byproduct than a goal – for faculty, as evidenced by the fact that Focus Group 1 did not independently identify it as a goal. Additionally, participants differed in their understanding of how standards-based grading can provide equitable opportunities. To Dr. S, standards-based grading provides the opportunity for all students to master academic skills through hard work, no matter what level of skill they begin with. To Margaret and Colton, standards-based grading accounts for the fact that some students deal with factors that can hinder learning, specifically by not factoring homework completion. To Ben, standards-based grading encourages teachers to give credit for all the skills a student has mastered, which might go unnoticed within a traditional grading system. These three understandings are not mutually exclusive and do not detract from the shared goal, but they illustrate different understandings of how standards-based grading policies and practices might contribute to the fulfillment of the goal.

Sub-finding 1.1: Teachers' own internal influences largely shape how they perceive the goals of standards-based grading.

While identifying and articulating the goals of standards-based grading, most faculty participants expressed support for the system and its aims (see Finding 2). Their endorsement of

standards-based grading largely seemed to be shaped by internal influences, especially previous experience and personal values.

Several of the participants noted that they were influenced by their previous experience, both as students and as teachers. When reflecting on his belief in the value of a grading system designed to promote academic mastery and a growth mindset, Sanford recalled his own high school experience:

> I made good grades growing up, but I was always anxious about them. I think it was because I didn't ever quite know what [the grade] was or what it meant. It just meant, 'You are doing good. Don't back off.' And so I think it lent a certain fixed mindset to me, where it wasn't like I could get any better, but it was like, 'Do not fall behind.' (Focus Group 2, para. 154)

Annie similarly narrated that her previous experience shaped her endorsement of standards-based grading and her goals, but it was her professional experience that was most impactful. When describing her experience at a previous school, she said, "I didn't put a lot of stake in grades. I was more focused on learning" (Interview, para. 2). But the school underwent an "admin change" that resulted in her being required to enter a certain number of grades into her gradebook on a weekly basis (Interview, para. 8). "It became a very stressful environment for me," she said (Interview, para. 8). "And I had been aware of standards-based grades and grading, and I wanted to shift to that more progressive way of looking at learning" (Interview, para. 8). While Annie largely emphasized the role of her previous experience in leading her to standards-based grading, it is clear that her values also played a role. She valued learning more than grades, and thought standards-based grading would be "a more authentic way to assess learning" (Interview, para. 14).

Other participants were influenced more by their values than their previous experience. These responses emerged in follow-up interviews, rather than in focus groups. Colton, for example, said, "I've been passionately pro standards-based grading since the day I read about it" (Interview, para. 96). The system's goals "vibed" with his own values as an educator (Interview, para. 96). Margaret and Ben described similar experiences. Ben used almost the same language during his follow-up interview when he described his introduction to standards-based grading: "It just made more and more sense," Ben said as he described his introduction to standards-based grading at a previous school (Interview, para. 9). "This is how I always felt learning should happen" (Interview, para. 9). Margaret used similar language in her follow-up interview, saying, "I think [standards-based grading] just makes sense. I mean, obviously, I've always wanted to be a teacher since seventh grade. And so just in my soul, wanting kids to learn, wanting people to learn, it seemed like the best system for that" (para. 6). Margaret's reference to her soul is striking, as it underscores the depth of her personal commitment to helping students learn and the degree to which she perceives standards-based grading as in alignment with that commitment.

It is worth noting that Ruth was an outlier in this sub-finding, as became clear in her one-on-one interview. Like Annie, she previously worked at a school that employed a traditional grading system and mandated that teachers record a specific number of grades per week. Unlike Annie, however, she was not aware of or looking for a new framework for grading and assessment. Ruth acknowledged that "it took time to understand [standards-based grading] and feel comfortable with it" (Interview, para. 68). After four years of experience at The Green School, Ruth still seemed uncertain of her attitude towards standards-based grading. She used the phrase, "I don't know" over twenty-five times in her interview. And at the end of the interview, she expressed interest in exploring other grading programs, saying, "I'd be interested to know if

there's another system. Like, if there's . . . if other schools are coming up with something different. I don't know" (para. 223). Ruth's closing comment seems to indicate that she has internal doubts about standards-based grading. This made her an outlier amongst the other participants, who narrated that their internal influences drove them towards standards-based grading and its goals.

Sub-finding 1.2: There is concern that shared goals can erode as new faculty members enter the institution.

Finding 1 has demonstrated that Green School faculty and administration have a shared understanding of the goals of standards-based grading, though the depth of that understanding varies by goal – and perhaps by the degree to which participants' internal influences align with the goals. However, there is concern that shared goals can erode as new faculty members enter the system. Dr. S first voiced this idea:

> I can't say with great confidence that we haven't started to pick up some faculty for whom standards-based grading is, "Well, whatever. I guess that's what we're doing here." That kind of attitude, as opposed to intentional, deliberate. I wouldn't be surprised if that were a little bit the case.I'm surprised this year finding myself in conversations with faculty who really don't know that much about how we got started and where we came from . . . I think that maybe there has been a little bit of lost institutional memory towards standards-based grading and a slightly less proactive and intentional approach to it. (Interview, para. 22)

Colton, with three years of experience at the school, voiced a similar concern. "I don't think we have complete faculty buy-in," he said, "[or] a thorough faculty growth towards the goals and notions of what the goals are" (Focus Group 1, para 187). Colton voiced this concern in the

context of a discussion of new faculty members, and he clarified his comments moments later to focus specifically on new faculty, saying, "I think that's been one of our struggles with some new faculty . . . making that transition [to standards-based grading] has not always been as smooth as we might like. And that's a growth opportunity" (Focus Group 1, para. 191).

In their follow-up interviews, Margaret and Ruth corroborated this idea by reflecting on their experience as teachers new to the school. Ruth recalled her own onboarding four years earlier and said, "I wish during orientation we had talked . . . I don't feel like we talked about [standards-based grading] a lot" (Interview, para. 177). Conversely, Margaret transitioned into the school two years later than Ruth, the first year that the school hosted a new faculty orientation before the school year began. "I loved that we had the new teacher orientation," she said (Interview, para. 48). "It could be very specific on, 'Hey, let's break [standards-based grading] down for you. This is what we do here and all that'" (Interview, para. 48). Though Margaret found the new teacher orientation helpful, she also thought it was insufficient. She described herself as having developed a strong understanding of the goals of standards-based grading before joining The Green School. Regarding new faculty without that background, she said, "I think there could be more, especially around standards-based grading and specifically how we do it at [The Green School] . . . maybe more check-ins within the first month or two, and around trimester time, maybe another check-in with new teachers. Like, 'Hey, where are we at? What's going on here?' Tips and tricks" (Interview, para. 48).

Two of the participants, Shauna and Ben, had only one year of experience at The Green School at the time of data collection. Ben shared the concern that new faculty members might not receive the support necessary to develop an in-depth understanding of the school's goals for its standards-based grading program. Ben joined The Green School after operating within a very

similar standards-based grading program for six years at a former school. When he first started using standards-based grading at his former school, he had weekly meetings with his supervisor to discuss the philosophical underpinnings of standards-based grading. In addition, he discussed the "practical, day-to-day" specifics of implementing standards-based grading with his co-teachers, whom he observed on a daily basis (Interview, para. 82). To Ben, The Green School does not offer as much support for teachers new to standards-based grading. "Maybe for some new teachers and new faculty that don't have as much experience with [standards-based grading], it would be nice to have a bit more of a very specific professional development program," he said (Interview, para. 108). Without such a program, Ben is doubtful that teachers new to standards-based grading will fully understand the goals of the system and therefore be able to implement practices aligned to them.

Unlike Ben, Shauna described herself as "knowing a little" about standards-based grading before joining The Green School (Interview, para. 8). In her one-on-one interview, the only goal she explicitly articulated when asked was that of promoting academic mastery by clearly communicating student progress on specific learning targets, giving an example of how that element of standards-based grading changed her practice (see Finding 2). Instead of articulating goals, she relayed aspects of the system she liked, particularly the ability to give students retests and allow them to redo assignments. Her responses suggest there could be validity to the concern that new faculty members might not be developing a robust understanding of standards-based grading, and that shared goals might erode as new teachers join the school.

Implications of Finding 1

Based on the data presented in Finding 1, participating Green School faculty and administration have a strong shared understanding of two goals of the school's standards-based

grading program: promoting both academic mastery and a growth mindset towards learning. There is also consensus among participants around two other goals: promoting intrinsic motivation for learning and providing equitable opportunities for students. However, some participants were hesitant to articulate, or had difficulty clearly articulating, their understanding of these goals. Even for those who did clearly articulate their understanding, these goals seemed less salient than the first two, with some participants describing them as subsets of the larger goals of promoting academic mastery and a growth mindset. Half of the participants also expressed concern that shared understanding of the goals of standards-based grading might erode as new faculty members join the institution. Even though most participants indicated that internal factors shaped their understanding and endorsement of standards-based grading, they suggested that the school exert more external influence on new faculty members through more intentional and concentrated professional learning.

It is worth noting that while the goals of promoting academic mastery, a growth mindset towards learning, and intrinsic motivation for learning align with goals that appear in the literature on standards-based grading (see Chapter 2), the goal of providing equitable opportunities for students does not fully align with the goal that appears in the literature: promoting equitable grading practices. The goal that emerged from the literature focuses on teachers: standards-based grading recognizes that teacher grading practices can be tainted by implicit bias and encourages practices to mitigate that bias. The goal that emerged from this study focuses on students: standards-based grading recognizes that external factors can impinge on learning and encourages policies that provide students with more equitable opportunities to demonstrate their mastery.

Perhaps relatedly, another goal from the literature – the goal of promoting curricular and instructional change – did not emerge from data collection, though Dr. S did gesture towards it by emphasizing the role of the teacher in using the data generated by standards-based grading to "think more precisely about where the learning opportunities are for the student" (Interview, para. 60). Overall, participating teachers at The Green School seem to understand the goals of standards-based grading as focused on changing student outcomes, mindsets, and behaviors, while the literature understands the goals of standards-based grading as focused on changing both student outcomes/mindsets/behaviors and teacher practices. The impact of this difference between the literature and the data will be explored in the discussion at the end of this chapter.

Finding 2: Green School faculty perceive the goals of standards-based grading as largely being fulfilled, though they articulate specific ways in which each goal is not being fulfilled.

This finding aligns directly with RQ2: According to Green School teachers, in what ways (if any) are those goals being fulfilled? In what ways (if any) are those goals not being fulfilled? In both focus groups and interviews, participants were asked to discuss the fulfillment (or non-fulfillment) of the goals identified in Finding 1: 1) academic mastery; 2) growth mindset towards learning; 3) intrinsic motivation for learning; and 4) equitable opportunities for students. Dr. S was hesitant to comment on the fulfillment (or lack thereof) of the goals, given that he has less opportunity to observe student outcomes, behaviors, and mindsets. Therefore, the following sections detail the ways in which teachers articulate that the goals of standards-based grading at The Green School are and are not being fulfilled, in support of Finding 2.

Academic Mastery

As detailed in Finding 1, participants identified the promotion of academic mastery as the most significant goal of The Green School's standards-based grading program. Participants

largely viewed this goal as being fulfilled, though they did identify the school's transdisciplinary learning goals as a hindrance to the complete fulfillment of this goal.

Many faculty participants expressed a shared belief that standards-based grading at The Green School successfully promotes academic mastery by communicating student progress on individual skills, thereby equipping students to identify their areas for growth and adjust their learning accordingly. In Focus Group 2, Jay very clearly stated, "I do feel like we give the kids a better idea of where they're at in mastery of the content and skills in our classes than the traditional grading system" (para. 117). Sanford seemed to agree, as he said earlier in the focus group, "I feel like it gives students an ability to see their skills more clearly so that they can take action to improve certain skills, to first identify which skills need work and to then improve based on the feedback provided by their teacher" (para. 8).

The participants in Focus Group 1 expressed similar sentiments and provided more concrete evidence from their experience at The Green School to justify their perception. For Colton, changed conversations about learning formed the basis for his belief:

> To me, the conversations are the biggest thing that inform me that it is going well. The conversations are about learning and growth and not haggling over points allocation or that kind of thing. . . . I've had more parent communications about how can this kid get better at doing X, Y, and Z. And few have questions about how can my kid get more points so their grades are better. (Focus Group 1, para. 59)

To Nora, the most compelling evidence was in student self-assessment. She noted that students "are able to more clearly self-assess and reflect and say, 'Yeah, I was weak in that area, but now I know my way forward'" (Focus Group 1, para. 123).

In her follow-up interview, Shauna gave a specific example of how she saw standards-based grading promote academic mastery in one of her units. She compared a unit at a previous school with a similar unit she taught in her first year at The Green School. She narrated that, before working under standards-based grading, the goal of her unit revolved not around specific learning targets, but rather was to "write this essay properly," a goal she now described as "too broad" (Interview, para. 36). When she redesigned the unit at The Green School, the focus on standards-based grading encouraged her to identify a clearer essential learning target, which she articulated as "citing authentic sources from the media, news reports, articles . . . we really need[ed] to focus on the skill of interpreting what that piece of information means" (Interview, para. 36). She then described how she redesigned her instruction to target that skill. As a result, as she narrated, she "could see a change in their essays" by the end of the unit (Interview, para. 36). In describing her experience with this unit, Shauna explains how the focus on specific skills promoted by standards-based grading allowed her to adjust her instruction and provide practice opportunities to students that led to greater academic mastery. Essentially, Shauna describes the enactment of Dr. S's understanding of this goal: that standards-based grading equips teachers to "think more precisely" about student learning and make intentional decisions to promote mastery (Interview, para. 60).

While faculty participants conveyed a general perception that The Green School's standards-based grading system is fulfilling its goal of clearly communicating, and thereby promoting, academic mastery, they also conveyed a perception that the school's transdisciplinary learning goals hindered complete fulfillment of the goal. As noted in Chapter 3, The Green School organizes its learning targets under the umbrella of six transdisciplinary learning goals: Factual Knowledge, Procedural Technique, Conceptual Understanding, Critical Thinking,

Communication, and Creativity & Originality. The existence of the transdisciplinary learning goals surprised at least two teachers, Ruth and Margaret, when they joined The Green School. As Ruth said in her follow-up interview, "I think when I first came . . . we had standards-based grading but we didn't have standards. We had these broad transdisciplinary learning goals instead" (para. 10). Margaret had a similar experience. The summer before she joined The Green School, she spent significant time planning one of her math classes with another colleague new to the school:

> So in my mind and in my colleague's mind, we were picturing it as literally standards of, like, "can you solve an algebraic equation? Can you apply the Pythagorean theorem?" And so we were trying to break down our unit into specific standards . . . And then we started the year and I was like, "Oh, this is not what I was thinking at all." So I think that's interesting . . . I know it's standards-based grading, but I feel like it's less standards-based. (Interview, para. 9)

Ruth and Margaret were not the only participants to remark on the broadness of the transdisciplinary learning goals. Science teacher Colton compared his experience using standards-based grading at a previous school, where, as he said, "I broke down my classes by the skills I wanted [students] to master, and they were fairly discrete, like free body diagrams, projectile motion, identifying lens laws and applications" (Interview, para. 9). For him, the "biggest challenge when coming to [The Green School]" was "lumping all of my conceptual understandings into one Conceptual Understanding bucket" (Interview, para. 12). He continued to say that aggregating those discrete skills into one larger category allowed "fuzziness" to creep into his communication of academic mastery (Interview, para. 70). And that struck him as problematic:

In this model, unless you work around it carefully, it leaves space for students not to

know things . . . there's room for ignorance to sneak through. There's more room for

missed learning to remain unobserved, because these [transdisciplinary learning goals]

are kind of fuzzy, nebulous things. And when you retest or when you assess, the bucket

of Conceptual Understanding is large, and you're never going to plumb the whole thing

in a test, it's just not logistically possible, so you plumb some subset of the bucket and

you might not notice the other half of the bucket is empty. (Interview, para. 64)

To Colton, The Green School's decision to report aggregated ratings in transdisciplinary

categories means that the goal of promoting academic mastery is not completely fulfilled. Not

only do the aggregated ratings not clearly communicate student mastery of individual skills, but

students potentially can finish a class without the teacher or student even recognizing that a

student has not mastered a skill.

However, while participants expressed concern with the "fuzziness" of the

transdisciplinary learning goals, they also expressed a belief in the value of the transdisciplinary

learning goals and noted that the school has made progress in clarifying them. Nora, for example,

spoke positively about the fact that The Green School's standards-based grading system is

"broken down into multiple proficiencies which are specific to the discipline, but also they are

related interdisciplinarily, with transdisciplinary skills that can speak to other classes. It helps

students track their own performance across different classes and disciplines" (Focus Group 1,

para. 14). And Ruth and Annie both emphasized that their individual academic disciplines

(English and science, respectively) had developed clear, specific standards under the umbrella of

each transdisciplinary learning goal. Annie called that a "pivotal piece," a "turning point," and a

"springboard" to the implementation of standards-based grading in her classroom, where she was

finally able to "break [the transdisciplinary learning goals] down even further into specific skills"
that she could communicate to students and design her assessments and instruction around
(Interview, para. 28).

Participating Green School teachers clearly perceive the transdisciplinary learning goals
as an area for growth in the school's standards-based grading system, especially because they
may hinder the clear communication of student progress that promotes academic mastery.
Despite this clear area for growth, the faculty participants continued to express their belief that
The Green School's standards-based grading communicates and promotes academic mastery
more than a traditional grading system would. As Annie said, "I see great value in this system.
And I want us to keep moving forward at figuring it out and making [the transdisciplinary
learning goals] clear to all stakeholders. Because I think it's groundbreaking work that is
reimagining education. And it's hard, but I feel like we're getting there" (Interview, para. 92).

Growth Mindset and Intrinsic Motivation

As detailed in Finding 1, participants identified the promotion of a growth mindset
towards learning and intrinsic motivation for learning as goals of The Green School's
standards-based grading system. Though they were categorized as two distinct goals in Finding
1, many participants saw them as related, as they formed the basis of an overall orientation
towards learning that is a goal of standards-based grading. Therefore, they will be addressed
together here. Participants largely perceived these goals as fulfilled. However, they did note that
the fulfillment of these goals is an ongoing process, and that The Green School's decision to
report letter grades for upper school students hinders the complete fulfillment of the goals.

