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A Mixed-Methods Comparison of Standards-Based and Traditional Gradebooks
in one High School

by

Kevin P. Mable

A Dissertation submitted to the Education Faculty of Lindenwood University
in partial fulfillment of the requirements for the

degree of

Doctor of Education

School of Education

A Mixed-Methods Comparison of Standards-Based and Traditional Gradebooks
in one High School

by
Kevin P. Mabie

This dissertation has been approved in partial fulfillment of the requirements for the
degree of
Doctor of Education
at Lindenwood University by the School of Education

Beth Kania-Gosche

Dr. Beth Kania-Gosche, Dissertation Chair

1-31-14

Date

Mrs. Susan Doering

Mrs. Susan Doering, Committee Member

1-31-14

Date

Jeremy Mitchell

Dr. Jeremy Mitchell, Committee Member

1-31-14

Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Kevin Paul Mabie

Signature: Kevin Mabie Date: 1/31/14

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Abstract

Online gradebooks have gradually become a staple of schools in the 21st century. Students and parents have immediate access to grades, and the composition of these grades is transparent. While the purpose of the online gradebook may have initially been for the conveniences such systems offer the school and its stakeholders, it has also served as a catalyst for gradebook reform. Gradebook construction strategies have been called into question, and solutions which allow gradebooks to provide more accurate and specific information have been developed.

This study explored student learning growth through the use of two different online gradebooks: a traditionally averaged gradebook and a standards-based gradebook. While the quantitative results of the study showed that students demonstrated a little more growth with an online standards-based gradebook than with an online traditional gradebook, the qualitative portion of this study explored student, parent, and teacher preferences for gradebook construction and suggested that online standards-based gradebooks may result in greater learning increases for students if they are consistently used.

For instance, “organization and clarity benefits” were among the positives students referenced concerning the standards-based gradebooks. One student recognized the benefit such a gradebook may provide at final exam time, as the gradebook clearly showed the skills in which the student was strong and weak. Likewise, the parents also preferred the clarity of the standards-based gradebook. However, they also liked the traditionally averaged gradebook as it provided information they were familiar with and to which they could relate.

The teacher input echoed thoughts of the students and parents. They liked the idea of the standards-based gradebook and could see how it helped students learn. However, they also recognized the great deal of work that may go into developing such a system for classroom use, and the great deal of work that may accompany such a system in day-to-day use. This ominous amount of work, they opined, would likely decrease once they used the system consistently, allowing results of this study to support that such a system can only work to its intended extent once it has been implemented and consistently practiced over multiple semesters.

Table of Contents

Acknowledgments.....	i
Abstract.....	ii
List of Tables	viii
List of Figures.....	ix
Chapter One: Introduction of the Study.....	1
Background, Purpose, and Direction of the Study	3
Limitations and Delimitations of the Study	7
Rationale for the Study.....	9
Definition of Terms.....	10
Conclusion.....	12
Chapter Two: The Literature Review	14
Education Initiatives Strive to Focus Students on More Than a Letter	14
Grading Reform Does Make a Difference	16
Details Regarding Traditional Grading and Reporting Practices.....	22
Details Regarding Contemporary Grading and Reporting Practices	28
Philosophical Differences that Affect Grading Practices.....	36
Research-Based Strategies vs. Willingness to Change Tradition	40
Focus on Standards Can Lead to Gradebook Providing Feedback.....	42
The Relationship between Grading and Frequent Formative Assessment.....	46
Feedback can be Positive, even when Results are Negative	48
The Advent of the Internet Gradebook	49
The 21st Century Learner is Prepared for a Gradebook Overhaul.....	51

Conclusion.....	52
Chapter Three: Methodology	54
Research Setting and Participants	56
Instrumentation.....	59
Gradebooks are Rich in Variance.....	59
Recruitment and Selection	64
Procedure.....	65
Protection of Human Subjects.....	70
Summary	72
Chapter Four: Results	74
Online Gradebook Access: December 2012-March 2013.....	75
Weekend Online Gradebook Access: March 2013	76
Student Focus Group.....	77
Organizational and Clarity Benefits.....	77
The Negatives Students See with Standards-Based Gradebooks.....	79
Students Prefer Zero Grades, Fear Teacher Bias	80
Student Conclusions.....	82
Parent Focus Group Reveals Agreement with Student Opinions	82
Parents Derive Clarity Issue Students Did Not See	84
Parent Subjective Comments Agree with Students.....	85
Parents Possess Strong Beliefs about Perfection; Number of Assignments	87
Parent Perspective of Positives of Standards-Based Gradebook	88
Why Not Have Both?	91

Parent Focus Group Conclusions	92
Teachers Want Grading to be Productive	94
Teachers Realize Effects of Zero Grades	97
Student Grade Variance has Reasons.....	98
Gradebook Can Also Be a Tool for Teachers	99
Teacher Conclusions	101
Student Learning Growth Analysis 1: Honors Algebra I.....	101
Learning Standard 4: Factor Polynomials.....	104
Student Learning Growth Analysis 2: Senior-Level English.....	104
Summary of Learning Standard Progress for Teacher B	109
Student Learning Growth Analysis 3: Sophomore English Comparison.....	111
Student Learning Growth Analysis 4: Freshman Biology Comparison.....	116
Student Learning Growth Analysis 5: Senior Publications.....	120
Mixed Results Fail to Reject Null Hypothesis	123
A Great Amount of Thought Goes Into the Online Gradebook.....	125
Chapter Five: Discussion and Reflection.....	127
Conclusions Derived From Students.....	128
Conclusions Derived From Parents.....	132
Conclusions Derived From Teachers	134
Conclusions Derived From Learning Growth Analysis	137
Summary of Findings and Implications	141
Research Question 1:.....	142
Sub-Question A:.....	143

Sub-Question B:	145
Recommendations for Practice and Policy.....	147
Failure to Reject Null Hypothesis Warrants Future Research	149
Final Notes	150
References.....	157
Appendix A.....	162
Appendix B.....	163
Appendix C.....	164
Vitae.....	165

List of Tables

Table 1. Waukesha School Best Practices in Grading Guide	18
Table 2. Study Comparison.....	18
Table 3. Comparison of Traditional Grading Practices	19
Table 4. Challenges of Contemporary Gradebook Strategies.....	35
Table 5. Variety of Gradebooks at School of Study	57
Table 6. Gradebook Comparison of Teachers A, B, and C	61
Table 7. Gradebook Comparison of Teachers D, E, F, and G	63
Table 8. Learning Growth z-test of Two Independent Means	1255

List of Figures

- Figure 1. Growth of “Evaluate Linear and Exponential Functions” Skill **Error! Bookmark not defined.**
- Figure 2. Growth of “Factor Polynomials” Skill **Error! Bookmark not defined.**104
- Figure 3. Growth of “Thesis Composition” Skill **Error! Bookmark not defined.**106
- Figure 4. Growth of “Supporting Arguments” Skill..... **Error! Bookmark not defined.**107
- Figure 5. Growth of “Drawing Conclusions” Skill..... **Error! Bookmark not defined.**108
- Figure 6. Growth of “Understanding of Theme” Skill **Error! Bookmark not defined.**113
- Figure 7. Growth of “Understanding of Thesis” Skill **Error! Bookmark not defined.**113
- Figure 8. Growth of “Understanding of Thesis Support” Skill **Error! Bookmark not defined.**114
- Figure 9. Summary of Learning Standard Growth for Teachers C and D **Error! Bookmark not defined.**
- Figure 10. Growth of “Characteristics of Living Things” Knowledge **Error! Bookmark not defined.**1
- Figure 11. Growth of “Purpose and Process of Mitosis” Knowledge **Error! Bookmark not defined.**11
- Figure 12. Summary of Learning Standard Growth for Teachers E and F **Error! Bookmark not defined.**
- Figure 13. Skill Increases in Publications Class **Error! Bookmark not defined.**123

Chapter One: Introduction of the Study

The report card has long served as the link between the classroom and the “outside world.” For decades, parents have depended on this communication to understand the events taking place behind the closed doors of classrooms. From the marks on this report, parents have determined the academic strengths and weaknesses of their children, as well as effort put forth, and other information that could potentially be used to make decisions about the future of a child. This information has historically been communicated to parents using a single mark, such as an *A, B, C, D, or F*, typically produced through the collection of a variety of data kept in the teacher's gradebook. Traditionally, this gradebook was maintained by the teacher, and except in extenuating circumstances was for his or her eyes only. However, at the time of this writing, this was no longer the case (Guskey, 2012).

With the advent of the Internet, school districts discovered an opportunity to provide the information provided by the report card on a more frequent basis. Parents were able to access the online gradebook at any point in a semester to determine the current status of one's child in a class. However, parents were not simply looking at the letter grade provided by the traditional report card; they were able to see the manner in which that grade was compiled (Geddes, 2010, p. 14). And perhaps to the surprise of some, grades were sometimes compiled in a manner that does not include mathematical calculation.

In many ways, the ability to see the composition of a grade was a positive effect of the online gradebook. Parents could see where a student may have struggled, and they could help a child maintain organization so one may turn in assignments on time.

Perhaps more importantly, students were able to view their grades to better understand their successes and failures (Stiggins, 1999, p. 24). They also could use the online gradebook to stay organized and to assure themselves that assignments had been turned in. However, an unintended consequence of online gradebooks and the transparency that came with them was the visibility of gradebook disparity. Parents, students, and others, including colleges and universities, quickly became aware of the fact that letter grades communicate different things (Jaschik, 2012). Some letter grades clearly communicate a student's knowledge in a specific subject area, but others are more muddled. Teachers who had a limited number of summative assessments may make it easy for students, parents, or school personnel to determine that a letter-grade represented specific understandings. These teachers specified which skills and knowledge were represented on the assignments in the gradebook. However, other teachers had dozens of assignments, and it was hard to tell what a student did or did not know and understand. Unfortunately, colleges had trouble determining the basis of a letter grade because they were not privy to the specifics, only the final letter, and that letter was becoming less and less reliable (Jaschik, 2012). Also, because of the way the grade was constructed, it may communicate a student's effort more than ability (Guskey, 2012), and this possibility became more evident in middle school and high school when students began visiting multiple teachers in a single school day.

Arguably, parents, students, universities, and others recognized these discrepancies long before the advent of the online gradebook (Jaschik, 2012). However, the extent to which differences existed may not have been so apparent prior to the online gradebook. For instance, not only did teachers at different grade levels, in different

buildings, or in different subject areas grade differently, but teachers teaching the same course in rooms adjacent to one another often graded differently (Guskey, 2012).

Online gradebooks, the topic of this dissertation study, have added depth to an *outsider's* understanding of the *obstacles* that comprise education and the discrepancies between one child's obstacles, as opposed to those of another child. This study was designed to provide teachers, parents, and students with increased understanding of the composition of a grade and the reasons why teachers comprise grades in the way they do. Importantly, this study will also seek to understand high school student, parent, and teacher perceptions of various grading practices at one school. Furthermore, the study will assess a student's ability to self-reflect on his or her learning, set learning goals based on the gradebook, and then to demonstrate learning growth. The research presented will give insight to teachers, administrators, and university teacher preparation programs to help them assess how online gradebooks can enhance learning.

Background, Purpose, and Direction of the Study

Since the George W. Bush administration launched the No Child Left Behind (NCLB) legislation in 2000, educational leaders have wrestled with the idea of a *guaranteed education*. NCLB was designed to guarantee that every child in every class learned the content he or she needed to be successful. A focus of the initiative on standardized test scores meant that federal funding and a school's autonomy were tied directly to standards taught in a given class or course. The standards did not just need to be taught: they had to be learned (No Child Left Behind, 2014). Coincidentally, this focus on standards took shape at a time when online gradebooks became more common, as well (Our History, 2012). Schools were looking for opportunities to increase student learning,

and the more frequent feedback that online gradebooks provided was identified as a way to enhance the educational experience of a student, while also allowing teachers to better use data to drive instruction (Guskey, 2012). Therefore, if one of the initial purposes of online gradebooks was to provide students and parents with feedback they could use to enhance learning, that purpose increased in importance due to the stringent learning requirements of NCLB legislation. These two movements have grown to complement one another, but the extent to which online gradebooks allow schools to meet the needs of federal educational accountability legislation is part of what this study will determine.

This study explored grading and how online gradebooks were being used in high school classrooms, with specific attention to the differences between classrooms using a traditional gradebook and those using a standards-based gradebook. Because new technology has enabled teacher gradebooks to be more accessible to students and parents, this study sought to determine if this opened up new abilities for students to self-reflect and set goals, and whether the online gradebook was better used when non-traditional gradebook constructions, like standards-based grading, were used. To do this, the study involved approximately 120 students in seven different classes, some of which used a traditional online gradebook, others which used a standards-based online gradebook. The study measured their quantitative learning goal gains in these classes, but also qualitatively measured the comfort of students, parents, and teachers with a non-traditional gradebook. Guskey (2012) argued that if I am a high school student or the parent of a student who views a gradebook online, I should be able to determine something about my knowledge and skills. The overall letter grade might give me some

information, but the gradebook should also tell me specifically what to work on to improve that letter grade (Guskey, 2012).

The way learning is represented in gradebooks, online or not, varies. One method of gradebook construction that was explored in-depth in this study was that of standards-based gradebook construction. Traditional and standards-based gradebook construction included one key difference. The traditional gradebook listed scores on assignments, including tests, worksheets, projects, and other tasks completed by students; the standards-based gradebook listed the knowledge and skills a student was responsible for learning in the place of this assignment. Students still completed assignments such as quizzes, projects, and worksheets that they completed when grades are represented with a traditional gradebook, but the scores on these tasks contributed to a representation of a student's overall understanding of a knowledge or skill. The ability of the traditional online gradebook and the standards-based online gradebook to be used as self-reflection and goal-setting tools will be analyzed in this study.

This study sought to connect the use of classroom gradebooks to learning. It took place in one private high school. The researcher gathered quantitative data on gradebook use and compared the test scores of a control and experimental group. The researcher also collected qualitative data through interviews of parents, teachers, and students. Both pieces of the study will evaluate the effectiveness of grading philosophies and gradebook strategies in the 21st century, when online gradebooks were becoming much more common (Poole, 2007). Traditional online gradebook strategies (control group) were compared qualitatively and quantitatively to standards-based gradebook strategies (experimental group). Quantitatively, this study compared the pre and post-test scores for

two classes taught by two separate teachers, one experimental and one control, for one unit of study for two different subject areas: English and Science. Furthermore, the study analyzed quantitative data of a math teacher, an English teacher, and a yearbook publications teacher who each incorporated standards-based strategies into their classes. The researcher also compared the qualitative perceptions of students, parents, and teachers about using the two methods of online gradebooks in these classes.

While several authors lauded the strengths and weaknesses of the standards-based gradebook (Guskey, 2003; Marzano, 2001; Wormeli, 2006), few studies have incorporated a direct comparison of student growth towards learning goals in two classrooms featuring the same curriculum, where students in one class are using a traditional gradebook, and students in another classroom are using the standards-based gradebook. This study sought to determine a correlation between learning and the gradebook strategy of the teacher's choice. In doing so, the standards-based gradebook became the study's independent variable, with data regarding student growth towards learning goals serving as the dependent variable, as it is dependent on the effectiveness of the use of the standards-based gradebook. Similar data derived from students with teachers using a traditional gradebook served as the control group.

To accomplish the goals of the study, one primary research question was used: What are the differences in understanding of learning goals and student growth towards those goals when teachers use an online, standards-based gradebook compared to an online traditional gradebook? However, it was necessary to support this question with two sub-questions:

1. What are the pros and cons of arranging an electronic gradebook by

standards rather than by assignment, as the traditional gradebook does?

2. What are the gradebook preferences of teachers, students, and their parents?

Teacher comfort with a gradebook system, and gradebook preferences of students, parents, and teachers were important to the study because learning growth based on a gradebook format is arguably more possible when each of these stakeholders is comfortable with the gradebook format and able to use it to self-reflect and to set learning goals. This made the two sub-questions extremely important to this study's purpose. However, this study's ability to show the learning growth differences between traditional gradebook formats and alternative gradebook formats will likely be judged by its quantitative measures more than these qualitative measures. To determine the quantitative success of alternative online gradebook methods, the following alternative hypothesis was used: Students who have grades communicated through an online standards-based gradebook will demonstrate greater growth in learning than those students who have grades communicated through a traditional gradebook, as evidenced by growth between pre and post-assessments over learning goals used in a unit of study. A *z*-test or difference between two independent means was used to determine if this alternative hypothesis could be supported or if there was an inability to reject the null hypothesis.

Limitations and Delimitations of the Study

This study was limited to one private high school in suburban St. Louis, Missouri. The high school for this study was selected because school administrators had chosen to give its teachers the option of using a standards-based gradebook or a traditional

gradebook in a variety of ways. In-service opportunities were provided to teachers who wished to pursue a standards-based system, after school administrators and teachers were introduced to the idea at a workshop run by educational researcher and standards-based gradebook advocate Rick Wormeli. Some teachers elected to use a standards-based gradebook, as opposed to a traditional one, in each of one's classes. Other teachers elected to use the standards-based gradebook in one or some classes. Likewise, others elected to use a standards-based gradebook only for some units within the semester in one or more classes. Some teachers elected not to use a standards-based gradebook at all, electing to use a traditional method of gradebook composition. This diverse use of gradebooks allowed this high school to be an ideal location for a study of gradebook formats to take place.

However, this private high school as a setting did offer some limitations, one of which was the fact that no student in the school had previously been graded in a standards-based format. While this allowed the research to show pure growth of the learner, teachers who had experience using this sort of system may have been better prepared to show students how to benefit from its advantages. One teacher in the study was more educated than others regarding classroom activities that allowed students to use the information in the gradebook to self-reflect and set learning goals. Had all teachers been prepared in that way, the learning gains in the study may have been different.

Other limitations were due to the school's population. The school had a student population of 670 that was predominantly Caucasian (99%), and it had a low number of students who qualified for free and reduced lunch or for special services. It had no students who were not native English speakers. The selected high school had an average

ACT score of 23, which was above the national average (National Ranks for ACT Scores, 2013), but only six of its students scored 30 or above on the 36-point test. Therefore, this study involved data generated by a large number of students who fell within one standard-deviation of the average ACT score, nationally. The study may not generalize to other high schools with different demographics.

Furthermore, because the primary researcher was an employee in the school district of the school being studied, results could possibly be skewed. For this reason, the primary researcher attempted to remove himself, as much as possible, from the collection of qualitative data.

Lastly, one limitation of the study was realized in measurement of use of the online gradebook. Though access of the gradebook could be measured, the amount of time the gradebook was used on a single access could not be measured. More information could have been derived with this additional information.

Rationale for the Study

Guskey and Bailey (2001) and Wormeli (2007) completed a large amount of work to explore the perceptions of the gradebook in education. They were among the researchers who worked to demonstrate gradebooks had the potential to enhance student learning. While their work has not directly addressed online gradebooks, these researchers believed that today's young learners were information-hungry and could benefit from having more information about their abilities given to them on their grade reports (Guskey & Bailey, 2001, p. 129; Wiggins, 2010, p. 75; Wormeli, 2006, p. 14).

The number of schools and school districts using an Internet gradebook has increased exponentially in the past decade (Zao, 2009, p. 114). Gradebooks were now

transparent and accessible to students and parents who checked the status of gradebooks on a regular basis. Despite the shift in the way gradebooks were viewed and used, the way gradebooks were comprised has often remained as traditional as the paper charts teachers used to pencil in grades throughout the 1900s (Guskey, 2012). While a change in format does not necessarily warrant a change in practice, educators should consider the student self-reflection and goal-setting possibilities that come with online gradebooks. This study analyzed the possibilities of online gradebooks in a way different from other studies by creating similar environments where students sought to show proficiency in identical learning goals, with the type of gradebook used as the only difference.

Definition of Terms

To best understand this study, its purpose, the research questions that drive the study, and its research itself, the following terms must be understood:

Feedback Strategies. Strategies teachers use to help students recognize the difference between one's present state and full understanding of a desired learning outcome (Burden, 2013, p. 136). Traditional methods at all grade levels include conferencing with students and explanatory narratives on assignments; the way the gradebook is used for feedback will be explored in this study.

Formative Assessment Strategies. Strategies teachers use to gather data showing the difference between a student's present level of understanding and the teacher's desired level of understanding in relation to a desired learning outcome (Burden, 2013, p. 95).

Grading and Reporting Practices. Summative, numerical, or quasi-numerical symbols that represent a student's performance in a marking period or a course and become part of a student's permanent records (Burden, 2013, p. 312).

Online Gradebook. A gradebook that is housed online, allowing students and parents real-time access to the scores input by teachers. While several programs provide this service to school districts, this study will analyze teachers' use of software called Gradequick, which is a product of Rediker, Incorporated.

Standards-Based Grading. A method of grading in which individual assignments are not used to compile a student's reported grade. Rather isolated skills and knowledge and a student's ability to transfer those skills and that knowledge are used to compile the student's reported grade (Burden, 2013, pp. 326-328). For instance a standard in a high school English classroom may be "The student will construct an essay using a controlling idea" (Curriculum, 2014). In Standards-Based Grading, the gradebook will reflect a student's level of understanding on that skill, rather than the gradebook reflecting a percentage of success on an assignment that may have included that skill. Gradebooks of this type can be formatted in two ways. One way allows for assignments and learning standards to be listed. An alternative allows only for the learning standards to be listed. In both circumstances, students can recognize strengths and weaknesses; they can also see growth towards learning goals. For instance, a student may have a learning goal to construct a complex controlling idea. The student may complete multiple assignments to learn and/or demonstrate that goal, but only one number or symbol will appear in the gradebook: the number or symbol that shows most accurately where the student presently stands towards the learning goal. This number

may or may not be the average of the various assignments. More than likely, it is the mode or a number or symbol that represents the student's most recent representation of this skill. Please see Appendix A for examples.

Traditional Grading. A method of grading in which individual assignments are used to compile a student's reported grade. The average score of each assignment is averaged to determine a student's class average and letter grade. Please see example in Appendix B.

Conclusion

If used by schools, this study will effectively improve student learning. The increased pressure to *guarantee* learning that has been placed on schools and school leaders requires student learning to be a non-negotiable aspect of schooling. While that has always arguably been the case, the urgency initiatives such as *No Child Left Behind* and *Race to the Top* put on education leaders require them to examine all aspects of schooling, especially the link between the classroom and the outside world: gradebooks. This study is exploratory, designed to provide school leaders with enough qualitative and quantitative data necessary to decide whether a change in gradebook structure is a worthy initiative to the school. This study will allow school leaders to formulate some initial thoughts regarding the possibility of the gradebook to guarantee the learning they have been charged with guaranteeing.

Chapter Two: The Literature Review will first communicate the work of researchers who have documented the changing scope of education in the 21st Century, due to technological growth. It will then explore the way some researchers believe the gradebook should evolve to get the most use from the online gradebooks that have

become prevalent in 21st century schools. Chapter Two will identify the growing number of gradebook strategies that exist, as well as the growing emphasis on student self-reflection and goal-setting that online gradebooks make possible. Research about these educational movements, as well as how they relate to national education initiatives, will be introduced and discussed to develop reader understanding of the rationale for this study, including the correlation between online gradebooks and student learning growth. Also explored in Chapter Two are the many varieties of grading philosophies that exist and how these philosophies affect different responses in students and parents who see gradebook philosophies contributing to a grade, online. Importantly, the literature review will also seek to show why there is such disparity between gradebooks from district to district, school to school, and even from classroom to classroom within the same school. Lastly, Chapter Two will reveal the many reasons educators are slow to make changes to grading systems, even though researchers like Geddes suggested a change is necessary to gradebooks if students are to receive the full benefit of Internet feedback. The review shows the reasons why the online gradebook was initially established, and why the comfort level of adolescents with technology makes the 21st century learner the ideal recipient of a change to the traditional grading system.

Chapter Two: The Literature Review

Twenty-first century technology has changed the status quo of many aspects of life, and education is no exception. The Internet has enabled students to learn in different ways; the classroom is no longer the only source for learners to find information (Zao, 2009, p. 114). Students have become consumers of information, able to independently learn, review, and use concepts taught in class to improve understanding. While student hunger for knowledge, including curricular content, is evident, their hunger to know the status of their grades is just as clear. This was the case in the research of Geddes (2010) of Temple University. She wrote, “online gradebook monitoring was students’ most preferred and utilized form of feedback seeking” (p. 13). In situations where faculty members provided timely assignment performance information online, student achievement and improvement was greatest (p. 13). Geddes’ research pointed out, however, that the traditional gradebook “does not tell students *how* they should improve their performance,” though it does indicate how well a student has already performed, “prompting students to understand that improvement may be necessary” (p. 13). Because the research of Geddes confirms that students are using the online gradebook often, it is important to understand the many ways the online gradebook may be used, if teachers and school leaders would like it to be used that way.

Education Initiatives Strive to Focus Students on More Than a Letter

When students and parents log in, the key piece of information they seek is the letter grade being earned in a class (Geddes, 2010, p. 13). However, education initiatives to focus teachers, students, and parents on core learning standards indicate that educators would like to see the information-hungry seeking more than a letter. “Students with a

learning or mastery goal [gradebook] orientation want to increase their competence and master new skills,” Geddes wrote (2010, p. 14), which is better than wanting to simply improve a letter grade when the letter may not reveal specifically how to do so. Geddes’ (2010) research revealed her belief that the information hungry students and parents would accelerate learning even more if the Internet gradebook provided a means to see progress towards specific goals.

“Another practical implication of online gradebook use includes the possibility of separating outcome from process feedback on student assignments,” Geddes wrote (2010, p. 16). Geddes (2010) lauded an online gradebook that communicated feedback without simultaneously causing the instructor to serve as a judge of student’s work. “In the classroom, the common practice is to return essays, memos, reports, and so forth, with comments on ways to improve the paper and the actual grade earned,” she wrote. “However, there are logical problems with faculty acting as judge and coach when providing performance feedback” (Geddes, 2010, p. 16). Geddes’ use of the metaphors “judge” and “coach” highlight one reason for contemporary gradebook strategies. In the online gradebook, teachers now have an avenue to “coach” students to new understandings and abilities by providing feedback online, possibly through an online gradebook. However, if the “judgment” of the work is just as accessible, students are likely to focus on the judgment more than the coaching (Geddes, 2010, p. 17).

While Geddes’ (2010) writing indicated a deep belief that Internet gradebooks should have a very specific structure focused on learning goals, researchers have deemed grading reform to be necessary due to the existence of the online gradebook (Guskey & Bailey, 2001, p. 129; Wiggins, 2010, p. 75; Wormeli, 2006, p. 14).

Grading Reform Does Make a Difference

In the 2011 article, “How Grading Reform Changed Our School,” author Erickson discussed how grading reform resulted in a fundamentally different way in which his students approached learning. Erickson (2011) shared a story about his daughter's attempts at learning to swim. She had to swim the front crawl 50-feet across a pool; after attempting unsuccessfully throughout the course, she was finally able to make it across the pool on the last day. He wrote, “How shocked I would have been if her teacher had informed me that my daughter's final mark in the swimming course would be determined by an average of her performance over the entire course” (p. 66). Erickson used this example to reveal his belief that averaging is not an accurate way to determine a final grade. The author next discussed the many grading practices in his school, involving averaging and other gradebook choices, and his school's decision to make sure all decisions regarding grading were to guarantee that grades only reflect what a student can do (p. 66). His school's staff determined that “inflating grades” with things such as extra credit for unused bathroom passes and “deflating grades” for behavioral issues were practices that the school determined were not creating an accurate reflection of student grades in classes. Erickson also discussed his school's decision to do away with giving grades for homework based on completion. These scores confused parents, he said. Parents would question how so many positive marks in the gradebook would precede a poor test or quiz (p. 68).

The online gradebook at Erickson's (2011) school caused the need for change. Parents were questioning the inconsistency caused by completion grades, and also the inconsistencies that existed because some teachers gave extra credit, and others did not

(p. 69). At Erickson's school, the decision to make gradebooks consistent was a direct result of the transparency that comes with the online gradebook (p. 70). At the time of this writing, Erickson's school could not yet document consistent improvements to student achievement as the result of the changes they made to the grading system, because the new system was still in its infancy. However, the staff's ability to use data to identify learning needs certainly had increased; Erickson believed (p. 70).

