Standard-Referenced Grading

by

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Field Project

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Abstract

This field project addresses the concern that the traditional grading system, using a letter grade of A-F, does not communicate to students or guardians why they received a particular grade or what learning targets the students have mastered in a particular curricular area.

Using Salem's algebra class, the author assessed if changing to a standard-referenced system creates better communication of student mastery and justifies the grade each student receives. The process involved changing the algebra class from the traditional grading system to the standard-referenced system and receiving feedback through the author's personal reflections, surveys from students and guardians, and how the summation of the data show whether communication of mastery has improved. In the end, communication was improved for students and guardians. They were able to more clearly understand what standards were being performed well and which needed improvement.

Table of Contents

List of Tables

Chapter I: Introduction

Salem, like many other schools, has utilized the traditional method of grading since its inception. Many teachers have used the typical A-F scale to share with students and guardians how their child is performing academically and behaviorally. This method needs to be updated and sometimes needs clarification about what a grade tells a student or parent.

After attending workshops, listening to speakers, and reading articles about standard-based grading, the author would like to assess if standard-based grading would benefit the students and guardians Salem serves. Salem's students do not seem to have a concept of the learning targets they are aiming to master from the teachers. Through standard-based grading, the author feels this problem can be remedied. Standard-based grading aims to communicate student achievement through assessments and changes to grading practices. This allows both students and guardians to know learning targets that students need to improve upon and those that have been mastered while incorporating that information into a grade.

Utilizing standards-based grading will achieve the following goals:

1. Communicate clearly and effectively what a student has mastered and needs to master in a curricular area.
2. Create assessments that clearly assess the learning targets being taught by the teacher.
3. Allow the teacher to assess how the students are progressing towards mastery of specific learning targets.

Chapter II: Literature Review

Introduction

This research aims to ascertain whether the traditional grading method is the optimal way to assess students and if it is the best tool to communicate a student's growth in a curricular area to interested parties. Grading has been the same for over a hundred years, and while some aspects of school have changed drastically, assessment has strangely stayed the same. The literature review will dig into the research to compare the traditional way of grading with standards-based grading.

Traditional Grading

Types of Assessment

Assessment is the key to any grading process. It informs the teacher about the students through observations, questions, worksheets, tests, projects, and other forms. The information obtained informs the teacher on how and what to teach next, whether that be a review of learning targets already taught or moving on to different learning targets. Grouping students based on their mastery level for a learning target is a beneficial boon of assessment (Spencer, 2012). This allows teachers to group students who have partially met a standard or allows students with wide ranges of mastery levels to work together and learn from each other.

In traditional grading, many of a teacher's assessments are summative (Marzano, 2010). This means that the lesson is paused, the teacher has reached the end of a chapter or unit, and the assessment is given. The assessment typically is shown by students completing a quiz, test, or project. The teacher is not teaching during this time, but the students show their learning in the manner chosen by the teacher. These assessments are

meant to be the final product of what the student can do, and many teachers use assessments from the end of a chapter or in a resource book. The assessments are only sometimes checked to ensure the content matches the learning targets.

Sometimes, the teacher will use formative methods, such as note-taking, journaling, asking questions, or making observations. These assessments do not stop the teaching, but the teacher can do these during a lesson to understand students' mastery level and the content (Marzano, 2010). This informs teaching during and after the lesson and allows the teacher to adjust his lesson plans to meet the needs of the students.

In traditional grading, summative assessments are a one-and-done opportunity for the students to show mastery of their content. Sometimes, students are given another formative assessment to help them understand. However, after each assessment has been graded, they no longer have an opportunity to redo or show that they have mastered the concept.

The other aspect of assessment regarding traditional grading is that both formative and summative assessments are graded (Vatterott, 2015). The grades are then averaged out over the quarter or semester, and the grade is given to the students. This averaging means that the mistakes the students make early on in their learning will hurt their overall grade (Hooper & Cowell, 2014).

Grading

In the traditional grading method, homework and the number of points you get on the homework are the emphases (Iamarino, 2014). It is common for students to be graded on whether they turned their assignment in on time, whether the assignment was neat, whether their name was on the assignment, and by the content they are learning. These

are packed into one worksheet, project, or assessment the teachers assign to their students (Hooper & Cowell, 2014).

All of these assignments are turned into points and typically given a percentage. This percentage is then turned into a grade for the students. The students' foci become what the letter is on top of their papers rather than learning the objectives and concepts from the lesson (Iamarino, 2014). Students learn how to "play the game" of school and work towards getting the correct percentage or points by utilizing extra credit that ends up just being busy work rather than focusing on the actual learning that should be taking place (Westerberg, 2016).