All but two participants expressed a shared belief that Green School students largely
approach learning with a growth mindset and intrinsic motivation. Though Dr. S was hesitant to

comment on ways in which the goals of standards-based grading were (and were not) being fulfilled, he did say, "I'm really, really pleased with the general culture of curiosity and the general culture of taking pride of ownership in the work" (Interview, para. 28). Three of the participants in Focus Group 2, especially, seemed to agree with him. Margaret compared her experience with students at The Green School to her experience with students at a school that employed a traditional grading system:

> I do feel like I have more students here that are very interested in and could articulate to you their learning journey from the past few years, more than my previous school. For sure. I can name multiple students who check in with me about what's going on in all of their classes. They've got a good idea of what their individual goals are, where they're going, and what they need to do to get there. (Focus Group 2, para. 149)

Jay and Sanford began their teaching careers at The Green School and therefore could not compare the mindset of Green School students with that of students under a traditional grading system. Instead, they focused on their experience with Green School students, with Jay saying that he observes students as they:

> gain confidence in the learning process. They see themselves either they start off with lower skill ratings than they want and they implement changes and get higher skill ratings later on and they say, "Oh, look, I learned." And then the next time they go to learn and the next time they encounter a challenge, they can remember their past experience of, "Oh, this was hard at first and then became easy." (Focus Group 2, para. 30)

Later in the focus group, Jay continued to dissect his experience with students:

> I think some evidence that [standards-based grading] has been successful [in changing student mindset] would be cross-sectionally looking at the lower grades versus the upper

grades. My last experience teaching in seventh, eighth grade, is that it's really hard to get those students to come to office hours and they don't really seem to have this belief that they can grow through hard work or the motivation to put the work in. Now I've had the privilege of teaching 9th-12th grades a lot. So I kind of see what students are doing at different levels. And I've taught 10th grade a lot, which I feel is this sort of pivotal moment where our students start to understand how the system works. They see that they can improve a lot if they take the feedback seriously and put in the effort. And they do. (Focus Group 2, para. 164)

Sanford agreed, focusing on his experience with juniors and seniors. "When you see the 11th and 12th graders, those are the ones that seem to get it," he said (Focus Group 2, para. 168). "Like, 'Oh, it's about learning. Can I go to office hours? And I understand the rubrics and I read them in advance before I write my paper.' And they can articulate their story of how they've gotten where they are" (Focus Group 2, para. 168).

Ruth and Shauna, the other participants of Focus Group 2, shared their perceptions of the goals of growth mindset and intrinsic motivation in their individual interviews, with both focusing on intrinsic motivation. As discussed in Finding 1, their responses were hesitant, with Ruth saying that students will "hopefully" (Interview, para. 94) want to learn more and Shauna saying that students "could" (Interview, para. 26) be more motivated under standards-based grading. They did not provide any examples of how they saw their students demonstrate a growth mindset or intrinsic motivation. These data suggest that Ruth and Shauna might doubt whether standards-based grading promotes a changed mindset towards learning in Green School students.

Several participants in Focus Group 1 said that they perceived the goals of promoting a growth mindset and intrinsic motivation as being fulfilled. Interestingly, the teachers of middle school students were most vocal in this discussion, and they emphasized the ongoing nature of this goal. As Annie said:

> It takes time to shift that mindset. But I think it's happening and I think I see the kids relax and become less anxious over grades and more just about the learning. I can get them out of that [old mindset] . . . and see that shift happening. But it's intentional and it takes a lot of time and effort. (Focus Group 1, para. 61).

Charity agreed, and focused on the "lightbulb moment" where students "just get it" (Focus Group 1, para. 64):

> And suddenly it's like, 'Oh, there's a purpose to all of this. There's a reason. . . . You guys aren't just telling me to do something for no reason.' And so it is really nice once that clicks for them, and then they do start to understand that it's more about learning, it's more about growth. (para. 64)

Ben articulated his thoughts in his individual interview. Like Margaret in Focus Group 2, he compared the mindset of Green School students with that of students under more traditional grading systems, saying:

> Our students, the longer they're here, the longer they have a feeling and understanding that it's not just about this one thing [a grade], it is about the long-term growth that allows me to really think more about "What am I doing here, what am I learning here? How is this important or applicable to me in my growth as a person?" Not just this lesson, this class. So that's something that our students feel a bit more than students I used to teach. (Interview, para. 33)

In the beginning of this quote, Ben notes that students develop a growth mindset over time: "the longer they're here," the longer they understand that learning "is about long-term growth." In this way, his response aligned with others given during Focus Group 1.

Interestingly, Focus Group 1 consisted of mostly middle school teachers, while Focus Group 2 consisted mostly of upper school teachers. Figure 4.3 breaks down faculty participants' perceptions of student mindset towards learning to illustrate correlations between responses and the division in which each participant teaches.

Figure 4.3

Student Mindset Towards Learning: Faculty Participant Perceptions

Participant	Division	Perception
Focus Group 1		
Annie	Middle	"It takes time [for students] to shift that mindset. But I think it's happening and I think I see the kids relax and become less anxious over grades and more just about the learning. I can get them out of that [old mindset] . . . and see that shift happening. But it's intentional and it takes a lot of time and effort" (Focus Group 1, para. 61)
Ben	Middle	Did not comment in focus group "Our students, the longer they're here, the longer they have a feeling and understanding that it's not just about this one thing [a grade], it is about the long-term growth that allows me to really think more about "What am I doing here, what am I learning here? How is this important or applicable to me in my growth as a person?" Not just this lesson, this class. So that's something that our students feel a bit more than students I used to teach" (Interview, para. 33)
Charity	Middle	"And suddenly it's like, 'Oh, there's a purpose to all of this. There's a reason. . . . You guys aren't just telling me to do something for no reason.' And so it is really nice once that clicks for them, and then they do start to

		understand that it's more about learning, it's more about growth" (Focus Group 1, para. 64)
Colton	Upper	Did not comment in focus group or follow-up interview
Nora	Middle	Did not comment in focus group; no opportunity for follow-up interview
Focus Group 2		
Jay	Upper	"[Students] gain confidence in the learning process. They see themselves either they start off with lower skill ratings than they want and they implement changes and get higher skill ratings later on and they say, "Oh, look, I learned." And then the next time they go to learn and the next time they encounter a challenge, they can remember their past experience of, 'Oh, this was hard at first and then became easy'" (Focus Group 2, para. 30)
Margaret	Upper	"I do feel like I have more students here that are very interested in and could articulate to you their learning journey from the past few years, more than my previous school. For sure. I can name multiple students who check in with me about what's going on in all of their classes. They've got a good idea of what their individual goals are, where they're going, and what they need to do to get there" (Focus Group 2, para. 149)
Ruth	Upper	Did not comment in focus group "I think describing what they're learning instead of just, 'This is your grade,' hopefully they'll want to learn more. But I don't know" (Interview, para. 94)
Sanford	Upper	"When you see the 11th and 12th graders, those are the ones that seem to get it. Like, 'Oh, it's about learning. Can I go to office hours? And I understand the rubrics and I read them in advance before I write my paper.' And they can articulate their story of how they've gotten where they are" (Focus Group 2, para. 168)
Shauna	Middle	Did not comment in focus group "Knowing that they're able to master a skill and transfer it into a different context would be something that students were feeling success with and would maybe be motivated to move forward with" (Interview, para. 26)

Figure 4.3 illustrates a difference in how middle and upper school teachers articulate their perceptions of student mindset. Middle school teachers seem more focused on the process of mindset shift as students first experience standards-based grading, while upper school teachers are more familiar with the final outcome of that process. The majority of teachers in both divisions perceive students as developing a mindset oriented towards growth and intrinsic motivation, but they observe students at different points in the development of that mindset.

However, teachers in both middle and upper school expressed concern that the existence of letter grades in the upper school hinders the goals of promoting a growth mindset and intrinsic motivation from being completely fulfilled. As noted in Chapter 3, upper school students (grades 9-12) receive letter grades in addition to ratings on their report cards. Though The Green School aims to minimize the impact of letter grades, letter grades are reported for the purpose of creating a legible transcript for the college admissions process. In Focus Group 2, Margaret addressed the impact of this decision on student orientation towards learning, saying:

> I see the kids still struggle with valuing the learning process at times. And I don't necessarily think it's our fault, but it's the whole having to put [standards-based grading] into an A, A-, B+, B for transcripts for colleges for the future. Whenever that's happening, [the teacher] and the students can't help but care what they get in the end. So I struggle with that. (para. 83)

Colton expressed a similar idea in his individual interview, saying:

> [Letter grades] are a compromise. Anytime you compress from a story to a letter, you're compromising, right? I think you have to. I don't know how you get around that because fundamentally we're preparing kids to go out in the adult world and the next part of that

world for a lot of them is some sort of college experience and those college experiences

require admission. (para. 99)

Both Margaret and Colton acknowledge that letter grades are a compromise that impedes the

goals of standards-based grading, but they also indicate that they perceive them as a necessary

compromise.

Participants also noted that even without the explicit inclusion of letter grades on upper

school report cards, students and families can map The Green School's rating scale (1-4) onto a

traditional 4-point GPA scale, which again can detract from the development of a growth mindset

and intrinsic motivation. As Colton said, "I think it's unfortunate that our 1, 2, 3, 4 scale gets

mapped so weirdly onto the 1, 2, 3, 4, GPA scale. They're so close, but they're not the same"

(Interview, para. 103). Annie narrated experiencing similar challenges with her middle school

students, even though they do not receive letter grades on their report cards. She advocated for

switching to a 3-point rating scale:

> I think if the 4 was gone, the students would not try to naturally equate it with A, B, C, D.
>
> And I think the parents do that, too. You've got the 4-point grade scale that has been
>
> around forever and this is a 4-point scale, but it's different, and I think . . . a lot of my
>
> problems with student mindset came out of that number scale. Without the 4-point scale,
>
> I think the focus would be more on, "Did you learn this?" Instead of on, "At what level
>
> did you learn this?" (Interview, para. 96)

To Annie, having a 4-point scale that distinguishes between different levels of mastery – where a

3 and a 4 both indicate mastery, but the 4 indicates a higher level of mastery – is no different than

distinguishing between an A and a B, at least in its impact on students and their orientation

towards learning.

In sum, participating Green School teachers seem to agree that letter grades are a necessary compromise with the goals of standards-based grading, though they wonder if it is possible to minimize the relationship between ratings and letter grades by moving away from a 4-point rating scale. Despite this challenge, faculty participants perceive students developing an orientation to learning that includes the characteristics of growth mindset and intrinsic motivation, especially as students spend more time within the school's grading system. As Colton said when summarizing his thoughts on the goals of promoting a growth mindset and intrinsic motivation, "They seem thoroughly fulfilled to me. I think it's hard to do, but I think that we are approaching or fulfilling all of those goals" (Focus Group 1, para. 55).

Equitable Opportunities for Students

As detailed in Finding 1, participants identified providing equitable opportunities for students as a goal of The Green School's standards-based grading system. However, unlike with the other goals they identified, they hesitated when asked in what ways this goal was and was not being fulfilled. The most common response was to cite a lack of evidence, as Sanford did in Focus Group 2: "That's one for which I feel like I have no evidence one way or the other" (para. 172). Margaret similarly said, "I don't have a whole bunch of evidence" (Focus Group 2, para. 189). But she did reference "two or three experiences . . . specific students in which I feel like our grading system helped those who were going through maybe a rough time in life" (Focus Group 2, para. 189). Ben, who understood standards-based grading as providing equitable opportunities by equipping teachers to recognize each student's strengths, also expressed his belief that the goal was being fulfilled, though he acknowledged that he couldn't be sure because identifying each student's strengths "makes it so much harder for us evaluating . . . we might miss something" (Interview, para. 193). Despite a lack of evidence, these three participants

seemed to want to believe that standards-based grading provides equitable opportunities for students. As Colton said, "I have got to think" that standards-based grading "is helpful" to students from disadvantaged backgrounds (Interview, para. 30). However, most participants did not comment on the fulfillment of this goal, and a lack of evidence hindered those who did comment from truly understanding the ways in which this goal is or is not being fulfilled at The Green School.

Implications of Finding 2

Based on the data presented in Finding 2, participating Green School faculty articulate that the goals of The Green School's standards-based grading program are largely being fulfilled. As Ben said, "We [are] seeing the difference with kids. I think that's the biggest thing, is seeing how kids respond differently" under standards-based grading (Interview, para. 26). Ben's words are similar to the many optimistic comments quoted throughout Finding 2. Interestingly, the most optimistic participants – Annie, Colton, Margaret, and Ben – are also the participants who most explicitly narrated how their personal values and previous experiences influenced their understanding of standards-based grading. Perhaps they have an internal vested interest in perceiving the system positively. However, their optimism did not prevent them, like the other participants, from clearly articulating three hindrances to complete fulfillment of standards-based grading's goals: the broadness of The Green School's transdisciplinary learning goals, the decision to report letter grades on upper school report cards, and a lack of evidence regarding equity within the grading system.

Finding 3: Tension exists between goals of standards-based grading and practical application of standards-based grading.

This finding aligns with RQ3: "What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?" The tension between the goals of standards-based grading and the practical application of standards-based grading is the most significant challenge expressed by faculty participants. As Margaret said, "We are trying to find the balance between how to do standards-based grading within our limitations" (Focus Group 2, para. 115). Faculty participants explicitly identified those limitations as the product of external influences. Yet the data indicate that teachers also experience tension within their own teaching practice, and can experience standards-based grading and the practices associated with it as a limitation to their instructional methods. The following sections detail the data related to external influences and teacher practices, in support of Finding 3.

External Influences

Faculty participants articulated several external forces that are misaligned with the goals of The Green School's standards-based grading program, and therefore create tension as teachers implement standards-based grading and the practices associated with it. These external forces, which are detailed below, are parent pressure, college expectations, the school's learning management system, and the reality of a teacher's daily workload.

Parent Pressure. While participants such as Colton narrated having conversations more focused on learning under The Green School's standards-based grading system (see Finding 2), other participants said that it was difficult to communicate the goals of the grading system to parents, and that they felt pressure from parents to focus more on the final rating than on academic mastery or growth. Annie was particularly vocal when explaining this challenge. "Getting [the goals of standards-based grading] across to parents . . . has definitely been a

challenge," she said, explaining that "[a mindset shift] definitely happens with students before it happens with parents" (Focus Group 1, para. 68). As a former public school teacher, she expressed being very aware that "parents had to pay for their education" at The Green School and that this reality "came with a whole different mindset of expectations for me" (Interview, para. 21). According to her, she regularly has conversations where "parents are like, 'So why didn't you get a 4?'" (Interview, para. 94). She perceives parents as simply "wanting their kids to get 4's" (Interview, para. 94). As a result, she has compromised the validity of her communication of academic mastery, admitting, "I've just had to give the grades" that she perceives parents as expecting (Interview, para. 98).

Annie's articulation of this pressure was the most extreme, but other participants expressed more muted versions of the same sentiment. Nora, for example, said:

> It might take the parents a bit longer [to understand the goals of standards-based grading] and they might have different perspectives or they might feel more strongly about how their child is being evaluated. So I've had some tough conversations with parents who are either unfamiliar with or resistant to how we grade and I think getting through to the adults sometimes is a little . . . It's tougher than convincing the middle school students. (Focus Group 1, para. 73)

Overall, participants found identified parent misalignment with standards-based grading as an impediment to the successful implementation of the system.

College Expectations. The Green School labels itself a college preparatory school. As discussed in Finding 2, the school reports letter grades on upper school report cards to create a legible transcript for the college admissions process, a decision that teachers understand but also identify as an impediment to the development of growth mindset and intrinsic motivation among

students. This section will not retread the ground covered in Finding 2, but will requote

Margaret, who effectively summarized the nature of the tension caused by college expectations:

> I see the kids still struggle with valuing the learning process at times. And I don't
>
> necessarily think it's our fault, but it's the whole having to put [standards-based grading]
>
> into an A, A-, B+, B for transcripts for colleges for the future. Whenever that's
>
> happening, [the teacher] and the students can't help but care what they get in the end. So I
>
> struggle with that. (Focus Group 2, para. 83)

As Finding 2 demonstrates, Margaret was not the only participant to struggle with this tension

between the goals of standards-based grading and the practical reality of college expectations.

Learning Management System. Participants expressed that the school's learning

management system makes it difficult to communicate academic mastery of specific skills. As

detailed in Finding 2, teachers identified the transdisciplinary learning goals as a weakness of

The Green School's standards-based grading program, as they are broad and can obscure the

communication of academic mastery of more concrete standards. Academic departments have

worked to clarify the standards within each transdisciplinary learning goal, but the learning

management system does not allow teachers to input and rate those standards. "And that's a

weakness of the learning management system," Margaret said in Focus Group 2 (para. 147). "It's

just because of our gradebook [within the learning management system]. I mean, if you ask

teachers, they could tell certain students, 'You've got this skill down, but you haven't mastered

this skill.' But our gradebook is not *this skill*, *this skill*, *this skill*. It's a big picture: Procedural

Technique, Conceptual Understanding, Critical Thinking" (Focus Group 2, para. 147). Margaret

most clearly voiced the perception that the learning management system impedes the goals of

standards-based grading, but this challenge came up in both focus groups. In Focus Group 1,

Nora wondered, "How do we take all of this, all the complexities of standards-based grading and put it through the learning management system so that it distills that information in a way that is useful to students and families?" (para. 175). Her question was clearly rhetorical: no one had an answer, except for Colton to say, "Someone needs to build a learning management system for us" (Focus Group 1, para. 176). Nora's and Colton's comments are representative of the tone surrounding the learning management system: resigned acceptance and desire for improvement.

Teacher Workload. Participants expressed that implementing standards-based grading requires significant work, especially when first joining The Green School and becoming acclimated to the system. Annie said that it took her four years to feel comfortable with standards-based grading at The Green School, and that she was:

> doing it [learning how to implement standards-based grading] with all the daily pressures of creating curriculum, going to meetings, running clubs, and being a parent. So I had stuff outside [of standards-based grading] and I was also a student [of standards-based grading], so, I think it was just a really intense four years. (Interview, para. 133)

Similarly, Shauna said "it was always such a challenge" in her first year at The Green School to focus on learning the standards-based grading system while also planning all new classes and acclimating to a new school culture (Interview, para. 12).

The challenge of balancing the demands of standards-based grading with the daily demands of teaching does not end after a teacher's initial introduction to standards-based grading, according to participating Green School teachers. In his individual interview, Ben described his practice before moving to a standards-based system like this: "It was, we're going to have a class, we'll discuss it. We'll have this unit and we'll have several lessons and then we'll take a quiz or a test to see how much you captured from it. And that was really it" (para. 65).

This description contrasted with his description of his practice within standards-based grading, which involves collecting and analyzing data on many different aspects of a student's academic progress. Annie called this "a crazy amount of work for the teacher. . . . Instead of grading one thing, it's now turned into four facets to look at for this one assignment, and then that's entering four different data points" (Interview, para. 44) – all while still fulfilling the other responsibilities of teaching.