Similar to Erickson's (2011) school, the School District of Waukesha (2013) found the need for district-wide reform to gradebooks and grading, and consequently published a guide entitled "Best Practices in Grading." The School District of Waukesha is a district that is heavy in students whose native language is not English. However, they believe that focusing staff, students, and parents on specific learning goals, which can be done when consistent strategies are in place district-wide, has enabled them to have one of the highest graduation rates in the state. At 97%, this graduation rate has improved greatly from where it was in the past (p. 2). They cited the following reason for having such a guide: "Grading practices are firmly held beliefs that are near and dear to the teaching professional," the preface professed. "Many educators struggle with grading practices so that it portrays accurately what a given student or class has learned" (p. 2). They developed their guide because "few professionals have ever had a college-level course on the subject" (Best Practices in Grading, 2007, p. 2). Their guide was developed for a variety of reasons, illustrated by Table 1:

Table 1.

Waukesha School Best Practices in Grading Guide

Reasons for implementing the “Best Practices in Grading” guide:	Research used to back-up these best practices:
To establish collaboration and consistency around grading.	“The most promising strategy for sustained, substantive school improvement is developing the ability for school personnel to function as professional learning communities” (Eaker & Dufour, <i>Best Practices in Grading</i> , 2007, p. 5).
To make criterion-referenced grading a common practice in schools.	“Grading on a curve tells very little about what students can do” (O’Connor, <i>Best Practices in Grading</i> , 2007, p. 11).
To consistently and fairly determine grades.	“Use the photo album approach, not a snapshot approach to grading student learning” (Tomlinson & McTighe, <i>Best Practices in Grading</i> , 2007, p. 15).
To communicate expectations.	“Create the Nintendo effect, use immediate and meaningful feedback” (Howard, <i>Best Practices in Grading</i> , 2007, p. 18).
To make homework used in a uniform way.	“Homework should be a risk-free chance to experiment with new skills” (Carr and Farr, <i>Best Practices in Grading</i> , 2007, p. 24).
To make missing work, late work, and zeroes handled consistently.	“No studies support low grades or marks as punishments; low grades often cause students to withdrawal from learning” (O’Connor, <i>Best Practices in Grading</i> , 2007, p. 28).
To make feedback a priority.	“Feedback is the breakfast of champions” (Lombardi, <i>Best Practices in Grading</i> , 2007, p. 32).
To make grading practices consistent for special populations (such as gifted or students with disabilities).	“Before considering grading methods for specific students...schools must have a high quality grading system in place” (Jung, <i>Best Practices in Grading</i> , 2007, 37).

Li (1998) said “Perhaps the greatest advantage of [electronic] gradebooks is the flexibility they allow educators in reporting student progress” (p. 62). However, nine years later, the School District of Waukesha recognized the need to take away some of that flexibility in favor of consistency. This “Best Practice in Grading” guide suggested that the School District of Waukesha recognized a great deal of student improvement that can come with reforming grading, and doing so consistently (Best Practices in Grading, 2007, 43).

If the success of the School District of Waukesha and the commitment to consistency by Erickson’s school were not enough reason to believe that online gradebooks have offered a new opportunity for education, a 2009 article by four European researchers also showed that gradebook reform may be necessary due to the transparency of the online system (Dahlgren, Fejas, Abrandt-Dahlgren, & Trowald, 2009). These researchers found that students approached assessments differently with knowledge of their current status in a class. While their research was designed to show that students study more and learn more when “multi-step grades,” such as letter-grades were used instead of “pass-fail grades,” their research contributed to the argument that students learn more when they can see the direct effect of their learning on course success (Dahlgren et al., 2009, p. 191). In the discussion of their research they identified a fear that the transparency of grades “may compromise the quality of students' learning” because “it invited students to focus on quantitative rather than qualitative aspects of [learning]” (Dahlgren et al., 2009, p. 192).

Focusing more on the qualitative feedback and less on the quantitative score was also at the heart of an article written by Smith (2008), who conducted a study at the

University of Wisconsin. She believes that students, like all humans, are bottom-line beings, interested first, and sometimes only, in the final result. Meaning, students who view grades online are primarily interested in the letter grade next to each course. Similarly, students who are handed-back essays their teachers may have spent a great deal of time grading are often interested only in the final letter-grade result, thus wasting the time of the instructor who worked to give his or her students feedback (p. 325). As a result of this mentality, Smith wrote: “[Today's students'] educational experiences in elementary and secondary school involved access to more types of technology, more extensive quantities of information, and higher expectations for interactivity than those of previous generations” (p. 325). She believed that students think the letter grade is the quickest way to receive the most information, and for a generation that wants to obtain as much information as possible in the quickest way possible, it makes sense that many students would look only at the letter grade, without giving appropriate thought to the feedback and comments accompanying the score (p. 325).

Smith (2008) discussed the increase in students considering feedback when the feedback was given in some different ways. For instance, she pointed out that “blanket error correction seldom improves student writing, but selective correction does” (p. 326). Blanket error correction is when a teacher identifies every error that exists in a given essay, for instance. However, selective correction means the teachers focuses only on the corrections that are the result of understanding or misunderstanding a learning goal. She went on to express how this example can serve as a microcosm for all feedback. Given in chunks that students can digest, the feedback is well received, but when given too much, students do not know where to begin, and therefore venture no further than the bottom-

line letter grade. Furthermore, Smith expressed how students gained the most from assignments where learning goals were clear when work was assigned (p. 327), suggesting that students can gain the most from the online gradebook if it provides feedback around clear learning goals. The number of learning goals, however, must be limited so as not to give the student too much to digest. Doing this, Smith suggested, would lead to “more positive faculty-student interaction” (p. 330).

Importantly, Smith (2008) also pointed out that teachers often provide feedback to students in the same way they received feedback as students. This, she said, is a mistake. “Faculty are likely to be at least one generation removed from their students. This age gap leads to differences in attitudes, values, experiences, and learning styles” (p. 325), she wrote. “Unfortunately, personal experience may not be the best model [for teacher to use when providing feedback to today's students]” (p. 325).

Consider the message of these four studies in Table 2:

Table 2

Study Comparison

Study	Author	Message
#1	Erickson (2011)	Online gradebooks created transparency of the gradebook, opening educators up to criticism because of the inconsistency of gradebook formats.
#2	School District of Waukesha (2013)	Due to the transparency of the online gradebook, it was necessary for this district to develop consistent “best practices” for gradebook construction.
#3	Dahlgren et. al. (2009)	The transparency of the online gradebook can cause students to focus more on the quantitative indicators of learning, instead of recognizing growth towards specific learning goals.
#4	Smith (2008)	Frequent feedback provided for a limited number of learning goals can be an effective instructional practice.

If these four studies may serve as an indication, it can be concluded that the transparency of the online gradebooks used by the majority of school districts has caused transparency that has made educators rethink the use of their gradebooks. Transparency has allowed outsiders to recognize inconsistencies in grades. In the process of becoming more consistent, school districts have recognized the need to provide feedback around learning goals in a way that is more consistent and designed to enhance learning.

Details Regarding Traditional Grading and Reporting Practices

The transparency of the online gradebook combined with the added pressure of standardized testing may be the reason teachers have begun to look for new ways to provide feedback. As a result multiple contemporary grading and gradebook strategies, including those that incorporate feedback into the gradebook, have begun to be used in education. As may be expected, a variety of choices can cause dissension. In his 2001 book, *Developing Grading and Reporting Systems for Student Learning*, Guskey wrote, “Few topics in education generate more controversy than grading and reporting student learning...teachers, parents, students, administrators, and community members all generally agree that we need better grading and reporting systems” (Guskey & Bailey, 2001, p. 121). However, a problem arises because “none of these groups seems to agree on what form those new systems should take” (p. 68).

Guskey (Guskey & Bailey, 2001) began his book by laying out the wide variety of “traditional” grading practices that teachers across America have embraced, such as letter grades, plus and minus letter grades, percentage grades, and pass-fail grading. He then delved into more contemporary approaches, such as standards-based grading, mastery grading, narratives, and the varying approaches of incorporating such systems.

Letter grades remain the most prevalent grading method used today in high schools, colleges, and universities (Guskey & Bailey, 2001, p. 68). Typically, students, parents, and others universally know the meaning of an A, B, C, D, or F mark on a report card. But, as mentioned, there are reasons why many stakeholders believe this system needs to be changed. “Despite their apparent simplicity, the true meaning of letter grades isn’t always clear,” (p. 69) Guskey said. “What teachers wish to communicate with a particular letter grade and what parents interpret that grade to mean often are not the same” (p. 69). Brown, in his 2001 research *Reporting Assessment Information to Teachers* agreed with Guskey’s penchant for breaking down the letter grade system, if it is to be used at all. He wrote, “[Grade] reports should indicate what students know (product), how students learned or demonstrated it (process), and how much they have learned (progress)” (Brown, 2001, p. 1). The point Guskey was trying to make is that the traditional letter grade system – which most United States teachers are using – fails to communicate a clear message about product, process, or progress. Instead, the traditional letter grade tries to encompass all three and, in doing so, fails to clearly communicate anything.

Another problem Guskey (2012) cited about the letter grade system was based on the confusion about whether or not the system was norm-referenced or criterion-referenced. He noted one school district had a reporting policy that stated “report card grades reflect students’ progress on grade level learning goals” (Guskey, 2012, p. 118). This means that the grades are criterion-referenced. However, the grade report from that same district included a key that identified an A as “desirable,” a B as “Above Average,” a C as “Average,” a D as “Below Average,” and an F as “Failing.” Guskey said, “At

least three of the five descriptors (Above Average, Average, and Below Average) reflect norm-referenced comparisons rather than criterion-referenced standards” (Guskey & Bailey, 2001, p. 69). He honed in on the “average” descriptor for the C grade and pointed out that average is “pretty good if the majority of students are doing well, but dismal if the majority of students are doing poorly” (p. 69).

Research conducted by Walvoord and Johnson-Anderson (1998) suggested teachers have “spent nearly every day of their teaching lives wrestling with the problems, the power, and the paradoxes of the grading system” (p. 1). However, change to the grading system seems robust because of the tradition that roots traditional grading systems. Teachers have grown up as students who were graded traditionally. This, along with the fact that averaging grades can seem so safe, has caused teachers to step very carefully into contemporary grading practices. Guskey and Bailey (2001) acknowledged that there are advantages to the traditional grading systems because many parents can empathize with their children since they were graded with similar reporting systems and parents believe they know what these systems mean. However, Guskey and Bailey’s research (2001) showed his belief that most parents see the letter grade in a norm-referenced way. A grade of C means “in the middle of the class” and changing from this mentality to a grading system that could potentially help students and parents work together to self-reflect and goal-set is a “significant challenge” (p. 70).

To avoid some of the shortcomings of typical letter grade systems, Guskey pointed out that educators must take steps to “avoid integrating so much information into one symbol” (Guskey & Bailey, 2001, p. 71). Guskey’s research showed his belief that educators thought they were addressing that recommendation with the advent of plus and

minus grades (Guskey & Bailey, 2001, p. 72). Guskey said, “this allows a single grade category to be divided into three levels [and] many educators assume that the more classification categories you have, the less likely you are to be inaccurate” (Guskey & Bailey, 2001, p. 72). However, his research revealed that this movement actually exacerbated the problem. “In the absence of clearly articulated learning standards and well-refined assessment instruments based on those standards, such minute distinctions are dubious at best,” Guskey said (Guskey & Bailey, 2001, p. 72). “The process is akin to cutting pudding with a razor” (p. 72). Dwyer, in her 1996 research agreed. In “Cut scores and testing: Statistics, judgment, truth, and error,” she pointed out that setting more grade ranges sets up more opportunities for misclassifying a student’s abilities. She acknowledged that the magnitude of erroneously giving a student a B+ instead of an A- is much less than giving a student a B when he deserved an A (Dwyer, 1996). However, the idea that a grade could so easily miscommunicate a student’s abilities only validated the assertion of Guskey and Dwyer: the traditional grading systems are broken.

Similarly, Walvoord and Anderson (1998) wrote that the traditional grading systems are rooted in false hopes:

The challenge for effective assessment is to manage the grading process. To do this faculty must abandon three common false hopes that belie the context and the complexity of the grading process: 1) The false hope of total objectivity in grading; 2) The false hope of total agreement about grading; and 3) The false hope of a one-dimensional student motivation for learning. (Walvoord & Anderson, 1998, p. 10)

She stresses that if grading can be viewed as a tool for learning, rather than only as an avenue for reporting a level of understanding, educators can take great strides towards fixing broken systems (Walvoord, 1998, p. 11).

Another way educators report a student's final grade is through percentage alone. Though they are often used in unison with letter grades, "some schools and school districts use percentage grades alone to express teachers' summative judgments of students' achievement or performance in a particular subject area or course" (Guskey & Bailey, 2001, p. 77). While Guskey's problems with the letter grade system were numerous, his problems with the use of percentage grades were even more greatly documented. Guskey pointed out "percentage grades require the abstraction of lots of information into a single [percent]...this in turn makes accurate interpretation of the meaning of a percentage grade extremely difficult" (Guskey & Bailey, 2001, p. 78). Meaning, he believed educators who indicate a grade is an 87%, for instance, are actually being more subjective than objective because it is very unlikely that the teacher has developed a rubric that shows the difference between an 87 and an 88, for instance. He pointed out the "increased precision of percentage grades is far more imaginary than real," and "the fine discrimination required in determining the differences between categories allow for the greater influence of subjectivity and greatly diminish the reliability of the grade" (Guskey & Bailey, 2001, p. 78). Meaning, teachers should grade on a scale that has precise differences between one mark and the next; teachers should not use a system that allows them to subjectively assign a grade without determining the differences between one mark and the next, prior to beginning to grade.

One final traditional grading system in use is pass-fail grading. Contrary to other traditional systems, pass-fail grading limits the number of grade possibilities to two. This system was originally introduced in college-level courses in the 1800s to get students to “attach more importance to learning and less to the grades they attained” (Durm, 1993, p. 64). According to Guskey, the distinction between pass and fail is determined almost as arbitrarily as with letter or percentage grades (Guskey & Bailey, 2001). “[Pass-fail grades] may be either criterion referenced or norm referenced,” he said (Guskey & Bailey, 2001, p. 94). He went on to say that students gain very little input for growth within a subject or unit when using a pass-fail system. They actually pay less attention to their strengths and weaknesses than they may in even a letter-grade or percentage-grade system (Guskey & Bailey, 2001, p. 95).

While multiple styles of gradebook construction have existed for decades, traditional averaging has been the “norm” (Guskey & Bailey, 2001, p. 101). However, the transparency of the online gradebook has given educators a new reason to consider the strengths and weaknesses of traditional averaging grading practices. Table 3 summarizes the traditional grading practices discussed in this section for comparison purposes:

Table 3

Comparison of Traditional Grading Practices

Type of Gradebook Construction	Summary of its Composition
Traditional Letter-Grade, based on average.	Assignments are given a point value. All assignments are averaged to determine letter grade.
Traditional Averaging	Assignments are given a point value. All assignments are averaged, allowing schools to assign a final “number” to each student.
Traditional Pass-Fail	Assignments are given a point value. All assignments are averaged to determine an average percent that allows a student to pass the course of the final percent is above a pre-determined number.

Details Regarding Contemporary Grading and Reporting Practices

The idea that grades should communicate strengths and weaknesses is a point that Walvoord and Anderson (1998) focused on in their book, *Effective Grading*. They argued that grades would more effectively contribute to learning if educators acknowledged 12 grading principles that turn the focus of teachers, parents, and students away from the final mark or the current mark, which serves as a projection of the final mark, and towards strengths and weaknesses that led to the final grade. This is different than the practice of students 20 years ago, because of the transparency of the online gradebook. For instance, one of those 12 principles was “Be Open to Change” (p. 12), and Walvoord and Anderson wrote to parents and students, “Your grades and grading system will be interpreted and used within the system that is—not the one you wish for or the one you experienced as a student” (p. 12). Likewise, they wrote to teachers, “In establishing grades . . . you are invoking a set of cultural beliefs and values that will shape the learning potential of your grading process. The better you understand the

culture, the better you can manage the grading process” (p. 12). This principle is one that suggested that students, parents, and teachers are all looking at the use of grading somewhat inaccurately, and a compromise of sorts might be in order.

Two other principles suggested by Walvoord and Anderson (1998) are “Seize the Teachable Moment” and “Make Student Learning the Primary Goal.” They wrote that values can clash between internal and external forces. When they do, teachers need to remember “to hold learning, rather than reporting to outsiders, as the most important goal of grading” (p. 14). They also suggested that more student involvement leads to more learning and personal development and their involvement in learning is in part determined by their perception of faculty members’ interest and friendliness toward them, including the fairness and helpfulness of the testing and grading system and the teacher’s communication about their work and their grades (p. 14). In summary, informal feedback and discussion about grades is good for students and that emotional moments can be valuable teaching moments in which lessons and values can be imparted to students (p. 18).

Perhaps most important of Walvoord and Anderson’s (1998) principles is the principle to “Appreciate the Complexity of Grading; Use it as a Tool for Learning.” She wrote, “Grading is a socially constructed and context-dependent process,” and “no grade or grading system is immutably right by some eternal standard” (p. 10). Her point was that educators are trying their best to use the gradebook to help students learn and to communicate current ability, at the same time. Because constructive criticism is sometimes hard to accept, student and parents fixate on the overall score, rather than the marks that led to that score. She wrote that educators must find a way to turn the

attention towards the mark that led to the final score to make parents and students more accepting of what the final score communicates (p. 12). The decisions educators make about grading philosophy and how the scores in the gradebook are used contribute positively or negatively to the ability to do this.

Guskey (2007) echoed a point similar to Walvoord and Anderson (1998) in his book to drive-home his discussion of standards-based grading. This non-traditional grading method is one initiative that he believes solves the problems associated with traditional grading systems (Guskey & Bailey, 2001, p. 58). Instead of a gradebook showing a series of assignments, points possible, and points earned, a standards-based gradebook replaces assignment descriptors with skill descriptors. Sometimes the standards have points possible attached to them, but often standards-based systems replace points with other descriptors such as “advanced,” “proficient,” “basic,” and “below basic” (Guskey & Bailey, 2001, p. 58).

Guskey & Bailey (2001) believed that grading by standards eliminated the philosophical problems many teachers have with zero grades and extra credit. Plus, standards-based grading allows teacher, students, and parents to focus on progression towards learning goals with individual skills, he believed. In fact, compared to traditional grading systems, in this system students are much more likely to know what their learning targets are (p. 59).

Aside from knowing what their learning targets are, grading by standards allows students to misunderstand a concept prior to understanding it, without penalty to one’s grade. A comparable example is the driver’s license examination (Kifer, 2001, p. 31). Guskey (2003) elaborated on this example in his article “How Classroom Assessments

Improve Learning.” He said many individuals do not pass their driver’s test on the first attempt. On the second or the third try however, they may reach the same high level of performance as others did on their first. “Should these drivers be restricted, for instance, to driving in fair weather only?” (Guskey, 2003, p. 6). He used this example to show that a strength of a standards-based system is that students do not have low scores continuing to lower one’s grade long after the skill has been mastered. Guskey (2003) said, “Because they eventually met the high performance standards as those who passed on their initial attempt, they receive the same privileges. The same should hold true for students who show that they, too, have learned well” (p. 6).

Sternberg (1994) agreed with this assertion of Guskey’s (2003). He said, “By keying teaching and assessment techniques to the diverse ways people think and learn, teachers will be surprised at how much smarter their students get” (Sternberg, 1994, p. 36). Sternberg described how one assessment of learning often is not enough for students to show understanding. Sometimes teaching the concept differently or assessing it differently reveals a level of learning that otherwise may have gone unnoticed (p. 36). A standards-based gradebook allows for such diversifying of lessons and tests, without harming a student’s final grade in the process (Guskey, 2012).

However, Guskey (2012) admitted that this grading and reporting system comes with challenges of its own. The chief challenge that Guskey noted was “identifying the specific learning goals or standards on which grades are to be based” (Guskey & Bailey, 2001, p. 84). The fact that this was a challenge may point to a deeper problem in education because teachers often struggle to agree on exactly what they want students to know and be able to do as a result of their learning experiences. Teachers in many

districts and schools have a curriculum that has dealt them a large number of goals and objectives to convey to their students in a semester. There is no lack in sources to find such objectives. However, some objectives are arguably more important than others. Consequently, teachers often have trouble identifying which skills and what knowledge they want to consistently convey (Guskey & Bailey, 2001, p. 84). Even after successfully identifying learning targets, teachers then must also determine the level or degree of specificity of which a concept will be taught. If that does not sound complicated enough, after teachers agree on the standards and specificity to use, the standards they roll out to students and parents are often confusing (Guskey & Bailey, 2001, p. 178).

Guskey (2012) highlighted an experience he had attended where a school staff was presenting a standards-based system to the parents in its community. One man raised his hand and said he liked the idea, but wondered what a “Jean-er” was. The word he was looking at was on a language arts descriptor, and it was actually spelled “genre” (Guskey, 2012). While standard-based systems attack several elements that teachers would like to philosophically see change and many would argue that they are a step in the right direction, the system is full of challenges that education professionals need to consider, especially that of collaborating to take a curriculum full of learning goals and choosing which goals will be chosen to represent the grade (Guskey & Bailey, 2001, p. 62).

Yet another method teachers use to report a student’s final grade is an extension of standards-based grading called mastery grading. This format is very similar to standards-based grading, but more directly affects classroom procedures. In this format, students are still measured by their performance in relationship to learning standards.

However, mastery grading limits the number of categories into which a student may fall to the following two: mastery and non-mastery. Students who master a topic are ready to move onto a new topic, while students who do not master a topic are given additional instruction and reassessed until able to demonstrate mastery. Guskey wrote,

mastery grading is similar to what most students will face throughout their lives.

Although most professional certification examinations are scored on a pass/fail basis, those who do not do well initially are given additional opportunities to improve their performance. (Guskey & Bailey, 2001, p. 101)

The book went on to point out that everything from the bar exam to medical board examinations allow for a person to reassess if one has not mastered work on the first try.

While mastery grading sounds like a tremendous system that guarantees learning, few classrooms are prepared to offer such a system. Chances are that some students will master material initially, and others will not. Students who do not master the material on the first try will receive extra instruction while the students who do master the material will be in a “holding pattern” until the others have caught up. This is different from the standards-based approach because a standards-based system does not require total mastery before students can move on. So even though it makes sense to require mastery in a classroom, it is not always the most feasible approach, if it is used as it was designed to be used (Guskey & Bailey, 2001, p. 102).

One final method that teachers use to determine a student’s final grade is called narrative grading. Guskey wrote that narrative grading “represents the oldest of all grading methods” and that it has evolved to the point where teachers effectively “relate to clearly defined learning goals” (Guskey & Bailey, 2001, p. 104). However, not only is

this grading method extremely time consuming, but teachers have trouble eliminating jargon and complex technical language from their narratives (Guskey & Bailey, 2001, p. 104). Arguably, parents are less confused by a single letter grade than a short description that cannot possibly communicate a student's progress towards every learning goal (Guskey & Bailey, 2001, p. 104).

School districts have tried to make the narratives more feasible for teachers and easier for parents to understand by combining them with letter grades and, in some cases, providing standardized comment menus. However, as Friedman pointed out in his 1998 research, only a small portion of parents and teachers think that the menu based comments are adequate (p. 42). "Parents generally want more specific and more individualized comments," Friedman (1995) said (p. 42). Guskey's (Guskey & Bailey, 2001) research agreed. He wrote,

Few parents indicated that standardized, menu-based comments were helpful, and none found them prescriptive. Many of the parents with whom we spoke described the comments as "highly impersonal" and illustrated their point by citing how different teachers, teaching different subject areas, oftentimes offered the same, word-for-word comment about their child. (Guskey & Bailey, 2001, p. 121)

Guskey went on to say that some reporting systems list only a comment number and referred parents to a standardized comment list. He said "[this] was identified as the most impersonal of all" (Guskey & Bailey, 2001, p. 121).

According to Guskey (Guskey & Bailey, 2001), the intent of narrative grading is not to be impersonal. The fact that educators have created standardized lists of

comments, however, only highlights the point that this grading method is extremely time consuming and that school districts were clearly trying to make it easier on teachers (Guskey & Bailey, 2001, p. 147). Consequently, narrative grading falls into a category similar to that of each of the other grade reporting methods in that it has its positives, but it also has its distinct negatives (Guskey & Bailey, 2001, p. 147).

Letter grades, plus and minus letter grades, percentage grades, pass-fail grading, standards-based grading, mastery grading, and narratives are likely not even a full list of grading practices teachers are using, according to Guskey (2012). The many options available, however, are not the reason educators have so much trouble picking one. Often, Guskey's (2012) research has shown, choosing has more to do with educational philosophy than one might think. Even if educators can agree that traditional grading practices are not as effective as they would like, the challenges associated with the contemporary grading strategies have caused educators to hesitate before implementing new approaches. Table 4 illustrates those challenges:

Table 4

Challenges of Contemporary Gradebook Strategies

Type of Contemporary Grading:	Challenge:
Standards-Based Grading	Teachers must choose 10-15 standards that will comprise the grade, though three times as many may be in the curriculum
Mastery Grading	Students who have mastered all standards in a course should be allowed to move onto new goals, and many schools are not set up to allow this, logistically.
Narrative Grading	This type of grading provides a great deal of feedback, but requires a great deal of time for teachers, especially at the high school level.

Philosophical Differences that Affect Grading Practices

After becoming mindful of the many ways teachers determine a student's final grade, it may be next natural to explore what philosophical factors researchers have determined contribute to such disparity. Many who are not associated with education may be surprised to find that such disparity exists because educators cannot agree on the primary purpose of grades (Guskey, 2012). Education researcher and writer Wormeli (2006) has published his belief that with this varying agreement on purpose comes a variety of decisions educators must make when deciding whether or not that purpose is being adhered to. Teachers often have to decide whether zero grades will be used within their grading system, though they may take away from communicating a student's true ability level. Teachers also must decide if extra credit should be used, for the same reason: doing so can distort what the grade is meant to communicate, ability-level. Teachers also must wrestle with the purpose of grading on a curve and dropping high or low quiz scores (Wormeli, 2006, p. 56). According to Wormeli (2006), these questions, and many more, are wrestled with by educators on a regular basis and he makes the varying philosophies of the purpose of grades the basis of his workshops. Through his work with teachers on a "Grading Philosophy Statement," which he called a GPS, he encouraged educators to consider how questions about zeros, extra credit, curving, dropping scores, and more affect an educator's philosophy (Wormeli, 2010).

Johanson (1993) determined there are five primary purposes educators believe grades are designed to fulfill (p. 1). Importantly, each purpose provided may cause educators to question the method their district is using to compile and report grades because many of the aforementioned grading and reporting methods fail to meet the

district's intended purpose. For instance, the first reason for grading that Johanson cited was that grading is "to communicate the achievement status of students to parents and others" (p. 2). Johanson believes this idea implies that grading is done to involve parents in the education of their children. However, grading systems that provide only a letter grade or a percentage fail to really break down the area of help a student may need to improve and therefore limit a parent's involvement (p. 2).

The other purposes of grading that Johanson (1993) cited do not align with many of the most popular grading and reporting systems. A second reason was to "provide information students can use for self-evaluation" (p. 2). Similar to communicating with parents, however, letter grades and percentages give students little feedback for self-evaluation. A third reason is to "select, identify, or group students for certain educational paths or programs" and another is to "evaluate the effectiveness of instructional programs" (p. 3). While some inferences can be made by educators regarding grouping or effectiveness of programs, most grading systems leave educators without key information they need to make such substantial decisions. The fourth reason he cited is to "provide incentives for students to learn" and a fifth is "to provide evidence of students' lack of effort or inappropriate responsibility." All grading systems can provide some sort of incentive and all can punish students for lack of effort. Problems may exist, however, when educators use grades to report curricular skills and knowledge, yet use them to reward or punish at the same time.

"All of these purposes of grades may be legitimate, but [educators] seldom agree on which purpose is most important," Guskey said (Guskey & Bailey, 2001, p. 147).