In sum, faculty participants articulated four external forces that impede the fulfillment goals of The Green School's standards-based grading program: parent pressure, college expectations, the school's learning management system, and the reality of a teacher's daily workload. Though the participants largely express strong internal alignment with the goals of standards-based grading (see Finding 1), these external influences create tension between the goals and the practical application of standards-based grading within the context of the school. However, not all tension derives from external factors. The participants also seem to experience tension between the goals of standards-based grading and the implementation of instructional practices associated with the grading system.

Sub-finding 3.1: Green School teachers simultaneously perceive their practices as aligned with standards-based grading and question the value and practical application of specific practices associated with standards-based grading.

Faculty participants perceive their teaching practices as aligned with the aims of The Green School's standards-based grading program. Four of the participants – Annie, Ben, Shauna, and Sanford – articulated that their practices changed significantly when they first began to operate within a standards-based system, resulting in aligned practices. Annie narrated her experience by saying:

[At first], I just didn't understand [standards-based grading] whatsoever. . . . I didn't

know how to break it down and assess for [each skill] separately. . . . I didn't really know

how to grade all the pieces separately and I didn't have assessments designed for that.

And so I realized it was kind of like an, "Oh, crap!" moment. It's like I realized I was

missing that piece. And so when I started designing assessments I would look and make

sure that my questions fit the skills and that I had the questions labeled under the skill . . .

that our team, our department had determined. . . . And so that, to me, was really like a

springboard to understanding this. (Interview, para. 20)

Annie's words show her changing her practice to align with the goal of communicating and

promoting academic mastery. Ben went through a similar journey, though he described his

practice as coming into alignment with the goal of promoting a growth mindset. Before

implementing standards-based grading, he relied on lectures and never assessed student learning

before the summative assessment. After implementing standards-based grading, his practice

became characterized by ungraded "formative build-up to the summative" because "it's a process

of helping them . . . thinking of feedback and growth from a very low-stakes point of view"

(Interview, para. 23). Similar to both Annie and Ben, Shauna described how she learned to split

assessments into discrete skills and how she began to offer unlimited redos and retakes in her

classroom, so that students could learn in a growth-oriented classroom where "it's okay to fail,

and you can try again" (Interview, para. 28). Finally, Sanford, who began his teaching career at

The Green School under standards-based grading, described the system as "a whetstone" on

which he had sharpened his teaching practice by being forced to think intentionally and precisely

about his curricular planning and the instructional strategies he employs to promote learning and

growth (Focus Group 2, para. 222). In fact, as Sanford described the way his practices changed

to promote a growth mindset in his students, he also said, "I know that [standards-based grading] has helped me develop more of a growth mindset as a teacher" (Focus Group 2, para. 154).

The other six faculty participants also indicated that they perceived their practices as in alignment with standards-based grading, but they articulated that their practices were already in alignment with standards-based grading and therefore did not change when they began operating under the system. When asked in focus groups if standards-based grading had changed their practice, Jay, Charity, and Nora said that it had not, though they did not elaborate. In follow-up interviews, Colton, Margaret, and Ruth provided more detail. When asked about his teaching practices, Colton said, "Teaching practices . . . I might think of something later, but offhand . . . I don't think the school's system per se has been any driver of teaching practice change" (Interview, para. 78). When asked if her practices had changed because of standards-based grading, Margaret similarly said, "I don't think really too much . . . I guess because I've always done kind of like a formative check-in as far as entrance tickets and exit tickets go" (Interview, para. 37). Ruth noted that standards-based grading "probably also helps with backwards-planning" (Interview, para. 30), but said that she had already been employing backwards-planning and did not think standards-based grading had changed her practice.

All of the faculty participants perceive their practices as aligned with the goals of The Green School's grading system, whether because their practices changed when they implemented standards-based grading or because their practices were already aligned with standards-based grading. However, they simultaneously question the value and practical application of specific practices associated with standards-based grading, suggesting that there may be tension between teachers' understanding of the goals of standards-based grading and the practical application of specific practices that they might not deem valuable to the pursuit of those goals.

When Dr. S was asked to comment on teacher practices related to standards-based grading at The Green School, he said, "They may all be using standards-based grading, but they're using it in different ways" (Interview, para. 45). Focus groups and interviews with faculty participants seemed to validate that observation. As teachers discussed their use of practices associated with standards-based grading, they had a variety of perspectives on the value and practical application of those practices in their classroom. The two practices they most associated with standards-based grading at The Green School were rubrics and formative assessment, both of which are discussed in greater detail below.

Rubrics. Green School teachers articulated a shared understanding of what rubrics are and why they are used in standards-based grading. All participants described rubrics as scoring guides that identify and describe a set of possible student performance levels (on a scale of 1-4) on the learning goals of an assignment. As Charity said, a rubric ensures that students "see [the expectations for proficiency] right there and they know in black and white clearly what the expectation is" (Focus Group 1, para. 95). Sanford, an English teacher, explained how he came to understand the connection between rubrics and the goal of academic mastery by describing a conversation with The Green School's former Director of Teaching and Learning:

> I was saying something like, "I think the quality of a sentence is inextricably linked to the quality of the idea." That was my original assumption. And [the Director of Teaching and Learning] pushed me to think about separating those. . . . And the first rubric I made was because I was like, "Oh, I need to split those up." And then on the next paper, sure enough, [with] one student I was like, "Oh, okay, cool, I can see he has really good ideas and he's just really struggling with syntax and mechanics." . . . And then [students] can make game plans for the next time, like, "I did get 3's here, but I got a 2 here and a 1

here, so obviously focus my energy on the 2 and the 1, and here's how I'm going to do it

for the next [assessment]. So I feel like there are some really specific, concrete actionable

teaching practices that just attach to the rubric itself. (Focus Group 2, para. 212)

Sanford's words are representative of the participants' understanding of why rubrics are

associated with standards-based grading: they allow teachers to distinguish between specific

skills and measure student progress in each skill separately, in hopes of better communicating

and thereby promoting academic mastery.

Despite that shared understanding, and despite a shared perception that the participants'

current practices align with the goals of standards-based grading, teachers also questioned the

value and practical application of rubrics in their classrooms. In Focus Group 1, Annie said that

rubrics do not help with the goal of communicating and promoting academic mastery: "I don't

think the rubrics bring any clarity to students" (para. 98). She and other participants also worried

that the use of rubrics might diminish student performance. In her follow-up interview, Ruth said

that "rubrics can be too limiting" (para. 45), though she did not elaborate. Annie seemed to share

a similar sentiment. She perceives rubrics as communicating "ceilings" to students and expressed

concern that students "will work to that ceiling and go no further because they're done" (Focus

Group 1, para. 98). Colton, another member of Focus Group 1, agreed, saying he had "become

more anti-rubric" as he implemented standards-based grading (para. 105). He explained:

It smells, in so many ways, like the old points-chasing game that I hated so much [under

traditional grading]. They look at the rubric [and say], 'I need to do this thing, this thing,

and this thing, and that gets me a 4 in this category. And then they do those things and

those things only. And I find that deeply frustrating" (Focus Group 1, para. 107).

Though Annie and Colton expressed concern about rubrics within The Green School's standards-based grading system, they also demonstrated an eagerness to learn and hopefully improve the implementation of rubrics in their classroom. Annie narrated how she recently used artificial intelligence to generate performance descriptions that might promote "high ceiling" work (Focus Group 1, para. 100), prompting Colton – along with Nora and Charity – to say, "I want to hear more about that" (Focus Group 1, para. 101). Even though these participants questioned the value and impact of rubrics on student performance and mindset, they seemed interested in learning more about rubric development.

Other participants perceived rubrics as valuable, but articulated challenges in creating and using them effectively. Nora focused on her difficulties in creating effective rubrics. She finds it difficult to write meaningful levels of proficiency that communicate clearly to students. "Just for instance," she elaborated, "I had a rubric one time where for a 4 in Communication, I included the ability to develop one's personal voice in the target language in the World Language classroom. And there was some debate over what that actually meant" (Focus Group 1, para. 51). She returned to this idea later in the focus group and generalized, saying:

> "I always find it a challenge to word the 4 column on my rubrics because I'll always start with, 'In addition to the criteria for 3," and then just kind of pause because I don't know what else. And then I start writing vague stuff about 'develops a personal voice' and then I get lots of questions. (para. 110)

Charity felt confident in writing success criteria for rubrics, but admitted that she wasn't always sure those written criteria helped her maintain consistency in her grading, especially in relation to her colleagues, saying, "I really appreciate when we go by departments and say, 'Let's all score this one paper. What would it be [on the rubric]?' That always keeps me in check and

makes me go, 'Oh, I grade a little soft'" (Focus Group 1, para. 85). Ruth also expressed a belief that, no matter what steps are taken to promote consistency, rubrics might not lead to greater validity and reliability in grading: "We don't want [grading] to be subjective, but I think at some level it is for everybody. And I think a rubric is a way to try and make it seem more objective, but . . ." (Interview, para. 162).

Overall, Green School teachers identified rubrics as a practice associated with standards-based grading at the school. As Annie said, "I couldn't survive without rubrics" in a standards-based grading system (Focus Group 1, para. 98). But she and others expressed significant concern about the value and practical application of rubrics, questioning whether rubrics might put a ceiling on student achievement, and also whether they, as teachers, were effectively constructing and using rubrics within their practice. Thus, there seems to be a tension between faculty participants' understanding of the goals of standards-based grading and their practical implementation of standards-based grading, at least in regards to rubrics.

Formative Assessment. Green School teachers articulated a shared understanding of what rubrics are and why they are used in standards-based grading. Nora's definition was both clear and metaphorical:

> I like thinking of [formative assessment] with an athletic metaphor. So formatives are like the practice and the training, and that includes practices run by the coach (the teacher), which is the stuff I collect. But it also includes the practice that [students] might do by themselves outside of class that nobody sees but themself. And when it's time for a game, that's the summative. (Focus Group 1, para. 161)

Nora's words are representative of how the faculty participants articulated their understanding of formative assessment. To them, it is clearly practice work – and, importantly, ungraded practice

work – but the category of practice work can be broad. Participants also agreed that formative assessment supported the goals of standards-based grading, particularly in providing specific feedback on the journey towards academic mastery and in cultivating a growth-oriented environment where students know "that it's okay to fail, and you can try again," as Shauna said in her follow-up interview (para. 28).

No participant questioned the value of ungraded formative assessment. But participants did raise questions about the practical application of formative assessment in their classrooms. They particularly wondered how formal their record of student progress on formative assessments should be. In Focus Group 1, Colton explicitly asked his fellow participants, "I would like to know if other teachers are inputting formative grades into [the learning management system]" (para. 140). That sparked a 7-minute conversation about the value of formally recording formative ratings versus informally delivering qualitative feedback. Colton described his practice as informal and conversational: "To me the important formative work is the conversation. It's, 'I'm looking at this paper right now. We're talking about it right now.' And to me that's the important formative stuff. And that doesn't have a space in the gradebook" (Focus Group 1, para. 156). Nora, on the other hand, thought it was very important to record ratings for every formative assessment in the school's learning management system:

> Because [in the learning management system] . . . there's a little arrow that shows
> [students and parents] a grade and then in parentheses how many formatives there are and
> I feel like there needs to be, like, a certain number of formatives in the parentheses so that
> parents know when they check their portal every day, that the score is not just based on
> two summatives that we had this trimester or whatever. There's more background and
> then they can reach out and ask their student. (Focus Group 1, para. 147)

Though Margaret was in Focus Group 2, she narrated working through similar questions in her own formative assessment practice. "I was just reading something today," she stated, "that said, 'Don't put a rating on [formative assessment]. Just put the feedback'" (Focus Group 2, para. 224). Previously, she had marked all her formative entrance tickets with ratings and recorded them in the learning management system. But she noted that many students focused on the number: "And I would leave feedback, but once they would see the score . . . that's it" (Focus Group 2, para. 224). While Focus Group 1's conversation centered on the mechanics of whether or not to enter ratings in the learning management system, Margaret more explicitly connected the question to thoughts about effective practices for promoting academic mastery and a growth mindset.

Overall, Green School teachers identified ungraded formative assessment as a practice associated with standards-based grading at the school. While participants agreed on the value of formative assessment and feedback in supporting the goals of standards-based grading, they raised questions about the practical application of formative assessment, particularly wondering whether, or how often, it should be recorded in the school's learning management system. This mechanical question dominated the participants' discussion of formative assessment, though one participant asked more explicitly pedagogical questions about effective feedback practices. This suggests there may be a tension between faculty participants' understanding of the goals of standards-based grading and their practical implementation of standards-based grading, at least in regards to formative assessment.

Implications of Finding 3

Based on the data presented in Finding 3, Green School faculty articulate a tension between the goals of standards-based grading and the practical application of standards-based

grading. Teachers foreground external forces that contribute to that tension, especially parent pressure, college expectations, the school's learning management system, and the reality of a teacher's daily workload. Teachers perceive these external influences as the greatest impediments to implementing standards-based grading at The Green School. However, not all tension derives from external factors. Participant responses also indicated that participants experience tension between the goals of standards-based grading and the implementation of instructional practices associated with the grading system. In the case of both rubrics and formative assessment, which both faculty participants and the literature associate with standards-based grading, teachers raised questions about the value and effective implementation of the practices. Interestingly, in both cases, participants again spent a significant amount of time discussing the external factors – such as student behaviors, parent expectations, and the learning management system – that they perceived as impacting the effectiveness of both practices. They spent less time reflecting on their own use of the practice, though they did demonstrate an openness to learning about methods to improve the implementation of each practice. This suggests that professional learning might have a role to play in minimizing the tension between teacher perception and the implementation of practices associated with standards-based grading.

Finding 4: Green School teachers perceive themselves as participating in a supportive and growth-oriented learning community, which could be enriched by more formal professional learning experiences.

This finding aligns with RQ 3: "What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?" While Finding 3 focused on impediments, Finding 4 focuses on supports. The Green School's professional learning culture is the most significant support

identified by faculty participants, as it acts as a springboard for learning and growth that supports the implementation of standards-based grading at the school. Yet most of this learning happens informally, according to participants, and more formal professional learning opportunities could prove beneficial. The following sections detail the data related to The Green School's learning community and culture, informal professional learning opportunities, and formal professional learning opportunities, in support of Finding 4.

Learning Community and Culture

Participants expressed strong consensus that The Green School's culture is one of learning, where members of the community actively seek to grow and support one another's growth. As Ruth said, "I think [the members of The Green School's professional community] are always wanting to learn and learning every day. And I think that's something all of us share and what brings us here. And it's one of the joys of being here, that it is genuine" (Interview, para. 183). Margaret similarly described the culture of the school as "super open and supportive" (Interview, para. 41), Ben noted the school's "very strong learning community" (Interview, para. 98), and Nora emphatically stated, "This is the first place that I've found where collaboration does make you better. It does. It does" (Focus Group 1, para. 171). These quotes are representative of the tone and substance of every participant's comments about The Green School's learning community and culture.

Teachers further highlighted the interdisciplinary nature of the support and collaboration they received from their colleagues. When they are not teaching, Green School teachers work in their grade-level team workrooms, sharing space with their colleagues who teach students of the same grade level. All the participants who had K-12 teaching experience elsewhere before joining The Green School described this as a positive change, compared to their former

experience, and one that helped them more effectively understand and implement standards-based grading. "What I find most interesting [about The Green School's culture] is that it's interdisciplinary," Margaret said (Interview, para. 41). She continued:

> I can peek over [my desk] and be like, 'Hey, [colleague].' And discuss grading with him. And it's so interesting to hear it from [a different perspective]. And then of course [a different colleague] will pop her head up and put her two cents in. And so to hear the same ideas but different content and compare the similarities and differences is super interesting. (Interview, para. 41)

Annie similarly said, "I think it's a strength that we have everybody from different departments to kind of bounce ideas off of. And I even love it when we have people from outside our normal workroom team come in and get in on those conversations" (Focus Group 1, para. 87). Ben, Sanford, Charity, Nora, and Ruth also identified the interdisciplinary grade-level team workrooms as important spaces that help define and maintain the school's professional learning community and culture.

It is worth noting that Annie, who narrated significant challenges in implementing standards-based grading, also narrated feeling supported by the professional learning community and culture during challenging times. In her follow-up interview, she said:

> [Implementing standards-based grading] was definitely stressful and I definitely felt less than and I felt, really for the first time in a long time, incompetent at what I was doing . . . I couldn't figure out why it didn't make sense to me, why it was so hard, and it was very discouraging. But I felt there were people trying to help me figure it out [at The Green School]. I never felt like, 'Oh, this person . . . I don't know why they don't just get it.' I never felt that, I always felt like everybody understood that [a grading system like this]

had not been done before and everybody was trying to figure it out and it was hard. (para. 27)

In this quote, Annie describes a professional learning community that is characterized by compassion, care, and a collaborative approach to individual and institutional improvement, and thus creates a positive, growth-oriented culture, even in challenging times.

Informal Professional Learning Opportunities

Given The Green School's growth-oriented professional learning community and culture, it is no surprise that participants reported that they perceive much of their professional learning about standards-based grading as happening informally, within the context of organic relationships and conversations with their colleagues. As Sanford said, "There's a good deal of learning about standards-based grading that takes place rather informally, which again could be an indication of the strength of the culture" (Focus Group 2, para. 252).

Faculty participants emphasized the important role of informal conversations with their colleagues in their professional learning about standards-based grading. In his individual interview, Ben shared his experience, saying:

I feel very supported and that this school's created an environment where I can say, "Hey, I'm not sure about this." Or, "I have a question about this," or, "Hey, I'm gonna try this." And that's okay. It's encouraged. I think that really opens up a lot of the idea of standards-based grading [and] might enable [effective implementation of standards-based grading] to be more of a possibility because I have more options of how I can try something different in class, a class activity or an assessment, formative or summative. (para. 98)

Margaret similarly emphasized the importance of informal conversation with her colleagues about standards-based grading practices. When asked what support was most valuable in helping her transition into standards-based grading as a teacher new to The Green School two years prior, she said:

> Talking to people, definitely. Coming in as a first-year standards-based grader, talking to people that have been there, especially within [The Green School] system, was huge. And then continuing to talk to people, bouncing ideas off people. I think that's the most beneficial thing for sure. Like, "Hey, I'm thinking about doing this. What do you think?" Or, "Hey, I'm planning for this to be a Conceptual Understanding project. What do you think? Or, "Hey, I got this response from a student. I think it's this [rating], will you check me on that?" That's been the most helpful because I do think . . . teachers have to think about . . . I feel like, it's as much of a thinking process for me to give feedback and grades as it is for the kids to do it. (Interview, para. 39)

By the end of the quote, Margaret comes to the conclusion that using standards-based grading requires just as much learning for her as for students who are expected to master academic standards. And, to her, ongoing informal conversation with colleagues is the most effective way to pursue that learning.

Other participants noted that this informal professional learning can often happen most effectively with co-teachers and, in keeping with the data described in the previous section, within the context of their grade-level team workrooms. Dr. S also highlighted the value of informal professional learning, saying that "teachers getting together that teach the same course to talk about it" was perhaps the most valuable support for faculty in implementing

standards-based grading (Interview, para. 63). Dr. S teaches one English course every year and shared his experience working with a team of three teachers to teach seventh-grade English:

> That year in seventh-grade was particularly valuable for me because it was the first time I'd really paired up with two other teachers to kind of get [insight into] their standards-based grading practices, and that . . . usually I've been kind of teaching [with standards-based grading] in my own little private Idaho. So, that was very helpful to see and I learned a lot through that collaboration. (Interview, para. 63)

Annie narrated a similar experience not with her teaching team, but with the grade-level team she shared a workroom with. When asked what support was most valuable in helping her transition into standards-based grading, she said:

> I definitely think talking to [my grade-level] team, because we were all kind of on this excursion together of figuring [standards-based grading] out, because it was new for all of us. So I think talking to them and expressing my frustrations and I'm just stuck and I don't get it, somebody please help me. And they would jump in and try to help. So other people trying to explain, but at the same time you could tell they weren't really clear on it. So we were all . . . in the same boat. (Interview, para. 80)

Annie's response highlights the importance she attributes to working with a team where all the members are "in the same boat" and "figuring [standards-based grading] out" together. At the same time, her response also suggests some frustration with the idea that a team of teachers who were still not "really clear" on the system were each other's most significant means of support. This is a tension that Sanford also noted. As documented at the beginning of this section, he said, "There's a good deal of learning about standards-based grading that takes place rather informally, which again could be a strength of the culture" (Focus Group 2, para. 252). He then continued to

say, "But that also can create the conditions for misunderstandings that at the time might be minor, but over time become quite large and could actually work at odds to some of the goals [of standards-based grading] that we set out in terms of the student experience" (Focus Group 2, para. 252). Like Annie, Sanford seems to acknowledge that it is possible that the learning that occurs in informal spaces might not always be accurate: the participants in these conversations might not have full clarity about the issues under discussion, which could result in misconceptions. Both Annie's and Sanford's words suggest that the professional learning community and culture could be enriched by more formal professional learning opportunities, a theme that also emerged from data collected from other participants.

Formal Professional Learning Opportunities

According to participants, The Green School does provide formal professional learning opportunities related to standards-based grading. Dr. S perceived these opportunities as thorough and wide-ranging: "I see that [professional learning related to standards-based grading] is built into the orientation and onboarding sessions. I see that there have been sessions dedicated to standards-based grading throughout the year in the context of faculty meetings or in-service days. I think that we've even had some summer reading on this topic" (Interview, para. 62).

Faculty participants agreed that formal professional learning on standards-based grading has occurred and been effective. Much of this has occurred in the context of department meetings, when the Academic Chair for each department has time to lead the members of their academic discipline through professional learning activities. Ruth and Annie – members of the English and science departments, respectively –highlighted the importance of department meetings dedicated to developing discipline-specific standards and categorizing them under the school's transdisciplinary learning goals. Ruth said that "the work we did as the English

department was critical. And I wanted it. I was hungry for some direction on standards, so that work was really helpful" (Interview, para. 177). The fact that Ruth "was hungry" for this work is noteworthy. She clearly perceived the formal meetings devoted to the development of English standards as relevant and meaningful to her practice. Annie provided more insight on the formal process the science department used to create discipline-specific standards:

> We all decided that we would be teaching the Next Generation Science Standards. . . .
> The department got together and analyzed all of those skills as, 'This is Communication, this is Critical Thinking, this one is Conceptual Understanding.' And so then that . . . was really a turning point [for the department's implementation of standards-based grading]. (Interview, para. 27).

Taken together, the foregoing comments demonstrate that, within at least two of The Green School's five core academic disciplines, relevant formal professional learning opportunities have had a positive impact on the implementation of standards-based grading.

Some formal professional learning has occurred outside of department meetings, as well, primarily during faculty meetings and in-service sessions. Charity recalled faculty meetings where faculty members from different disciplines "sit around and talk about assessment design and how we're grading, when we would take student work and everybody graded and compared how we graded it" (Focus Group 1, para. 85). Margaret emphasized the importance of sessions on standards-based grading at the new faculty orientation that she participated in when she joined The Green School, as noted in Finding 1, saying, "it could be very specific on, 'Hey, let's break this down for [teachers new to the school]. This is what we do here'" (Interview, para. 48). Annie recalled an ongoing formal professional learning opportunity from her third year at the school, when faculty members had the option of joining a bi-weekly book club on Feldman's (2018)

Grading for Equity. "That was helpful in seeing the rationale for why I needed to continue trying to figure this out," she said, "because there were times I was just like, 'I'm just going to throw in my hand. I'm just going to put in grades and just be done with it'" (Interview, para. 92). While Charity and Margaret referenced formal professional learning opportunities focused on the practical implementation of standards-based grading, Annie's experience with the book club focused on the goals and underlying philosophy of standards-based grading, which helped motivate her to continue pursuing the practical implementation of the system in her classroom.

Though participants agreed that The Green School has provided meaningful formal professional learning opportunities related to standards-based grading, several expressed a desire for more of those opportunities. As she recalled the formal work her department had done to clarify standards, Annie said, "I wish we were having more of those conversations" (Focus Group 1, para. 87). Similarly, while remembering the value of faculty meetings dedicated to grading consistency, Charity noted, "We've only done this twice, maybe three times in the four years I've been [at The Green School]" (Focus Group 1, para. 85). Other participants also demonstrated a desire for more formal professional learning opportunities by suggesting what those opportunities could look like or focus on – though, in alignment with Sub-finding 1.2, their suggestions focused on faculty members new to The Green School, or perhaps simply new to standards-based grading. Colton's suggestion, which he based on his experience at a previous school, was the most fully-formed:

> At an old Quaker school [I worked at], when you joined the school you went to "teachers new to Quaker education" bootcamp for a weekend or something. And I can see sending people to "teachers who are new to standards-based grading" bootcamp. . . . That would be a useful endeavor. Like, "Oh, you're new to the school? Here are three days of

onboarding where we're going to dig into standards-based grading and the why and the how and the pitfalls and all these things." (Focus Group 1, para. 189, 191)

In her individual interview, Margaret pitched a different idea designed to offer formal professional learning to new faculty members: "It would be nice if there was, like, a committee of people that are like, 'Hey, I feel really comfortable with standards-based grading. I really like it.' And we had just four or five people who held trainings for new teachers and who new teachers knew they could email with questions about standards-based grading" (para. 55).

Nora didn't specifically suggest a formal, required professional learning opportunity for new faculty, but she did remember opting out of a recommended, but not required, opportunity in her first year at The Green School. She said:

This might be controversial, but I think having some mandatory reading on standards-based grading would be helpful. I think my first year there was an optional reading of the Feldman book [*Grading for Equity*], which I did not participate in because I was dealing with a lot. And then as a result, I think I went through my first year really lost on what standards-based grading meant. I did eventually read it, but it was on my own and not part of a book club or whatever. But it was like a light bulb moment for me when I finally read it. And I think maybe even just having excerpts of that be summer reading – highly recommended summer reading – for [faculty] might be a good thing. (Focus Group 1, para. 188)

Interestingly, Nora frames her suggestion that Green School faculty engage in required – or at least highly recommended – reading on standards-based grading as controversial, seemingly because of the time commitment involved. Nevertheless, she perceives the value of such a

formal, required professional learning opportunity as worth the investment, for both future participants and the institution.

One of the challenges The Green School faces in offering more formal professional learning opportunities focused on standards-based grading is bandwidth. As Dr. S said after he detailed the formal professional learning the school had provided, "There's only so much bandwidth out there. I think a fair amount of [that bandwidth] has been dedicated to [standards-based grading]" (Interview, para. 62). Nevertheless, the data indicate that formal professional learning opportunities are valued by Green School faculty, and that further developing these opportunities could equip teachers to more effectively implement standards-based grading in their practice.

Implications of Finding 4

Based on the data presented in Finding 4, participating Green School teachers perceive themselves as participating in a supportive and growth-oriented learning community. Their descriptions of the learning culture largely align with the tenets of Knowles' (1980) Adult Learning Theory. In particular, the learning is directed by Green School faculty themselves, through informal collaboration and conversation, and is perceived as relevant and meaningful in approaching problems in teachers' daily practice. Similarly, the professional learning that Green School faculty engage in largely aligns with Webster-Wright's (2009) definition of professional learning as "continuing, active, social, and related to practice" (p. 2), as Green School teachers narrate ongoing professional learning conversations with their colleagues that impact their practice. This professional learning often happens informally. Participating Green School faculty report that they value this informal professional learning, but also express a desire for more formal professional learning opportunities – though their specific suggestions for such

opportunities focus on new faculty, rather than the faculty as a whole. Perhaps that is because several of the participants struggled to learn and implement standards-based grading when they joined the school, or when they joined a different institution that used standards-based grading. The needs of the faculty as a whole may be more difficult to identify, making it more challenging to develop meaningful and relevant formal professional learning opportunities.

Discussion

The data and findings presented in this chapter emerged in response to a problem of practice at The Green School: the school wants to build a valid and reliable grading system that communicates student mastery of learning goals and positively impacts both students and teachers, but survey data from 2020-21 and 2021-22 indicated that teachers doubt the effectiveness of standards-based grading. Research questions focused on how Green School teachers understand and articulate the goals of standards-based grading, the ways they perceive these goals as fulfilled (or not fulfilled), and the supports and impediments that most impact their implementation of standards-based grading. The findings above respond to those research questions. In this discussion, I synthesize the findings and the literature to develop an understanding of teacher perceptions of standards-based grading at The Green School, which will lead to the commendations and recommendations presented in Chapter 5.

This study foregrounds teacher perceptions of the goals of standards-based grading, as two research questions address this topic. Participants identified four goals of The Green School's standards-based grading program: to promote 1) academic mastery; 2) a growth mindset towards learning; 3) intrinsic motivation for learning; and 4) equitable opportunities for students. With a few exceptions, participants' understanding and articulation of the first three goals aligned almost exactly with commonly accepted goals of standards-based grading identified in

the literature review. Participants also indicated that they perceive these three goals as largely being fulfilled. Given the results of prior survey data, this was surprising. Perhaps the timing of this study impacted participants' perceptions of the grading program, as data was collected in the summer, when frustrations associated with grading might have been less salient. Perhaps this study's qualitative focus groups and interviews allowed participants to express their thoughts with greater nuance than the quantitative surveys of the past. Perhaps the social dynamics of focus groups played a role in the responses, as participants might have felt a desire to affirm the perceptions of their colleagues and thus reinforce their sense of belonging to a professional community they seem to deeply value. Or perhaps Green School teachers' perceptions of standards-based grading have changed over time, in line with hypotheses proposed in prior research (Knight & Cooper, 2019; Link & Guskey, 2022).

Teachers did also identify clear, actionable areas hindering the fulfillment of the goals of promoting academic mastery, a growth mindset, and intrinsic motivation. For example, criterion-referenced standards are the foundation of standards-based grading (Moore et al., 2009; Shepard, 1979), yet the school is still in the process of clarifying its standards within the umbrella of its transdisciplinary learning goals. Interestingly, these areas differ significantly from the areas of concern most commonly cited in the literature. In previous studies at different sites, teachers most frequently expressed concern that student work habits declined with the implementation of standards-based grading practices, such as not grading homework and other formative work, allowing for unlimited redos and retakes, and removing behavioral components from grades (Knight & Cooper, 2019; Rosales, 2013; Schiffman, 2016). Green School teachers did not express that concern, and instead noted that they saw student motivation and orientation toward learning shift in a positive direction – and that the shift might be even more pronounced

if the school leaned even further into the ideals of standards-based grading by moving away from the use of letter grades in the upper school and the use of a 4-point scale that resembles the GPA scale commonly used in traditional grading and for the college admissions process. Given teachers' investment in the school's standards-based grading program, coupled with their clear and specific suggestions for the program's improvement, The Green School may want to consider relying on teacher feedback for the continued improvement of standards-based grading at the school.

However, it is worth noting that participants' understanding and articulation of the goals of standards-based grading did not fully align with the commonly accepted goals identified in the literature. The literature identified two additional goals: to promote 1) equitable grading practices; and 2) curricular and instructional change. Both of these goals promote change in teacher practices. Notably, while Green School participants did identify equity as a goal of the school's standards-based grading program, they focused on promoting equitable opportunities for students, not equitable teaching practices. The literature claims that traditional grading practices are often tainted by implicit bias (Feldman, 2018), which can impact teacher judgments of the academic performance and behavior of students from historically marginalized or underrepresented backgrounds (Cross & Frary, 1999; Dee, 2005; Downey & Pribesh, 2004; Feldman, 2018; Munoz & Guskey, 2015; Reeves, 2008). Proponents of standards-based grading claim that the system encourages teachers to implement practices to counter bias – a process that requires intentional effort (Stevens & Abernathy, 2017). Based on data from this study, teachers at The Green School are less aware of the need for that intentional effort than the literature suggests they should be.

Participants also did not identify curricular and instructional change as a goal of The Green School's standards-based grading program. The majority of the faculty participants perceived their mindset and practices as aligned with standards-based grading before they joined the school. Three of the participants – Annie, Ben, and Sanford – narrated undergoing significant change as they adopted and implemented standards-based grading. However, when explicitly asked if one of the goals of standards-based grading was to promote change in teacher practices, they demurred, calling it, in the words of Annie, an "unintended byproduct" of the system (Focus Group 1, para. 92). Indeed, in her individual interview she expressed feeling "incompetent" for having to change so much (para. 27). This is interesting. While my conceptual framework envisioned teachers swimming in a sea of change, that is not how the majority of the study's participants perceive themselves, and participants only seem to perceive undergoing change as a normative experience when teachers first join The Green School.

At the same time, Green School faculty perceive themselves as operating within an environment supportive of growth and change. This emerged as a hallmark of The Green School's culture and community. And there are topics that Green School teachers would like to further explore, as the data indicate. They raised questions about the value and practical implementation of rubrics and formative assessment, for example, and even began to share strategies in Focus Group 1. Based on the literature, it is unsurprising that Green School teachers raise questions about these practices commonly associated with standards-based grading, as evidence indicates that teachers do not always share a common understanding of rubrics and formative assessment, nor do they always use them effectively (Brookhart et al., 2008; Brookhart & Chen, 2015; Dawson, 2015; Moss & Brookhart, 2019). Within the context of their supportive and growth-oriented community, Green School teachers may be poised to undertake professional

learning focused on these topics. If they do so, they may not see this as curricular and instructional change, but rather as a refinement of the curricular and instructional practices that they perceive as already aligned to standards-based grading.

Green School teachers clearly indicate a desire for more formal professional learning about the practical implementation of standards-based grading. As noted above, faculty participants raised important questions about two practices commonly associated with standards-based grading: rubrics and formative assessments. Though it is beyond the scope of this study to truly understand teacher implementation of rubrics, formative assessment, and redos/retakes (a practice emphasized in the literature but largely unmentioned in data collection for this study), it seems as though formal professional learning on these topics could be beneficial. However, it is important to note that any formal professional learning that The Green School develops should align with best practices in adult and professional learning. In narrating their professional learning at the school, participants described experiences that were self-directed yet social, ongoing, and meaningfully related to real problems in their daily work – hallmarks of Knowles' (1980) Adult Learning Theory and Webster-Wright's (2009) definition of professional learning. Perhaps The Green School's professional learning community and culture is so strong because it aligns with best practices in adult and professional learning. Therefore, the school must take care to ensure that any future professional learning opportunities – especially formal, required ones that might strike teachers as less self-directed – continue to align to those tenets. If formal professional learning can empower Green School teachers to meaningfully address problems that they identify in their own practice, it is likely to be well-received by a faculty committed to learning, growth, and the goals of standards-based grading.

Chapter 5

Commendations and Recommendations

This study began with a problem of practice at The Green School: the school wants to build a valid and reliable grading system that communicates student mastery of learning goals and positively impacts both students and teachers, but survey data from 2020-21 and 2021-22 indicated that teachers doubt the effectiveness of standards-based grading. In response to that problem of practice, I developed an inquiry into teacher perceptions of standards-based grading at The Green School was guided by three research questions:

- RQ1: How do Green School teachers understand and articulate the goals of the school's standards-based grading program?

- RQ2: According to Green School teachers, in what ways (if any) are those goals being fulfilled? In what ways (if any) are those goals not being fulfilled?

- RQ3: What supports do Green School teachers perceive as most helpful, and what impediments do they perceive as most challenging, in implementing standards-based grading?

I employed a qualitative exploratory case study approach to these questions, conducted focus groups and individual interviews. In reviewing the data, several themes emerged that served as the basis for the findings presented in Chapter 4. These findings, along with the literature presented in Chapter 2, allowed to identify areas of strength and growth for The Green School's standards-based grading program. This chapter turns those areas of strength and growth into a set of two commendations and three recommendations for the school as it continues to improve its standards-based grading program:

- Commendation 1: Green School faculty and administration express a shared commitment to the values and long-term success of standards-based grading at the school.

- Commendation 2: The Green School is characterized by a positive, growth-oriented culture in which teachers feel supported.

- Recommendation 1: Protect and further cultivate The Green School's shared commitment to the values and long-term success of standards-based grading by investing in hiring and onboarding processes that emphasize the goals and underlying philosophy of standards-based grading.

- Recommendation 2: Clarify and transparently communicate the discipline-specific standards that fall under The Green School's transdisciplinary learning goals.

- Recommendation 3: Develop teacher-directed formal professional learning opportunities about the practical implementation of standards-based grading.

This chapter elaborates on each of the above commendations and recommendations, thus concluding this study.

Commendations

Green School teachers are invested in the school's standards-based grading program. First, they (along with the school's administration) express a shared commitment to the values and long-term success of standards-based grading at the school. Second, they participate in a positive, growth-oriented culture that supports teachers.

Commendation 1: Green School faculty and administration express a shared commitment to the values and long-term success of standards-based grading at the school.

My findings revealed that both faculty and administration at The Green School express a high level of investment in the values and long-term success of standards-based grading at the

school. The Founding Head of School, Dr. S, spoke of standards-based grading as deeply connected to the school's underlying philosophical ideals, such as its commitment to growth and equity. Similarly, faculty members perceived standards-based grading as a core element of the school's academic program. Many of the participants saw value in standards-based grading before joining The Green School, as the goals of the grading system aligned with their own internal ideals and educational experiences. But even those who had to adapt to the grading system upon joining the school articulated an investment in standards-based grading. Participants overwhelmingly said that they value the shared goals they identified: to promote academic mastery, a growth mindset towards learning, intrinsic motivation for learning, and equitable opportunities for students. These goals describe a system of educational values that Green School faculty and administration are committed to in their work as educators.