We frequently ask participants [of workshops] to rank order these six purposes...in almost every case some portion of the group ranks each one of the six purposes as first – even when the group consists of teachers from the same school. And that is precisely the problem. (Guskey & Bailey, 2001, p. 148)

Because teachers often grade as they were graded as students, they engage in practices that work against their purpose. So even if educators can agree on a purpose, they often resent the fact that change may be necessary to avoid taking away from that purpose (Guskey & Bailey, 2001).

For instance, giving students zero grades for missed assignments is a practice many educators engage in (Wormeli, 2006, p. 42). So, if teachers can agree that grades should “communicate the achievement status [of curricular standards] to parents and students” (Johanson, 1993, p. 2), then it is wrong to give zeroes because they distort a student’s achievement status. In his book, *Fair Isn’t Always Equal*, author Wormeli (2006) discussed the inaccuracy “forgetting to record a temperature” caused in a list of Virginia summer temperatures. He showed that temperatures of 75, 82, 80, and 83 have an average temperature of 80. However, if the recorder forgot to record the temperature on the fifth day, and that temperature is listed as a zero, the average becomes 64 degrees, which is an inaccurate representation of the summer weather in Virginia (Wormeli, 2006, p. 117). Grades work similarly. One single zero can skew the ability of a percentage to show a student’s true knowledge and skills as related to the curricular goals. Guskey said, “Obviously, if the grade is to represent how well students have learned, then the practice of assigning zeros clearly misses the mark” (Guskey & Bailey, 2001, p. 143). Similarly, extra credit can distort a score, too. It is possible for a student to earn extra

points doing things like supplying the class with Kleenex. In doing so, his score is distorted because it no longer addresses the student's ability to meet curricular goals, but rather his ability to provide the class with Kleenex (Guskey, 2012, p. 140).

Another grading practice that possibly distorts grades is grading on a curve. Grading on a curve allows a teacher to maintain a rigorous curriculum, perhaps even going beyond a written curriculum, because one can adjust student scores to assure that the best students in the class are properly rewarded with an A. However, in doing so, grades are no longer showing students how they are performing in relation to curricular standards, but how they are performing in relation to their classmates (Guskey, 2012, p. 141). Guskey wrote

grading on the curve makes learning a highly competitive activity in which students compete against one another for the few scarce rewards (high grades) distributed by the teacher. Under these conditions, students readily see that helping others become successful threatens their own chances for success.

(Guskey & Bailey, 2001, p. 141)

So again, if a school's purpose of grading is to help students gain information necessary for self-evaluation, a curved grade provides little more than an opportunity to self-evaluate one's relationship to other students. A minimal amount of self-evaluation of progress towards curricular goals takes place in a curving system (Guskey, 2012, p. 142).

Similarly, dropping scores is yet another practice that works against getting students to monitor their progress towards learning goals. Depending on the manner in which scores are dropped, it is possible for a student to earn a high score, even an A, without achieving proficiency in every curricular goal (Guskey, 2012, p. 142). The

scores identifying skills in which a student may be weak may have been dropped, and while this means the student may finish the semester with a higher score, the grade fails to communicate the student's true ability (Guskey & Bailey, 2001, p. 143).

Research-Based Strategies vs. Willingness to Change Tradition

Unfortunately, Guskey (2012) believed, old habits die hard. Even when teachers are shown the advantages of grading for one way or another, they choose to avoid changing practices such as using zeros, extra credit, curving, dropping scores, and other traditional methods used while grading in the classroom (Guskey & Bailey, 2001, p. 148). Getting teachers to agree on a grading purpose and then to alter grading practices to adhere to a grading purpose is a tough endeavor for any school system. However, this is an endeavor schools must strive to achieve if it is to succeed in using grading and reporting as a strategy for closing achievement gaps (Guskey, 2012).

Zemelman discussed why change is difficult for educators (Zemelman, 2005, p. 266). "Teachers, students, parents, and principals go through many learning steps to make new approaches work," his book said. "They need time and positive support through structures and relationships as they grow...and they have many questions that must be respected" (Zemelman, 2005, p. 267). His work went on to stress that changes forced onto educators will lead them not only to rebel but to forget the spirit of the changes. "The strategies described in this book...all aim for children to make more thoughtful choices, ask questions, and become invested in learning," the book said. "Forcing teachers to adopt a new pedagogy without developing ownership of it just about guarantees weak execution, disappointing results, and eventual rejection of the effort" (p. 267).

Other researchers have written about the complexities that impede educational change, including Lortie (1975) who wrote the sociological study of teachers called *Schoolteacher*. This book may have been ahead of its time when Lortie highlighted the fact that teachers “spend most of their careers isolated in cellular classrooms” (p. 17). Lortie went on to write, “While there are some wonderful exceptions, not nearly enough principals understand how to balance commitment to high expectations with nurturing and support” (p. 17).

Researcher Hargreaves (2003) agreed with Lortie, adding “Deep professional learning involves more than workshops or in-service training in government priorities...implementing change effectively requires time to understand, learn about, and reflect on what the change involves and requires” (p. 108). Hargreaves goes on to point out that even for the best teachers, change can be hard intellectual work. “Learning to teach better, to be a continuously improving professional, involves more than implanting other people’s ideas and agendas compliantly” (p. 108).

Change, researchers found, is especially tough when it comes to getting teachers to buy-in to the standards movement (Zemelman, 2005, p. vii). In *Best Practice*, the author reported

Most teachers don’t like the standards movement. Don’t believe us? Just bring up the topic of standards with a roomful of teachers and watch what happens...their faces immediately take on an expression of one of Dracula’s about-to-be-victims in those old horror movies. (Zemelman, 2005, p. vii)

Zemelman then goes on to ask “How did standards become a dirty word – or at least one that invokes wildly mixed feelings among educators?” (Zemelman, 2005, p. viii). He

answered this question by saying, “All the standards documents rejected schooling *as usual*. All called for classrooms filled with challenging, authentic, and collaborative work – a big break with past practice” (Zemelman, 2005, p. viii).

The research of Guskey and Bailey (2001) showed that teachers must agree on the reasons for grading before an appropriate system may be selected. He wrote, “reform initiatives that set out to improve grading and reporting procedures must begin with inclusive, broad-based discussions about the purpose that involve most stake-holders” (p. 156). No matter who the stake-holders are in the grading and reporting discussion, it is important that all stake-holders, whether teachers, principals, or parents, have background knowledge of grading and reporting options and have comprised philosophies regarding purpose (p. 156).

Focus on Standards Can Lead to Gradebook Providing Feedback

Educational researcher Hattie (2009) may provide direction to educators seeking a common purpose for gradebooks. He released a thorough review of education practices in his 2009 book *Visible Learning: A Synthesis of over 800 Meta-Analyses Relating to Achievement*. His goal was to take educational studies over the past 30 years and to rank education practices from most effective to least effective. At the top of his list of effective education strategies is student self-reflection around learning objectives, suggesting that schools should be doing everything in their power to guarantee this is happening (p. 120). While his research did not directly consider the effect of online gradebooks, many of his strategies may be incorporated when students have a clear understanding of where they are in reference to their learning goals, an understanding the online gradebook could provide if a standards-based format were used (Guskey & Bailey,

2001, p. 124). Of the strategies Hattie's research proves most effective, three within the top ten have something to do with grading, feedback, and providing students with formative assessments from which they can learn (p. Appendix B).

Research suggesting incorporating strategies such as these has increased a focus on standards in the world of education. "Educators have recognized the need to assess students' achievement according to state standards," said Adrian (2012), a Washington State University researcher (p. 17). However, the creation of the standards alone was not meant to be the driving force that would increase student learning. Rather, it was focused learning using the standards that educators believed would distinguish this initiative's success (p. 17). The National Governors Association Council of Chief State School Officers designed the standards with several intentions in mind, the first of which was to make expectations clear for students, parents, teachers, and the general public (Common Core State Standards Initiative, 2013). However, with the release of the standards, the team indicated that they expected educators to "evaluate policy changes needed to help students and educators meet the standards" (Common Core State Standards Initiative, 2013). The initiative does not bind states or teachers to specific strategies, but does expect education leaders to "implement effective strategies for their students by providing benchmarks for skills and knowledge" (Common Core State Standards Initiative, 2013). A primary strategy for using standards in the classroom is standards-based grading. When the gradebook is transparent to students, parents, and others, as Internet gradebooks are, the standards-based gradebook allows the self-reflection, goal-setting, and formative assessment (Adrian, 2012, p. 26). The research of Hattie (2009) deemed

these worthy purposes for grading, but educators often fail to connect the construction of a gradebook to its ability to provide increased feedback (Guskey, 2012).

The relationship between grading and feedback was the connection that Guskey (2012) wanted educators to make when choosing what grading practices will be used in a district, school, or even a teacher's individual classroom. Chappuis agreed with Guskey in writing her 2009 book, *Seven Strategies of Assessment for Learning*. She wrote, "when learning to play a sport, student athletes practice regularly, with feedback, before they are expected to play in the game that counts toward the team record" (Chappuis, 2009, p. 55).

Coaches don't teach their sport by scheduling twenty games and then pulling players out during the game to introduce the fundamentals. They schedule practices to get in as much time with their players as possible before the first game of the season. (Chappuis, 2009, p. 55)

The sports analogy used by Chappuis is designed to show the differences between the regular classroom and what is considered logical practice in a different realm: the world of sports. "Effective feedback in the classroom operates much the same way (as practicing for a sports competition)," Chappuis said, "its role is to help students identify where they are now with respect to where they are headed, and to prompt further learning" (p. 55).

The gradebook is one tool that educators can use to show students "where they are now with respect to where they are headed" (Chappuis, 2009, p. 55) and other education researchers agree. Sadler (1998) said,

Formative assessment does make a difference, and it is the quality, not just the quantity, of feedback that merits our closest attention...we now [realize] we have to understand not just the technical structure of the feedback, such as its accuracy, comprehensiveness, and appropriateness, but also its accessibility to the learner as a communication. (Sadler, 1998, p. 80)

Sadler believed the gradebook could be an accessible tool for students to use to track progress towards goals. Shepard (2000) wrote that gradebooks can best be used as an accessible tool for students to track progress when the gradebook is focused on standards rather than giving students solely an overall mark for one's performance (p. 8). He pointed out that gradebooks that focus on the "person" rather than the "task" offer little opportunity for student self-growth. He wrote, "When evaluation focuses on the person rather than the task...feedback is not always or even usually successful" (p. 10).

Chappuis (2009) wrote that feedback, "directs attention to the intended learning, occurs during learning, and limits corrective information to the amount of advice the student can act on" (p. 56). Each of these elements of feedback can be accomplished with a gradebook focused on learning standards (Guskey & Bailey, 2001, p. 160). Chappuis cautioned educators, however, not to let a gradebook reflect practice work. "Assigning grades to practice work inhibited further learning and students ignored comments when they were accompanied by grades," Chappuis said (p. 65).

Black (2009) pointed out that feedback must be done with clear standards in mind. He wrote, "When anyone is trying to learn, feedback about the effort has three elements: recognition of the desired goal, evidence about present position, and some understanding of a way to close the gap between the two" (p. 143). He pointed out while

there are multiple ways to keep a student abreast of present position and progress towards closing the gap, a place students will look often is the place where their class grade is kept (p. 43).

The Relationship between Grading and Frequent Formative Assessment

Frequent formative assessment (prior to assigning a grade for a skill) is another quality that fell into Hattie's (2009) "top ten" (p. Appendix B) that ties itself to effective feedback and to grading. Chappuis (2009) argued that educators cannot have one effectively working without the other (p. 57). Frequent formative assessment allows students an opportunity to self-assess and set goals. Harlen (1997) wrote, "Formative assessment requires that pupils have a central part in it...unless they come to understand their strengths and weaknesses, and how they might deal with them, they will not make progress" (p. 372). By using frequent formative assessment, Chappuis argued, students will "self-assess and set goals . . . [developing] an internal sense of control over the conditions of their success and greater ownership of the responsibility for improving" (p. 95). Chappuis also argued that students who engage in such formative assessments, self-reflection, and goal setting can also cause students to value the descriptive feedback of the teacher more than they otherwise would have (p. 95).

Wormeli (2007) also became an outspoken advocate for standards-based gradebooks, frequent formative assessments and effective feedback when he published *Differentiated Assessment and Grading*, leading off his book with the following mindset: "What we teach is irrelevant. It's what students carry forward after their time with us that matters" (p. 4). He highlighted a common reason teachers fail to buy into standards as being because teachers sometimes see differentiated instruction and standardized testing

to be oxymorons (Wormeli, 2007, p. 7). Wormeli (2007) also discussed teachers' inability to agree on what constitutes mastery of standards as the reason why they fail to develop ownership in them (p. 20). He used an example where he asked what the standard of excellence is for tying a shoe and asked what the student can do who has mastered tying his shoe (Wormeli, 2007, p. 31), and his purpose in doing so was to point out that even in cut-and-dry cases such as shoe tying, there are still debates from teachers as to what mastery of tying a shoe might be. He also points to a problem DuFour and Eaker (2004) refer to in their book, *Whatever It Takes*, when he addressed the "problem" schools deal with when a student already knows how to do what the class is learning and the philosophical questions that arise when the teacher wonders whether to hold the class to the standard of the student who already knows the information and whether or not to require the advanced student some sort of advanced responsibility to earn the same score as less-able peers (p. 24).

Dweck (2009) agreed with Wormeli's view of standards as important to differentiated instruction, echoing that students will grow when they have a chance to develop a "growth mindset" (p. 6). She wrote educators must "distinguish between students with a fixed intelligence mindset who believe that intelligence is innate and unchangeable and those with a growth mindset who believe that their achievement can improve through effort and learning" and pointed out that those who fall into the former rather than the latter must be taught to have a growth mindset (p. 6). "Teaching students a growth mindset results in increased motivation, better grades, and high achievement test results," she said (p. 6).

The world of education put a “stamp of approval” on focusing on standards, feedback, and frequent formative assessment when it developed the Common Core State Standards (Guskey, 2012). In Guskey’s December 2009 article, “Getting Curriculum Reform Right,” he tells of his high school American history class. In it, he recounts a situation where class spent the first week covering from 1490 to 1860, only to spend the next 20 weeks covering the Civil War, because his teacher was a “Civil War addict” (Guskey, 2009, p. 38). Guskey (2009) wrote, “As students we were cheated...we did not recognize it at the time, but the class was not an American history class, it was a Civil War class, and not a very good Civil War class at that” (p. 38). Guskey (2009) went on to explain that this is why standards are important. “Had standards for student learning been developed for the class, that situation could have been avoided” (p. 38). Guskey (2009) is an advocate for standards because they “help educators focus instruction and align it with assessments of student learning” and he believes the adoption of the Common Core State Standards will better push teachers to focus on these standards, as well as feedback and formative assessment around these standards.

Feedback can be Positive, even when Results are Negative

While the need for feedback may be prevalent in discussions about grading and gradebook reform, it should be stated that most educational researchers believe feedback is only productive and boosting of self-confidence if the feedback is accurate. In her article, *Grading Exceptional Learners*, Jung (2010) wrote

when students receive inflated grades based on material that is not appropriate to their skill level, they actually lose motivation. For self-confidence to be built

around grades, the feedback has to be accurate, and students know whether they should truly feel good about a grade or not. (p. 4)

Along these lines, students also recognize when one teacher is easier than another, allowing grades to increase. In his research brief *Grading Considerations in Math Classrooms*, Williamson (2009) of Eastern Michigan University described the results of his study, which measured the difference between the grades freshmen received on the same assignment from different teachers. His study showed that just 45% of the time, the student received the same score and 38% of the time the grade was one letter-grade different. However, 11% of the time it was two grades different, and 6% of the time it was three grades different.

Guskey's (2012) research demonstrated his belief that exploration of grading practices and the instructional philosophies that accompany grading conversations reveals the great depth of thought that has gone into determining the best way to grade and the best way to report those grades. However, ironically, most teachers will develop their initial grading strategies based on the way – or on a mixture of the ways – one was graded in high school and college (Hattie, 2009, p. 109).

The Advent of the Internet Gradebook

The electronic gradebook likely began with the advent of the electronic spreadsheet in 1978 (Poole, 2007). However, not until Internet became more commonplace in the home did Internet gradebooks become prevalent. In 2002, 58.5% of the U.S. population was using the Internet and many Internet gradebook companies got their start, but it was not until 2006 when there were over 92 million websites online that Internet gradebooks became the norm in American school districts (Poole, 2007).

Infinite Campus is one gradebook program that got a bit of a head start. In 1996, it launched an online gradebook website for the Centennial School District in Circle Pines, Minnesota (Our History, 2014). They claim to be the first web-based student information system. Today, this company serves over five million U.S. students in 43 different states. Their CEO Charlie Kratsch has published the following statement on his company website: “Today, many have observed that our K12 educational system is broken as if something was changed to cause its demise. In fact, our schools are struggling because they have not changed to keep pace with the new information economy” (Our History, 2014), suggesting that online gradebooks are part of the answer to helping education thrive. “We believe that information technology is the catalyst that will transform education as it has other sectors of society,” Kratsch said (Our History, 2014).

Gradebook Portal (2008) is another Internet gradebook program that believed its features can change education, and they believed in 2008 that they could change education for free. This online gradebook is still free and offers teachers many of the same features that for-profit gradebook companies offer. “Teachers have the freedom to work from home or from their favorite coffee shop,” said an online report (GradeBook Portal, 2008). “Teachers also have the ability to attach assignments to the class calendar for parents and teachers to stay side by side of what work needs to be accomplished for each class” (p. 1). Companies such as these have life because students of the 21st century have the mindset required to gain from a gradebook that is available on the Internet at every hour of the day.

The 21st Century Learner is Prepared for a Gradebook Overhaul

In her article *What Parents can Learn from Their Tech-Savvy Teens*, Kiles (n.d.) asked, “Who can teach these days better than children? Kids are practically born with a wireless mouse in their hands. It starts in the early years with electronic educational games that teach kids their numbers and colors, states and presidents” (p. 1). She continued to point out that today’s school-age children are “technocrats loaded to the gills with technology, and it’s all we can do to keep up” (p. 1). While some adults may claim to be just as tech-savvy as high school students, Kiles’ argument was that teens are very capable of managing technology. This argument reveals that this era is an excellent time to use technology for anything teens need to do, including monitoring learning with Internet gradebooks.

Poole (2007), an associate professor of education and instructional technology at the University of Pittsburgh, has published research that suggests educators are failing if they don’t get students using Internet gradebooks for reflection and goal setting around learning goals. He wrote, “Many teachers believe they can do a satisfactory job by assessing and recording grades the old-fashioned way...unfortunately, [these] methods used by teachers, even when they are conscientiously done, fail to inform students or their parents where the students stand” (p. 1). Internet gradebooks allow students to take learning beyond the classroom walls, and they are prepared to do it (p. 1). Poole argued that today’s teens are hungry to gather as much information as possible, especially when it is about themselves. He wrote, “When we are informed about something, we become less uncertain – more sure – about that particular piece of knowledge. Information reduces doubt; increases certainty; makes us more informed” (p. 1). Poole’s research

suggested that teens are able to make sense of data in gradebook programs, if the gradebook is constructed in a way that allows data to be analyzed. “Good gradebook programs facilitate the gathering of data about student work, organize it, and make it more meaningful by comparing it with other relevant data,” he wrote (p. 1). “Good gradebook programs make it easy to share or transmit the data to all those who need to know” (p. 1).

Internet gradebooks are special when they can provide tech-savvy students with information to dissect, Poole (2007) argued. “Today, with ubiquitous availability of the world wide web, the best gradebook programs...compare grades, show patterns of progress – or the lack of it...and create visualizations of the data in the form of graphs and charts or presentation and reporting purposes,” he wrote. “The goal of a good gradebook program is simple: data transformed into information enables students, teachers, administrators, and parents to better assess a student’s progress in school” (p.1).

Conclusion

The manner in which gradebooks have been constructed has stayed the same over several decades, but Internet visibility of these gradebooks may constitute a change that makes feedback, self-reflection, and goal-setting around learning standards a more prominent part of a gradebook’s purpose. Researchers are encouraging educators to make the construction of the gradebook align with philosophies like these; however, many educators have continued to cling to traditional methods of gradebook construction. If the information in this literature review reveals nothing else, it confirms that the tech-savvy, information-hungry teens are going to gather data, but the value of the data they receive will vary based on the decisions educators make regarding the construction of the

gradebooks students see online. Though many gradebook construction methods exist, many researchers point to the value of the standards-based gradebook. The purpose of this study was to explore the differences of grading philosophies and gradebook strategies in the 21st century, where online gradebooks are becoming much more common, giving teachers and school leaders the ability to best use the transparent online grading system to enhance student self-reflection, goal-setting, and actual learning. How this is done with a standards-based gradebook as compared to a traditional gradebook will be revealed.

Chapter Three: Methodology

The purpose of this study was to connect the use of the type of classroom gradebook to learning. While the gradebook has been used as a tool for documenting learning for centuries, only recently have educational researchers begun to push teachers to use the gradebook as an actual tool for learning (Wormeli, 2006). Technological advances have increased the transparency of the gradebook to the learner. Arguably, this should allow students to self-reflect on their learning and to set goals for future lessons. It may be easy to believe that any human may be able to self-reflect and set goals more effectively and efficiently if more data is available to help meet that goal. This may be why many educational researchers have concluded that online gradebooks should positively affect a student's ability to do so (Guskey, 2012). However, the extreme disparity among the types of gradebooks from district to district, school to school, and even classroom to classroom suggests that online gradebooks could have muddled the self-reflection and goal-setting process rather than helped with the process.

One proposed method of gradebook clarification is the use of a standards-based gradebook. A standards-based gradebook is different from a traditional gradebook in that the standards-based uses numbers or symbols to record measures of defined skills, whereas the traditional uses numbers or symbols to record measures on assignments. In the traditional gradebook, a student may receive a score for a test, quiz, essay, or worksheet. However, in the standards-based gradebook, that same test, quiz, essay, or worksheet would not be recorded as such. Instead, the skills associated with the test, quiz, essay, or worksheet are disaggregated and recorded in the gradebook, shifting the focus of the learner from assignment score to skills proficiency or deficiency. This study

may show whether or not using an online standards-based gradebook contributes to an increase in learning among students.

The primary research question in this study was: What are the differences in understanding of learning goals and student growth towards those goals when teachers use an online, standards-based gradebook compared to an online traditional gradebook? This question was supported by two sub-questions: What are the pros and cons of arranging an electronic gradebook by standards rather than by assignment, as the traditional gradebook does? and What are the gradebook preferences of teachers, students, and their parents? Preferences were important to this research only because the comfort-level of teachers, students, and parents in using a non-traditional gradebook may affect the effectiveness of such a strategy. Researcher Guskey (2012) believed that teachers often grade in a way similar to how they were graded as students; there is a comfort in doing so. Consequently, even if standards-based grading is a strategy that has the potential to change a student's ability to self-reflect and set learning goals, the comfort of the teacher to operate in such a system is paramount to success. The teacher's comfort-level was documented in this research.

In order to answer the research questions associated with this study, focus groups were formed including students, parents, and teachers. In his book *Designing Social Inquiry*, author King (1994) discussed “designing research that will produce valid inferences” (p. 1). Qualitative studies, he believed, could be designed to “unearth enormous amounts of information” when linking with case studies where the focus is on a particular event, decision, institution, location or issue (p. 4). As a result, the methods used to respond to the research questions of this study focused on three distinct types of

cases: study of students' abilities to self-reflect and set goals with a variety of gradebook constructions, a study of parents and their understandings of the online gradebooks, and a study of teachers' comforts with non-traditional grading philosophies.

Lastly, part of this study included a statistical analysis of student growth towards mastery of learning goals in both traditional gradebook classrooms and standards-based gradebook classrooms. Students in multiple classrooms using the two different gradebook methods took a pre-test and post-test; so that it could be determined whether student learning increased or not. Due to the quantitative nature of this portion of the research, the study also included an alternative hypothesis that reads: Students who have grades communicated through an online standards-based gradebook will demonstrate greater growth in learning than those students who have grades communicated through a traditional gradebook, as evidenced by growth between pre- and post-assessments over learning goals used in a unit of study. A z -test for difference between two independent means was used to determine if this alternative hypothesis could be supported, or if there was an inability to reject the null hypothesis: Students who have grades communicated through an online standards-based gradebook will not demonstrate greater growth in learning than those students who have grades communicated through a traditional gradebook, as evidenced by growth between pre- and post-assessments over learning goals used in a unit of study.

Research Setting and Participants

One St. Louis Area high school was selected to generate the data for this study. This high school was selected because school leaders elected to allow its teachers to choose whether or not they would like to incorporate a standards-based gradebook into

their classroom format. Some teachers elected to use a standards-based gradebook, as opposed to a traditional one, in all of their classes. Other teachers elected to use the standards-based gradebook in one or some classes. Likewise, others elected to use a standards-based gradebook only for some units within the semester in one or more classes. Some teachers elected not to use a standards-based gradebook at all, electing to use a more traditional method of grading. This diverse use of gradebooks allowed this high school to be an ideal location for a comparative study of the effects of the use of types of gradebooks to take place, and for the qualitative study of the views of groups of students, parents, and teachers to take place.

Table 5

Variety of Gradebooks at School of Study

# of Teachers	Type of Gradebook
22	Traditional Gradebook
4	Standards-Based Gradebook in One or More Classes for Whole Semester
7	Standards-Based Gradebook in One or More Units, but not in any one class for the whole semester

This high school was a Catholic high school that advertised itself to be a college preparatory high school, meaning only students with true college aspirations were admitted. However, those admitted to this college preparatory high school were not always as prepared for the college preparatory environment as the school would have liked. This school had a number of students with learning needs that may or may not have been identified prior to admission.

To help those students with learning needs, the school employed a “Learning Consultant,” which is indicative of the fact that the school admitted many students with

learning needs, similar to its public school counterparts. The Learning Consultant worked with students who had Individualized Education Plans, as well as those with other learning modifications. The existence of students with learning needs was important to this study, as it is comparing gradebook practices and how they help enhance learning.

The school also enrolled a number of students in challenge courses, as well as Advanced Placement courses. Forty-one percent of students at this high school took at least one challenge or Advanced Placement course. Twenty-six percent of these students took more than one. Additionally, this high number of students in challenge and Advanced Placement classes was also important to this study, because a study of the effects of the use of different types of gradebooks could show learning growth in those students who were strong learners.

Students, their parents, and teachers were asked to participate in focus groups and interviews to compile the data necessary to answer the research question. Each of the focus groups included six to eight students, parents, or teachers. Each participated in a setting separate from the other two groups. Voluntary participants were recruited from students, parents, and teachers at the school of study. Some student participants were members of the classrooms of teachers who volunteered to allow their use of a standards-based gradebook to be studied. Other student volunteers were members of classrooms of teachers who were willing to serve as a part of the control group, allowing their use of a traditional gradebook to be studied. Student focus groups were comprised of students from these classrooms, and also included both students with individualized education plans, as well as those who were in challenge and Advanced Placement classes. Parent

participants were requested from the student populations of these classrooms and then randomly selected from those who were willing to volunteer. Six teachers who participated were part of a focus group.

Instrumentation

Interview questions for the qualitative portion of the study were developed by sharing a variety of gradebook types with students, teachers, and parents. They were asked what questions came to their minds when viewing the gradebooks. Additional questions were developed by considering research, and comments of colleagues. The questions were shared with Lindenwood University's Institutional Review Board before being used formally with the students, parents, and teachers.

Data for the quantitative portion of the study was compiled from scores on pre- and post-tests that were created by the teachers at the school of study. These tests were the same in some cases, but in other cases were similar only in the learning goals, meaning, the questions or exercises were similar, but composed differently.

Gradebooks are Rich in Variance

Before revealing the student improvement results associated with traditional and standards-based gradebooks and analyzing the gradebook format that affected those results, it may enrich understanding of gradebook study to explore the variance of traditional gradebooks in the study site high school. Even though the gradebooks studied were the product of teachers in the same building and, in some cases, the same curricular department, quite a bit of variance existed between the gradebooks studied in both the control and experimental group.

Teacher A was a teacher of sophomore English classes. In the second quarter of the 2012-2013 school year, he recorded 13 assignments in the gradebook ranging from 10 to 75 points. Participation was one grade, worth 50 points. However, he had his gradebook preset to make participation worth 20% of the grade. Homework and quizzes were worth 30% of the grade, while tests were worth 50% of the grade. Another sophomore English instructor, Teacher B, taught directly across the hall and has a common planning time with this teacher. Her second quarter gradebook, however, was much different. She had 17 assignments ranging from 5 to 75 points, and while participation was one of them, it was only worth 10 points. However, it was also set to be 20% of the grade. The biggest difference, however, was in the preset percentages she had set-up. Aside from the 20% for participation, she had 30% determined by homework grade. All other assignments made up the final 50%. Additionally, this teacher had additional extra credit assignments. This was different from Teacher A, who did not record any extra credit in his second quarter scores.

Teacher C was also an English teacher; he taught Junior English. However, differences greater than the grade-level he taught were apparent in his gradebook. He had a total of nine assignments for third quarter, and participation was not included in any way. His grades were also not weighted in any way, so the quarter grade was simply an average of all assignments. Significantly, his highest score was 30 points, or 45 fewer than the high scores of his colleagues. He did not allow extra credit. See Table 6 for comparison of characteristics in gradebooks for teachers A, B, and C.

Table 6

Gradebook Comparison of Teachers A, B, and C

	Total # of Assignments	Point Range	Participation Included in Grade?	Final Grade Determined by...	Extra Credit?
Teacher A: English	13	10-75	Yes (50 Points)	Participation = 20% Homework/ Quizzes = 30% Tests = 50%	No
Teacher B: English	17	5-75	Yes (10 Points)	Participation = 20% Homework = 30% All other = 50%	Yes
Teacher C: English	9	5-30	No	No weight; average of all assignments	No

Teachers of varying departments yielded even greater variance in gradebook format. Teacher D was a Spanish teacher. She had 24 different assignments, but five of these assignments were identified as participation in one activity or another, for a total of 45 points. She also accepted extra credit and, different from the sophomore English teachers, made a workbook a large part of her grade (35%). Teacher E was a religion teacher who was similar to Teacher D only in the way he weighed participation. Both Teachers D and E had five different assignments equaling 45 and 40 points, respectively. However, while Teacher D recorded extra credit, Teacher E did not. The most drastic difference came in the weight of tests. While Teacher D weighted tests at 45%, Teacher E weighted them at just 25%, a difference that could drastically affect a student's grade.

Similar to Teachers D and E, Teachers F and G also were extremely different. However, both of these teachers had the highest number of assignments of all the teacher gradebooks studied. Teacher F, a teacher of social studies, had 26 assignments ranging from 5 to 48 points. He accepted and recorded extra credit, counted participation, and broke the final grade into five categories, including daily work (30%), quizzes (10%), participation (5%), tests (45%), and projects (10%). Teacher G could not have been more different. She did not record extra credit nor did she count participation towards the grade. And while Teacher F had 26 assignments worth a maximum of 48 points, Teacher G had 33 assignments worth as much as 81 points.

As drastically different as traditional gradebooks can be, the differences between a traditional gradebook and a standards-based gradebook defy many of the norms that can be found in the traditional gradebooks studied. For instance, the number of assignments was not represented in the gradebook. Instead, the number of skills focused on takes the place of these assignments, and it was possible that five to 10 skills may be all that are focused on in a given grading period, depending on the type of class, its curriculum, and the length of the grading period (Marzano, 2001). Also, it was very uncommon for a specific skill to be worth anywhere near the 81 points given to an assignment in the gradebook of Teacher G. Often, skills are worth anywhere between 4 and 10 points, or no points at all and represented by symbols instead. See Table 7 for comparison of characteristics in gradebooks for teachers D, E, F, and G.

Table 7:

Gradebook Comparison of Teachers D, E, F, and G

	Total # of Assignments	Point Range	Participation Included in Grade?	Final Grade Determined by...	Extra Credit?
Teacher D: Spanish	24	10-43	Yes (45 Points)	Participation = 20% Workbook = 35% Tests = 45%	Yes
Teacher E: Religion	18	10-30	Yes (40 Points)	Participation = 25% Homework = 30% In-Class Assignments = 25% Tests = 25%	No
Teacher F: Social Studies	26	5-48	Yes (56 Points)	Daily Work = 30% Quizzes = 10% Participation = 5% Tests = 45% Projects = 10%	Yes
Teacher G: Math	33	4-81	No	Quizzes = 15% Homework = 30% In-Class Assignments = 15% Tests = 40%	No

While a standards-based gradebook could be similar to a traditional book in the way that a final grade is comprised of many categories, the traditional categories were more so activity specific, while the standards-based categories are commonly more curriculum standard specific. Participation was sometimes represented as a skill or standard in a standards-based gradebook, but extra credit was uncommon, if used at all.

To best understand the composition of standards-based gradebooks, their differences from traditional gradebooks, and most importantly, their effect on student learning growth, several student-learning analyses were conducted, studying the growth of students in both types of gradebooks.

Recruitment and Selection

Participants in this study were recruited with the assistance of teachers who agreed to participate in the study. Students, their parents, and teachers were sought to participate in the focus groups and interviews. Initially, a letter seeking permission to study gradebooks at the selected high school was submitted; then letters to individual teachers seeking permission to study their classrooms and gradebooks were submitted. After gaining this permission, letters were sent home to the students of the teachers who had granted permission for the study to take place in their classrooms. These letters were signed by the parent or guardians of the student volunteers, as most were under the age of 18. Lastly, volunteers were sought to participate in the parent focus group, and permission for their participation in the study was sought at the time the focus group took place, prior to the beginning of the focus group.

Qualitative data for this study was collected from a minimum of 20 students, parents, or teachers from the high school that had been selected for the study. An effort was made to select an equal number of male and female participants in the initial study. Participants in the study were informed of their right to withdraw from the study at any point.

Procedure

January 2013: Qualitative studies. The qualitative study of students was conducted through a variety of focus groups. One group consisted of students from the study site high school. These students were chosen randomly from students who generated data for the quantitative analysis of learning growth. If the selected students were not willing to participate or parental consent could not be obtained, new students were selected at random until six to eight students had been chosen. These students were asked to respond to a variety of questions to determine their perceptions of the use of gradebooks. Next, students were presented with gradebooks that were created using a variety of formats and asked to self-reflect and set goals for fictional students represented in these gradebooks. The complete list of student questions follows:

1. Is the gradebook a support of your learning, is it simply a device for viewing grades, or is it a hindrance of your learning?
2. Do gradebooks measure ability, motivation, or both?
3. How much of a grade is ability?
4. How much of a grade is motivation?
5. What are some differences in the gradebooks of which you have been presented?
6. Which gradebook provides you with the most information? Why?
7. What features do you like about one gradebook as opposed to another?
8. Using Standards-Based Gradebook A, can you identify the skills this student is good at?
9. Using Traditional Gradebook A, can you identify the skills any individual

students are good at?

10. In Standards-Based Gradebook B, the teacher is using the “most consistent level” to represent a task, rather than an average. What do you think of that?
11. In Traditional Gradebook C, students 4 and 7 have a D. Can you determine why that is? What suggestions would you give this student to improve his or her grade?

The student focus groups and the interviews of students were conducted by the teachers who contributed data for the quantitative portion of the study. They took place during the students’ Contact Time in the Academic Conference Room of the study site high school.

A similar focus group was formed with parents from the study site high school to determine what they liked and disliked about gradebooks. These parents were selected at random following an invitation to participate via the school's Alert Now system. The focus group took place on a weekday evening in Academic Conference Room of the study site high school. Parents were given multiple gradebooks to look at and then answer questions about. These questions included:

1. What are some of the differences you notice between the gradebooks of which you have been presented?
2. Which gradebook provides you with the most information? Why?
3. How do you use the online gradebook to inform your conversations with your students?
4. Using Standards-Based Gradebook A, can you identify the skills this

student is good at? How might you use this with your son or daughter?

5. Using Traditional Gradebook A, can you identify the skills any individual students are good at?
6. In Standards-Based Gradebook B, the teacher is using the “most consistent level” to represent a task, rather than an average. What do you think of that?
7. In Traditional Gradebook D, there are 34 assignments. As a parent, do you like to see a high number of assignments? Why or why not?
8. In Traditional Gradebook C, student 18 has a C. If you were his or her parent, what advice would you give to the student in regards to getting that grade to rise?

Important to understanding how gradebooks are used is knowing the number of times a gradebook is accessed by students and parents. Because the first semester ended in December and grades were of paramount importance to students and parents, the number of times the gradebook was accessed in the three weeks of classes leading up to and including final exams was documented and analyzed to determine if there was a difference between the number of times a standards-based gradebook was accessed versus the traditional gradebook.

Another type of focus group included teachers from the study site high school. These teachers were the six who contributed data for the quantitative portion of the study. The focus group participated in a conversation after school hours, and responses were recorded by a teacher who was not participating in the study, but who was willing to

serve as a facilitator. The conversation was held in the Academic Conference Room at the study site high school. The group began by analyzing multiple gradebooks.

Teachers had the opportunity to share what they liked and disliked about the gradebooks they examined. They also discussed the possibilities of self-reflection and goal-setting using the gradebooks set before them. These gradebooks were created by the researcher, based on the variety of gradebook construction methods noted by Guskey and Bailey (2001) in their book, *Developing Grading and Reporting Systems for Student Learning*. Teachers then responded to the following questions:

1. Do zero grades fit on the 100-point grading scale?
2. What is the purpose of grading?
3. What does an *A*, *B*, *C*, *D*, and *F* communicate, respectively?
4. Should an *A* represent only the top five percent in a class?
5. What is your grading philosophy?
6. If you are the teacher who has input data into Standards-Based Gradebook C, what would you spend time teaching in the next class?
7. If you are the teacher who has input data into Traditional Gradebook A, what would you spend time teaching next class?
8. Standards-Based Gradebook D features skills, but no space for assignments. Could you see yourself using a gradebook like this? Why or why not?
9. If you were using Standards-Based Gradebook D, would you use numbers to represent a student's performance on each skill, or would you use another symbol of some sort?

To those who used Standards-Based Grading:

10. How did standards-based grading change your instruction?

To those who don't use Standards-Based Grading:

11. How could using a standards-based gradebook change your instruction?

February 2013: Document analysis. In February 2013, a document analysis occurred. Data was generated from viewing gradebooks at the selected high school. This analysis was used to determine the differences in number of assignments, points possible, and other similarities and differences from one class to another. Student and teacher names were removed from these gradebooks prior to analysis.

March 2013: Student learning measurement. An analysis of student learning also took place, measuring student improvement in two similar classroom settings; one in which the teacher was using a traditional gradebook while the second teacher was using a standards-based method. This analysis took place in two similar English classrooms, two similar math classrooms, and two similar science classrooms. Two English classes and science classes generated data for statistical analysis of student growth. One of each group of classes administered a pre-test and a post-test to students at the beginning and end of a unit, respectively, while using a traditional gradebook. Students in the second of each group of classes took the same pre and post-test. However, their teacher used a standards-based gradebook within the unit. An additional English teacher also administered pre-tests and post-tests within his classroom, but graded some sections of his course with standards and others with traditional grading. Two additional teachers, a math teacher and a yearbook publications teacher, measured growth in a standards-based system, though this data was not compared to similar students in a traditional classroom.

The teachers in the standards-based graded classrooms and in the traditionally graded classrooms were different people in some cases and the same in other cases. Some teachers at the study site high school elected to adopt a standards-based system in some of their classes, but not all. Data was analyzed to determine if students experienced greater learning gains in one classroom or another. Names of teachers and students were irrelevant were not be included in the entire study.

Also analyzed in March 2013 was student use of the online gradebook in the months of December 2012 and January, February, and March of 2013. This was evidence of when students were accessing the gradebook in an effort to measure the importance of the online gradebook to them. This research was designed to identify if the gradebook was being accessed on weekends and holidays, as well as different times of the 24-hour day. It also was designed to recognize the difference between regular use, and use during key academic periods such as mid-terms and finals.

While this data was not necessarily a part of the study that was formally analyzed, the number of accesses per student observably added to the relevance of the study if students were frequently accessing the online gradebook. This study existed because the online gradebook gave students an opportunity to use the gradebook as a tool for learning growth, should schools and teachers choose to use it in a way that promoted. As a result, the number of Internet accesses will be reported.

Protection of Human Subjects

The anonymity of the students, parents, and teachers who agreed to participate in this study was maintained in the analysis of the study in Chapters Four and Five. While individual subjects provided information to allow the researcher to derive inferences and

to form conclusions, at no point would actual names benefit the study. Possible identification of subjects was minimized with the researcher's confidential record keeping and use of participant-selected alias or pseudonyms in the interview and transcriptions. Students, teachers, and parents were made aware of this policy in writing prior to their participation. This research was approved by the University Institutional Review Board, which examined the design for potential human subjects risk.

Potential risks for participants included the participant feeling uncomfortable, embarrassed, or anxious about sharing personal thoughts. In order to address those concerns beforehand, participants were informed that their participation would not harm them in any way, but could potentially help educators improve use of the online gradebook. Importantly, participating in the study did not negatively or positively affect student grades due to the fact that the use of traditional or standards-based grading in the classroom was the option of the teacher at the selected high school, whether this study was taking place there, or not. Importantly, because the researcher worked at this school, a possible risk was positive or negative bias being formed by the researcher towards the subjects of the study. However, this possibility was eliminated by having a third-party person ask the questions and collect the answers in the focus groups.

Educators participating in the study were also informed that the researcher was not attempting to separate those who used the gradebook one way from those who used it another way. The goal of this study was to find facts about how the different types of gradebooks were used and/or could be used in the future to best benefit student learning. The wide variety of ways in which gradebooks are currently constructed prevented any

one way from being considered right or wrong, therefore protecting the subjects of this study.

To ensure the protection of participants' identities, the researcher recorded and stored each participant's selected alias or pseudonym next to one's real identity and contact information in a locked and password-protected spreadsheet to which only the researcher had access. The teacher's actual name was revealed to the researcher during the study, but only an alias or pseudonym was used in the researcher's conclusions, when it was necessary at all.

All interview notes, recordings, and transcriptions were secured on the researcher's password protected Microsoft Word and Microsoft Excel documents until a "reasonable amount time" (Creswell, 2008, p. 91) of three years passed from the conclusion of the study, and stored data was no longer be needed; at which time, all stored data was shredded or deleted.

While participants in the study were informed of their right to withdraw from the study at any point, the participants also were made aware that participation would not result in compensation in any way; consequently, no penalty would be assessed if participants left the study before it was completed.

Summary

The variety of focus groups used in this study, coupled with the analysis of student learning in six different classrooms, was designed to answer the question: What are the differences in understanding of learning goals and student growth towards those goals when teachers use an online, standards-based gradebook compared to an online traditional gradebook? The purpose of the study was not to determine what the right and

wrong way to grade may be, but rather to understand the amount of growth, self-reflection and goal-setting around learning objectives that students were able to manage with the advent of the online traditional gradebook and its transparency. Using multiple methods to find this data produced a variety of results that educators can use for future planning.

Chapter Four: Results

While the goal of this study was to determine if there was a relationship between the construction type of the gradebook and learning growth, it is important to recall a point made in the literature review: the Internet has heightened gradebook transparency, and the Internet is the reason why a movement from a traditional gradebook to a standards-based gradebook can even be considered. This was because the standards-based gradebook was designed to give students a snapshot of their current understanding of learning goals. From the data the gradebook provides, students can self-assess and strategize to improve current understanding. Without an opportunity to view progress on a regular basis, the standards-based gradebook would likely not even be considered as a feasible option for teachers to improve learning growth.

Because the gradebook's availability on the Internet is so important to this study, data regarding its usage was analyzed. The study of gradebook usage was limited only to students, as the web address accessed when students visit the gradebook was different from that of parents or teachers. The frequency of the appearance of the student address was the one that was measured.

The study site high school housed approximately 670 students in the 2012-2013 school year. Three students transferred from the school within or at the completion of the fall semester, but six additional students began attending the school in the spring. The number of students was significant only because the Internet gradebook was accessed 66,392 times from December 1, 2012 through March 31, 2013. This averages out to 99 times per student for Internet gradebook access in the four months of study. This meant the gradebook was accessed nearly every day, by every student, in this 121-day span;

students averaged access to the online gradebook 0.80 times per day in this span, even though spring break and other periods of expected downtime by students existed during the time of this study.

Online Gradebook Access: December 2012-March 2013

Not surprisingly, the Internet gradebook was accessed more when final exams and midterms were looming. In the week prior to the final exams of the 2012 fall semester (the week beginning Monday, December 10) and within the actual final exam week (December 17-21), the online gradebook was accessed 10,694 times. This was an average of nearly 16 times per student in these two weeks alone, or 1.45 accesses per day. Somewhat similarly, in the week before the spring 2013 midterms (the week beginning Monday, March 11) and the week of the actual midterms (March 18-22), students accessed the online gradebook 7,866 times. This was an average of nearly 12 times per student in this time period, or 1.06 accesses per day.

Interestingly, the Internet gradebook was almost always being accessed by students. On the Tuesday morning of the final exam week of 2012, the Internet gradebook was accessed by one student in the 2:00 a.m. hour, two more in the 3:00 a.m. hour, and then 32 times between 5:00 and 6:00 a.m.. Wednesday morning had 13 visitors in the 4:00 a.m. hour; Thursday had 18 visitors in that same time frame. Weekends were also a time students chose to stay focused on the online gradebook. In March, the gradebook was accessed 590 times on Saturday and Sunday, March 2-3; 653 times March 9-10; 471 times March 16-17; 335 times March 23-24; and 136 times March 30-31, after the students' spring break had begun.

Weekend Online Gradebook Access: March 2013

Sixteen students who had at least one class in which a teacher used a standards-based gradebook and one class in which a teacher used a traditional gradebook were studied to determine if their use of the online gradebook program increased due to the standards-based format. While the frequency of their online gradebook access was observable, a single access of the gradebook program gave students access to the gradebooks for all seven of their semester classes. Therefore, it was not possible to determine the duration they spent looking at the standards-based versus the traditional gradebook. The results of this analysis specific to the classrooms included in the study, however, did not yield any noticeable differences from the overall average use of the school's students. From December 1, 2012 through March 31, 2013, these 16 students accessed the online gradebook 1,642 times, or an average of 0.848 times per day.

While the students using a standards-based gradebook accessed the online gradebook an average of 0.04 more times than the student-body average, this was not a large difference. Interestingly, the standards-based group had a higher average than the student-body in every month except March, in the weeks up to and including midterm exams. It should be noted the 16 students whose online gradebook access was studied were all enrolled in a Honors Algebra I course. This may be important because each of these students had demonstrated enough care or concern for grades in the past to be recommended for an Honors course and then chose to enroll.

Whether a teacher was using a traditional online gradebook or one that was in a standards-based format, this study suggested that students see benefits to frequently accessing their course grades through use of the online gradebook. For this reason, a

student focus group explored student understanding of how gradebooks work and whether student preferences were for gradebooks composed traditionally or in a standards-based format.

Student Focus Group

The students selected to participate in the student focus group for this study were selected from the classes of teachers who were using a standards-based gradebook. Each of these students was also enrolled in a different course, which used a traditional gradebook, in the same semester. This arrangement was created purposely so that students were mindful of the two types of gradebooks during their participation. Additionally, because the standards-based gradebook was new to the study site high school, teachers thoroughly detailed the differences between a standards-based and traditional grading systems just weeks prior to the students participating in the focus group. As a result, these students were easily able to voice many different opinions regarding the positives and negatives of each type of grading system.

When asked to analyze their first experience with a standards-based gradebook, the students were able to voice many of the positives their teachers may have considered when they decided to incorporate a standards-based system into their classes. In the focus group, the students were asked to analyze five gradebooks that were pre-labeled as traditional or standards-based. The positive comments they made can be classified into comments regarding organizational benefits and those regarding clarity benefits.

Organizational and Clarity Benefits

The group's analysis of the organization of gradebooks began when students were asked to compare standards-based and traditional gradebooks. One student responded,

“the standards gradebooks are more sorted . . . organized, I guess.” Another student agreed, saying, “the standards gradebook breaks assignments down into different sections.” She was referring to Standards-Based Gradebook B (Appendix A), which allows students to see which learning standards were assessed on a given assignment. The students added to this conversation by discussing the positives of listing the learning goals on the grade reports. “I would choose [Standards-Based Gradebook] C because they tell you what they expect from you on the top,” a student said. “It’s also easier to read.”

Students were also easily able to identify the strengths and weaknesses of the students represented in the sample standards-based gradebooks. “The total points you can get is four, and on the ones that have four, you can tell she’s good at those things,” a student said of Standards-Based Gradebook A. He then moved in on assessing her weaknesses. “If I were her, I would work on text-to-text and text-to-self connections,” he said. Another student added, “the more details, the better.”

Students also identified that clear gradebooks allowed them to get the information they needed in a hurry. “[When I look at the online gradebook], I want to see whether my grade is fine or not,” a student said, “and if it’s not, I want to easily see where I messed up.” The group agreed that the standards-based book does reduce “clutter” and makes it easier to see where a student may have “messed up.” Additionally, one student asserted that the standards-based gradebook could help her know what to study. “When it comes time to study for exams, this gradebook would help,” she said. “[Gradebook A] tells me what my weaknesses are so I know what I need to get help with before Finals.”

The Negatives Students See with Standards-Based Gradebooks

Students also recognized negatives of the standards-based gradebooks, and quickly identified the fact that standards-based books only reflect the “test” and don't necessarily take all assignments into account. “If you do well on a lot of assignments, but you do poorly on the test, you might have a low grade just because you're a bad test-taker,” a student said. In his analysis of the gradebooks he was presented for the study, this student is correct. Each of the sample standards-based gradebooks used only summative assessments (quizzes, unit tests, essay, and projects) to determine the students' score for each standard. However, one of the teachers' classes from which these students were pulled incorporated all assignments into the grade that was recorded next to the standard. Formative assessments such as worksheets and routine homework assignments affected the grade as much as those unit tests. None of the students in the focus group, however, made note of this following that student's criticism.

Along those lines, students also criticized the standards-based book's inability to reward students for trying. One student recognized the fact that tests do not hurt him as badly when he consistently turns in homework. “I like that I get points for participating and trying, even if I don't get it,” the student said. “The standards gradebooks don't have anything like that.”

Another criticism the students had of the standards-based gradebook came upon realizing that you really do not have to do the homework to get an A in the class. This offended them. “If I end up with a 92 (a B at this school) and have a B, it will annoy me if another student doesn't try at all and gets an A because he does well on the tests,” the student said.

The general consensus among the students was that effort should matter. "If a teacher see you're trying to improve," a student said, "then you should get a boost if your grade is close to an *A*, a *B*, or to passing." They stressed that the traditional gradebook clearly communicated the effort the students put forth. "If the student has a lot of zeroes, you know he's not turning stuff in," a student said. "Teachers can use this to know whether a student is trying."

Students Prefer Zero Grades, Fear Teacher Bias

Aside from the benefit of a zero identifying the students who are trying or not in a class that uses a traditional gradebook, students also discussed zeroes for students who cheat. This happened often, they asserted, and the students who cheated have to be punished. "Everybody would cheat if they couldn't get a zero on an assignment," a student said. The cheating they were speaking of seemed to be focused on copying to complete homework assignments, but larger assignments, such as essays, were also discussed. "If a teacher was using the standards-based book, maybe the teacher needs an extra column to show when students cheated, or something like that," a student said. One student suggested that maybe cheaters should get a detention, rather than a zero. Another student then responded, "I would rather get a zero than a detention." This line of conversation concluded with one final opinion, when a student asserted, "I think it's fair to give a zero on a quiz because it's not fair to the kid who did do well and studied for it." Clearly, the students cared very much about fairness when it comes to grades and relied on the teacher to maintain a fair playing field in which students could compete with other students.

The conversation of the student focus group became quite heated when one student brought up teacher bias. "Biased teachers could make the standards-based unfair," the student said. "Teachers remember really good and bad things, and if I make a teacher mad, I don't want a bad score for my standards." With this thought on the table, students quickly realized a fault of a grading system that does not use averages to determine grades. "Using more of a math-based average eliminates bias," another student added. "Maybe [teachers] could use averages as a base to go off, and then improve the score."

At this point, one student discussed the rubric used in his English class. "If the teacher gives us a chart to tell us how to earn the highest grade, I usually feel like it's fair," he said, "but for some of the skills we don't have a chart, and I don't like that." Another student then brought up that her teacher does not use a rubric at all, but the score on a quiz becomes the score for a skill. According to the student, this teacher may change the score each time a quiz is given on that skill. Again, teacher bias came into play. "My grade is never safe," the student said. "I might do really well on a quiz, and then if I do bad on another quiz over that same skill, my grade might be changed and the score from the first quiz might not even matter anymore." The students concluded that an average might be better because they have more control over the score.

Students also recognized the challenges teachers face when incorporating a standards-based gradebook into a traditional 100% grading system. "When looking at Standards-Based Gradebook A, if this student doesn't have a 4 [out of four], he automatically has a 3 out of 4 and a 75 percent," the student said. At this school, a 75% is a *D*, so the students took a lot of issue with this. This student continued, "The key for

this gradebook makes it look like 3 out of 4 is not bad, but the student isn't going to notice that, he's only going to notice that he has a *D*." Another student added, "The percentage of it does not reflect how much I know."

Student Conclusions

When given a chance to add any final thoughts, the students shared a few negative experiences about grading. "I had eight quarters of art class and I got all 92s, so *Bs*," a student said, stressing that teacher bias about her art work kept her from earning an *A*. "I didn't know how to earn the *A*." Another student shared a story about her brother. "My littlest brother is in fourth grade, and he didn't get bumped up even though he had a 92.4 percent," the student said. "The teacher asked if he wanted extra credit, but he didn't want to do more work."

Lastly, students discussed the "quota" teachers seem to have. "It's like they can only give so many *As*," a student said, "but in some classes, especially Honors classes, sometimes you have a lot of people who deserve an *A*."

Clearly, students had some issues with the way grading happened, and it often hit them at a very personal level. However, they were unable to conclude that one gradebook or another fixed their problems. A parent-focus group was next studied to determine if their experience with gradebooks in the past, as students, or in the present, overseeing their children, allowed them to reach any conclusions about advantageous gradebook structure.

Parent Focus Group Reveals Agreement with Student Opinions

At two different times, six parents participated in focus groups. These participants were parents of those students in the classes studied. The sons and daughters

of these parents included some who were in challenge and Advanced Placement courses, and one who was on the school's Academic Probation list.

The general consensus among students who participated in the focus group was that gradebooks had a variety of problems that affect their fairness. Parents participating in the focus group agreed and were able to voice their opinions in many different ways. However, while the students were able to identify some strengths in the organization and clarity of the standards-based gradebooks, parents had some immediate issues with those same characteristics.

"I need a Master's Degree just to interpret this; my kids won't be able to interpret this," one parent said. Another parent quickly agreed that she could not see what she wants to see when she looks at the gradebook. "How will you know the child has completed and submitted all of the work?" she asked. "In the standards-based, I am not seeing progress upwards or downwards, and I can't relate to it in real life events." By that, she meant that she tries to account for issues that affect her son's grade. "If my son has a bad grade, I want to know if it was due the day after the power was out, or if it was due after Prom weekend, or if we were out of town the weekend before it was due," she said. "If we did not have any unusual circumstances, then I know I need to figure out why the assignment or test didn't go well."

The parent who began this discussion then jumped back in to say, "Sometimes the simplest things are the best for the largest audience," he said. "I want to know details without having to tap the teacher on the shoulder when I don't understand something; I would have to tap the teacher on the shoulder a lot if he or she was using a standards-based gradebook." Another parent agreed with this, saying, "I am a normal, what's the

average, 'did everybody do well on this?' kind of parent; without being in the classroom, it is hard for anybody else to understand this." Another parent did, however, recognize that she could like the standards-based book if she was taught to use it, and felt that students could like it better too, if they were taught to use it.