My findings also indicate that Green School faculty and administration perceive the school's standards-based grading program as moving along a positive trajectory. Participants are optimistic that the school's goals for its grading system are being fulfilled. Faculty members, in particular, also described areas of growth for the grading system and ways in which the goals of standards-based grading could be fulfilled even more effectively. These areas for growth were concrete and actionable, offered in a solution-oriented, rather than critical, manner. This further indicated that Green School faculty are committed to the values and long-term success of the school's standards-based grading program.

Commendation 2: The Green School is characterized by a positive, growth-oriented culture in which teachers feel supported.

Throughout the course of data collection, both faculty and administration at The Green School described the school's culture as supportive, growth-oriented, and engaged. Participants

repeatedly said that they respect their colleagues and value their perspectives and insights, giving

multiple specific examples of a positive professional learning community in action. This culture

has played an important role in professional learning related to standards-based grading, with

teachers relying on each other for informal and formal professional learning opportunities. They

ask one another questions and engage in repeated conversations, both formally and informally, to

better understand and implement standards-based grading. Administration engages in this work,

as well, with Dr. S narrating how much he learned from his seventh-grade English co-teachers. In

fact, one focus group even became a professional learning community for a few minutes, as one

teacher shared a new strategy for rubric creation and other participants immediately asked to see

the rubrics and then meet to discuss the strategies that led to their creation. This study indicates

that growth-oriented conversations are a normal and regular part of the school culture.

The Green School has structures in place that facilitate a supportive, growth-oriented

culture. Based on participants' responses, perhaps the most impactful structures are the

grade-level team workrooms. These workrooms are hubs of ongoing interdisciplinary

collaboration, as well as safe spaces where teachers can ask for help and acknowledge struggle,

as Annie did during particularly low moments in her experience with standards-based grading.

Given the value and supportiveness participants reported finding in their relationships with their

fellow teachers, it is perhaps unsurprising that Green School teachers express a desire for even

more opportunities to engage professionally with their colleagues. Their desire for more formal

professional learning opportunities demonstrates not only their trust in the value of the

professional learning culture at the school, but also their commitment to further cultivating that

culture.

Recommendations

The following recommendations are grounded in both the findings presented in Chapter 4 and my own pragmatic lens as a researcher. I could have generated many different recommendations based on the data and findings previously presented. Which recommendations could most significantly, and most immediately, impact The Green School's grading program and the teachers who implement it? That is the "practical and outcome-oriented" question I asked myself when developing the three recommendations outlined below (Johnson & Onwuegbuzie, 2004, p. 17).

Recommendation 1: Protect and further cultivate The Green School's shared commitment to the values and long-term success of standards-based grading by investing in hiring and onboarding processes that emphasize the goals and underlying philosophy of standards-based grading.

Shared commitment to the values and long-term success of standards-based grading is one of The Green School's strengths, as detailed in Commendation 1. However, one clear theme that emerged in my findings was a concern that this shared commitment could erode as new faculty members, particularly faculty members new to standards-based grading, join the school. Participants specifically expressed concern that the school might not be doing enough to prepare new faculty to fully understand and implement standards-based grading. Given that standards-based grading often requires a significant change in teacher mindset and practice (Brookhart, 2011; Brookhart & Nitko, 2018; Feldman, 2018; Guskey, 2014; Link & Guskey, 2022; O'Connor et al., 2018; MacCrindle, 2017; McMunn et al., 2003; Peters & Buckmiller, 2014), this concern is a significant one and should be addressed. I recommend doing so through both the hiring and onboarding.

Hiring. Many of the participants who articulated the most significant investment in the goals and long-term success of standards-based grading narrated an internal alignment with the grading system's philosophy. This internal alignment pre-dated their employment at The Green School and largely stemmed from their personal values and their previous experience with grading and assessment. Therefore, it makes sense for The Green School to actively recruit teachers who demonstrate internal alignment with the goals of standards-based grading.

The institution can attempt to do so in several ways. First, the school can cultivate partnerships with organizations aligned to the goals of standards-based grading, such as Mastery Transcript Consortium, a national and global nonprofit that aims to promote mastery learning within schools, and Competency Collaborative, an organization that advocates for and supports the implementation of competency-based equitable grading in New York City schools. Both organizations offer membership options (including for schools outside of New York, in the case of Competency Collaborative) and offer professional learning opportunities, such as yearly conferences, school visits, and networking events. Admittedly, little data exists to prove the effectiveness of these organizations. However, The Green School's purpose in joining their networks would less be to learn from them and more to develop relationships with like-minded educators who might consider joining the school in the future.

Second, the school can review its hiring protocols to ensure that they equip those who lead hiring processes to effectively gather information about candidates' personal values and previous experiences related to grading and assessment. The school's job descriptions for faculty positions already include language about standards-based grading so that all potential applicants are aware of the institutional importance of the system. Once candidates do decide to apply, asking questions such as these in interviews would complement the language in the job

descriptions and more fully illuminate prospective Green School teachers' views on grading and assessment:

- Describe your approach to grading at your current (or most recent) school. Is there anything you're considering changing about your approach?

- What, in your opinion, is the purpose of grades?

- What does assessment look like in your class?

- What methods do you use to help students master the skills and understandings that you teach?

These questions are representative of the kinds of questions The Green School can be sure to ask as they evaluate candidates for teaching positions. Given that the school's current faculty members are invested in the success of standards-based grading at the school, I also recommend that they be actively engaged in all hiring processes, and that they be specifically asked to give feedback on candidates' alignment with the goals of standards-based grading. Investing in the recruitment process, through both networking and the refinement of hiring protocols, could equip The Green School to better identify candidates who are likely to commit to the goals and long-term success of standards-based grading at the school.

Onboarding. In conjunction with more focused hiring processes, The Green School can also develop an onboarding process for new faculty that provides ample professional learning on the goals and practical implementation of standards-based grading at the school. Participants in this study described a new faculty orientation that includes sessions on standards-based grading, but also indicated that, in their experience, these sessions were insufficient for new faculty to develop a deep understanding of standards-based grading at the school. Additional professional learning for new faculty could take many forms, including the one I outline below.

I recommend that the school continue to provide standards-based grading sessions during new faculty orientation, and then build upon that foundation with a year-long series of biweekly "lunch and learns" for new faculty on the topic of standards-based grading. In the first half of the year, these lunch and learns could take the form of a book club where all participants read and discuss Feldman's (2018) *Grading for Equity*. This book not only provides a strong introduction to standards-based grading – one that aligns with The Green School's goals for its own grading program – but also has the benefit of being part of the school's institutional history. Several participants described a 2019-202 book club on *Grading for Equity* as foundational to their understanding of standards-based grading at The Green School. Furthermore, the book, as its title indicates, focuses on equity, which participants identified as a goal of the school's standards-based grading program, but one that they demonstrated a more limited understanding of. Having all new faculty read this book could result in informal conversations – the kinds that occur frequently in the school's professional learning culture – about grading and equity, perhaps resulting in a greater shared understanding of those concepts among the whole faculty.

During the second half of the year, I recommend building upon the philosophical foundation laid by the book club by offering sessions focused on the practical implementation of standards-based grading. Each bi-weekly lunch and learn could focus on a different topic associated with the practical implementation of standards-based grading, such as formative assessment, rubrics, the learning management system, and addressing parent concerns. These suggested topics emerged from the findings outlined in Chapter 4, but I also recommend asking current faculty what topics they would have liked to discuss as newcomers to the school, and asking new faculty what topics they perceive as most pressing. Soliciting teacher input is especially important given the time commitment this recommendation requires from teachers

new to the school. Adapting to a new teaching environment – with its own unique culture, policies, and procedures – can be challenging and time-consuming, whether a teacher is in their first year in the profession or has many years of experience elsewhere. Given that context, it's possible that new faculty could perceive these onboarding sessions as an additional burden rather than as a helpful support. The Green School should make every effort to ensure that extended onboarding related to standards-based grading meets its new teachers' needs.

If the school can provide a year-long series of professional learning opportunities that meaningfully address the goals and practical implementation of standards-based grading, as well as continue to cultivate a self-directed learning environment focused on addressing meaningful problems relevant to new faculty members' daily work, then it will hopefully not only reinforce a shared investment in the values and long-term success of standards-based grading at The Green School, but also continue to cultivate a positive, growth-oriented culture in which all teachers feel supported.

Recommendation 2: Clarify and transparently communicate the discipline-specific standards that fall under The Green School's transdisciplinary learning goals.

The Green School's standards-based grading system operates within the framework of six transdisciplinary learning goals: Factual Knowledge, Procedural Technique, Conceptual Understanding, Critical Thinking, Communication, and Creativity & Originality. While participants expressed a belief in the value of these transdisciplinary learning goals, they also noted that the categories are broad and can result in unclear communication of student mastery of discipline-specific standards. Therefore, each academic discipline should clarify and transparently communicate the discipline-specific standards that fall under each transdisciplinary learning goal.

The data indicate that this process has already begun in disciplines such as English, math, and science, which have developed discipline-specific standards that fall under each transdisciplinary learning goal. Using these disciplines as a model, the other disciplines in the school can follow the same process. For example, Annie narrated how the science department first aligned itself to a set of national standards, then collaboratively worked to categorize the standards for each grade level under The Green School's transdisciplinary learning goals. If every academic discipline goes through a similar process, the disciplines can then compare the results of their work to ensure alignment across disciplines. For example, if the history and English disciplines categorize similar standards (e.g., analyzing primary sources) under different transdisciplinary learning goals, the disciplines can then have conversations to clarify and come to consensus, so that the school's understanding of the standards that comprise the learning goals is in alignment across academic disciplines, therefore making the goals both clearer and more truly transdisciplinary.

Internally clarifying the discipline-specific standards that fall under each of The Green School's transdisciplinary learning goals is only a first step. To better communicate academic mastery, the school should also transparently communicate these standards, and student performance in them, to students and families. Without that communication, it is difficult for teachers, students, and families to assess progress on each discrete skill that students are expected to master within a course. Based on data from this study, the school's learning management system does not allow the school to articulate discipline-specific standards within the umbrella of the transdisciplinary learning goals. Given that teachers also reported that the learning management system itself was challenging to use, the school can search for a new learning management system, prioritizing learning management systems with the capability to

articulate and report on discipline-specific standards within umbrella categories such as the

transdisciplinary learning goals. In case it proves impossible to find a learning management

system that fills that need, the school can simultaneously ask a few tech-savvy teachers to pilot

other ways to communicate student mastery of discipline-specific standards to students and

families. For example, a teacher in the English, math, or science departments could develop a

Google Sheet for each student that clearly identifies the standards that comprise each

transdisciplinary learning goal and allows the teacher to document the student's progress on each

standard throughout the year. Sharing this document with each student and their family would

provide all stakeholders with a clear picture of the student's academic progress.

It is important to acknowledge that developing a means of communicating academic

mastery, such as the Google Sheet described above, is not without its drawbacks. Such a project

would require the investment of a significant amount of time from each teacher. To protect

student privacy, each individual student would need an individual Google Sheet, which teachers

would have to update in addition to updating the learning management system, which houses the

school's official records. Given that teachers already said that incorporating standards-based

grading into their daily workload already presents a challenge, the idea of creating more work for

teachers is concerning. Therefore, the school should prioritize the search for a learning

management system that meets this need, perhaps canvassing like-minded schools (such as those

involved with Mastery Transcript Consortium and Competency Collaborative) to learn about the

learning management systems they use. If the school cannot find a learning management system

that meets this need, it should involve teachers in robust discussions about other possible courses

of action, so that teachers continue to perceive themselves as part of a positive culture where

they feel supported.

Recommendation 3: Develop teacher-directed formal professional learning opportunities about the practical implementation of standards-based grading.

One of The Green School's strengths is its collaborative and supportive professional learning community, as described in Commendation 2, which is largely characterized by ongoing, informal conversation among colleagues. These professional learning relationships are highly valued, as my findings indicate, but Green School teachers expressed a desire to augment them with more structured formal professional learning opportunities. My findings also indicate that while Green School teachers express a strong shared understanding of the goals of standards-based grading at the school, they experience a tension between the goals and the practical implementation of standards-based grading at the school. Therefore, it makes sense for topics related to the practical implementation of standards-based grading to be the focus of the formal professional learning opportunities that The Green School develops.

When developing these professional learning opportunities, The Green School should look to the principles of Knowles' (1980) Adult Learning Theory, which largely describe the environment in which adult learning should take place, in recognition of the needs of adult learners (Merriam, 2008). According to Adult Learning Theory, adults learn most effectively when five fundamental assumptions are respected: 1) adult learners are self-directed; 2) adults bring rich and valuable experience to the learning process; 3) adults are most ready to learn when the learning is relevant to a meaningful need or goal in their life; 4) adult learners are problem-centered; and 5) adult learners are best motivated by internal factors (Knowles, 1980). To respect these assumptions, The Green School can gather more information about the needs of its teachers and the problems they experience (related to standards-based grading) in their daily practice. To initiate the development of formal professional learning experiences, the school can

send out a brief survey to teachers about the topics they would like to see explored. This study provides a set of options that the school can list on the survey – such as formative assessment, rubrics, the learning management system, and challenging parent conversations – but teachers should also be provided with free response questions where they can suggest other topics, as this study is exploratory and not exhaustive. Based on the themes that emerge from the surveys, the school can develop a slate of offerings that is directed by teachers and meets their felt needs.

As the school designs the professional learning opportunities, it can continue to follow the principles of Adult Learning Theory (Knowles, 1980), as well as Webster-Wright's (2009) definition of professional learning: "continuing, active, social, and related to practice" (p. 2). First, as The Green School addresses the topics most commonly identified by teachers, it should do so in an ongoing way. The school has a monthly rotation of Tuesday afternoon meetings for teachers: all-staff meetings on the first Tuesday of the month, followed by faculty meetings, divisional/grade-level meetings, and department meetings on subsequent Tuesdays. The school can potentially provide professional learning on one topic each month, beginning in the monthly faculty meeting and continuing with follow-up sessions in division/grade-level meetings and department meetings. Given the strong culture of informal professional learning among the faculty, the school can also expect that informal follow-up conversations will also emerge. Second, the school can maximize the effectiveness of these sessions by designing them to be active and related to teacher practice. When a new topic is introduced in a faculty meeting, it can be framed as a response to questions teachers ask or problems they encounter. Then, the professional learning experience can contain a mix of best practices and active problem-solving opportunities. For example, if the topic for the month is rubrics, teachers can analyze sample rubrics, develop and give/receive feedback on newly created rubrics, and compare their

rubric-based assessment of student work with that of their colleagues. Throughout these professional learning experiences, the school can also reinforce the link between the topics being discussed and the overall goals of The Green School's standards-based grading program, bolstering the shared commitment to the goals that already characterizes the school's professional community.

In the foregoing paragraphs, I describe a structure for formal, ongoing professional learning related to standards-based grading at The Green School. There is a limited amount of time for professional learning in any school, and I recognize that the structure described above takes up much of the time The Green School allots for formal professional learning. Standards-based grading is doubtless not the only area of curriculum, instruction, and assessment that could benefit from formal professional learning at the school. My suggested structure represents a maximal investment of time, which the school may need to scale down to address other priorities. However, the school should also keep in mind that standards-based grading is a significant and ongoing priority in its own right.

Regardless of the structure The Green School chooses, it should continue to involve teachers throughout the development and delivery of the formal professional learning opportunities that it designs. Teachers can be asked to facilitate the sessions, strong practice from within the faculty community can be highlighted as models, and feedback can be gathered after each monthly professional learning rotation. Doing so will hopefully reinforce and strengthen the positive, growth-oriented, and supportive culture that faculty describe as characteristic of the school community.

Conclusion

The commendations and recommendations presented in this chapter close my study of teacher perceptions of standards-based grading at The Green School. I commend the school for its shared understanding of and commitment to the goals and long-term success of the school's standards-based grading program, as well as its supportive and growth-oriented culture. I recommend that the school invest in hiring and onboarding processes so that new faculty also share in the school's understanding of and commitment to standards-based grading. I also recommend that the school clarify and clearly communicate the discipline-specific standards under the school's transdisciplinary learning goals, as well as provide formal professional learning opportunities on the practical implementation of standards-based grading. These recommendations could build on the strong foundation of the school's standards-based grading system and enhance teacher understanding and implementation of it, potentially resulting in the growth and development of all students' academic mastery and mindset towards learning.

This research might also prove relevant to educators beyond The Green School. After all, standards-based grading is a leading reform effort in education (Iamarino, 2014; Schiffman, 2016; Scriffney, 2008). It has also generated conflicting opinions, with some teachers, students, and parents claiming that standards-based grading diminishes student motivation and academic achievement (Hany et al., 2016; Knight & Cooper, 2019; Schiffman, 2016). That controversy has extended to the mainstream press. For example, in April of 2023 *The Wall Street Journal* published an article describing and largely critiquing many of the hallmarks of standards-based grading, such as separating classroom behavior from communication of academic mastery, not including formative homework in grades, and allowing redos/retakes on assignments and assessments (Randazzo, 2023). The article implicitly calls for a return to traditional grading – though it does so without addressing the flaws in the traditional system that led to calls for

change in the first place. In many ways, the debate over standards-based grading is emblematic of the trajectory of change (or lack thereof) in American schools. In their book on the history of education reform in America, Tyack & Cuban (1995) claim that education reform in America is "faddish" (p. 4), characterized by the quick adoption of the next new thing, and then the just-as-quick jettisoning of it, either because it is judged ineffective or because the *next* next new thing is right around the corner.

In the context of Tyack and Cuban's (1995) claim, the research conducted at The Green School is significant. While most research on standards-based grading focuses on schools just beginning to implement standards-based grading, this research focuses on a school in its fifth year with the system. And the research paints an encouraging picture, one in which teachers understand the goals of the grading system, are invested in those goals, and see promising academic and affective outcomes in their students. This may not have been the case in the beginning of the school's implementation of standards-based grading, as evidenced by the survey data prompting this problem of practice. Tyack and Cuban (1995) claim that effective education reforms are "gradual and incremental" (p. 5). While the wholesale adoption and implementation of a new grading system can hardly be called gradual or incremental, perhaps this study is a call for schools that have adopted standards-based grading to let the change sit, to allow it to gradually and incrementally change students and school communities. And to build strong professional learning communities so that teachers and support and lead one another in charting the path forward.

References

Abdul Ghaffar, M. (2021). Co-constructing writing rubrics to enhance students' autonomy and

collaboration. *Journal of English Language Teaching and Applied Linguistics*, *2*(5),

43-47.