Parents Derive Clarity Issue Students Did Not See

Using Standards-Based Gradebook C, the parent focus group noticed that one assignment might get multiple standard scores. "It's not very concrete in the child's mind when an assignment goes over many different [standards]," a parent said. Plus, the parents discussed that having the standard grades did not necessarily help them help their children. "It's telling me that there are ten areas to work on in this one subject," a parent said, referencing Standards-Based Gradebook A. "It's not easy for me to know, however, how to work on these topics with my child. But with a specific assignment, I know how to help my son figure out what the teacher is looking for."

An additional clarity issue was discussed when looking at Standards-Based Gradebook A. "I don't know what these skills actually mean," a parent said. "What is text-to-text and text-to-self connections?" This parent went on to ask if this had to do with text messaging and joked that her son would have a perfect score in that.

Additionally, parent views were similar to students in pointing out "there are other reasons for low scores aside from not grasping material." They stated grades can be low because of organizational issues, or because of laziness and not completing assignments. They also agreed that more often than not, this is the reason for low scores, instead of the misunderstanding of a concept causing low scores. "I need to know the reason for the

low scores, and the standards book only tells me if misunderstanding is the reason," a parent said.

One parent then suggested that the goal of education might not be just for the student to know the skills. Being able to be organized and complete tasks was part of education, too. "My preference in gradebook is about what I want to know," a parent suggested. "I want to know that my son left his stuff in his locker after I saw him working on it the night before, and the traditional gradebook provides me with that information."

Another parent believed the traditional gradebook allowed her to know what had been assigned and what she could expect to see her son doing. "I like to know what they're working on that day, to tell the truth," a parent said.

The parents pointed out that one non-content-based skill that both the traditional and standards-based gradebooks could help parents see was that of poor test-taker. One parent pointed out how important it was that Standards-Based Gradebook D listed formative and summative separately. Parents discussed test-taking, time management on tests, and the need to know whether students were good test-takers or not.

Parent Subjective Comments Agree with Students

"Our junior is very annoyed by the subjective grading," one parent began, "and I think he would feel that the standards-based gradebook is very subjective." This parent felt that students would begin to question the scores of one another if it was hard to understand why the grade given was given, and his perception of the standards-based gradebook made it seem as if this would always be the case. "Students will ask, 'why did he get that [grade] when I think mine is better?'" the parent said.

"Pretty much their entire life we raise them by being objective; there is right and wrong, good and bad; there are not shades of gray," another parent said. "In the standards-based book, you're beginning to go into shades of gray that kids won't understand."

The parents also had some concerns with subjectivity related to two teachers, teaching the same class, with standards-based gradebooks. "It's going to be like apples and oranges when it comes to subjectivity," a parent said. "You run into this a little bit with the traditional gradebooks, but not like you would with the standards-based book."

For this reason, the parents concluded that rubrics are essential to the incorporation of standards-based gradebooks. "At my daughter's old school, every assignment had a rubric," a parent said. "If that was the case, I could see the standards-based gradebook work because the student would know what the teacher was looking for, and subjectivity would not be such an issue." However, this parent went on to explain that many teachers in this school do not regularly use rubrics. "She went to one teacher and asked for a rubric, but that teacher had no idea what she was talking about," the parent said. "Teachers have to know how to use a rubric before a standards-based gradebook can be used." Another parent pointed out that it is okay for teachers to have varying opinions of what skill mastery is, so long as there was a rubric. "Some teachers are old-school," he said, "and they want you to do it their way. This is okay if they make it clear how they are going to grade."

A final parent suggested that the subjectivity of teachers was similar to how real-life was, so he encouraged his daughter to just accept it. "You're going to find

[subjectivity] in college, and you're going to find it in your job," he said, "so you just need to do what you can."

Parents Possess Strong Beliefs about Perfection; Number of Assignments

An additional problem that at least one parent had with standards-based grading was that it made perfection seem attainable. "I don't know that any student is ever perfect," the parent said. "I don't know that it is smart to give a student a perfect mark when a different teacher might have a different perspective." Similarly, another parent discussed that it might not be fair to students who achieved perfection if they were asked to do more than the rest of the class.

Finally, a problem that the parents identified in the standards-based gradebook was the low number of assignments that were recorded in the gradebook. Citing Standards-Based Gradebook A, one parent noted that she "liked to see a high number of assignments because it is important for the children to have chances left to make it better." She went on to say that "we need chances for positive reinforcement." Another parent agreed, "The more assignments there are, the more they overwhelm him, but he gets the benefit of opportunities." Similarly, another parent agreed "the higher number of assignments, the more time you have to 'catch back up.'"

One final parent jumped in and said he thought he was getting his "money's worth" of the school if his child had plenty of assignments in the gradebook, pointing out that he often did not know exactly how much homework his daughter had, until he saw it in the gradebook.

Along these lines, the parents pointed out that different subjects usually had a different number of assignments, so the standards-based gradebook might be better in

different subject areas. "A math class has a lot of assignments, and the skills build off of one another, so maybe the traditional gradebook is better in a math class," a parent said. "But an English class has fewer assignments in the first place and they focus on reading and writing skills that are kind of the same throughout high school, so maybe the standards-based book is best in like a lit class."

Another parent agreed: "If you are writing a term paper, you might need the information provided by Standards-Based Gradebook C, but in math you are dealing with building blocks, so the traditional gradebook might be all the information you need."

Parent Perspective of Positives of Standards-Based Gradebook

The first key positive the parent focus group identified in the standards-based gradebooks was that it is easy to figure out which topics a student may have struggled with. However, as one parent pointed out, the same could occur with the traditional gradebook. Citing Traditional Gradebook A, he said, "All I have to do is figure out what quiz 4.1 is; if I am a teacher, I can just look back at the book and know what this student was having trouble with." This parent did acknowledge, however, that the standards-based gradebook made this easier for a parent who was looking online and did not have a book. One parent pointed out that a standards-based gradebook provided information that could be helpful to a tutor, or anybody aside from the teacher, who might be working with a student on a specific subject. Additionally, parents acknowledged that knowing specific skill strengths and weaknesses could "help a student with the ACT, PSAT" and other tests that require abilities with specific skills. The advent of electronic books, however, made it easy for a parent to have a copy of the textbook, however, so the parent who acknowledged the standards-based book helps those without a book suggested that

simply having a copy of his student's book might be easier than implementing a whole new grading system.

At this point, a football analogy came into play. One parent said, "If you're a football coach, you have an offensive plan and a defensive plan and you rate an athlete on the skills needed to execute those plans. Just as the coach needs to know what skills to drill down on with the team, it would be nice for the teacher to know the average for the class [with specific skills] so she can ask if she needs to drill down and worry about [a skill]." Similarly, a parent compared standards-based grading to the system of a home-schooled student. "If you're home schooled, you just need to know the information," he said, "that's essentially what this is."

Another positive the parents found came in looking at Standards-Based Gradebook C and its structure to use mode to determine the final grade on assignments. "If I was given a choice between absolute average and a mode to determine a final grade, I would choose mode," a parent said.

"It's like being a gymnast," another parent added. "The different skills combine to give you an overall understanding of the student's performance."

However, whether using a mode or a mean, the parents noted that the gradebook averaged the scores input in the gradebook for the teacher. Furthermore, it was noted that the average for an assignment was better in the standards-based gradebook because it quickly averaged, for the teacher, the students' ability in a given skill area. The same could be done with a traditional gradebook, but that required the teacher to put some scores together, they noticed.

Similarly, the parents noted that by taking the assignments out of the picture and focusing them just on the skills, it became more about "grasping the concept of the assignment more so than just what the grade is." Another parent concluded by saying, "This is a good tool."

After reflecting on the positives of standards-based gradebooks, one parent reflected on his high school experience, and decided that he could have been a lot more successful with a standards-based gradebook. "When I was in school, I wasn't a good student and I didn't do the work, but I always aced the tests," he said. "Homework was too structured for me, like [the teachers] didn't trust you, so I didn't do it." He then explained that the standards-based system would have allowed him to get the high grades he was capable of because he would not have been penalized for his unwillingness to do homework that he saw as busy work. He shared one negative moment in school when a teacher tore up a test of his. "I had a math teacher who thought I cheated, so he tore my test up," he said. "Since I never did my homework, he thought I had to have cheated, so he tore it up right in front of me." His parents, he said, made sure the grade made its way into the gradebook, as he recalled them having a lengthy conversation with his teacher. However, he didn't blame the teacher. "I didn't try," he said, "so he had no reason to believe I had that grade." At the time of this study, a successful business owner, this man was still unsure which grading system he prefers. The standards-based system would have been better for him, but he claimed he learned some lessons about life from his high school experiences.

Why Not Have Both?

When one parent asserted that the standards-based gradebook was just "a different perspective of the same information," it prompted one parent to ask why both types of gradebooks could not be available. At this point, they acknowledged that the standards-based gradebook provided a very detailed analysis of student learning, but the traditional gradebook provided details about effort that they were used to. "We should be able to click on some options and get the type of gradebook we want to see," a parent said. "That's how life is now, I can point and click and get the information I need. Could a school gradebook do that?"

Another parent pointed out that "you have a range of things that parents want [when looking at a gradebook]," and that "you can't satisfy all of us." However, he concluded by pointing out that schools could satisfy parents in this "world of clicking." He said, "There is a certain expectation that I can click and get the information that I want in the way I want." The other parents agreed. "The more tools you have, the more approaches you can take, and the better chance something is going to go click," another parent concluded.

Following this, a parent pointed out that a human resources supervisor worked to analyze specific skills an employee might have, and that the standards-based gradebook was more like this. "When is the right time to insert something like this into [the students] learning cycle?" a parent asked. "Maybe high school is the right time, because at some point they need to realize that effort doesn't matter if the job doesn't get done." However, another parent argued against standards-based grading helping prepare students for the workforce by discussing his experience recruiting employees. He said, "We do a

lot of college recruiting, and the ability to come in and just do your job every day is a skill. We're finding that this is a skill people are not coming to the table with." In saying this, he tried to point out that the traditional gradebook held students more accountable for the skill of coming to work every day and getting the job done.

Another parent believed that maybe senior year was the right time to incorporate a standards-based gradebook. He said, "In college, it's all about the test. [At this school], there is so much take-home, so it might be the parents or friends doing it, and then the kids panic on test day. They get so used to homework and class participation counting that senior year might be the time to break them of it." However, this same parent believed that prior to senior year, homework and participation needed to count. "In high school, a lot of kids need the homework to stay focused," the parent said. "You have to learn how to study for a test, so you remember it in college. You have to learn how to study; it takes years of progression."

It was important for high schools to make the homework worthwhile, however, the parents said, "Sometimes kids think homework is busy work and they don't want to do it." A parent said, "We have had our fair share of busy work, and that needs to be a focus before deciding that one type of gradebook or another works or not."

Parent Focus Group Conclusions

"It's hard to teach an old dog new tricks," one parent concluded, citing that a new grading system might be a good idea, but it would be a hard sell to parents and teachers. The parents stressed that the bottom-line grade was what is most important to them. It's not until a student is struggling that "all the other stuff" comes into play. One parent asked, "Are we looking for gains with our top 30 or 40 percent, or the lower level kids?"

He pointed out "There are different avenues to take, depending on what we are looking for."

With this, one parent suggested that parents of the top students just want to know the bottom line grade, and if there is anything that needs to be brought up with the student at home. "If there is a problem, I want to know about it so I can encourage my son to get to the problem quicker before it gets out of hand," a parent said. However, the students who were less capable might need more parental guidance, the group agreed, so having the additional information the standards-based book provides might be helpful. One parent said, "I have one [child] who always wants to be on the honor roll, so I would definitely prefer the traditional gradebook for him. However, I have another who is not there yet and I can see why I might like the standards-based gradebook for him."

Another parent felt that few parents would value the work that teachers put into grading a certain way in an effort to break down skills and abilities. "Traditional is more specific and gives parents what they want quickly," a parent said. "Teachers might like the standards book because it gives teachers what they want quickly, but it's not necessarily better for parents."

Another parent disagreed with this parent's assessment that the standards-based gradebook was better for the teachers. "We are adding a ton of work to the teacher's life when using the standards-based book," a parent concluded. "Most of this would be a total waste of effort." With that in mind, a focus group of teachers was studied to determine how teachers do feel about implementing a gradebook system different from the traditional norm.

Teachers Want Grading to be Productive

The Teacher Focus Group was comprised of eight teachers who came from a variety of subject areas: English, Math, Science, Foreign Language, and Religion. The questions they were asked can be found in Appendix C. Though these teachers came from different curricular areas, they quickly came to the consensus that they wanted grading to be productive. They wanted students to use the gradebook to understand what they are doing right and what they may be doing wrong. One teacher stated, "The gradebook should remind students of how they are doing; if I am a student and things are going right, I should keep doing what I'm doing. But if I am doing something wrong, I need to change something." In a nutshell, that is what the teacher focus group believed grading should do: give students an idea of whether they were doing well in the class or not. "A student should be able to say, 'this is a weak point of mine' when they are looking at the gradebook," another teacher said. However, the teachers in the focus group all agreed that gradebooks were not always informative enough to allow students to recognize their strengths and weaknesses. The fact that gradebooks were different and students needed to be able to decipher them differently in different classes stood out as a key reason why teachers believed a gradebook does not necessarily communicate strengths and weaknesses to students.

The wide range of differences in gradebooks may be attributed to differentiation in the meaning of grades, if nothing else. One teacher was quickly able to divide grades into distinct categories. "An *A* is excellent; a *B* is laudable, a *C* is average, *D* is below average and an *F* is failure," she said. However, while several teachers agreed that they

would describe grades in a similar way, defining the "excellent" *A* grade became a point of disagreement.

The teacher focus group became engaged in a conversation that revealed the various meaning of an *A* in their different classrooms. While one teacher said, "An *A* is total mastery to near total mastery" and that he tried to "hold an *A* to a pretty high standard," another teacher said, "It should be about high quality work; let the students decide whose getting the *As*," other teachers in the group took great offense to this. "I think it should be criteria-referenced, not normed," a third teacher said. This initial disagreement about what an *A* means opened the conversation up to show there are two distinct sides in the discussion of what grades mean: those that feel grades are norm-referenced and based on the students in a class, and those that feel grades are criterion-referenced and based on predetermined skills and indicators that reveal proficiency in those skills.

Despite this strong difference in opinion regarding *A* grades, teachers had a different take on students with failing grades. "I don't see many students, if any, fail when they're actually trying," a teacher said. "Trying" was what each of the teachers agreed kept a student from earning an *F*. Mathematically, one teacher pointed out, most students did not have a failing percentage if they try. However, one teacher pointed out an important point about high school grades in American education. "An *F* means [the students] are not going to be able to play sports," the teacher said, "and I don't want to be the person who takes away their sports." Another teacher agreed. "We would be creating defeated attitudes that would take away from our school culture," he said.

To summarize, teachers wanted to avoid failing grades, so long as the students were trying, and some wanted to avoid giving too many *A* grades, thus perpetuating the bell-curve that permeates so many averages that existed in society. However, the education bell-curve they were discussing means the majority of students would fall between 70 and 93%, because in this school of study, this was the range of grades that were higher than an *F*, but lower than an *A*.

One teacher followed the direction of the discussion and claimed he was not a "bell-curve guy." He said,

To break it down simply, if I am teaching two plus two, and they all get it, sometimes the whole class will master it; it's not my place to keep making it harder and harder until I only have a handful of kids left who understand what I'm teaching.

With this, another teacher jumped in saying that this "takes away the merit and the value of the *A*," but the original teacher stood his ground. "It's like the vineyard story in the Bible," he said, referring to a story where several people agreed to work for the same amount of money, even though some of them began working much later in the day than the time the original workers agreed to work. "If I agree to work for \$8 a day, then I work for that, even if the next guy gets paid the same for doing less work." He finished his thought by explaining that learning goals are predetermined, and it is not fair for him to change them as a unit progresses or from year-to-year. When another teacher disagreed with him, he said, "I want my standards to be high, but I don't want to get caught up in how many students get the *A*."

Unilaterally, the teachers agreed that they felt a pressure to give more *A* grades because of the changing meaning of a *C* grade. Consequently, some teachers felt the need to protect the meaning of the *A*. The *C*, which one teacher pointed out literally means “average” he believed, was not accepted by the students as average. “A *C* used to mean average, but now it means you practically failed the class, students believe,” he said. He also pointed out that parents feel the same way. “When students are earning *C*s, that's when phone calls begin,” he said.

Teachers Realize Effects of Zero Grades

The conversation of the teachers next turned to the effect a zero can have on a student's average, and though the group disagreed on the meaning of an *A*, the group seemed to be in agreement in regards to giving zero grades: they did not want to give them. “The way we have [the grading scale], zero has way too much of a penalty,” one teacher said. She added, “The reason I give points for doing late work is because it is nice to give points to the people who do something. If they do the work, I don't want them to have a giant hole to dig themselves out of.”

Agreeing, a teacher said, “If you get nothing from a student, they shouldn't get anything back, but if they give me something, I can't give them a zero.” However, another teacher quickly disagreed, citing the real-world. “If I don't do my job, I won't keep my job,” the teacher said. “I will not have anything in my bank account if I don't do my work.”

Another teacher made it clear that they were constantly striving to work with a 100% grading scale that had inadequacies because of all the teacher-student decisions that had to be made due to late work. “Late work is hard because it is kind of like

English grammar; there are so many exceptions," he said. "I always try to say I have a policy, but there are reasons why I change it. I definitely want to accept it, but I can never decide what the penalty should be."

One teacher brought up the fact that homework had varying ranges of value for different students. "Some students need to do the work I assign to understand it and others don't," she said. "But I think this is a tough decision for a freshman in high school to make, to decide whether he needs practice or not."

Student Grade Variance has Reasons

A second thought that branched from the teacher discussion of the meaning of grades was the reason why student grades varied. "Some students put forth the effort, but they don't test well," a teacher said, "and that is why differentiated assessments are so important." He felt that students who couldn't earn an *A* the traditional way may be held back by the format of the class or the format of the test. However, another teacher asked, "If they bomb the test, do they really know what they're doing?" A third teacher agreed with the first teacher, stressing that some students could understand concepts, even if they did poorly on the test. This remark led the group back to discussing the effect "trying" had on a student's grade.

The teachers decided that the reason they sometimes curved tests was because they agreed that assessments may sometimes be unfair. "I have curved tests before because the kids didn't do very well," a teacher said. "I didn't form some of the questions as best I could, or maybe I didn't teach it well." Another teacher stressed that this was why she allowed re-dos. "I will allow a student to re-do part of a test, but before I let

them re-do it, they have to come and see me and have a conference about what to work on.”

In summary, the teachers communicated that they sometimes held themselves responsible for student misunderstanding, making it clear that they did not want grades to miscommunicate a student's ability. However, the idea of changing a grading system to better meet the needs of students and to better communicate ability was not something they were prepared to jump into head-first. They communicated there were many variables to discuss, when it came to creating a grading system that meets students' needs, parent needs, and teacher needs.

Gradebook Can Also Be a Tool for Teachers

After the dust settled and teachers weaved through the decisions and their philosophies to decide what constituted an *A* and what late work should be accepted, teachers simply wanted the gradebook to be a tool that could be used by the students and by themselves. "I like to be able to look at my gradebook and know whether the kids understood what I told them," a teacher said. "I can also decide what it is realistic for me to expect from my students."

When given a chance to analyze gradebooks, Standards-Based Gradebook C stood out to teachers. "I almost want to use this gradebook to put students into two different groups: the accelerated and the not accelerated" one teacher said. "I also would know that I would not need to teach skill #3 anymore because it looks pretty easy for most of them." Due to this gradebook's ability to be used as a tool, and the fact that it was standards-based, the teachers used this as an opportunity to begin discussing the positives and negatives of a standards-based gradebook. "I do kind of like the idea that

students wouldn't nit-pick over one particular assignment," a teacher said. "Sometimes students miss one-point on a five point quiz and they miss the fact that they're pretty good at the concept we quizzed on that day." Another teacher agreed, saying, "I think this could lead to much more independent work; a student could look at the gradebook and work on 'this,' while another student worked on 'that.'" Teachers also communicated their ability to see very specific messages communicated with the standards-based gradebooks. One teacher said, "On entry nine [of Standards-Based Gradebook B] the kid who was blowing everybody out of the water on everything else bombed it." Another teacher was able to discuss the topics she would need to go back and cover.

The group also discussed the negatives of the gradebook. One teacher discovered the fact that one assignment could have three different grades. "It sounds like a lot of fun to input these grades," he said sarcastically. "It's the logistics that make me wonder if something like this would work." Another teacher wondered what she would do when a student didn't complete an assessment. "If I can't give a zero, I have no way to motivate him to do the assignment, and then I'm not able to input data for this student. Yet another teacher was also concerned with inputting data. "Are these scores averages or just the most recent?" he asked. "It sounds like grading with standards requires a lot more thought than an average." Along these lines, the teachers discussed the students who fail to do the work. "What do you do about the kid who doesn't do anything?" a teacher asked. "While this might work a lot of the time, I feel like we're doing a real disservice to the kid if we allow him to get away with not turning things in, and the standards-based system allows for that." Finally, a teacher discussed the classes in which a standards-based system could be used. "I could use this for part of my curriculum, but not the rest

of it," she said. "It lends itself to writing, but when you deal with other things, comprehension-wise, I would find it very difficult."

Teacher Conclusions

Though the teachers find faults in the 100% system they used, they were hesitant to try the standards-based system because of the freedom it gave students not to turn-in their work. "We're not preparing them for the workload of college," a teacher said. However, the teachers did see the ability to use the standards-based gradebook as more the tool they wanted the gradebook to be. It was obvious with this focus group that the right answer in regards to gradebook construction was yet to be determined.

Student Learning Growth Analysis 1: Honors Algebra I

Teacher A used a standards-based gradebook for the first time in spring of 2013 in her Honors Algebra I class. This first study was a comparison of learning goal growth in this class alone. There was not a control group used for comparison. However, the results were used to document that learning goal growth did take place in a standards-based classroom. This teacher's first unit of the grading period focused on four specific learning standards:

Learning Standard 1: Evaluate Linear and Exponential Functions

Learning Standard 2: Manipulate Monomial and Polynomials

Learning Standard 3: Operations with Polynomials

Learning Standard 4: Factor Polynomials

Teachers at the high school of study were encouraged to explore and apply the use of a standards-based gradebook, with no requirement to do so. This had two consequences that are important in the analysis of Teacher A, and of other teachers

featured in this study. First, many of the students were experiencing a standards-based gradebook for the first time. As a result, this teacher spent a great deal of time stressing the importance of using the gradebook to identify specific skills that may require additional time or focus to guarantee success.

The second consequence evident in an environment that allowed teachers unfenced flexibility in the composition of their gradebooks was the varying nature of which standards-based gradebooks were designed. This teacher chose to continue to list every assignment, such as is the case in a traditional gradebook. However, each of the assignments percentages contributed to a standard-specific folder that represented 10% of the final course grade. Similar to Standards-Based Gradebook C used in the focus group study, this gradebook allowed students to focus on both the standards and the assignments that contributed to them.

Students in this class demonstrated learning growth in each of the standards focused on by the class. Average scores of Learning Standard 1 increased by 3%; improvement of 2% was evident towards Learning Standard 2; there was a 3% increase towards Learning Standard 3; Learning Standard 4 was improved upon by a full 4%. Evidence of these increases was determined by pre- and post-tests given to the 16 students at the beginning and end of the unit. Importantly, the high percentage of understanding demonstrated by students at the beginning of the unit, when minimal teaching of these topics had occurred, demonstrates that the students brought with them a great deal of prior knowledge to begin this unit.

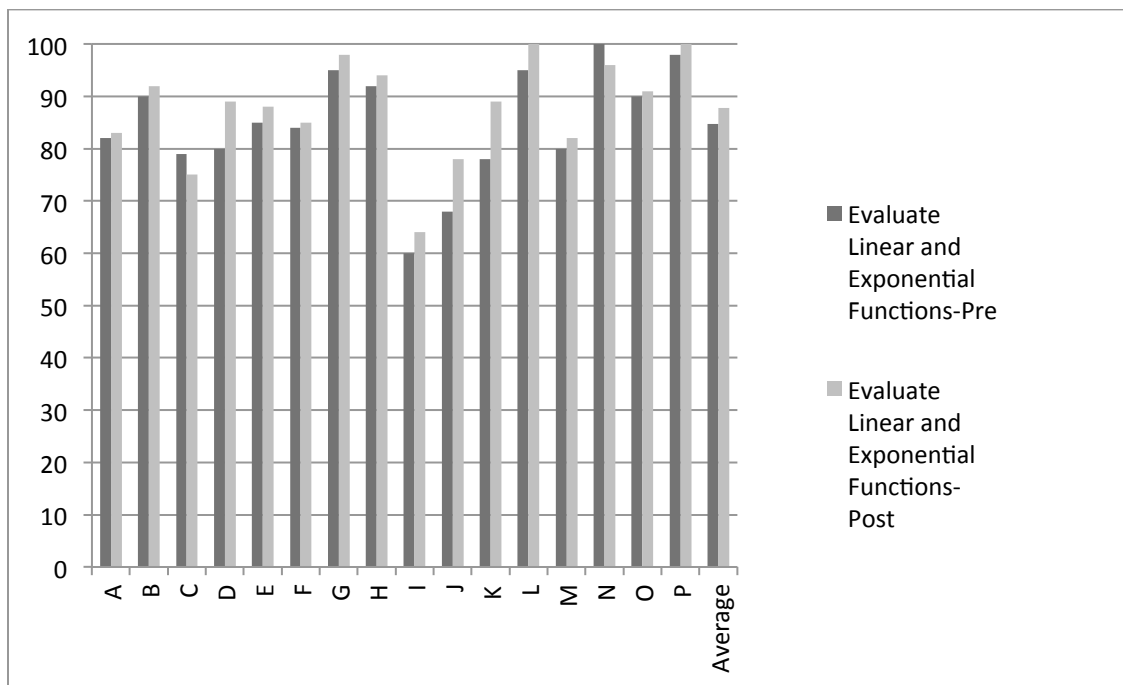


Figure 1. Growth of “Evaluate Linear and Exponential Functions” Skill

This graph reveals the learning growth of the 16 students studied in this Honors Algebra I class. Overall, the students averaged a score of 91.39% on the pre-test and improved to 94.68% on the post-test. Above each letter, the first bar represents the student’s pre-test score, and the second bar represents the student’s post-test score. There is a lot that can be learned by comparing the data of the pre- and post-tests. Students A, B, F, and M, for instance, showed no increase or decrease of understanding of this learning goal during this study. However, this graph also shows where the greatest increases occurred. The separation between the bars for students D E, I, J, K, and L show where growth occurred most notably. Also of note are students C and O, who actually decreased their understanding of the learning goals within the unit. The teacher attributed this to the composition of the assessment. The pre- and post-tests were different, though focused on the same learning standards, and may have affected a student’s ability to demonstrate understanding of a topic. “The first test may have been too easy, or the

second one may have been too hard,” the teacher said, voicing the fact that test composition may potentially skew this data. The tests were teacher made, but required students to construct answers on their own, without the help of pre-selected responses.

Learning Standard 4: Factor Polynomials

Of the learning standards studied in this class, Learning Standard 4, Factor Polynomials, resulted in the greatest increase of learning. Therefore, it was analyzed further. With this standard, at no point did any students decrease in their understanding of this learning standard, though they did remain the same in some cases. In the graph below, note student 4 demonstrated the largest growth towards a single learning goal in the study of this class. This student’s 15% increase from the pre-assessment to the post-assessment represents a substantial improvement.

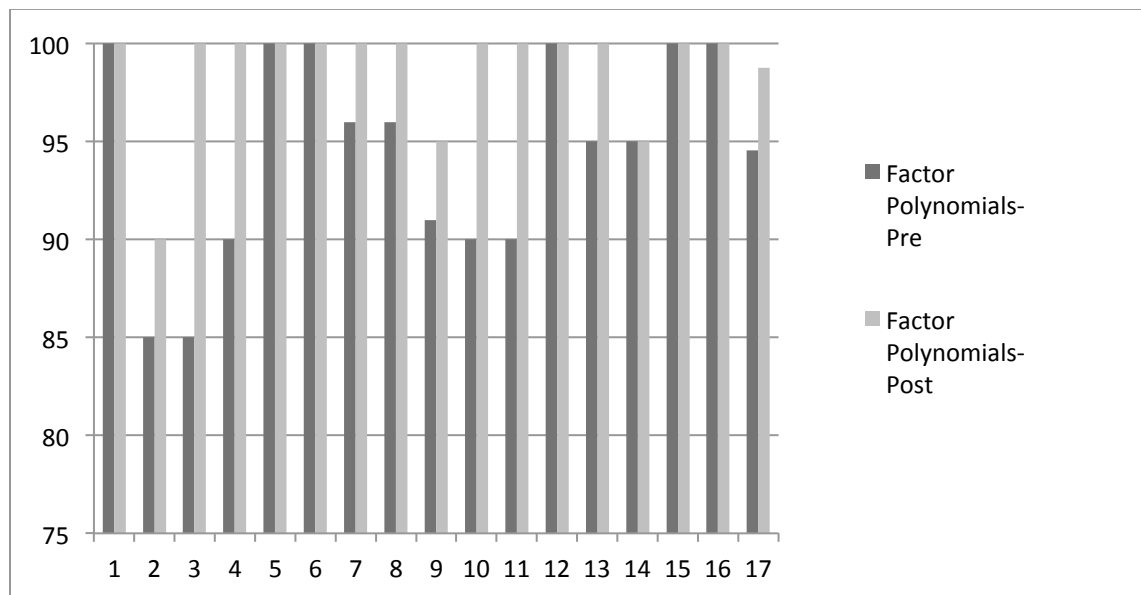


Figure 2. Growth of “Factor Polynomials” Skill

Student Learning Growth Analysis 2: Senior-Level English

While the first student growth analysis demonstrated an increase in student understanding towards learning goals can occur when a standards-based gradebook is

used, it did not show the difference in growth between students using a standards-based gradebook and those using a traditional gradebook. This second growth analysis provides an opportunity to see this comparison, as it involves a senior English teacher who used a standards-based gradebook to communicate grades in one class, while he used a traditional gradebook in a second senior-level English class. His learning goals for the unit studied were the same in both courses:

Learning Standard 1: Thesis Statement Composition

Learning Standard 2: Supporting Arguments

Learning Standard 3: Drawing Conclusions

Learning Standard 4: Analysis vs. Summary

Learning Standard 5: Grammar, Spelling, and Word Choice

To allow for comparison, this teacher administered a pre-test and a post-test at the beginning and end of his unit, respectively. The test was designed by this teacher, and was composed of short answer response exercises, for the most part. Additionally, student grades on these quizzes were communicated in a 10-point format, though there were more than 10 points possible on the quizzes. As a result, quiz scores will include some “half” grades such as “9.5,” or “8.5,” but the comparison of scores between the students in the class using the standards-based gradebook and those in the class using the traditional gradebook has been made easier because of the way the teacher has communicated the scores. During the unit, students in the standards-based class were able to first see their initial scores, out of 10, on the pre-test, and then improvement towards 10 was communicated as other formative assessments took place. A student who scored 6 of 10, for instance, but showed improvement on a formative assessment, may

have seen that “6” change to a “7” or higher, based on his or her performance. The score that would remain in the gradebook following the unit, however, was the grade earned on the summative post-test at the end of the unit. The purpose of the fluctuation within the unit was only to show students their progress towards proficiency in learning goals.

In the traditional class, the students knew what the learning goals for the unit were, but only viewed assignments and their averages on those assignments in the gradebook. As in traditional classrooms, these students knew their overall average in the class served as an indicator of how well they understood the material, however the gradebook did not implicitly state what specific learning goals were positively or negatively affecting that average.

The first skill assessed in this unit was “Thesis Composition,” and the results showed a slightly larger gain for the students in the standards-based gradebook class than that of the students in the traditional gradebook class. In the standards-based class, scores climbed from approximately 8.35 out of 10 to 8.44; in the class using the traditional gradebook, scores began higher at 8.52 and climbed to 8.58.

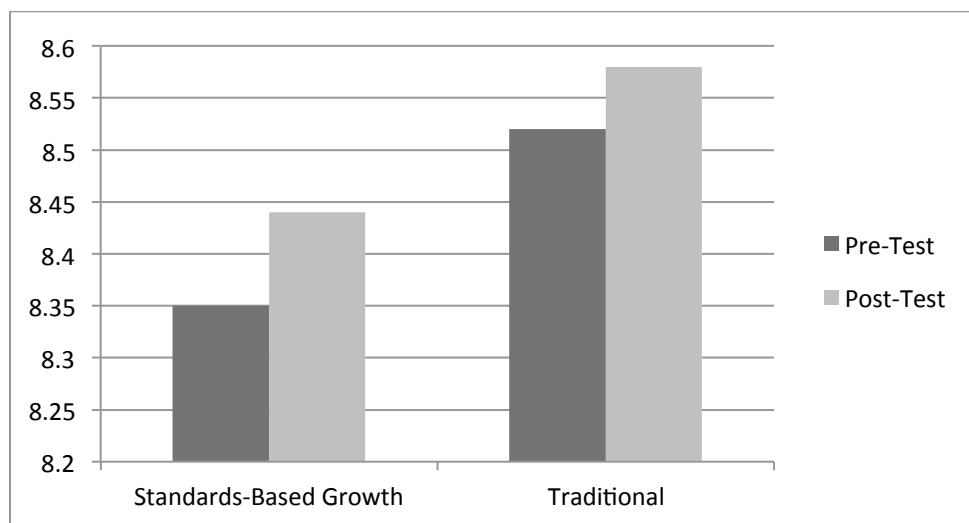


Figure 3. Growth of “Thesis Composition” Skill

Skill B: Supporting Arguments was very similar. Again, the class using the traditional gradebook began with lower scores. However, in this case, the score increases were almost identical. The class using the standards-based gradebook showed an improvement of 0.17, and the class using the traditional gradebook showed an improvement of 0.18. Again, the average scores were just less than two percent better on the post-test than on the pre-test.

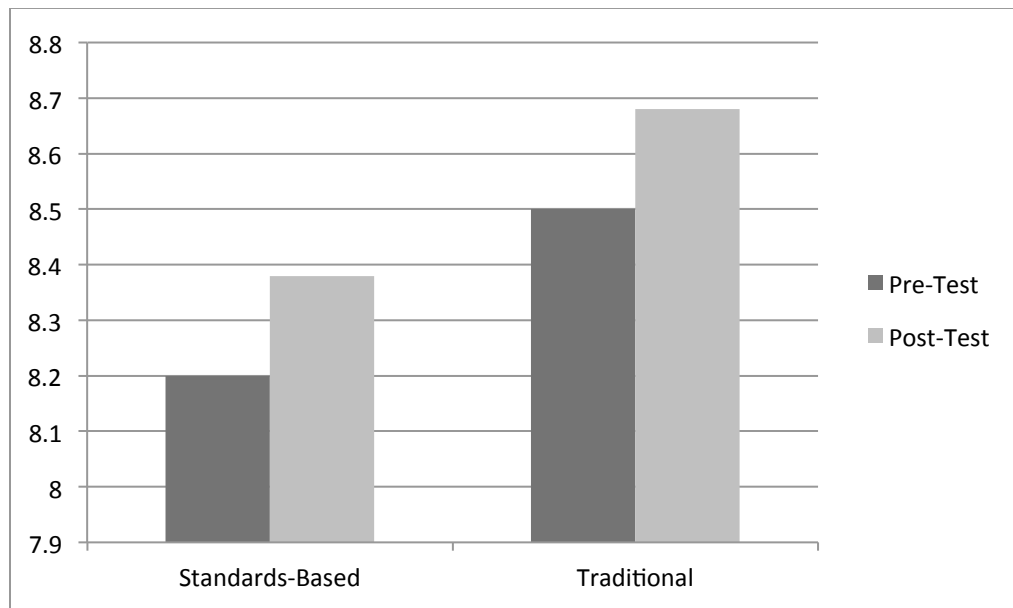


Figure 4. Growth of “Supporting Arguments” Skill

Skill C: Drawing Conclusions showed the greatest improvement for students in this course’s study. Students in the standards-based gradebook class demonstrated scores that averaged nearly 2.5% better on the post-test than they did on the pre-test. However, the students in the class using the traditional gradebook recorded the greatest difference in scores between the two groups when their average scores were a full percent better than the standards-based class, improving from an average of 8.47 to 8.83.

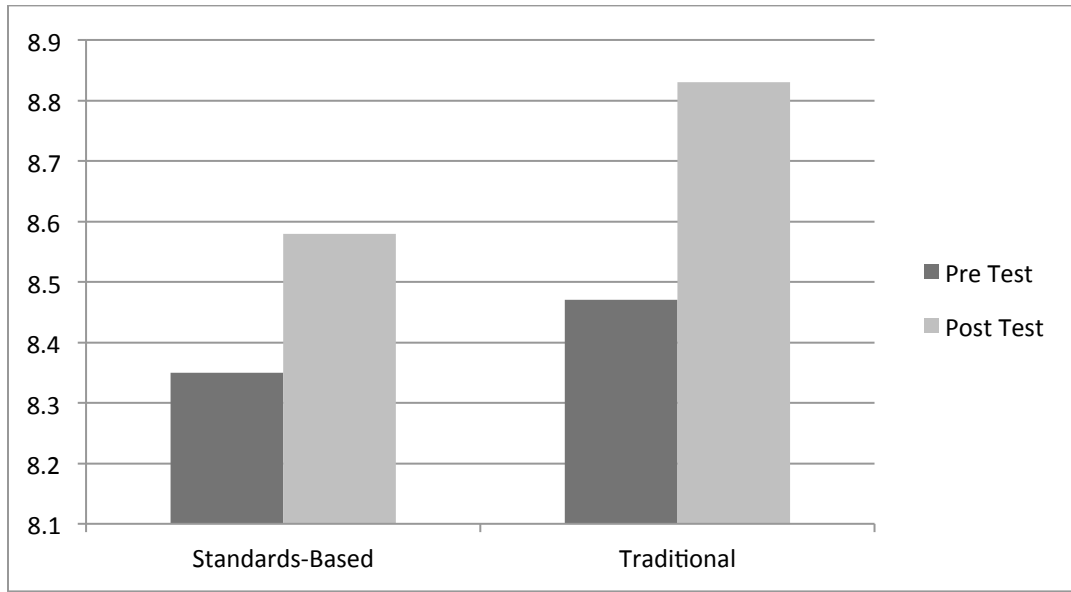


Figure 5. Growth of “Drawing Conclusions” Skill

Skill D: Analysis vs. Summary and Skill E: Grammar, Spelling, and Word Choice differed from the other three skills because each showed little or no growth. In fact, in both cases, one class or the other actually regressed in performance from the pre-test to the post-test. In the case of Skill D, while some student scores changed, the class average of those using the standards-based gradebook remained the same at 8.41. At the same time, the students using the traditional gradebook demonstrated a slight regression, falling from an average of 8.75 to 8.64. With Skill E, the standards-based gradebook classroom took a turn regressing from an average score of nine to 8.94; the students using the traditional gradebook, however, showed no improvement or regression, averaging scores of nine on both the pre- and post-tests.

In summary, the students in the class using the traditional gradebook showed more improvement than the students using the standards-based gradebook during this unit.

Summary of Learning Standard Progress for Teacher B

It should be noted that Teacher B used the same assignments for students in both classes, so both had equal practice between the two assessments used for data collection. However, while the teacher continued to average all scores for the students in the traditional class, he only made changes to the grades of the students using the standards-based gradebook if a student showed progression or regression from one's current score. This, the teacher feels, may have been confusing for some of his students because it was their first time using a gradebook system such as this one. For instance, at one point he gave a thesis composition assignment that was worth 30 points. While those 30 points were averaged into the scores of those using a traditional gradebook, a student who had an 8 out of 10 on that skill only had a grade change in the gradebook if one's score was 27 or higher (resulting in that student's score changing from 8 to 9 out of 10) or 21 or lower (resulting in that student's changing from 8 to 7 out of 10). The score naturally could have changed to a score higher than 9 or lower than 7, if the student had performed better or worse on the assignment, respectively.

The teacher noted that he could have avoided students thinking through this math if he had provided a rubric for thesis composition, for instance, that was used on both the pre- and post-assessment, as well as all assignments working with this skill. However, he did not initially think this would be necessary because he planned to make all assignments a point value that could be translated into a 10-point score.

Lastly, it is important to note that the unit used to collect data in this study was the second unit of the semester in which this teacher tried using standards-based grading for the first time. He had initially used a 4-point scale to record scores representing each

standard. However, this was met with a lot of complaint from students. The reason for this complaint was because, even though the teacher was listing standards instead of assignments in his gradebook, they still contributed to an average that resulted in a current course grade that was based on a 100% system. In his first unit, this teacher had five 4-point skills assessed. However, a student who was nearing proficiency, and scored a 3 out of 4, actually had a 75% on that assignment. At the study site high school, this is a score that is near failing (*D*). Similarly, a student who had demonstrated a basic understanding of a concept was given a 2 out of 4, but that 50% grade indicated the student was failing.

His solution was to switch to a 10-point scale that allowed him to give a 9 out of 10 score to indicate that a student was nearing proficiency, while having that student's average grade remain acceptable (*B*). He was also able to indicate a student having a basic understanding of a concept by giving a student an 8 out of 10, resulting in a percentage that traditionally indicates basic understanding (*C*). Students with little understanding of a concept were given scores of 6 and 7.

It may have been noted that no student scored lower than a 7 on either the pre- or post-tests in this class. However, the teacher's need to make his standards-based gradebook work in an environment that had traditionally used the traditional gradebook was the reason why none of the scores on his assessments were below 7. The teacher indicated that standards-based grading is something he wanted to try, but he had to find a way to make it work for his students. He thought a 4-point scale would be easier to understand, but it led to great frustration for his students. As a consequence of the philosophy of which this teacher used his 10-point scale, it can be concluded that his

students averaged somewhere between what he called Basic (8) and Nearing Proficiency (9) on his assessments.

Student Learning Growth Analysis 3: Sophomore English Comparison

Students in a classroom using a standards-based gradebook recorded the greatest disparity from their peers using traditional gradebooks in a comparison of sophomore English teachers. In this case, two teachers administered the same pre- and post-assessment on three core English learning standards. However, while Teacher C used a traditional gradebook with his three classes, Teacher D used a standards-based gradebook with her one class. The comparison of these two teachers was possible because the learning goals for the unit studied were the same in the classes of both teachers:

Learning Standard 1: Understanding of Theme

Learning Standard 2: Understanding of Thesis

Learning Standard 3: Understanding of Thesis Support

Though their gradebooks were very different during this unit, these two teachers are adjacent to each other in the hallway and spent a great deal of time planning together. Consequently, the assignments they used were the same. While the teacher using the traditional gradebook continued to average each of his assignments, the teacher using a standards-based gradebook may only have arguably done so. She listed the three learning standards as assignments in her gradebook. However, she also listed all assignments and allowed them to contribute to her students' overall letter grade, as well. Her philosophy was to allow students to monitor their current standing towards the unit's primary course goals, while also allowing them to see the status of their other assignments. In this case, if a student had an assignment that demonstrated a greater understanding of a skill than

he or she had on the pre-test, the score for that standard was adjusted. However, the score on that specific assignment also was recorded in the gradebook.

The three skills assessed in these classes were scored on a scale of 0-2. A 2 indicated proficient understanding, while a 1 indicated basic understanding, and a 0 indicated a need for improvement. The standards-based teacher listed these scores in her gradebook in this way, with a maximum of 2 points possible for these three assignments. The teacher using the traditional gradebook did not record the score of either the pre- or post-assessment in his gradebook. However, he administered the test for the purpose of this student growth comparison.

Teacher D, the teacher who noted the standards in her gradebook, expressed that her students were very aware of the learning goals in the gradebook and recognized their importance, despite the fact that they were present cosmetically as a reminder more so than they were a contributor to the overall score. “I reminded students to work with me on the skill scores that were weak,” she said, “and I definitely saw an increase in students working with me during Contact Time.” Contact Time, the school of study’s daily time for students to visit with teachers within the academic day, is the point where she noted she saw an increase in students working with her.

With Learning Standard 1: Understanding of Theme, students in the class of Teacher D, whose standards were featured in the gradebook, outperformed those students using only the traditional gradebook. In this case, student averages increased from 1.37 (out of 2) to 1.77 in the class of Teacher D. While the students in the classes of Teacher C also began with a 1.37, those students only increased their average scores to 1.62.

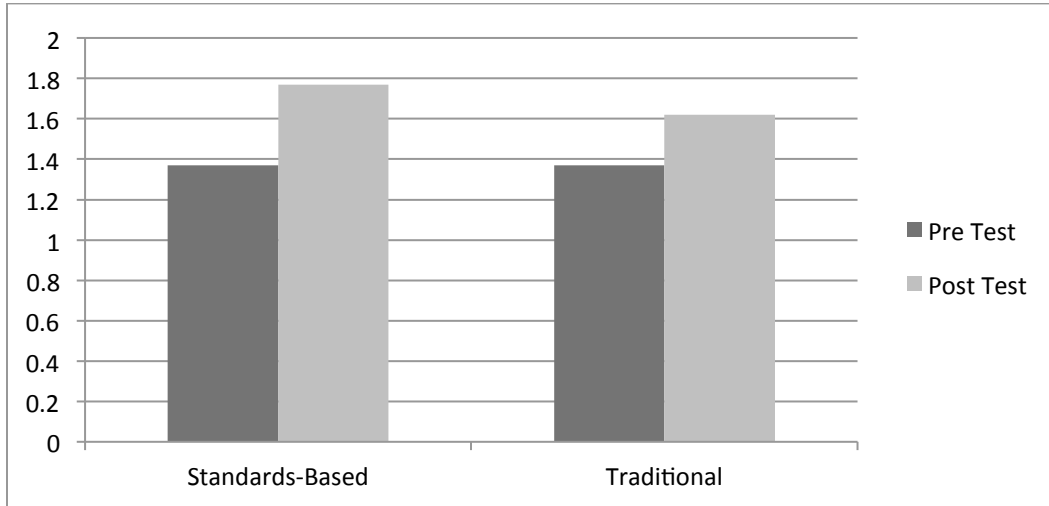


Figure 6. Growth of “Understanding of Theme” Skill

Skill B: Understanding of Thesis, revealed similar results. In this case, students in both classes also began with similar scores on the pre-test, with the students of Teacher C averaging 1.45 and the students of Teacher D averaging 1.48. However, the students using the standards-based gradebook of Teacher D again recorded the greater gain, improving scores by 0.33, nearly 0.2 more than the average scores of the students working with Teacher C, who showed an increase of 0.15.

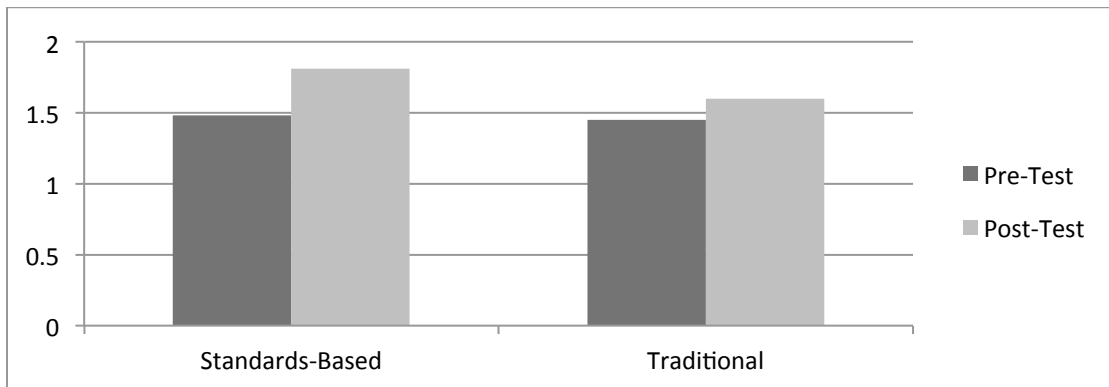


Figure 7. Growth of “Understanding of Thesis” Skill

However, the trend of the students using the standards-based gradebook outperforming those using the traditional gradebook did not continue with the final skill.

In this case, both groups recorded minimal gains, but the students using the traditional gradebook averaged gains greater than those in the standards-based classrooms.

While the gains of both groups were minimal in comparison to the gains by both groups with the other two learning goals assessed, it is of note that even though the students in the classes of Teacher C began with an average lower than that of the students in the class of Teacher D, their improvement was great enough that they outperformed the students in the class of Teacher D by the end of the unit.

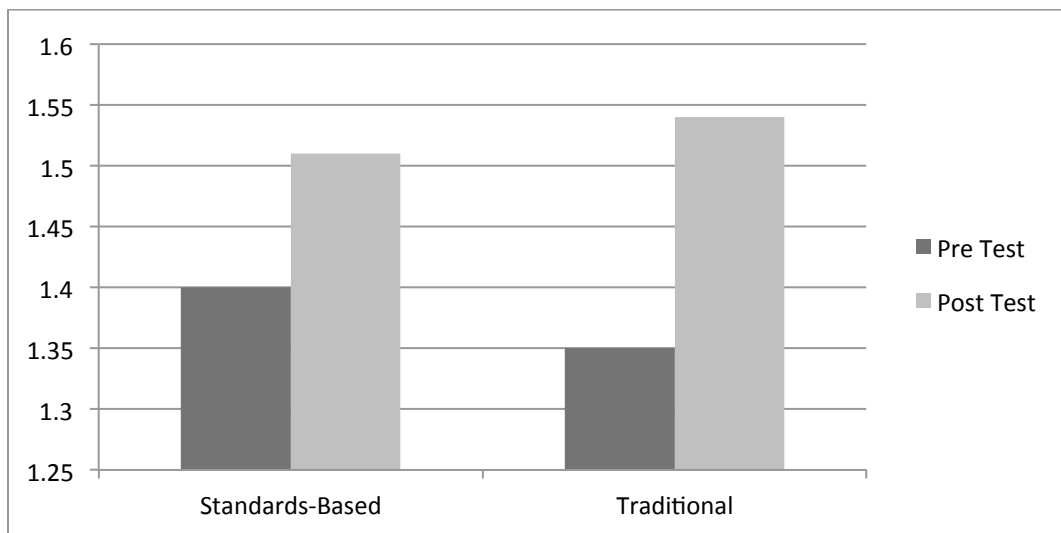


Figure 8. Growth of “Understanding of Thesis Support” Skill

Possibly affecting the results of the comparison of Teachers C and D is the number of students who contributed to the averages of the two teachers. While Teacher C, using the traditional gradebook, had 79 students from three different classes contributing data to the study, Teacher D, using the standards-based gradebook had just 27 students from one class contributing to the study. It is possible that a class greater in size could present more learning challenges for the teacher, resulting in lower average scores than might otherwise have been demonstrated. However, taken at face value, a comparison of improvement for students in the classes of these two teachers shows those

who had the chance to see their standard scores in the gradebook demonstrated greater improvement.

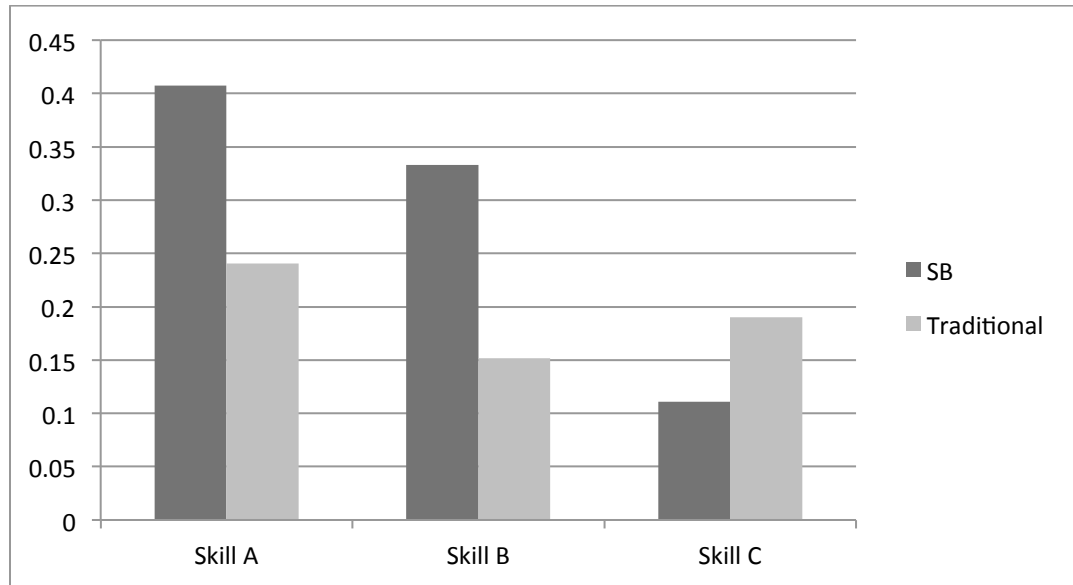


Figure 9. Summary of Learning Standard Growth for Teachers C and D

Significantly, because this data was derived from improvements on a 2-point scale, improvements of over four-tenths of a point, as the standards-based group made with Skill A, represent more than a 20% increase in understanding for those students on that skill. The standard-based students' improvement on Skill B was similar, where the growth of 0.33 represents a nearly 17% increase in understanding of the learning goal. While the improvements made here are significant, it should be noted that each teacher graded his or her own assessments, and while some of the exercises were objective, with a clear right or wrong answer, there were several exercises that involved some subjective interpretation by the teacher, though a rubric was used to limit the subjectivity as much as possible.

Student Learning Growth Analysis 4: Freshman Biology Comparison

Similar to Teacher A, the math teacher who allowed each assignment's percentage to contribute to a standard-specific folder that represented 10% of the final course grade, Teacher F, a Biology teacher, also arranged her gradebook in this way to begin the semester. However, while she had standard-specific folders that assignments contributed to, giving the students a "grade" for each standard, she did not make any standard worth a specific amount of the grade. Consequently, the final semester grade for the quarter was still an average of scores on all assignments; however, students would be able to spend the semester raising averages specific to different learning goals that were explicitly stated in the gradebook.

Teacher E, another Biology teacher, administered the same pre-test and post-test as Teacher F in his first unit of the semester. On these assessments, students were asked to demonstrate understanding of two first semester concepts (on the pre-test) and then to improve their understanding of those concepts within the first three weeks of the semester before retesting on the post-test. The concepts that both teachers chose to focus on were as follows:

Learning Standard 1: The Characteristics of Living Things

Learning Standard 2: The Purpose and Process of Mitosis

These two learning standards were identified by these teachers as core knowledge, important for students to have mastered in order to understand many of the second semester concepts taught. Therefore, they decided there was wisdom in testing their students and then re-teaching where necessary to move students as close to mastery as possible before entering into new material for the semester. Though the pre- and post-

assessments for these two learning standards required students to work through multiple exercises, these two teachers were similar to Teachers C and D, the sophomore English teachers, in that they represented student understanding of these two concepts with a 2 (proficient), 1 (nearing proficiency), or 0 (needs improvement). The data these two teachers began with shows that the students had a solid understanding of both concepts before this review unit began. However, there was room for improvement, and improvement did occur. Students in the class of Teacher E only viewed assignments in the gradebook as they worked their way through the unit; students in the class of Teacher F had the opportunity to see their understanding of specific standards disaggregated for them through the standard-specific folders the teacher had set up within her online gradebook.

With Learning Standard 1: The Characteristics of Living Things, students were already performing at a very high level. Students in the classroom of Teacher E began the unit with an average of 1.77 out of 2 on the skill, while students in the classroom of Teacher F began the unit with an average of 1.95 out of 2. While students in the classroom of Teacher E, using the traditional gradebook, demonstrated a greater growth, they also had more room for growth. However, the students in the classroom of Teacher F, using the standards-based gradebook, improved scores to the point of perfection, growing to a perfect 2 of 2 for all students.