Alex, P. (2022, 5 July). Time to pull the plug on traditional grading? *Education Next.*

https://www.educationnext.org/time-to-pull-plug-on-traditional-grading-supporters-say-m

astery-based-grading-could-promote-equity/

Andersson, C., & Palm, T. (2018). Reasons for teachers' successful development of a formative

assessment practice through professional development – A motivation perspective.

Assessment in Education: Principles, Policy & Practice, 1–22.

Andrade, H.G. (2000). Using rubrics to promote thinking and learning. *Educational Leadership*

57(5), 13–18.

Andrade, H., & Du, Y.. (2005). Student perspectives on rubric-referenced assessment. *Practical*

Assessment, Research & Evaluation, 10(3), 1-11.

Andrade, H. & Du, Y. (2007). Student responses to criteria-referenced self-assessment.

Assessment and Evaluation in Higher Education, *32*(2), 159-181.

Beatty, I.D. (2013). Standards-based grading in introductory university physics. *Journal of the*

Scholarship of Teaching and Learning, 13(2), 1-22.

Bennett, R.E. (2011). Formative assessment: A critical review. *Assessment in Education:*

Principles, Policy & Practice, 18(1), 5-25.

Bexley City Schools. (2022). *Standards-based grading.* Bexley Education Foundation.

https://www.bexleyschools.org/sbg.aspx

Bharuthram, S. (2015). Lecturers' perceptions: The value of assessment rubrics for informing

teacher practice and curriculum review and development. *Africa Education Review, 12*(3), 415-428.

Black, P. & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice. 5*(1), 7-74.

Black, P. & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, *21*(1), 5-31.

Blackwell, L. S., Trzesniewski, K. H., Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*, 246–263.

Boaler, J. (2019). Ability and mathematics: The mindset revolution that is reshaping education. *FORUM, 55*(1), 143-152.

Bresciani M. J., Zelna C. L., & Anderson J. A. (2004). *Assessing Student Learning and Development: A Handbook for Practitioners*. National Association of Student Personnel Administrators.

Brookhart, S.M. (1997). A theoretical framework for the role of classroom assessment in motivating student effort and achievement. *Applied Measurement in Education, 10*(2), 161-180.

Brookhart, S. M. (2011). Starting the conversation about grading. *Educational Leadership, 69*(3), 10-14.

Brookhart, S.M. & Chen, F. (2015). The quality and effectiveness of descriptive rubrics. *Educational Review*, *67*(3), 343-368.

Brookhart, S.M., Guskey, T.R., Bowers, A.J., McMillan, J.H., Smith, J.K., Smith, L.F., Stevens, M.T., & Stevens, M.E. (2016). A century of grading research: Meaning and value in the

most common educational measure. *Review of Education Research, 86*(4), 803-848.

Brookhart, S.M. & Nitko, A.J. (2008). *Assessment and Grading in Classrooms*. Pearson.

Burgoyne, A.P., Hambrick, D.Z., & Macnamara, B.N. (2020). How firm are the foundations of mind-set theory? The claims appear stronger than the evidence. *Psychological Science, 31*(3), 258–267.

Cauley, K.M. & McMillan, J.H. (2009). Formative assessment techniques to support student motivation and achievement. *The Clearing House, 83*(1), 1-6.

Centre for Education Statistics and Evaluation. (2020). *Supporting high academic expectations – Every student is known, valued and cared for in our schools*. NSW Department of Education. https://cese.nsw.gov.au

Collins, J. (2004). Education techniques for lifelong learning: Principles of adult learning. *RadioGraphics, 24*, 1483-1489.

Corpus, J.H., McClintic-Gilbert, M.S., & Hayenga, A. (2009). Within-year changes in children's intrinsic and extrinsic motivational orientations: Contextual predictors and academic outcomes. *Contemporary Educational Psychology, 34*(2), 154-166.

Cox, E. (2006). An adult learning approach to coaching. D. Stober & A.M. Grant (Eds.), *Evidence Based Coaching Handbook*, 193-217. Wiley.

Creswell, J.W. (2003). *Research design: Qualitative, quantitative, and mixed methods* (2nd ed.). Sage Publications.

Cross, L.H. & Frary, R.B. (1999). Hodgepodge grading: Endorsed by students and teachers alike. *Applied Measurement in Education, 12*(1), 53–72.

Darling-Hammond, L., Hyler, M. E., Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute. https://bibliotecadigital.mineduc.cl/bitstream/

handle/20.500.12365/17357/46%20Effective_Teacher_Professional_Development_

REPORT.pdf?sequence=1

Dawson, P. (2017). Assessment rubrics: towards clearer and more replicable design, research and

practice. *Assessment & Evaluation in Higher Education*, *42*(3), 347-360.

Deci, E.L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of

Personality and Social Psychology*, 18(1), 105-115.

Deci, E.L. (1975). *Intrinsic motivation*. Springer.

Deci, E.L., Ryan, R.M., & Koestner, R. (1999). A meta-analytic review of experiments

examining the effect of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*,

125(6), 627-668.

Dee, T.S. (2005). A teacher like me: Does race, ethnicity, or gender matter? *American Economic

Review,* 95(2), 158-165.

Dee, T. & Gershenson, S. (2017). Unconscious bias in the classroom: Evidence and

opportunities. Google Inc. https://goo.gl/O6Btqi.

Dixson, D.D. & Worrell, F. (2016). Formative and summative assessment in the classroom.

Theory into Practice, *55*(2), 153-159.

Docan, T.N. (2006). Positive and negative incentives in the classroom: An analysis of grading

systems and student motivation. *Journal of Scholarship of Teaching and Learning*, 6(2),

21-40.

Downey, D.B. & Pribesh, S. (2004). When race matters: Teachers' evaluations of students'

classroom behavior. *Sociology of Education,* *77*(4), 267-282.

Drago-Severson, E. (2009). *Leading adult learning: Supporting adult development in our

schools.* Corwin.

Dweck, C.S. (1986). Motivational processes affect learning. *American Psychologist*, *41*(10), 1040-1048.

Dweck, C.S. (1999). *Self-theories: Their role in motivation, personality, and development*. Psychology Press.

Dweck, C. (2003). Ability conceptions, motivation, and development. *Development and Motivation, 2*, 13–27.

Dweck, C.S. (2006). *Mindset: The new psychology of success*. Random House.

Dweck, C.S. (2015). Carol Dweck revisits the 'growth mindset.' *Education Week, 35*(5), 20-24.

Dweck, C.S. & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273.

The Education Trust. (n.d.). Understanding the national shortage of teachers of color. https://edtrustmain.s3.us-east-2.amazonaws.com/wp-content/uploads/2014/09/25142130/Handout_Teacher-Diversity-National-Fact-Sheet.pdf

Erdley, C. A. & Dweck, C. (1993). Children's implicit personality theories as predictors of their social judgments. *Child Development, 64*, 863-878.

Feldman, J. (2018). *Grading for equity: What it is, why it matters, and how it can transform schools and classrooms*. Corwin.

Ferguson, M.J. & Bargh, A.J. (2004). How social perception can automatically impact behavior. *TRENDS in Cognitive Science, 8*(1), 33-39.

Franklin, A.E. (2016). *Growth mindset development: Examining the impact of standards-based grading models on middle school students' mindset characteristics*. [Unpublished doctoral dissertation]. Drake University.

Franklin, A.E., Buckmiller, T. & Kruse, J.W. (2016). Vocal and vehement: Understanding

parents' aversion to standards-based grading. *International Journal of Social Science Studies, 4*(11), 19-29.

Frechette, A. (2017). *The impact of a standards-based approach on student motivation* (141). [Doctoral dissertation, New England University]. DUNE.

Frisancho, V., Krishna, K., Lychagin, S., & Yavas, C. (2016). Better luck next time: Learning through retaking. *Journal of Economic Behavior and Organization, 125*, 120-135.

Garet, M.S., Porter, A.C., Desimone, L., Birman, B.F., & Yoon, K.S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, *38*(4), 915–945.

Gay, L. R., & Airasian, P. (2000). *Educational research: Competencies for analysis and application*. (6th ed.). Merrill Publishing.

Giannotta, A.P. (2022). Qualitative relationism about subject and object perception and experience. *Phenomenology and the Cognitive Sciences, 21*, 583-602.

Glicken, A.D. (2004). Becoming an effective teacher: Applied principles of adult learning. *Journal of Veterinary Medical Education, 31*(3), 268-272.

Gottfriend, A.E., Fleming, J.S., & Gottfriend, A.W. (2001). Continuity of academic intrinsic motivation from childhood through late adolescence: A longitudinal study. *Journal of Educational Psychology*, 93(1), 3-13.

Green, K. & Emerson, A. (2007). A new framework for grading. *Assessment & Evaluation in Higher Education, 32*, 495-511.

Griffin, R.T. (2020). *Grading and equity: Inflation/deflation based on race, gender, socio-economic and disability statuses when homework and employability scores are included* [Doctoral dissertation, University of Northern Iowa]. ScholarWorks.

Guskey, T.R. (2014). *On your mark: Challenging the conventions of grading and reporting*. Solution Tree.

Guskey, T.R. & Brookhart, S.M. (2019). *What we know about grading: What works, what doesn't, and what's next.* ASCD.

Haines, K. J. 2018. Professional development for new classroom spaces: Extending the Concerns-Based Adoption Model. *Journal of Perspectives in Applied Academic Practice, 6*(2), 58- 66.

Hall, G.E. & Hord, S.M., (1987). *Change in schools: Facilitating the process*. SUNY Press.

Hall, G. E. & Hord, S. M. (2020). *Implementing change: Patterns, principles, and potholes* (5th ed.). Pearson.

Hancock, D.R. & Algozzine, B. (2017). *Doing case study research* (3ʳᵈ ed.). Teachers College Press.

Hanson, A. (1996). The search for a separate theory of adult learning: Does anyone really need andragogy? In R. Edwards, A. Hanson, & P. Raggatt (eds.), *Boundaries of Adult Learning*. Routledge.

Hany, K., Proctor, M., Wollenweber, J., & Al-Bataineh, A. (2016). Teacher perception of standards-based grading: Implication and effectiveness. *Journal of Teaching and Education, 5*(1), 749-764.

Haptonstall, K.G. (2010). *An analysis of the correlation between standards-based, non standards-based grading systems and achievement as measured by the Colorado student assessment program (CSAP)*. ProQuest LLC.

Hargreaves, A. (2000). The four ages of professionalism and professional learning. *Teachers and Teaching: Theory and Practice, 6*(2), 151-182.

Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, *17*(3), 300–312.

Haynes, E., Zeiser, K., Surr, W., Hauser, A., Clymer, L., Walston, J. Bitter, C., & Yang, R. (2015). *Looking under the hood of competency-based education: The relationship between competency-based education practices and students' learning skills, behaviors, and dispositions*. Nellie Mae Education Foundation. https://www.air.org/sites/default/downloads/report/CBE-Study%20Full%20Report.pdf

Haystead, M. W., & Marzano, R. J. (2009). *Meta-analytic synthesis of studies conducted at Marzano Research Laboratory on instructional strategies*. Marzano Research Laboratory.

http://www.marzanoevaluation.com/files/Instructional_Strategies_Report_9_2_09.pdf

Heyman, G.D. & Dweck, C.S. (1992). Achievement goals and intrinsic motivation: Their relation and their role in adaptive motivation. *Motivation and Emotion*, 16(1), 231-247.

Hill, H. C., Beisiegel, M., & Jacob, R. (2013). Professional development research: Consensus, crossroads, and challenges. *Educational Researcher, 42*(9), 476–487.

Hollingshead, B. (2009). The Concerns-Based Adoption Model: A framework for examining implementation of character education program. *National Association of Secondary School Principals Bulletin, 93*(3), 166-183.

Holmes, A.G.D. (2020). Researcher positionality: A consideration of its influence and place in qualitative research - A new researcher guide. *International Journal of Education, 8*(4), 1-10.

Hong, Y., Chiu, C., Dweck, C. S., Lin, D. M.-S., Wan, W. (1999). Implicit theories, attributions,

and coping: A meaning system approach. *Journal of Personality and Social Psychology*, 77, 588–599.

Hulleman, C.S. & Barron, K.E. (2013). Teacher perceptions of student motivational challenges and best strategies to enhance motivation. *American Educational Research Association*. https://www.researchgate.net/publication/315381992_Teacher_Perceptions_of_Student_Motivational_Challenges_and_Best_Strategies_to_Enhance_Motivation

Iamarino, D.L. (2014). The benefits of standards-based grading: A critical evaluation of modern grading practices. *Current Issues in Education, 17*(2), 1-12.

Jaschick, S. (2009, 22 January). Imagining college without grades. *Inside Higher Ed*. https://www.insidehighered.com/news/2009/01/22/imagining-college-without-grades

Johnson, C.C., Sondergeld, T.A., Walton, J.B. (2019). A study of the implementation of formative assessment in three large urban districts. *American Educational Research Journal*, *56*(6), 2408-2438.

Johnson, R.B. & Onwuegbuzie, A.J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26.

Jonsson, A. & Svingby, G. (2007). The Use of Scoring Rubrics: Reliability, Validity and Educational Consequences. *Educational Research Review, 2*(2), 130-144.

Kelly, J. (2017). Professional learning and adult learning theory: A Connection. *Northwest Journal of Teacher Education, 12*(2), 1-15.

Klapp, A. (2015). Does grading affect educational attainment? A longitudinal study. *Assessment in Education: Principles, Policy & Practice, 22*(3), 302-323.

Knaack, S., Kreuz, A., & Zawlocki E. (2012) *Using Standards-Based Grading to Address Students' Strengths and Weaknesses*. Unpublished professional paper, Saint Xavier

University–Chicago.

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. *NASSP Bulletin, 103*(1), 65-92.

Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Follett.

Kohn A. (1999). *Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes.* Houghton Mifflin Harcourt.

Korthagen, F. (2017). Inconvenient truths about teacher learning: Towards professional development 3.0. *Teachers and Teaching: Theory and Practice, 23*(4), 387-405.

Lawler, P.A. (2003). Teachers as adult learners: A new perspective. *New Directions for Adult and Continuing Education, Summer 2003*(98), 15-22.

Lawson, M.A. (2017). Commentary: Bridging student engagement research and practice. *School Psychology International*, 38(3), 221-239.

Leahy, S., Lyon, C., Thompson, M., & Wiliam, D. (2005). Classroom assessment: Minute by minute, day by day. *Educational Leadership, 63*(3), 18-24.

Lee, H., Chung, H.Q., Zhang, Y., Abedi, J., & Warschauer, M. (2020). The effectiveness and features of formative assessment in U.S. K-12 education: A systematic review. *Applied Measurement in Education, 33*(2), 124-140.

Leedy, P., & Ormrod, J. (2013). *Practical research: Planning and design* (10th ed.). Pearson Education.

Lepper, M.R., Greene, D., & Nisbett, R.E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality and*

Social Psychology, 28(1), 129-137.

Lepper, M.R., Sethi, S., Dialdin, D., & Drake, M. (1997). Intrinsic and extrinsic motivation: A developmental perspective. In S.S. Luthar, J.A. Burack, D. Cicchetti, & J.R. Weisz (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (pp. 23-50). Cambridge University Press.

Levy, S.R. & Dweck, C. (1999). The impact of children's static versus dynamic conceptions of people on stereotype formation. *Child Development, 70*, 1163-1180.

Lewis, D. (2022). Impacts of standards-based grading on students' mindset and test anxiety. *Journal of the Scholarship of Teaching and Learning, 22*(2), 67-77.

Li, Y. & Bates, T.C. (2019). You can't change your basic ability, but you work at things, and that's how we get hard things done: Testing the role of growth mindset on response to setbacks, educational attainment, and cognitive ability. *Journal of Experimental Psychology: General*, *148*(9), 1640–1655.

Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic inquiry*. Sage.

Link, L.J. & Guskey, T.R. (2019). How traditional grading contributes to student inequities and how to fix it. *Curriculum in Context, 45*(1), 12-19.

Link, L.J. & Guskey, T.R. (2022). Is standards-based grading effective? *Theory into Practice,* 1-14.

MacCrindle, A.N. (2017). *Effective change: A case study of a standards-based grading initiative* (10276786). [Doctoral dissertation, Concordia University - Chicago]. ProQuest.

Manly, A.M. (2019). *Implementation of standards-based grading at the middle school level.* [Doctoral dissertation, Arkansas Tech University]. Online Research Commons.

Marbouti, F., Diefes-Dux, H.A., & Madhaven, K. (2016). Models for early prediction of at-risk

students in a course using standards-based grading. *Computers and Education, 103*,
1-15.

Marzano, R. (2000). *Transforming classroom grading*. ASCD.

Marzano (2003) *What Works in Schools: Translating Research into Action.* ASCD.

McLaughlin, M.W. & Shepard, L.A. (1995). *Improving education through standards-based reform*. The National Academy of Education. https://naeducation.org/wp-content/uploads/2018/04/McLaughlin-and-Shepard-NAEd-1995.pdf

McMunn, N., Schenck, P., & McColskey, W. (2003). *Standards-based assessment, grading, and reporting in classrooms: Can district training and support change teacher practice?* [Working paper presented at conference]. Annual Meeting of the American Educational Research Association, Chicago, Illinois.

Merriam, S.B. (2008). Adult learning theory for the twenty-first century. *New Directions for Adult and Continuing Education, Autumn 2008*(119), 93-98.

Merriam, S. B., Mott, V. W., & Lee, M. (1996). Learning that comes from the negative interpretation of life experience. *Studies in Continuing Education, 18*(1), 1–23.

Merriam, S.B. & Tisdell, E.J. (2015). *Qualitative research: A guide to design and implementation* (4th ed.). John Wiley & Sons, Inc.

Mezirow, J. (2000). *Learning as Transformation: Critical Perspectives on a Theory in Progress*. Jossey-Bass.

Midkiff, B., Langer, M., Demetriou, C., & Panter, A. T. (2017, July). An IRT analysis of the Growth Mindset Scale. In M. Wiberg, S. Culpepper, R. Janssen, J. González, & D. Molenaar (Eds.), *Quantitative psychology: The 82nd annual meeting of the Psychometric Society*, (pp. 163–174). Springer.

Molden, D. C., & Dweck, C. (2006). Finding "meaning" in psychology: A lay theories approach

to self-regulation, social perception, and social development. *The American Psychologist*, *61*(3), 192–203.

Moore, R., Jensen, M., & Hatch, J. The problem with state educational standards. *The Science Education Review, 2*(3), 83.1-83.8.

Moser, J. S., Schroder, H. S., Heeter, C., Moran, T. P., Lee, Y.-H. (2011). Mind your errors: Evidence for a neural mechanism linking growth mind-set to adaptive post-error adjustments. *Psychological Science, 22*, 1484–1489.

Moss, C.M. & Brookhart, S.M. (2019). *Advancing formative assessment in every classroom: A guide for instructional leaders*. ASCD.