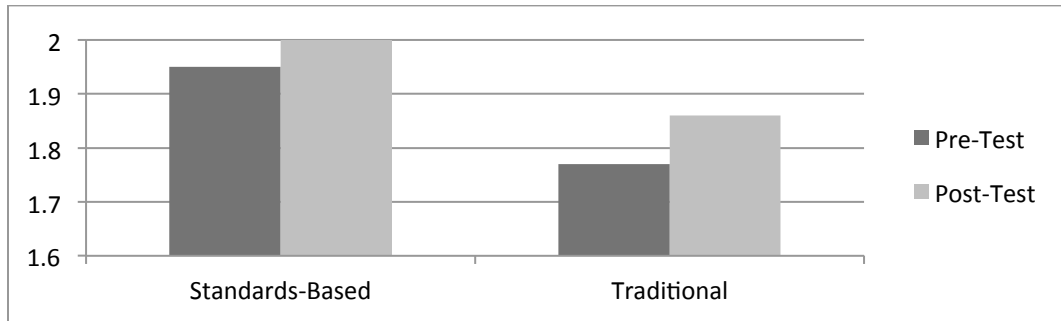


Figure 10. Growth of “Characteristics of Living Things” Knowledge

Students did not begin with such a solid understanding of Skill B: The Purpose and Process of Mitosis. Teacher F explained that she spent a great deal of time on Skill A last semester, and conducted multiple labs using the skills and knowledge associated with that learning goal. That same time was not allotted to Skill B. Conversely, Teacher E supposed he had spent “about the same” amount of time on both topics. So, it should come as no surprise that the students of Teacher F, who outperformed the students of Teacher E on the pre- and post-tests for Skill A, did the exact opposite on Skill B, lagging behind. While the students of Teacher E scored an average of 1.61 of 2 on the pre-test, the students of Teacher F scored much lower at 1.39. Within this unit, however, the students who had an opportunity to see their scores reflected in reference to standards made drastic improvements on Skill B. Students in the class of Teacher F improved from that 1.39 to 1.56; students in the class of Teacher E had only a modest improvement, from 1.61 to 1.63.

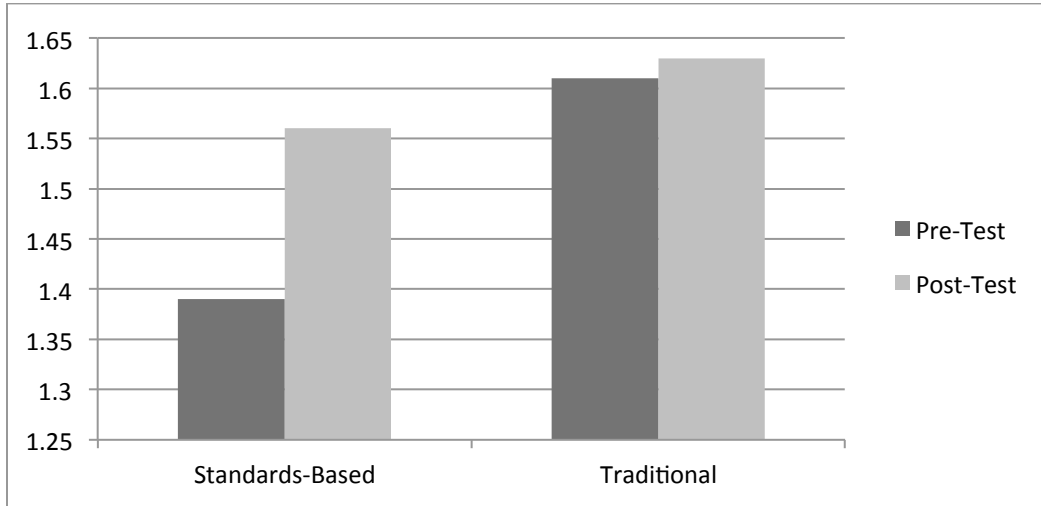


Figure 11. Growth of “Purpose and Process of Mitosis” Knowledge.

While there were improvements made towards these learning goals, as it was noted with the sophomore English teachers, it must be noted again here that each teacher graded his or her own assessments. While some of the exercises were objective, with a clear right or wrong answer, there were several exercises that involved some subjective interpretation by the teacher.

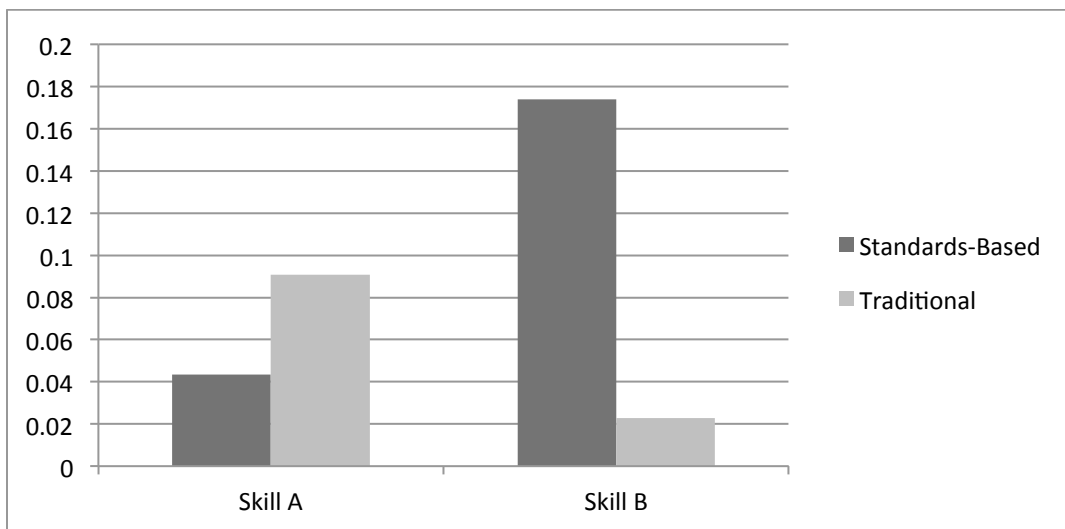


Figure 12. Summary of Learning Standard Growth for Teachers E and F

Student Learning Growth Analysis 5: Senior Publications

The final student learning growth comparison in this study is an analysis of senior publications students who produce the yearbook at the school of study. Teacher G, the teacher of this class, has long wrestled with the composition of the grades of her “Yearbook” students. Because this class does not have typical assignments, but instead works towards the publication of a yearbook on a daily basis, a gradebook that was based on assignments has always been a challenge to her. So, after learning about the concept of standards-based grading, she was anxious to incorporate a standards-based strategy. Her method of grading was to base student grades on six key learning goals in a yearbook-producing classroom:

Learning Standard 1: Copy Writing

Learning Standard 2: Caption Writing

Learning Standard 3: Headline Writing

Learning Standard 4: Spelling (Proofing and Revising)

Learning Standard 5: Style Elements

Learning Standard 6: Photo Elements

Interestingly, and unlike the other teachers in this study, this teacher did not make each learning goal worth an equal amount of points. But, to ease understanding of the standards-based format, the total worth of each learning standards equaled exactly 100, so as a student improved one standard by 1 point, the overall percentage in the class increased by exactly 1%. In this case, copy writing was worth 16 points, caption writing was worth 30, headline writing was on a 9-point scale, spelling was a 10-point standard, understanding of style elements was worth 20 points, and use of photo elements was

worth 15 points. A rubric was used to measure growth towards mastery for each learning standard.

This teacher's process was based on her typical class structure. In her class, the students spend the year creating yearbook spreads. Naturally, the student production of these spreads becomes more proficient as the year goes forward. This year, the teacher scored the initial draft of a student's spread according to that student's ability; the student then had to make changes to areas that were not yet ready for print. On the next spread, if the student's initial draft was better prepared, improvements to one or more areas were made to the student's grade. This process has been repeated throughout the year, but the same six standards have populated the gradebook throughout the year. Grades have improved as students have improved, and these grades no longer account for lack of proficiency or misunderstanding of any of the six standards at the beginning of the year.

The data represented in this study includes two yearbook spreads in the third quarter of the school year, so the students are familiar with the process and with the grading system. The data represents growth from one yearbook spread assignment to the next yearbook spread assignment. It should be noted that, with the exception of headline writing, which the students had all already mastered prior to the collection of data in this class, improvements were made in every category between the initial yearbook spread assignment and the subsequent one.

Skill A: Copy Writing involved both the intricacies of grammar and rhetoric, and the concise and vivid word choice specific to yearbooks. Therefore, though students were seniors, they did not begin the year already proficient in this learning standard. However, just in the weeks this course was studied, the students showed a drastic 2-point

improvement to their class average, and the instructor believes standards-based grading keeps them focused on these areas needing improvement. “If I just handed back a spread with red ink all over it, I probably would get a lot more questions about where to start in the revision process,” she said. “However, using standards in my gradebook gives the students a chance to treat improvement more like a checklist, and they attack their skills one at a time.” This teacher believes that the ability for students to isolate their weaknesses led to big results between this spread and the last. Two students made 4-point improvements, another made a 5-point improvement, and still another made a 6-point improvement. The student who had the big 6-point gain had previously been focused on improving other skills. “Earlier in the year, this student was really struggling with our criteria for caption-writing,” she said. “She achieved a perfect score for caption writing earlier this semester, so copy writing has been more of a focus.” The teacher implied that her students have really enjoyed the chance to really attack one skill at a time. “But they have to revise everything, so they don’t purposely fail to focus on specific areas,” she said. “They do as well as they can, but the spots they focused on are clear.”

Skill B: Caption Writing had similar results to that of Skill A in that the scores increased. However, Skill A had the largest increase within the time of this study. While students increased the average score of the class from 12.4 to 14.7 with Skill A, students increased the average from 28.4 to 29.8 with Skill B. Other skills such as Skill E: Style Elements and Skill F: Photo Elements had gains of exactly 1.0 and 0.73, respectively. Skill C: Headline Writing and Skill D: Spelling had almost no gain because the scores in these areas were already so high at the beginning of the study.

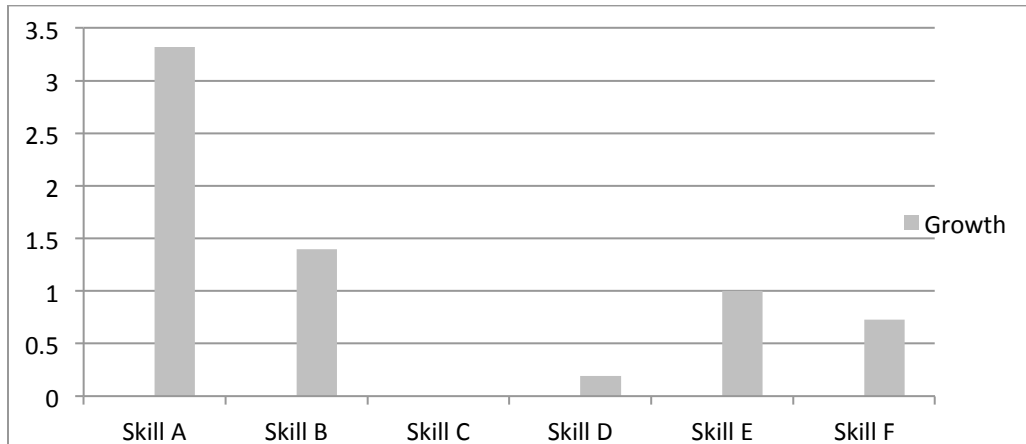


Figure 13. Skill Increases in Publications Class

Despite the great success this teacher has had with her publications students, there is one major thing this teacher would change. “I need to have a category for accountability,” she said, citing the fact that her students are sometimes slow to get assignments turned in. “They are never terribly late, but they know the gradebook doesn’t allow for me to give them a zero, so they will sometimes be two or three days late,” the teacher said. “When you’re making a yearbook that has production deadlines to meet, that can’t happen.” As a result, this teacher is actually making “accountability” a standard next year.

Mixed Results Fail to Reject Null Hypothesis

The variance of results in various classes with various learning goals showed that learning did occur in classrooms with a standards-based gradebook. In fact, in many cases, the learning exceeded that of the traditional classroom. However, the learning gains in the classrooms with the standards-based gradebook did not exceed those of the classrooms with the traditional gradebook. The null hypothesis read:

Students who have grades communicated through an online standards-based gradebook will not demonstrate greater growth in learning than those students

who have grades communicated through a traditional gradebook, as evidenced by growth between pre- and post-assessments over learning goals used in a unit of study.

While growth in learning was evident in students who were using an online standards-based gradebook, they did not consistently demonstrate greater growth in learning than those students whose grades were communicated through an online traditionally organized gradebook. In this study, 93 students used an online standards-based gradebook (16 algebra students, 17 senior English students, 27 sophomore English students, 22 biology students, and 11 publications students) and had a chance to demonstrate learning growth. These students combined to demonstrate growth of an average of 6.1%. At the same time 123 students used an online traditionally-organized gradebook (23 senior English students, 79 sophomore English students, and 21 biology students) and these students combined to demonstrate growth of an average of 4.4 percent. These percentages were determined by adding together the percent growth in each learning goal and dividing by the number of learning goals in that class, before adding together the averages from each class and then dividing by the total number of classes. While these statistics show a greater increase in the standards-based classrooms than in the traditional classrooms, the difference is not enough to reject the null hypothesis and to support the alternative hypothesis: Students who have grades communicated through an online standards-based gradebook will demonstrate greater growth in learning than those students who have grades communicated through a traditional gradebook, as evidenced by growth between pre- and post- assessments over learning goals used in a unit of study.

This was determined using a z -test for difference between two independent means by selecting 30 students at random and measuring the growth achieved by those students. Of this sample, the students using a standards-based gradebook increased their scores by an average of 4.12%, while those using a traditional gradebook grew by an average of 4.47%. The result of this test was a z -score of -0.0921, which failed to reject the null hypothesis when compared to the critical values of ± 1.96 .

Table 8.

Learning Growth z-test of Two Independent Means

	Standards	Traditional
Mean	4.11	4.46
Known Variance	226.58	206.39
Observations	30	30
Hypothesized Mean Difference	0	
z	-0.092	
P($Z \leq z$) one-tail	0.463	
Z Critical one-tail	1.644	

A Great Amount of Thought Goes Into the Online Gradebook

If nothing else, the collection of data discussed in Chapter Four reveals the great amount of thought that goes into gradebooks daily. Whether it was the thought of students and parents to view, analyze, and discuss the online gradebook, or it is the discernment of teachers to comprise a gradebook in one way or another, it was almost always at the forefront of the minds of those in education. This chapter revealed the frequency with which students and parents look at the online gradebook, as well as the deep thoughts they have as they look at the online gradebook and the data concerning the decisions teachers make within it. Also revealed in this chapter were the many different methods teachers used to make their gradebook as fair as possible, while allowing it to be

the best communication tool it possibly can be. This data, both qualitative and quantitative, allowed for multiple conclusions, which will be discussed in Chapter Five.

Chapter Five: Discussion and Reflection

In an effort to best understand the way the online gradebook is presently used and the way it could be used in the future, this study explored the practices, thoughts, and preferences of students, parents, and teachers. The exploration of their practices included an analysis of the frequency the online gradebook was used. This showed the great potential technology has given educators to use the gradebook as a learning tool, rather than as a recording device. However, analysis of the thoughts of each of these stakeholders revealed the great dissatisfaction that exists in regards to gradebook construction. Teachers want the online gradebook to be a tool that enhances learning and students and parents clearly want the gradebook to be as helpful as possible, but all three of these groups provided responses that show they are dealing with the gradebook by working with its inadequacies and trying to get as much out of it as they can. Lastly, this study derived some preferences from students, parents, and teachers that could give direction to educators and district leaders as they consider the vision they have for the online gradebook and how it might affect their mission to prepare children for their next educational challenges.

This study also attempted to show that student learning growth can be affected by one gradebook construction or another. And while the study produced mixed results, one solid fact emerged: in the classes where this study was conducted, the students, parents, and teachers increased the attention they paid to learning standards, as opposed to what they had done in the past. For this reason, it is not so surprising that nearly every study of student learning growth revealed an increase in learning, in both the classrooms using a standards-based gradebook and those use a traditional gradebook. And while teachers

have likely always been more focused on the learning standards they teach than the students who learn them or the parents who monitor them, it is likely that the students involved in this study were more likely to be able to answer the question: "What did you learn at school today?" Whether they were in a traditional or a standards-based classroom, they knew what they were learning because they pre-tested on the skill, recognized the skill as they worked on it, and post-tested on the skill. They knew what they were learning, and if nothing else, the study reveals the importance of formative assessment and feedback to guarantee learning.

With those successes identified, it is now appropriate to break down the conclusions derived from students, parents, and teachers in this study to give educators the best opportunity to use this study as a guide to positive change to teacher practices and student learning.

Conclusions Derived From Students

The schoolhouse is something that students used to have access to for approximately seven hours each day. They would arrive at school around 8:00 each morning and leave around 3:00 each afternoon after learning as much as they could possibly take in. And while many students may have stayed after school for one activity or another, they eventually went home to work on homework. However, that homework was worked on much more blindly than it is today. Presently, students can open the doors of the school 24 hours a day, by virtue of the Internet. Today, students email teachers when they have questions and view websites to remember what they did in class earlier in the day. Sometimes, teachers host online conversations and coordinate blogs so students can discuss their learning at any time of the day. And importantly, students are

able to view the online gradebook to learn more about their successes, failures, and progress.

The gradebook, however, is the component that may be lagging behind the advances that email, websites, and even blogs give the classroom teacher. This is because it may be the classroom connection that students forge online most often, but the information it provides can vary in so many ways. An exploration of the gradebooks in this study revealed that sometimes the gradebook can provide clear learning goals that are being pursued, but other times those learning goals are much harder to identify without looking into other sources. Sometimes the gradebook can show progress towards learning goals, while other times it shows only a student's present level of understanding. Some gradebooks clearly show a student's effort in a class, while others do not. However, while gradebooks can show all this variance, they all show the letter grade the student is earning, and that may be all the students are looking for anyway.

Students who participated in the focus group made it clear that grades can change quickly. Clearly, the human element of grading is what makes this the case. Students submit assignments and then wait for teachers to grade the assignment, input it into the online gradebook, and make the changes available for student view. Some teachers post assignment scores quickly, while others update the gradebook in a much less timely fashion. However, the students at the school of study made it clear that, like the adults of the 21st century, they appreciate quick feedback and up-to-the-minute information. The analysis of student gradebook access revealed that these students check the gradebook every day, and they look at it at all times of the day. School is such a large part of their

lives, and they want to know where they stand in their classes on their own time, when they are ready to delve into the information.

The ability to get this information quickly is one benefit student identified with the standards-based gradebook. They want to be able to see the letter grade currently being earned, and then be able to quickly figure out where improvement can be made, if necessary. The standards-based gradebook is progressive in nature, meaning there will be opportunities to improve their scores, and they like this. Students also like the fact that the standards-based gradebooks show them what is expected of them. They know what they are learning, and they know how well they understand it. In some cases, they know what they have to figure out to increase their scores. The focus group made it clear that they don't like surprises. They do not like to have teachers create important, high-point assignments unexpectedly.

However, in further analysis of the negatives of the standards-based gradebook, the students identified more that they want out of a gradebook that they did not feel the standards-based gradebook provided. Grades, they believe, should be derived from multiple sources. Meaning, tests belong in the grade, but they also believe other types of assignments should contribute to the grade. And without the knowledge of differentiated assessment that educators have, the students determined that the standards-based gradebook might not allow for such things. Looking out for one another, they clearly did not want the "bad test-takers" to be at any disadvantage. Furthermore, the students want trying and contributing to class to stand for something. And while this does not agree with the philosophies of the standards-based grading advocates whose research was

discussed in Chapter Two, "trying" is clearly a "standard" that students believe should be assessed.

Whether a gradebook is constructed by standards or assignments, it can be concluded that students want five things from the grading process:

1. A quick and clear understanding of the grade they have
2. Opportunities to improve the scores they see
3. Clear expectations
4. Differentiated assessment
5. Trying should count

Even if the gradebook is constructed in a way that includes all of these factors, the students made it clear that "fairness" is an overarching quality that a gradebook has to have. Meaning, students who do less work should not be rewarded with the same grade of those who are trying. This mentality, which is prevalent in society and in the workforce, is one that is hard to incorporate into a gradebook that does not include zero grades as a punishment to those who neglect to do assigned work. Different from the desire for "trying to count," students want to know that they can be differentiated from their classmates who do not do their work, so long as they do. Consequently, deciding how to do this while also constructing a gradebook that does the "five things students want" may be the most important obstacle standing in the way of making the gradebook more effective. Educators have to find a way to eliminate the question of fairness from one student to the next.

Conclusions Derived From Parents

"Fairness" was also a topic that immediately stood out in the preferences of parents. They believe that gradebooks can be indicative of teacher bias and subjectivity. For this reason, parents were quickly against the idea of a standards-based gradebook. The average, they indicated, gives the student more control of what his or her final mark may be. Allowing a teacher to subjectively assign a score to a skill, no matter if it is based on a collection of data, is likely unfair, they believe. And while this is different from the students, who needed fairness to keep a student who does not try from earning a high grade, parents also needed fairness because of the relationship of humans. They did not think it fair for bias to affect a grade in any way. The parents who participated in the study, through this discussion, revealed that having a concrete way to determine a grade objectively is non-negotiable if they have a choice in the way gradebooks are constructed. Along these lines, the parent group revealed that rubrics could give grading the objectivity they seek. Teachers who clearly identify indicators of success and show how they correlate to compose a student's letter grade are considered more fair in the eyes of the parents.

A second conclusion that could be derived from the parents in this study was the preference for "organization," "motivation," and even "test-taking" to be skills that could easily be isolated in the gradebook. While the curricular learning goals are important, the parents made it clear that it is the responsibility of the school and the parents to work collaboratively to help students in these three areas because of the great effect they will have on a student's future success. While again, the advocates of standards-based grading who were featured in Chapter Two would say that including these factors in the grade

contradicts the purpose of standards-based grading, it is what parents want. Researchers argue that the goal of standards-based grading is to isolate what the letter grade communicates, limiting it to communicating only the knowledge and ability of a student in a subject area. However, the parents who participated in this study do not mind the mixed message that is sent when a grade encompasses curricular knowledge, organization, laziness, and test-taking ability all in one. The traditional gradebook, the parents believe, has each of these components. However, a standards-based gradebook could include these factors, if a school or a teacher chose to measure them as standards, just as they measure the curricular goals.

Lastly, it is important to note that parents also want the information they want, when they want it, just as their sons and daughters indicated in their focus group. However, different from the students, the parent group indicated their desire to point and click to get the information they need, in the format they want. If gradebooks can exist in a traditional format and show things like organization, motivation, and test-taking ability, and if they can exist in a standards-based format and show things like growth towards curricular standards, then parents don't want to choose: they want both. This conclusion shows that parents see the benefit of the standards-based system, but they are reluctant to let go of the positives of the traditional system. As a result, whether a gradebook is constructed by standards or assignments, it can be concluded that parents want four things from the grading process:

1. Rubrics to make calculation of the final grade as objective as possible
2. An indication of curricular understanding and ability

3. An indication of organizational ability, motivation, and test-taking ability
4. The ability to decide whether information is presented in a traditional or standards-based format.

Conclusions Derived From Teachers

Any strong school administrator knows that change to any school system requires a great deal of buy-in. And with something such as gradebook construction, which teachers perceive as a sacred part of their philosophy, a strong administrator knows that such a change is easier said than done. Even if the nine things identified by students and parents in this study are accepted by the teachers, affecting actual change to the construction of the gradebook is a tough task. For this reason, it is perhaps most important to understand the preferences of teachers, and this study strived to do so.

First and foremost, teachers want gradebooks to be useful for students. During the focus group, teachers indicated multiple times their desire for the gradebook to be a tool students could use to progress learning. However, teachers fell into two distinct groups. Those who supported the standards-based format felt strongly that the chance to view standards and to see current standing towards achievement of learning standards gives the student a chance to know specifically where focus should be placed. However, those teachers who prefer the traditional gradebook feel that, if used correctly, students can derive their areas of need by determining the learning goals of the assignments or assessments that did not meet expectations. Though teachers may differ in their gradebook of preference, it is obvious that they want the gradebook to be a tool students can use for learning.

Unfortunately, the second thing teachers want of the gradebook is for it to be consistent, and this is hard to accomplish if teachers are also to retain the autonomous right to infuse their own gradebook philosophies, as they were at the school of study. It bothers teachers when an *A* in one class is earned very differently from another class, sometimes with the same course number and title. However, until teachers are willing to agree on concrete gradebook protocol, this consistency cannot happen. Disagreements on whether or not to count participation or whether or not to include extra credit are just the beginning of deep conversations that educators have to engage in in order to come to agreement that will lead to gradebook consistency. The range of these conversations is detailed in Chapter Two, and evident in the research summary is that the decision to use a gradebook in a traditional format or a standards-based format is deeper in this conversation to achieve gradebook consistency. While this conversation is a challenge to have school-wide, perhaps it is more easily begun within curricular departments or within teacher teams. Consistency between those that teach the same course would be a step in the direction that teachers desire.

Despite the challenge that comes with agreeing on a gradebook philosophy, the teachers in this study almost wholeheartedly agreed that the use of zeroes distorts a student's grade. The teachers in this study propose many different solutions to fixing this problem, and all have approached the problem differently in their own classes. While some teachers simply accept late work for reduced credit, other teachers refuse to give a student a grade lower than a 50% on any assignment, citing that this is a punishment without it having an exponentially adverse effect on a student's grade. Other teachers believe the solution to fixing the effect of zero grades is standards-based gradebook

construction, and this is the reason they use this gradebook format. This problem, perhaps, should be the first addressed by school leaders.

Lastly, teachers indicated that they would like the gradebook to be a tool they can use to determine class plans. Some teachers believe the fact that the traditional gradebook provides a mean for assignments is enough to decide whether or not students understood a lesson and allows them to decide whether or not to move on. However, other teachers like to have the information disaggregated into specific skills, as the standards-based gradebook allows. One conversation in the teacher focus group suggested that teachers in some subjects, like English and foreign language, have a pre-determined set of skills that sometimes range multiple grade levels and require continued focus to achieve proficiency by graduation. Other subjects, like math, have skills that build off of one another. Meaning, a skill does not necessarily need to be repeated, but one must be understood before a class can move on to the next skill. As a result, the teachers in the focus group indicated that standards-based grading may be better in situations where skills require continuous repetition and improvement, whereas a traditional gradebook may be better in a class that requires students to master a skill before moving onto another.

Whether a gradebook is constructed by standards or assignments, it can be concluded that teachers want four things from the gradebook:

1. Students should be able to use it as a tool to affect learning
2. Consistency in the philosophies that affect a final letter grade
3. A solution that eliminates the negative effect of zero grades
4. A way to derive data from the gradebook to use for lesson planning

Conclusions Derived From Learning Growth Analysis

While the focus groups allowed this study to identify a total of 13 different desires students, parents, and teachers have of gradebooks, the learning growth analysis allowed for several conclusion of its own. Because the teachers in this study attempted to incorporate the standards-based format in different ways, different lessons about the incorporation of standards-based grading can be derived from each individual study.

In the first study, a math teacher created folders representing each standard of study. And while she still allowed the scores in each folder to be averaged as a traditional gradebook would have averaged them, the students were able to see which standards were their strengths and their weaknesses, which this teacher believes resulted in some learning growth. This strategy serves as an excellent opportunity for a teacher and his or her students to focus on curricular standards without deviating too far from the traditional gradebook norms that give students, teachers, and parents comfort. The pre-test and post-test format also gave this teacher an opportunity to present learning goals, this teacher believed. And, though this is a math class that builds off of previous learning goals in subsequent units, disaggregating data in the standards format allowed students struggling with an "old" learning standard to keep working on it as new learning goals were introduced.

The second teacher in the study, an English teacher, also saw improvement from his students. However, his work revealed two important conclusions. First, a comprehensive rubric that can be used for an entire grading period is important in classes where students will have multiple chances in the grading period to demonstrate proficiency. This teacher reported that his students were confused when their scores did

not change from one assignment to the next. However, if a learning target and its indicators of success are obvious, students will be able to recognize the steps that will lead to score growth. As it was, the scores seemed to be contrived a bit too subjectively for the students' liking, so the teacher indicated he would change his class to include rubrics for all learning goals in future semesters.

The other conclusion that came from the study of this teacher was that it was hard for him to make standards grading fit into a traditional 100% grading system. He tried to use a 4-point scale for grading, where a 2 out of 4 demonstrates basic understanding. This is the same indicator used by the Missouri Department of Education on its state assessments. However, while he wanted students to recognize that they have some understanding but room for improvement, they only saw the 50%, and a failing score. This was, in part, because the school was using a 100% system, though he was using the 4-point scale in his class. Similarly, he had students with a 3 of 4, demonstrating a proficient understanding, but this 75% score is a *D* in the school where the study took place, and this was unacceptable to students with proficient understanding. Consequently, he had to make big changes to make the standards system work, to the point that he moved to a 10-point scale, but only awarded scores of 7, 8, 9, and 10 (instead of 1, 2, 3, 4). Schools may need to address this conflict between the two systems if they hope to have teachers implementing a standards-based program.

In the analysis of Teachers C and D, also English teachers, Teacher C provided yet another conclusion. For her, it was clear that her encouragement of students to address their weaknesses was a key contributor to their learning growth. Therefore, it may not be enough for teachers to simply disaggregate data by standards in a gradebook.

It may be more important for the teacher to remind students of the data available in the gradebook and to have methods in place for students to address their needs with these weaknesses and opportunities for them to reassess to demonstrate improved understanding.

Because Teacher E used a standards-based gradebook similar to Teacher A and because Teachers E and F participated in a pre-test and post-test study similar to Teachers C and D, there were no significant new conclusions reached with this pair. However, this pair again revealed that a future study of learning growth needs to have subjectivity eliminated from it. And for school leaders hoping to implement a standards-based system and to gauge its results, subjectivity also needs to be eliminated there. The pre- and post-tests administered by teachers in this study were all graded by the teachers themselves, perhaps lending some subjectivity to the great grade increases that were found. Importantly, in studies of two teachers, the individual teachers graded their own assessments. Consequently, because the teachers were hoping for an increase in learning, greater growth than actually occurred may have been found. However, there is no evidence to verify this one way or the other. The conclusion, however, is that schools implementing programs focused on standards should have local assessment systems in place to measure student growth. However, a teacher who is documenting growth in a standards-based gradebook is likely doing so with some sort of accuracy. Growth is growth, even if it's overstated, and this evidence may be what a student and teacher needs to assess learning and next steps in learning.

In the final student growth analysis, the teacher purposely made her standards worth a total of 100 points. While this is not necessary in a standards-based system, it

likely helped students in their understanding of their letter grade. In this class, every score increase resulted in an additional percent in the gradebook. Thus, a student with an 80% could analyze where learning could improve to get one's score up into the "A" range. He or she might have been able to pick up three points in "Copy Writing" and three more in "Caption Writing," while "Photo Elements" may have been a real weakness that 6 or 7 points possible for improvement. In any case, this system allowed for standards-based grading to do what it is designed to do: get students focused on standards. Equally important, this system made it hard for a student to completely ignore one standard or another if he or she hoped to earn an "A" grade. At some point in the semester, the student had to attack the weaknesses that were keeping one's score down.

In summary, an educator hoping to implement a standards-based system in his or her school might consider the following seven conclusions:

1. Any effort to disaggregate student assignment data into categories of learning standards will increase student and teacher focus on curricular goals, no matter how "by the book" the standards-based implementation may be.
2. It is important that students have a chance to continue working on learning goals throughout a grading period (quarter, semester, etc.).
3. A rubric must be used for every skill if they are to be allowed to continue working towards learning goals throughout a grading period.
4. A school hoping to have standards-based grading in use must rethink the way in which letter grades are contrived (i.e. student who has a 3 out of 4 in a skill, and a proficient understanding, cannot have a 75% if the school

considers that a "C" or "D").

5. Teachers must remind students how gradebook data can be used in the learning process if it is to be used in the learning process.
6. Schools must have local assessment programs in place, with tests graded by people other than the teacher, to truly measure learning growth success.
7. Schools forced to maintain a 100% scale might help student and parent understanding of grading systems if standards equal a point total of 100.

Summary of Findings and Implications

Schools should recognize the great opportunity that the online gradebook presents. While there are strengths to the traditional gradebook, no student, parent, or teacher who participated in this study is satisfied with the gradebook traditionally used in schools. They may not like some of the philosophies that comprise the standards-based gradebook, but they also feel the traditional gradebook is antiquated. Consequently, when all of the information and data in this study is considered, schools that want to make a change to the structure of their gradebooks may recognize a path to doing so.

First, teachers must find common ground. The most obvious area for common ground revealed in this study is around the existence of zero grades. Students, parents, and teachers indicate that there should be some sort of punishment for students who don't do their work. However, that punishment cannot be a score that is 59-69% below a score that indicates failure (69% at the school studied, 59% in many schools).

After finding this common ground around zero grades, school leaders must encourage teachers to disaggregate assignments into categories of learning standards.

When students, teachers, and parents can clearly identify the learning goals of a course without having to "dig out" the course syllabus, there will be an increase of attention to learning goals and a likely increase in student understanding and ability.

Next, focusing gradebooks on standards, in one way or another, allows for learning to no longer be limited by time. Schools must establish the norm that students must be allowed to continue to improve on learning goals throughout a semester. Developing a way to avoid punishing these students for understandings and abilities that develop at a time later than the majority of one's peers corresponds with this step, but is not entirely necessary so long as systems exist to get those students focused on standards in which they have yet to show proficiency.

Lastly, schools must put a local assessment program in place to measure growth of standards. When school leaders take responsibility for monitoring growth towards learning goals, teachers will be compelled to disaggregate data in their gradebooks to guarantee that the necessary learning is happening prior to these local assessments.

This summary of findings and implications allow the research questions and hypothesis of this study to be addressed with moderate success:

Research Question 1:

What are the differences in understanding of learning goals and student growth towards those goals when teachers use an online, standards-based gradebook compared to an online traditional gradebook?

This study has proven that students demonstrate differences in understanding of learning goals when students are made aware of clear learning goals. Whether they are made aware of these learning goals through a pre-assessment, a gradebook construction,

or both, students who focus on learning goals and know what standards they are focusing on in a class improve. In this study, 10 different classes of students demonstrated growth when standards were focused on in one of these two ways. These classes focused on a total of 20 different learning goals during this study and students demonstrated growth towards these learning goals in 17 instances.

However, in the 10 places where the growth of students using a standards-based gradebook were directly compared with students using a traditional gradebook, a class using each gradebook outgained the other in exactly five instances apiece. As a result, while no one method of gradebook construction can be identified as a clear method that guarantees student learning, the focus on standards was likely a contributor to student learning in this study.

Sub-Question A:

What are the pros and cons of arranging an electronic gradebook by standards rather than by assignment, as the traditional gradebook does?

Though it cannot be guaranteed that arranging a gradebook by standards has a more positive effect on student learning than arranging it traditionally, there are multiple "pros" and some "cons" that students, parents, and teachers were able to identify.

First, students like the quick format of the standards gradebook. It is easy to quickly identify the overall letter grade they have and it is clear to them what needs to be improved for them to raise the letter grade. The opportunity to improve without penalty for initial understanding is itself something they identified as engrained in the format of the standards-based format and this is a pro the students considered quite advantageous.

Parents also liked the ability to see a student's growth towards learning goals and appreciated that the standards-based format made it clear what those goals are.

Similarly, teachers like the fact that the gradebook can be used as a tool by students and parents to see growth towards learning goals and to assess where improvement is necessary. They, too, like to use the gradebook as a tool, and when it is disaggregated into standards, they can determine what their next lesson may need to focus on. Teachers are also satisfied with the way which the standards-based gradebook addresses the issue of zero grades so negatively affecting letter grades.

The standards-based gradebook did reveal some cons, but not those that cannot be addressed, depending on the school's philosophy. For instance, parents cited the need for organization, motivation, and test-taking ability to be clearly evident in the gradebook's format. However, if a school chose to include it, these skills might be listed within the gradebook as standards in every class. Some school districts incorporate standards found in their mission or vision in gradebooks; others have teachers give two grades, one for curricular understanding, and another for standards like organization and motivation. The gradebooks the participants in this study viewed, however, did not include these factors.

Students also found the standards-based gradebook to be too accepting of students who don't put forth 100% effort all the time. They don't want students like this to be rewarded with high grades when they make the effort to work hard all the time. It is important to address this mentality, in one way or another, before schools can properly achieve a school-wide implementation of standards-based grading.

Lastly, teachers are most afraid of the standards-based gradebook because it is perceived to add additional work to the teacher. Not only do they need to sometimes input an assignment in more than one place (if the assignment assesses multiple standards), but they also have to make more decisions. Instead of the average giving them a clear-cut standard from which to determine a final grade, the idea of weighing the mode or most recent assessments is scary. Teachers feel this will open them up to uncomfortable conversations with students and parents because of the subjectivity that may play into such decisions.

Sub-Question B:

What are the gradebook preferences of teachers, students, and their parents?

Just as a native of planet Earth is always going to prefer his home planet over Mars, or as a citizen of the United States will always consider himself an American, even if he has the chance to live in France, the traditional gradebook will always feel like home to students, parents, and teachers. There will always be people who love to travel and are happy to call a foreign country home, just as there will be some students, teachers, and parents who love the idea of the standards-based gradebook, but this study revealed that at this time a standards-based gradebook may be tolerated, but not accepted.

Students are scared of the fairness that standards-based gradebooks uphold. Schooling is a game that they understand. They know the rules. However, using a standards-based gradebook changes the rules. Some teachers like the fact that changing the rules can cause students to quit focusing on assignments and to begin focusing on learning goals, but many of these same teachers are apprehensive to try a system with so many unanswered questions. Furthermore, while teachers in the school of study were

encouraged to experiment with standards-based grading, and they have the support of school administration, they do not yet fall into the majority. If the majority of teachers are still using a traditional gradebook, the minority using a standards-based gradebook have to work harder to help students and parents understand the way the grade is comprised.

Parents lived up to the stereotype of being tough to satisfy by preferring both methods of gradebook. If there is a way for them to see growth towards learning goals, they want to see it. However, they also want to see scores on assignments. Furthermore, the traditional gradebook provides information that shows them how hard their sons and daughters are working, how organized they are, and whether they do well on tests or not; they also want to continue to have this benefit. The parents in this study preferred the standards-based gradebook, but only if they could continue to have the traditional gradebook, too.

In the movie *Back to the Future*, time-traveler Marty McFly has the opportunity to treat students in 1955 to his rendition of "Johnny-Be-Good." And while the students initially find the tune catchy, they soon quit dancing and stare at Marty finishing a very 1980s guitar solo on the stage. When he realizes they are no longer dancing, Marty says, "You guys might not be ready for this yet...but your kids are going to love it." This message relates to standards-based gradebook construction in that it is a generational shift that may not yet be ready to happen. Likely, the continued focus of educators on standards will lead to some sort of standards-based gradebook construction. However, it is not a shift that can happen overnight. Rather, it needs to happen progressively, as

school communities are ready to accept it, much like communities learned to first tolerate, and then accept, Rock 'n' Roll.

Recommendations for Practice and Policy

Schools that choose to implement a standards-based gradebook construction have several decisions to make before implementing such a program. This study revealed the uneasiness felt by students, parents, and teachers associated with standards-based grading because, despite the positives of such a system, standards-based gradebooks are different from the traditional norm. To ease this transition, teachers need not only to be supported by school administration, but they need to be given some guidelines for implementation. The school of study was attempting to allow teachers to maintain autonomy and the right to decide how to implement a standards-based program. However, while it is advised to have teachers collaborate with administrators to determine standards-based protocol, protocol must exist to give comfort to the teachers. They need to know that other teachers are implementing similar gradebooks in their own classes so they do not feel like they are on an island, alone, left to deal with this foreign grading method. Even if schools do not implement school-wide protocol, it is advised to have teams of teachers work together to establish guidelines for standards-based gradebooks to make the transition easier, giving it a better chance of success.

Second, while some schools may choose to implement standards-based gradebooks in the way the school of study did, giving teachers a choice to use a standards-based method or a traditional method to determine the method that is most successful in increasing student learning, it is advised that this is done in a more organized fashion. Again, giving teachers a chance to collaborate, it would have been

helpful if the three English teachers involved in this study each worked together to implement common plans. Schools implementing standards-based gradebook may want to begin with some departments implementing and some not, or with some teachers from each department implementing.

At the school of study, parent communication regarding the implementation of different gradebook structures was communicated only by the teachers to the parents. School administration should have been involved in communicating this. However, due to the wide-range of standards-based gradebooks in use, it would have been hard for the administrators to explain the many differences between the gradebooks. This alone, however, may be a reason for establishing some consistency between the different standards-based gradebooks in the building. Though, as discussed, there is a great deal of variance between traditional gradebooks that goes untouched. However, that variance is more well-accepted by students and parents because that same variance has existed for generations.

Lastly, a slow implementation of standards-based systems is very possible. As seen in the study of student growth, a standards-based system might involve assignments in standards-based folders so that teachers may maintain their traditional grading practices while focusing students on standards at the same time. To move even more slowly, schools may begin coming to agreement amount gradebook philosophies such as what to do with missing work or whether to count participation before attacking a change such as a full implementation of standards-based gradebooks.

Failure to Reject Null Hypothesis Warrants Future Research

Though this study did not show a definitive growth in student learning when one gradebook or another was used, it did reveal many positives that support standards-based grading systems. However, a more thorough study of standards-based grading in a school where students and teachers were more familiar with standards-based system may have resulted in some quantitatively positive results, revealing a clear distinction in learning growth between students in classes using traditional gradebooks and those using standards-based gradebooks.

The study of student growth in this study was over the period of one curricular unit. This decision was made, in part, because some teachers involved in the study were choosing to try standards-based grading, for the first time, within one unit in the semester of study. They were encouraged to do this by building leaders, and this was consequently studied. However, observing student growth over a full semester or even a full year may have revealed results different from those revealed by this study. Also, the fact that every teacher involved in this study used a standards-based gradebook for the first time within the past year may have affected the results. It can be suggested that as teachers use a standards-based system for a longer period of time, they become more well-versed in helping students use the gradebook to their advantage. As it was, some teachers discussed the gradebook regularly during the period of study, but others did not mention it at all, aside from letting the students know their grades had been updated online. Similarly, the more students involved, the longer they are studied and the longer they have used a standards-based system could have led to a greater differentiation between students using traditional and standards-based gradebooks.

Ideally, this study would have featured only teachers who taught the exact same lessons and administered the exact same tests, while using a traditional gradebook in one or more classes as a control group, and by using a standards-based gradebook in other classes. While this study did feature one teacher who did this, it relied more on data from two different teachers teaching the same course, and they likely taught their lessons differently, resulting in data that could not be isolated to show only the effects of standards-based gradebooks. Similarly, it might also have been advantageous to assess the differences between two teachers using standards-based grading, but in a situation where one teacher discussed the gradebook while the other one did not.

Lastly, this school did not begin the year with zero understanding of standards-based grading. In fact, they had much discussion in the school year prior about zero grades and the detrimental effect they had on letter grades, making them inaccurate communication. The school had bridged from this point into the idea of grading by standards rather than assignments. While this was not a problem, the study may have revealed different results if the teachers had either more or less understanding of standards-based grading.

Final Notes

This study was conducted because I, the researcher, had previously used a standards-based gradebook in my classroom with great success. However, that success did not come without initial failure. After learning about the idea of grading with standards and realizing the amazing impact it could have on my classroom, I chose to grade my students using 24 of the 43 standards in our English curriculum. Unfortunately, neither the students nor I were able to truly internalize the learning standards because I

tried to work with so many of them in the same semester. However, after continuing to research the idea of standards-based grading, I returned the next year ready to focus on 15 standards that my students could internalize and work to improve.

Similar to the teachers in this study, I began my semester by administering a pre-assessment that tested students on all 10 skills they likely hadn't learned yet. From there, my students had baseline scores from which to improve. While I rotated through lessons that were based on these standards, the students were encouraged to work with me independently on their lowest scores. Over the years that followed, I developed several assessments for each of the learning goals I focused on. Consequently, when students came to work with me, I was able to help them and then assess them for increased understanding. And while that means that some students may have assessed on a standards two or three times and others assessed on it seven or eight times, the system worked and my students were learning a great deal.

I did use class time to have students chart their progress on learning goals. This allowed them to see progress, which built confidence, and it also reminded them to work on skills they may have been avoiding. This charting, however, encouraged students to use the standards, again allowing them to internalize the course goals they were responsible for learning. By the end of the semester I was able to give my students a post-assessment on the ten skills, and the improvement was rewarding for both me and the students.

The next semester I would move on to new standards, for the most part. I would repeat important standards on which the students failed to meet my expectations the first semester. Importantly, it may be obvious that I did not grade every standard. While this

is true, I did teach every standard and work with it in class. Those that were graded were those that my department considered most important, as well as others I determined as key. Rest assured, the others did not get neglected. In 2009, I had the chance to share my classroom experience with the National Council of Teachers of English, and this is what I wrote:

My school year could not have ended better. All I could do is smile as my students engaged in a classroom battle that allowed them to prove what they know and are able to do. The best part about it was they were proving they had skills that I know they didn't have at the beginning of the semester. And if I hadn't gone outside my comfort zone to grade students differently than I ever have before, I certainly wouldn't have had this grand finish...and my students would not have improved so dramatically.

I started the semester by telling students I was no longer abiding by a traditional grading system. This scared them. I told them they no longer would be able to buoy their grade by mastering some skills. They would only be successful enough to earn an A if they could master almost all of the 24 "I can statements" I had given them. Because I teach English, the statements consisted of everything from "I can use effective transitions" to "I can question text while I am reading it." My students understood that my goal was to pinpoint what they had trouble with and then to force them to focus on it. While focusing on a student's troubles makes total sense for every teacher in every classroom, we can't motivate a student to improve if he can maintain a good grade proving he has mastered just a handful of skills again and again.

Immediately I set out to learn what my students already knew and were already able to do. By the time six weeks had passed, my students had 24 scores, one

representing each “I can.” At this point, my assignments began to look a bit different. While I would choose one or two focuses for the assignment, my students would have to pick one or two “I can statements” they would like to prove on the same assignment. Because every student wanted to earn an A, each sought to prove one’s ability to conquer the skills my grading system said he or she lacked. Instead of turning in an essay with mediocre transitions, a student who was struggling with this would come to me for extra assistance. Instead of struggling to “understand grade-level fiction,” those students struggling with a text came to me because they realized a problem had been noticed.

This grading experiment culminated with a project that required students to prove that a book was a “must-read.” Students had to put together a presentation that showed why one book was better than another, but each individual had control over how he or she would be graded. So, students focused on their weaknesses and presentations proved that these weaknesses no longer existed. In a classroom, what can be better than students who have addressed their individual flaws by working to correct them? I can think of nothing. This was the most effective semester I have ever spent in a classroom. With that said, the experiment was not always easy. It took a lot of getting used to for students. One thing I will do differently next year is to spend the semester focusing on fewer “I can statements.” While I will still strive to teach every curricular standard, students will focus on approximately 10 that will comprise their grade. I am doing this because I want students to commit our focuses to memory and because I want to guarantee that every mastered skill is truly mastered. As it was, some skills were assessed a minimal number of times. There just wasn’t time to devote a legitimate amount to each of the areas I was covering.

Another problem existed because some students became lazy with skills they had already proven they could do. For instance, a handful of students who had perfect scores in one or more “I can” areas at the six-week mark began to slack because they had already proven they “could do it.” Because of the way my grading system was set up, I was grading them for what they could do, and not necessarily for what they turned in. So if I student had already proven he could do something five times, could I lower his score when he didn’t turn in the sixth assignment assessing this skill? This grading system eliminated zeroes, and I didn’t like that students found ways to take advantage of that. For a solution, I am turning to my district’s mission statement.

Next year I will assess ten curricular “I can statements” and five mission-based “I can statements.” For instance, students will have to prove they can “transfer their learning to new challenges, tasks, and situations,” just as they prove their curricular abilities. This will give me the ability to keep a focus on the skills I am working to develop while also focusing the students on some lifelong objectives identified by my district.

I can’t say enough about the importance of the “I can” statements in this process. My curriculum coordinator, Parkway’s Rebecca Langrall, worked with teachers to turn state objectives into sentences students can understand. If students are aware of what they should know and be able to do, this alone empowers them to pursue classroom success. Once a student can identify a problem, it is a lot easier to fix. This simply makes incredible sense.

When I was in high school, my teachers challenged me in a lot of ways and I am thankful for every one of them. However, those who helped me most were those who

avoided tricking me into making mistakes. It is easy to be deceived if you are unsure of an assessment's purpose. What am I supposed to be showing I can do? The same teachers who revealed an assignment's objective were also those who were making me aware of my strengths, and this is likely what inspired me to teach English. "I can" statements are an easy way for me to assure myself that I am accomplishing what my favorite high school teachers were able to accomplish. If I can identify my strengths, I gain confidence. If I can address my weaknesses, I gain even more.

Making the transition to a standards-based grading system is scary for most teachers. It's different, and in a lot of cases it required some extra work. However, once the students caught on, the system drove itself. Students identified their own curricular flaws and I did what I went into education to do: I taught them how to be better. Last week I got a letter in the mail from a student who was inviting me to a Teacher Appreciation Night at the Missouri Fine Arts Academy. In the letter he discussed my desire to challenge students. This student was an initial opponent of the new system because he could no longer earn an A the way he had in the past. However, he addressed the "I can grading system" in his letter and in the end he was able to write: "This semester I didn't just get another A, I earned it."

Obviously, I had a chance to grow in my understanding of standards-based grading prior to conducting this study. As a result, it was hard to watch the quantitative results stay so close to the results from the classrooms using the traditional gradebooks. If the teachers in this study had a chance to learn more about standards-based grading and to grow their classroom strategies using standards-based grading, I am sure they would have affected more positive results on students. For now, I will hope that they stick with

the idea and grow with it as I did because while the students may not be ready for the standards movement yet, with teacher growth and focus around the idea, the students' "kids are going to love it."

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Appendix A: Example of Authentic Standards-Based Gradebook

Course: 054012-4 *ENGLISH 1
 Teacher: [REDACTED]
 Period 03



Grade: 09
 Student Summary Report

05/05/2010 12:43:06 PM
 Page 1 out of 1

EXAMPLE A

Grade Summary

Key: ** Group excluded from grade calculation

	Total Points	In-Progress Grade	Final Grade
Term 6 - Semester	48.5/60	80.83% B-	
Communication Arts	34.5/44	78.41%	
[REDACTED] Mission	14/16	87.50%	

Assignment Detail

Key: *M = Missing *L = Late *I = Incomplete *Ch = Cheated *Dr = Dropped *Ex = Exempt ** Assignment excluded from grade calculation

Term 6 - Semester

Assignment	Group	Due Date	Pts	Score
I can determine a text's messages & inferences	Communication Arts	05/26/2010	4	4
I can analyze motivations of fiction characters	Communication Arts	05/26/2010	4	3.5
I can determine meaning contextually/figuratively	Communication Arts	05/26/2010	4	2
I can make text to text & text to self connections	Communication Arts	05/26/2010	4	1.5
I can identify and explain literary techniques	Communication Arts	05/26/2010	4	2.5
I can sustain focus on a specific topic/argument	Communication Arts	05/26/2010	4	4
I can support Argument with Details and Evidence	Communication Arts	05/26/2010	4	3.5
I can create a logical progression of ideas	Communication Arts	05/26/2010	4	3
I can demonstrate command of grammar & mechanics	Communication Arts	05/26/2010	4	2.5
I can use precise and vivid words	Communication Arts	05/26/2010	4	4
I can discern the important ideas and summarize	Communication Arts	05/26/2010	4	4
I can clearly communicate my thoughts	[REDACTED] Mission	05/26/2010	4	3
I can transfer my learning to new challenges	[REDACTED] Mission	05/26/2010	4	4
I can work skillfully with others	[REDACTED] Mission	05/26/2010	4	4
I can understand the views and values of others	[REDACTED] Mission	05/26/2010	4	3

Note: 4 = Advanced; 3 = Proficient; 2 = Basic; 1 = Below.

Appendix B: Example of Authentic Traditional Gradebook

<i>Algebra I</i>		Course #: 434	Wednesday, November 14, 2012
		Period: G	Section #: 02
			Room #: 228

1	Class	=	Class Participation	18	4.8	=	4.8
2	Board	=	Board Work	19	Quiz 4.7	=	Quiz 4.7
3	4.1	=	4.1	20	Quiz 4.8	=	Quiz 4.8
4	Quiz 4.1	=	Quiz 4.1	21	Test 4.8	=	Test 4.8
5	4.2	=	4.2	22	5.1	=	5.1
6	4.3a	=	4.3a	23	Quiz 5.1	=	Quiz 5.1
7	Quiz 4.2	=	Quiz 4.2	24	5.2	=	5.2
8	4.3b	=	4.3b	25	Class	=	Class Participation
9	Quiz 4.3	=	Quiz 4.3	26	Board	=	Board Work
10	4.4	=	4.4	27	5.3	=	5.3
11	4.4b	=	4.4b	28	5.4	=	5.4
12	Quiz 4.4	=	Quiz 4.4	29	Quiz 5.3	=	Quiz 5.3
13	Test 4.4	=	Test 4.4	30	Quiz 5.4	=	Quiz 5.4
14	4.5	=	4.5	31	5.5	=	5.5
15	4.6	=	4.6	32	Quiz 5.5	=	Quiz 5.5
16	Quiz 4.6	=	Quiz 4.6	33	5.6	=	5.6
17	4.7	=	4.7	34	Quiz 5.6	=	Quiz 5.6

EXAMPLE A

Name	ID	1	2	3	4	5	6	7	8	9	10	11	12	13
Term		1	1	1	1	1	1	1	1	1	1	1	1	1
Category		CP	BW	HW	Quiz	HW	HW	Quiz	HW	Quiz	HW	HW	Quiz	Test
Date		08/16/	08/16/	08/22/	08/24/	08/24/	08/28/	08/28/	08/30/	09/04/	09/06/	09/10/	09/12/	09/14/
Possible		10	5	2	10	2	2	10	2	10	2	2	10	50
Mean		8.50	5.00	1.75	7.62	2.00	2.00	8.00	2.00	7.25	1.75	2.00	8.62	44.50
1. [REDACTED]	12302490	11	5	2	9	2	2	7	2	-6	2	2	9	44
2. [REDACTED]	12302594	9	5	0	-2	2	2	7	2	5	2	2	6	31
3. [REDACTED]	12302503	8	5	2	-8	2	2	9	2	10	2	2	10	48
4. [REDACTED]	12302750	8	5	2	10	2	2	10	2	-9	2	2	9	49
5. [REDACTED]	12303128	8	5	2	-7	2	2	10	2	8	2	2	9	48
6. [REDACTED]	12302451	8	5	2	9	2	2	10	2	-8	0	2	9	48
7. [REDACTED]	12302480	8	5	2	7	2	2	-6	2	6	2	2	9	47
8. [REDACTED]	12302446	8	5	2	9	2	2	-5	2	6	2	2	8	41

Appendix C

Focus Group Questions for Students

What are some of the differences you notice between the gradebooks of which you have been presented?

Which gradebook provides you with the most information? Why?

What features do you like about one gradebook as opposed to another?

Which gradebook provides you with the most information? Why?

How do you use the online gradebook to inform your conversations with your teacher?

Using Standards-Based Gradebook A, can you identify the skills this student is good at?

Using Traditional Gradebook A, can you identify the skills any individual students are good at?

In Standards-Based Gradebook B, the teacher is using the “most consistent level” to report on a task, rather than an average. What do you think of that?

In Traditional Gradebook C, students 4 and 7 have a D. Can you determine why that is? What suggestions would you give this student to improve his or her grade?

Vitae

Kevin Mabie is the principal of St. Francis Borgia Regional High School in Washington, Missouri. He is completing his second year as a high school administrator for the school district of the Archdiocese of St. Louis. Prior to working in school administration, Kevin was an English teacher for five years in the Fort Zumwalt School District and for seven years in the Parkway School District. While in the Parkway School District, Kevin facilitated multiple workshops on grading with standards and was the first English teacher in his district to use such a system. Kevin graduated from Lindenwood University with his Bachelor's Degree in 2000 and with his Master's Degree in 2003. He also earned his Educational Specialist Degree at Lindenwood in 2012 before pursuing his Doctoral Degree.