Moyosore, O.A. (2015). The effect of formative assessment on students' achievement in secondary school mathematics. *International Journal of Education and Research, 3*(10), 481-490.

Munoz, M.A. & Guskey, T.R. (2015). Standards-based grading and reporting will improve education. *Kappan, 96*(7), 64-68.

National Center for Education Statistics. (2018). *Characteristics of public and private elementary and secondary school principals in the United States: Results from the 2017-18 national teacher and principal survey*. Institute for Education Sciences. https://nces.ed.gov/surveys/ntps/summary/2019141.asp#:~:text=Among%20public%20school%20principals%20during,percent%20were%20another%20race%2Fethnicity

Nussbaum, A.D. & Dweck, C.S. (2008). Defensiveness versus remediation: Self-theories and Modes of self-esteem maintenance. *Personality and Social Psychology Bulletin, 34,* 599-612.

O'Connor, K., Jung, L. A., & Reeves, D. (2018). Gearing up for FAST grading and reporting.

Phi Delta Kappan, 99(8), 67-71.

OECD. (2012). *Equity and quality in education: Supporting disadvantaged students and schools.* OECD Publishing. https://www.oecd.org/education/school/50293148.pdf

Okonofua, J.A. & Eberhardt, J.L. (2015). Two strikes: racial disparities and the disciplining of young students. *Psychological Science, 26*(5), 617-624.

Ormrod, J. E. (2008). *Educational psychology: Developing learners* (6th ed.). Pearson.

Otis, N., Grouzet, F.M.E., Pelletier, L.G. (2005). Latent motivational change in an academic setting: A 3-year longitudinal study. *Journal of Educational Psychology*, *97*(2), 170-183.

Panadero, E. & Jonsson, A. (2013). The use of scoring rubrics for formative assessment purposes revisited: A review. *Educational Research Review, 9*, 129–144.

Peak Performance Center. (2023). *Skill and will*. WordPress. https://thepeakperformancecenter.com/business/coaching/skill-will-matrix/skill-and-will/#:~:text=Using%20the%20Skill%20Will%20Matrix&text=Knowledge%20of%20a%20person's%20skill,feelings%20about%20completing%20the%20task.

Peckham, I. (1993). Beyond grades. *Composition Studies, 21*(2), 16-31.

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).

Peters, R., Kruse, J., Buckmiller, T., & Townsley, M. (2017). "It's just not fair!" Making sense of secondary students' resistance to standards-based grading. *American Secondary Education, 45*(3), 9-28.

Picon Jacome, E. (2012). Promoting learner autonomy through teacher-student partnership assessment in an American high school: A cycle of action research. *Profile: Issues in*

Teacher Professional Development, *14*(2), 145-162.

Pollio, M. & Hochbein, C. (2015). The association between standards-based grading and standardized test scores as an element of a high school reform model. *Teachers College Record: The Voice of Scholarship in Education, 117*(11), 1-28.

Popham, W.J. (2008). *Transformative Assessment*. ASCD.

Quinn, D.M. (2020). Experimental evidence on teachers' racial bias in student evaluation: The role of grading scales. *Educational Evaluation and Policy Analysis, 42*, 375-392.

Ragupathi, K. & Lee, A. (2020). Beyond fairness and consistency in grading: The role of rubrics in higher education. In C.S. Sanger & N.W. Gleason (Eds.), *Diversity and Inclusion in Global Higher Education* (pp. 73-95). Palgrave Macmillan.

Randazzo, S. (2023, April 26). Schools are ditching homework, deadlines in favor of 'equitable grading.' *Wall Street Journal*. https://www.wsj.com/articles/schools-are-ditching-homework-deadlines-in-favor-of-equitable-grading-dcef7c3e

Reeves, D.B. (2008). Leading to change: Effective grading practices. *Educational Leadership, 65*(5), 85-87.

Rezaei, A.R. & Lovorn, M. (2010). Reliability and validity of rubrics for assessment through writing. *Assessing Writing, 15*(1), 18-39.

Rinkema, E., & Williams, S. (2018). *The standards-based classroom: Making learning the goal*. Corwin.

Rojas, L. & Liou, D.D. (2017). Social justice teaching through the sympathetic touch of caring and high expectations for students of color. *Journal of Teacher Education, 68*(1), 28-40.

Rosales, R.B. (2013). *The effect of standards-based grading on student performance in Algebra II* (Paper 53). [Doctoral dissertation, Western Kentucky University]. TopScholar.

Ruiz-Primo, M.A. & Furtak, E.M. (2006). Exploring teachers' informal formative assessment practices and students' understanding in the context of scientific inquiry. *Journal of Research in Science Teaching, 44*(1), 57-84.

Ryan, R.M. & Deci, E.L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychologist*, 61, 1-11.

Sanjari, M., Bahramnezhad, F., Fomani, F.K., Shoghi, M., & Cheraghi, M.A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop specific guidelines. *Journal of Medical Ethics and History of Medicine, 7*(14).

Saunders, R. (2012). Assessment of professional development for teachers in the Vocational Education and Training sector: An examination of the Concerns Based Adoption Model. *Australian Journal of Education, 56*(2), 182-204.

Schiffman, M.P. (2016). *Standards-based grading: Educators' perceptions of the effects on teaching, student motivation, and assessment at the high school level* (10117267). [Doctoral dissertation, Western Illinois University]. ProQuest.

Scriffney, P. (2008). Seven reasons for standards-based grading. *Educational Leadership*, *66*(2), 70-74.

Shavelson, R.J. (1976). Chapter XI: Teachers' decision making. *Teachers' College Record, 77*(5), 372-414.

Shepard, L. (1979). Norm-referenced vs. criterion-referenced tests. *Educational Horizons, 58*(1), 26-32.

Sisk, V.F., Burgoyne, A.P., Sun, J., Butler, J.L., & MacNamara, B.N. (2018). To what extent and under which circumstances are growth-mindsets important to academic achievement?

Two meta-analyses. *Psychological Science, 29,* 549-571.

Slavit, D. & deVincenzi, A. (2019). The use of standards-based grading in a project-based, STEM-focused learning context. *Assessment Matters, 13*, 113-137.

Smith, C. (2005). School factors that contribute to the underachievement of students of color and what culturally competent school leaders can do. *Educational Leadership and Administration, 17*, 21-32.

Staats, C. (2014). *Implicit racial bias and school discipline disparities* [Kirwin Institute Special Report]. Ohio State University.

Stahl, N.A. & King, J.R. (2020). Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education, 44*(1), 26-28.

Stanford Encyclopedia of Philosophy. (2019). Implicit bias. In *Stanford Encyclopedia of Philosophy*. https://plato.stanford.edu/entries/implicit-bias/

Stiggins, R. (2001). *Student-Involved Classroom Assessment* (3rd ed.). New York: Merrill

Stull, J., Varnum, S.J., Ducette, J., & Schiller, J. (2011). The many faces of formative assessment. *International Journal of Teaching and Learning in Higher Education, 23*(1), 30-39.

Terehoff, I.I. (2002). Elements of adult learning in teacher professional development. *NASSP Bulletin, 86*(632), 65-77.

Thompson, M., Paek, P., Goe, L., & Ponte, E. (2004). *Study of the California formative assessment and support system for teachers: Relationship of BTSA/CFASST and student achievement*. Educational Testing Service.

Tierney, R. D. (2013). Fairness in classroom assessment. In J. H. McMillan (Ed.), *SAGE*

Handbook of Research on Classroom Assessment (pp. 125-144). SAGE Publications.

TNTP. (2015). *The mirage: Confronting the hard truth about our quest for teacher development*. Brooklyn, NY: TNTP.

Tomlinson, C.A. & McTighe, J. (2006). *Integrating differentiation and understanding by design*. ASCD.

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.

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.

Troche, S. J., & Kunz, A. (2020). The factorial structure and construct validity of a German translation of Dweck's implicit theories of intelligence scale under consideration of the wording effect. *Psychological Test and Assessment Modeling, 62*(3), 386-403.

Tyack, D. & Cuban, L. (1995). *Tinkering towards utopia: A century of public school reform*. Harvard University Press.

U.S. Department of Education. (2003). *Guidance on standards, assessment, and accountability*. Laws and Guidance: Elementary and Secondary Education. https://www2.ed.gov/policy/elsec/guid/standardsassessment/crjudge.html

Vallerand, R.J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M.P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 29, pp. 271-360). Academic Press.

Vatterott, C. (2015). *Rethinking grading*. ASCD.

Wang, W. (2014). Teachers' *stages of concern* and *levels of use* of a curriculum innovation in China: A case study. *International Journal of English Language Teaching, 1*(1), 22-31.

Webster-Wright, A. (2009). Reframing professional development through understanding authentic professional learning. *Review of Educational Research*, 79(2), 702-739.

Weinstein, Y., Sumeracki, M., & Caviglioli, O. (2018). *Understanding how we learn: A visual guide.* Routledge.

Wiesman, J. (2012). Student motivation and the alignment of teacher beliefs. *The Clearing House*, 85, 102-108.

Wiliam, D., Lee, C., Harrison, C., & Black, P. (2004). Teachers developing assessment for learning: Impact on student achievement. *Assessment in Education, 11*, 49-65.

Wilson, S. M. & Berne, J. (1999). Teacher learning and the acquisition of professional knowledge: An examination of research on contemporary professional development. *Review of Research in Education*, *24*(1), 173–209.

Wininger, R. S. (2005). Using your tests to teach: Formative summative assessment. *Teaching Psychology, 32*(2), 164-166.

Wisch, J.K., Ousterhout, B.H., Carter, V., & Orr, B. (2018). The grading gradient: Teacher motivations for varied redo and retake policies. *Studies in Educational Evaluation, 58*, 145-155.

Wolf, K. & Stevens, E. (2007). The role of rubrics in advancing and assessing student learning. *The Journal of Effective Teaching, 7*(1), 3-14.

Wormeli, R. (2011). Redos and retakes done right. *Educational Leadership, 69*(3), 22-26.

Yeager, D.S. & Dweck, C.S. (2020). What can be learned from growth mindset controversies? *American Psychologist, 75*(9), 1269-1284.

Zimmerman, B. (2000). Attaining self-regulation: A social cognitive perspective. In M.

   Boekaerts, P.Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (pp. 13-41).

   Academic Press.

Appendix A

Faculty Recruitment Email

Dear [insert name],

As you may know, I am pursuing my doctorate in education at the University of Virginia. My capstone research project focuses on standards-based grading.

In standards-based grading, teachers rate students (usually on a scale of 1-4) on their mastery of core academic skills. Many assignments are ungraded, to allow students to have low-stakes opportunities for practice, and student work habits and behaviors (such as participation, homework completion, and on-time work submission) are not factored into student grades.

The purpose of this study is to better understand how teachers perceive the standards-based grading program at our school. Of particular interest is how teachers perceive:
1. the goals of standards-based grading;
2. the ways in which ways those goals are (or are not) being fulfilled at our school; and
3. the supports that have been most helpful (and the impediments that have been most challenging) to teachers as they have implemented the standards-based grading program.

The goal of this study is to use this data to provide recommendations that may inform future developments to the grading program, so that the school's grading practices better serve teachers, students, the learning process, and the mission of the school as a whole. Your participation would be very valuable in accomplishing this goal.

Would you be willing to participate in the study? Participation includes a one-hour interview where you would be asked about your perceptions of our school's standards-based grading program and of our teachers' experience with it.

If you agree to participate, the data you provide will be anonymized and your privacy will be protected. I have gone through an Institutional Review Board process to ensure that the study meets the ethical standards for social science research.

Thank you in advance for your consideration. Please let me know if you'd like to participate (or if you'd like to opt out) by [insert date]. In the meantime, feel free to reach out with any questions you might have.

Sincerely,

Jessica Bonnem

Doctoral Candidate | The University of Virginia's School of Education and Human Development

Appendix B

Founding Head of School Recruitment Email

Dear [insert name],

As you may know, I am pursuing my doctorate in education at the University of Virginia. My capstone research project focuses on standards-based grading.

In standards-based grading, teachers rate students (usually on a scale of 1-4) on their mastery of core academic skills. Many assignments are ungraded, to allow students to have low-stakes opportunities for practice, and student work habits and behaviors (such as participation, homework completion, and on-time work submission) are not factored into student grades.

The purpose of this study is to better understand how teachers perceive the standards-based grading program at our school. Of particular interest is how teachers perceive:
4. the goals of standards-based grading;
5. the ways in which ways those goals are (or are not) being fulfilled at our school; and
6. the supports that have been most helpful (and the impediments that have been most challenging) to teachers as they have implemented the standards-based grading program.

The goal of this study is to use this data to provide recommendations that may inform future developments to the grading program, so that the school's grading practices better serve teachers, students, the learning process, and the mission of the school as a whole. Your participation would be very valuable in accomplishing this goal.

Would you be willing to participate in the study? Participation includes a one-hour focus group. Based on the results of the focus group, I may ask you to participate in a one-hour follow-up interview, as well.

If you agree to participate, the data you provide will be anonymized and your privacy will be protected. I have gone through an Institutional Review Board process to ensure that the study meets the ethical standards for social science research.

Thank you in advance for your consideration. Please let me know if you'd like to participate (or if you'd like to opt out) by [insert date]. In the meantime, feel free to reach out with any questions you might have.

Sincerely,

Jessica Bonnem
Doctoral Candidate | The University of Virginia's School of Education and Human Development

Appendix C

Founding Head of School Interview Protocol

Prior to Interview:
- So a sound/audio recording check

During Interview:
- Ask follow-up questions
  - Can you tell me about a specific time when . . .
  - A few minutes ago, I heard you mention XXX. Can you tell me more about how XXX impacts your experience?
  - You mentioned that you perceive XXX in this way. Why do you think you perceive it in this way?
- Member check
  - So, what I heard you say is . . . Is that correct?

After Interview:
- Write field notes

Date:	
Length: 60 minutes	
Interviewer: Jessica Bonnem	
Participant: Founding Head of School	
Location:	

Anticipated Time	Content of Interview
5 minutes	*Introduction* As you know, I'm Jessica. I'm pursuing my Ed.D. from UVA and I'm completing my capstone research project. I'd like to begin by obtaining your consent to participate in this study. [Read from Oral Consent Script – Founding Head of School] I know that, as Dean of Faculty, I do a lot of work with standards-based grading here. I want to emphasize that I am here as a student, not as a school administrator. I hope you feel comfortable sharing your thoughts openly and honestly in this conversation. Do you have any questions about the project, or about this conversation?

5 minutes	*Background Information (as a reminder)*
	What is your name?
	How long have you worked at the school?
	What is your role at the school?
	Did you work in K-12 education before coming to the school? If so, for how long and in what capacity?
10 minutes	*History of Standards-Based Grading at The Green School*
	When did standards-based grading first become a topic of conversation at the school? How did those conversations start?
	When and why did the school decide to adopt standards-based grading? Potential follow-up questions: - What factors seemed most influential for those who were proponents of the system? (Cue internal and external) - What factors seemed most influential for those who were not proponents of the system? (Cue internal and external)
	From your perspective, how have faculty responded to standards-based grading? Has that response changed over time? Potential follow-up questions: What factors seem to be impacting teachers' perceptions of the system? (Cue internal and external)

20 minutes	*Goals of Standards-Based Grading*
	What are the goals of standards-based grading at the school as you understand them, especially related to students? How does the school hope that the grading program will impact students?
	How do you perceive those goals? Why do you think you perceive them that way? (Cue possible internal and external factors, if necessary)
	In what ways do you perceive those goals as being fulfilled? Not fulfilled? What do you base your perception on?
	What are the goals of standards-based grading related to teachers, as you understand them? How does the school hope the grading program will impact teachers?
	How do you perceive those goals? Why do you think you perceive them that way? (Cue possible internal and external factors, if necessary)

10 minutes	*Practices, Supports, and Challenges* When you think of implementing standards-based grading in the classroom, what practices come to mind? What are teachers supposed to do because of our standards-based grading system? In what ways do you think the school has supported teachers in implementing those practices, and standards-based grading more generally? How would you describe the learning environment and the professional learning experiences that are designed to support teachers in implementing standards-based grading? What challenges do you think teachers have faced as they have tried to implement standards-based grading? What other forms of support do you think the school could provide to teachers in the ongoing implementation of standards-based grading at the school?

5 minutes	*Closure*
	Thank you so much for your time today. Is there anything else you'd like to add before we conclude? [pause] If you think of anything else, please don't hesitate to reach out.

Appendix D

Faculty Focus Group Protocol

Prior to Interview:
- So a sound/audio recording check

During Interview:
- Ask follow-up questions
  - Can you tell me about a specific time when . . .
  - A few minutes ago, I heard you mention XXX. Can you tell me more about how XXX impacts your experience?
  - You mentioned that you perceive XXX in this way. Why do you think you perceive it in this way?
- Member check
  - So, what I heard you say is . . . Is that correct?

After Interview:
- Write field notes

Date:
Length: 60 minutes
Interviewer: Jessica Bonnem
Participants' Pseudonyms:
Location:

Anticipated Time	Content of Interview
5 minutes	*Introduction* As you know, I'm Jessica. I'm pursuing my Ed.D. from UVA and I'm completing my capstone research project. I'd like to begin by obtaining your consent to participate in this study. [Read from Oral Consent Script – Faculty Participants] I know that, as Dean of Faculty, I do a lot of work with standards-based grading here. I want to emphasize that I am here as a student, not as a school administrator. I hope you feel comfortable sharing your thoughts openly and honestly in this conversation. To protect the confidentiality of all participants, please refrain from using

	names during this focus group. Do you have any questions about the project, or about this conversation?
5 minutes	*Background Information* What is your name? How long have you worked at the school? What is your role at the school? Did you work in K-12 education before coming to the school? If so, for how long and in what capacity?
20 minutes	*Goals of Standards-Based Grading* What are the goals of standards-based grading at the school as you understand them, especially related to students? How does the school hope that the grading program will impact students? How do you perceive those goals? Why do you think you perceive them that way? (Cue possible internal and external factors, if necessary) In what ways do you perceive those goals as being fulfilled? Not fulfilled? What do you base your perception on?

	What are the goals of standards-based grading related to teachers, as you understand them? How does the school hope the grading program will impact teachers?
	How do you perceive those goals? Why do you think you perceive them that way? (Cue possible internal and external factors, if necessary)
	In what ways do you perceive those goals as being fulfilled? Not fulfilled? What do you base your perception on?
20 minutes	*Practices Associated with Standards-Based Grading* What specific practices do you associate with standards-based grading at the school? What practices are you expected to employ to bring the grading system to life in your classroom? How do you perceive those practices? Why do you think you perceive them that way? (Cue internal and external factors, if necessary)

	How confident do you feel in the extent and effectiveness of your use of those practices? What factors might influence your confidence level?
	Are there any practices you would like to use under our standards-based grading system that you don't use? If so, why don't you use them?
	What has been most helpful to you in learning how to use the standards-based grading practices that you use?
10 minutes	*Supports and Challenges*
	What supports have been most helpful to you in implementing standards-based grading?
	What has been most challenging in implementing standards-based grading?

	How would you describe the learning environment and the professional learning experiences that are designed to support teachers in implementing standards-based grading?
	Are there any additional supports you wish you had access to?
5 minutes	*Closure* Thank you so much for your time today. Is there anything else you'd like to share before we close? [pause] If you think of anything else, please don't hesitate to reach out.

Appendix E

Faculty Follow-Up Interview Protocol

Prior to Interview:
- So a sound/audio recording check

During Interview:
- Ask follow-up questions
  - Can you tell me about a specific time when . . .
  - A few minutes ago, I heard you mention XXX. Can you tell me more about how XXX impacts your experience?
  - You mentioned that you perceive XXX in this way. Why do you think you perceive it in this way?
- Member check
  - So, what I heard you say is . . . Is that correct?

After Interview:
- Write field notes

Date:
Length: 60 minutes
Interviewer: Jessica Bonnem
Participant Pseudonyms:
Location:

Anticipated Time	Content of Interview
5 minutes	*Introduction* Thank you for agreeing to have a follow-up conversation with me after the focus group you participated in with other teachers. The purpose of the focus group was to gather a wide variety of faculty perspectives on the school's standards-based grading program. I'm now interested in exploring a few teachers' perspectives and experiences in greater depth. Thank you for being one of those teachers. I'd like to begin by obtaining your consent to participate in this phase of the study. [Read Oral Consent Script – Faculty Participants]

	As I said in our focus group, I know that, as Dean of Faculty, I do a lot of work with standards-based grading here. I want to emphasize that I am here as a student, not as a school administrator. I hope you feel comfortable sharing your thoughts openly and honestly in this conversation. Do you have any questions about the project, or about this conversation?
10 minutes	*Personal Experience with Grading* Can you describe your experience with grading systems before coming to The Green School? What were the biggest changes (in terms of grading and assessment) that you experienced when you came to The Green School?
20 minutes	*Impact of Grading System on Practice* Based on the focus group, standards-based grading seems to be working for students. How is it working for you? Have you had to make any compromises as you've implemented standards-based grading at the school? How, if at all, has standards-based grading informed your teaching practices?

	Are there any ways in which you are a more effective teacher because of the school's standards-based grading system? Are there any ways in which you are a less effective teacher because of the school's standards-based grading program?
20 minutes	*Supports and Challenges* What supports have been most helpful in implementing standards-based grading at the school? What would you like to see the school do more of to support teachers in implementing standards-based grading? What has been most challenging in implementing standards-based grading at the school? How could the school address those challenges?

5 minutes	*Goals of Standards-Based Grading* In the focus group you didn't participate in, teachers identified [intrinsic motivation/equity] as a goal of standards-based grading. Would you agree? Why or why not?
5 minutes	*Closure* Thank you so much for your time today. Is there anything else you'd like to add before we conclude? [pause] If you think of anything else, please don't hesitate to reach out.

Appendix F

Sample Excerpts of Field Notes

Dr. S (6.20.2023)
Dr. S was most comfortable when talking about the history of standards-based grading at the school. As he noted, he was more involved in those discussions earlier in the school's history than he is now. He was also most comfortable and confident in talking about the philosophical rationale for the school. He became uncomfortable when asked about the specific practices associated with standards-based grading, even apologizing if he was missing something in his responses.

Dr. S was also very aware of the factors that his perceptions are based on, often mentioning them without prompting. He noted the limitations to his own perceptions and perspective, acknowledging that they were based on informal and selective observations of students (for example). But he also noted the impact of external perceptions from (for example) a consultant and a visiting accreditation team.

A few initial takeaways from Dr. S's interview:
- Internal factors (especially personal beliefs and values, which were widely shared due to the small nature of the founding of a school) dominated the decision to adopt the implementation of standards-based grading
- External factors were also present. Predominant among these was a recognition of the nature of the student body.
- The goals of standards-based grading that Dr. S mentioned were:
  - To promote a growth mindset among students
  - To clearly and legibly communicate academic mastery (which he connected with the development of a growth mindset)
  - To promote equitable opportunities for students to show their growth without being penalized for where they started (note: not equitable grading practices; equitable opportunities for students)
  - He also noted intrinsic motivation as a byproduct of standards-based grading
- Dr. S largely perceives these goals as being fulfilled, though he notes "mixed results"
- Dr. S distinguished between the beliefs of standards-based grading and the application of standards-based grading
  - Perceived high endorsement of beliefs among faculty at the beginning of the school's history, especially in connection to equitable opportunities
  - Now wonders if that endorsement still exists as the school has grown and the faculty has changed. Perhaps more faculty who simply say, "I guess this is what we do."
  - But how are the beliefs of standards-based grading being applied? That's where he has questions and thinks there might be more of a rub.
- Dr. S noted formal and informal professional learning opportunities and said the informal professional learning that occurred when he team-taught Grade 7 English was most valuable

Appendix G

Codebook

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria
Goals of Standards-Based Grading			
Academic mastery	Grades should be based on mastery of clear learning targets	All teacher perceptions of the purpose of grades in a standards-based grading system, including the role of work habits/behaviors	Teacher perceptions of the purpose of grades in a traditional grading system
Growth mindset	Students view their intellectual abilities as changeable through effort	All teacher perceptions of student attitudes towards their ability to grow as learners, in relation to standards-based grading policies and practices	Teacher attitudes towards students' abilities to grow as learners, unrelated to standards-based grading policies and practices
Intrinsic motivation	Students desire to engage in a task for the sake of the task itself	All teacher perceptions of student motivation to engage in learning activities in a standards-based grading system	Teacher perceptions of student motivation to engage in learning activities in a traditional grading system
Equitable grading practices	Grades are fair and inclusive	All teacher perceptions of the fairness and inclusivity of the standards-based grading program and policies	Teacher perceptions of the fairness and inclusivity of traditional grading programs and policies
Curricular and instructional change	Teachers modify their beliefs and practices	All teacher narration of how their beliefs and practices have changed due to standards-based	Teacher narration of the value of those changes

		grading	
Practices Associated with Standards-Based Grading			
Formative assessment	Ungraded assessment that measures a student's progress towards mastery during the learning process	All teacher perceptions related to their will and skill in implementing formative assessment, plus the impact of formative assessment on students	Teacher narration of their use of formative assessment in previous contexts
Rubrics	Scoring guides that identify and describe a set of possible student performance levels	All teacher perceptions related to their will and skill in implementing rubrics, plus the impact of rubrics on students	Teacher perception of their use of rubrics in previous contexts
Redos/retakes	Policies that allow students to redo/retake an assignment or assessment to demonstrate mastery	All teacher perceptions related to their will and skill in implementing redo/retake policies, plus the impact of redos/retakes on students	Teacher narration of redo/retake policies in previous contexts
Perceptions			
Internally Influenced	Factors that emerge from inside an individual and impact perception of standards-based grading	Previous experience (as a student or teacher) with grading systems, previous training, and personal values and beliefs.	Factors that emerge from external interactions with Green School colleagues, systems, and policies.
Externally Influenced	Factors that emerge from the external, social environment and impact perception of standards-based grading	Characteristics of the students population, student attitudes and behaviors, parent attitudes and behaviors, colleagues/ attitudes and behaviors, administration's	Factors that emerge from inside an individual

		attitudes and behaviors, and professional learning experiences	
Learning			
Adult Learning Theory	Describes the conditions that best facilitate adult learning, according to Knowles (1980)	Whether the learning environment respects adults as self-directed, having a wealth of experience, valuing relevant learning, problem-oriented, and best motivated by internal factors	The specifics of discrete professional learning opportunities
Professional Learning	The continuing, active, and social experiences designed to develop teachers as professional	Experiences intentionally designed to promote teacher learning regarding standards-based grading	The overarching theory and learning environment of the research site

Appendix H

Sample Excerpt of a Coded Transcript

Data Source	Location	Code	Data Segment	Data Collection Notes	Memo
GreenSchool_FocusGroup1_2023.7.12_JB_raw	40:48.5	Formative Assessment	CC: Yeah. And I would think... I think also too, because it immediately in grade six too, they also pick up on, "Oh. Formative assessment. So that means I don't have to do that." "No. You don't have to do it. If you don't wanna do it, don't do it. But who is that hurting? Certainly not me. That's less for me to grade. Right? So if you don't do it, when we go to take the summative, how is that going to impact you?" And for some students that's lesson enough for them, but for some students they have to try it out first. But so I'm just always very upfront with that. Like, "No. I'm never gonna make you do it, and if you don't wanna do it, that is your choice, but there are consequences either way." So I think just being honest with them about that instead of... At least in grade six, they feel like, "Oh, I wait. I got you. Because I don't have to... No. I'm already aware of that."	Formative assessment conversation begins here -- brought up entirely by participants	
GreenSchool_FocusGroup1_2023.7.12_JB_raw	41:39.7		JB: Would you say formative assessment is a hallmark practice or is that a, again, like a byproduct or?		I have to probe the association between SBG and formative assessment
GreenSchool_FocusGroup1_2023.7.12_JB_raw	41:45.8	Formative Assessment	CC: It's usually... So it usually happens when... With the siblings that we have that have caught wind of, "Oh. The formative is not necessarily gonna count towards your final grade kind of thing." So then these little babies come in with this big secret that they have and they're very excited to share with their friends and...		It's almost as if standards-based grading (the system) draws attention away from the actual purpsoe of formative assessment (and, therefore, away from the goals of SBG)
GreenSchool_FocusGroup1_2023.7.12_JB_raw	42:08.5		CC: It's a lot of fun.		
GreenSchool_FocusGroup1_2023.7.12_JB_raw	42:08.5		JB: Any other thoughts on formative assessment or other practices that you consider very important?		
GreenSchool_FocusGroup1_2023.7.12_JB_raw	42:17.0	Intrinsic Motivation	NK: Between the formative, like building the habit of doing formative assessments and the self-reflection piece. It's just trying to make it a more intrinsic experience for them instead of an extrinsic motivator of earning the points. We want them to have that mindset shift of this is benefiting me. This work aids me in the future and I'm not doing it for the teacher, I'm not doing it for my parents, I'm doing it because it is my learning. And I think ultimately it helps them... It helps students take ownership of their learning, which is what we want to send them off into the world with...		Intrinsic motivation not identified as a goal earlier, but it's clearly coming up here -- and entirely by participants
GreenSchool_FocusGroup1_2023.7.12_JB_raw	42:52.9		AVP: The agency...		
GreenSchool_FocusGroup1_2023.7.12_JB_raw	42:54.0		NK: Yeah.		

GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**42:52.9**		**AVP:** The agency...	
GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**42:54.0**		**NK:** Yeah.	
GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**42:54.7**		**AVP:** Is a big part, I think is.	Participants are thinking together, trying to define how important this quality is
GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**42:57.8**		**NK:** Yeah. Yeah.	
GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**42:58.9**		**JB:** Would you say building intrinsic motivation and agency is one of the goals of the program?	
GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**43:04.0**		**NK:** Yeah. I would.	All participants nodded in vigorous agreement here
GreenSchool_F ocusGroup1_20 23.7.12_JB_raw	**43:05.2**		**AVP:** And that ties into the growth mindset. You can continue to fix things, build on things. It's not a finite endpoint.	Note how participants do see all these goals as interconnected: to them, SBG is a whole system, not a series of discrete policies and practices

Note: This excerpt appears as a series of screenshots due to the formatting difficulties that arose when trying to copy information from Excel into a word processing document.

Appendix I

Sample Excerpts of Reflexive Memos

Focus Group 1 (*Interviewed 7.12.2023; Data analyzed 7.13.2023; Reflexive memo written 7.13.2023*)

Participants in Focus Group 1: Ben, Colton, Charity, Nora, Annie

Initial Interpretations

I recorded several initial takeaways in my Field Notes directly after this focus group. My Field Note was very long – I clearly just recorded ideas that struck me, without giving them shape or form. In this reflexive memo, I hope to generate more cohesive interpretations, which I think I came to during the coding process.

My thoughts on teacher perceptions of the goals of standards-based grading are largely unchanged from my initial takeaways. Participants were clear and confident in articulating the goals and how those goals were (or were not) being fulfilled. It is now clearer to me (than it was immediately after the focus group) that, in terms of Academic Mastery, clarity of communication is the biggest area in need of improvement for the goal to be fulfilled. The rest of my initial takeaways remain unchanged, and only strengthened by careful examination of the data.

It was much harder to make sense of the way the participants talked about their own practices as they implemented standards-based grading. Like in the interview with Dr. S, teachers did not mention curricular and instructional change as a goal of standards-based grading. In fact, when a teacher narrated how implementing standards-based grading caused her to change her curriculum and instructional practices, I specifically asked if that was a goal of standards-based grading and the participants agreed that it was not.

The participants did talk significantly about two practices associated with standards-based grading: rubrics and formative assessment. They demonstrated a clear understanding of both practices. However, they were divided on the usefulness of these practices within standards-based grading. In fact, there was a sense that standards-based grading might worsen their ability to effectively use those practices. But perhaps that's not fair in the case of rubrics – perhaps the weight standards-based grading places on them just made teachers more aware of how difficult they can be to write. In the case of formative assessment, it almost seemed as if teachers perceived the school's standards-based grading system as weakening their ability to use it effectively – or, at least, drew their attention away from the true purpose of formative assessment and towards gradebook mechanisms.

I'll also note that teachers did not mention any structured professional learning around formative assessment, though they clearly articulated the value of both formal and informal professional learning in the implementation of standards-based grading and the practices associated with it. In fact, the participants specifically wished for more formal professional learning experiences on standards-based grading.

Potential Bias

During the focus group, I did not feel as though my positionality played a role. The conversation seemed open and authentic. Participants were comfortable asking each other questions, admitting weaknesses and areas for growth, etc. I do worry that my interpretation of how teachers perceive their practices might be overly influenced by my own personal beliefs (and potentially speculation). I have been groping my way towards understanding how teachers perceive rubrics, formative assessment, and their own curricular and instructional practices related to standards-based grading. I think this needs to be a major focus of my follow-up interviews. I need to ask direct questions about these topics.

From this focus group, I plan to invite Ben, Colton, and Annie for follow-up interviews. This is my reasoning:

- Ben: Ben is in his first year at The Green School. He was quiet in this focus group. I need to hear more from teachers new to the system.
- Colton: Devised his own personal standards-based grading system, which he employed solo (at schools that had not adopted standards-based grading) for a dozen years before coming to The Green School. Seems to believe that the school's system might actually detract from fulfilling some of the goals of standards-based grading. Would like to probe more.
- Annie: The participant who articulated having to go through significant curricular and instructional change to implement standards-based grading when she joined The Green School after 15+ years in K-12 education elsewhere. There is clearly much more to her story.

Focus Group 2 *(interviewed 7.17.2023; Data analyzed 7.18/2023; Reflexive memo written 7.18.23)*

Participants: Shauna, Margaret, Ruth, Sanford, Jay

Initial Interpretations

This group largely confirmed the interpretations I have been building all along. I'll note that most of these interpretations related to the goals of standards-based grading, as well as the degree to which those goals are (or are not) being fulfilled. I now feel like I have a clear picture of that, especially as it relates to students.

Moving forward, I need to probe the teacher experience with standards-based grading more. That is fuzzier to me. I think these are some of the questions I need to ask in follow-up interviews:

- The other focus group said [intrinsic motivation/equity] is a goal of standards-based grading. Do you agree?
- Standards-based grading largely seems to be working for students. How is it working for you?
- Have you had to make any compromises as you've implemented standards-based grading?
- How, if at all, has standards-based grading informed your teaching practice?
- Are there any ways in which you are a better teacher because of standards-based grading?

- Are there any ways in which you are a worse teacher because of standards-based grading?

From this focus group, I plan to invite Shauna, Margaret, and Ruth for follow-up interviews. This is my reasoning:
- Shauna: Did not speak much. I would like to hear more from a faculty member relatively new to the school.
- Margaret: Margaret impressed me with her thoughtfulness. She spoke eloquently about the goals. I'd like to hear her talk more about her own practice.
- Ruth: Ruth came to The Green School (and to standards-based grading) from a very traditional environment where her grades were scrutinized. It will be interesting to hear more about how she responded and was influenced by standards-based grading. She was also very quiet in the focus group.

Potential Biases
Nothing to report at this moment.

Appendix J

Data Management Plan

The research project described in this data management plan relies on two types of data: interviews and document analysis. I plan to conduct 10 hour-long interviews. I will record these sessions on a laptop computer using the audio recording program Audacity, which stores the data in mp3 format. After each interview, I will use a paid transcription service, which will provide me with a Microsoft Word document that I will edit to ensure accuracy. I will also take hand-written notes during the interviews themselves, which I will scan and store as PDF files. Before each interview, I will also collect four documents from each participant. If the documents are provided in hard-copy form, I will scan and store them as PDF files. If the documents are provided as digital copies, I will convert them to PDF files.

I will store all files in UVA Box, the university's secure file server, and use a comprehensive data management log to organize and document the data. I used the following file name conventions to identify data:

- Focus group audio recordings
    - SchoolPseudonym_FocusGroup1/2_year.month.day_InterviewerInitials_raw/final.mps
- Interview audio recordings
    - SchoolPseudonym_ParticipantPseudonym_year.month.day_InterviewerInitials_interview_raw/final.mps
- Interview notes and transcriptions
    - SchoolPseudonym_ParticipantPseudonym_year.month.day_InterviewerInitials_notes/transcript_raw/final.docx

- Coded Transcripts

    - SchoolPseudonym_ParticipantPseudonym/FocusGroup1/2_year.month.day_Interv iewerInitials.xlsx

Note that I identify research sites and participants by pseudonyms in file names. I tracked real identifiers and corresponding pseudonyms in a separate document, also stored in UVA Box.

This data was collected with the consent of The Green School on the grounds that it remain confidential. Only I, as the researcher, have access to all the data. I have permission to use the data for a capstone project in fulfillment of the requirements of The University of Virginia's Ed.D. program. I also have discretion to grant limited access to the data in two cases: 1) If one of the participants of the study makes a request to verify the authenticity of their data, and 2) If a member of The Green School's faculty, staff, or administration makes a request to use data to make recommendations to improve the school's academic program. In either case, requests must be submitted in writing and provide a clear rationale for the request.

The data reported and analyzed in this paper are shared for the purpose of my capstone project at The University of Virginia. I will not share the raw data. Data used in my final capstone project will only be aggregated or reported with the use of pseudonyms. I will retain the data for 5 years after the completion of the research.