The traditional way of grading communicates to students that the end result is all that matters. The learning process and what you learned only mean something if you have the correct percentage in the end (Munoz & Guskey, 2015). This message shows students that making a mistake is a punishment instead of a learning opportunity because it will ultimately hurt their grades. They are less willing to take risks because this method has much at stake. Teachers can utilize a History Adjusted Score method of grading which focuses on the last two assessments of the unit, but students still are focused on the points instead of the learning (Hooper & Cowell, 2014).

Communication

Through the traditional method, guardians are given one grade that informs them about how their student understands the concepts being taught, their participation in class, their work habits of turning their work in on time, and their social-emotional skills. There needs to be a breakdown of how the students achieved this grade and what they need to

work on or have mastered. Guardians do not entirely understand their child's progress and where they are in the above categories from a single letter (Iamarino, 2014).

Standard-Based Grading

Standard-Based vs. Standard Referenced

Standard-based grading is the practice where students only move on to the next learning target once they have mastered the current one. This allows students to move at their own pace and is very individualized. Standard-referenced grading follows many of the same tenets, but the learning targets continue to progress. Students must then try again to show their learning and understanding on their own time or during special class periods when the teacher allows them to work on a learning target they have not yet mastered. This literature review will use standard-based grading as the tenets are the same except for what is mentioned above. The writer will switch to using standard-referenced grading in the design portion.

Types of Assessment

In a standard-based grading approach, many different assessment types are used. Summative and formative assessments work hand in hand to inform the teacher of the student's progress and the need to master the learning targets being taught (Marzano, 2010). Through the teacher's use of both types of assessment, students can see how the assessments and learning are intertwined to best show what they have learned and can achieve. This lets students know that learning is important to the teacher, not just the assessment. Teachers may also utilize student-led assessments where students choose how to show what they have learned. Student-led assessments engage them in the assessment process.

Formative assessments are utilized to adjust teaching and to help students and teachers to assess where they are on the path to mastering the learning targets (Brookhart, 2017). These assessments are not graded but allow students to know that making mistakes is a part of the learning process and that there is still time to adjust before the time comes for them to show their mastery. Summative assessments are graded, allowing students to show what they have mastered. After the summative assessments are completed, they can show how they have grown throughout the process, and if the students still come up short, there will be an opportunity for them to show that they have mastered the skills later. (Zimmerman, 2017).

Grading

Instead of utilizing percentages and points, standard-based focuses on standards and learning objectives. Students are then graded on their mastery of each individual standard or objective (Drake, 2012). There are also separate learning targets for behavior, work habits, and social and emotional skills. This can also be done in traditional settings; however, standard-based grading normalized this practice. Standard-based grading functions best when behavioral factors do not contaminate the assessment data. This allows the teacher to share with guardians how their student is progressing with the non-academic skills without combining them into a specific content grade.

Homework and formative assessment's primary goals are to provide students with feedback on their progress toward mastery of a standard or learning target. (Marzano, 2010). This allows students to take risks without hurting their grades at the end of the quarter and does not punish students who take a while to grasp a concept. This also

would allow teachers to put students into groups working on mastering the same content to learn together and from each other (Spencer, 2012).

Summative assessments are graded and given back to the students to show where they are on the proficiency scale in terms of mastering a standard or learning objective. To calculate a grade, only the most up-to-date proficiency scale numbers are used when averaging for the student's grade (Heflebower, Hoegh, & Warrick, 2014). This will ensure that a student's mistakes at the beginning of the unit do not hinder showing what the student can now accomplish many days later (Heflebower, Hoegh, & Warrick, 2014). Students should be given multiple chances to demonstrate mastery of a standard or objective. Mastery should happen through the natural planning of the lesson, but opportunities should be given after the summative assessment for students who need more time for mastery. Teachers will have to be ready with multiple methods and opportunities for assessment so students can show their mastery (Zimmerman, 2017).

The number of standards on the summative test may cause anxiety for some students because of the length of the list. Teachers can help with student anxiety by giving students a list of the standards ahead of time (Lewis, 2020). The list allows the students to be aware of what will be expected of them on the test and help to curb their anxiety by being transparent with the goals they are expected to master.

Communication

By grading using standards, students focus on meeting the learning objectives instead of getting a certain percentage or grade. The focus on standards equips students to use academic language throughout the school day and in their communication with peers

and teachers. This tells students that the process is more important than the product, and it is okay to take risks and make mistakes as they learn (Munoz & Guskey, 2015).

Guardians will get a much clearer picture of the proficiency level of their children. They will not only be able to see the grade of their children, but they will be able to see the objectives and where their children are on the proficiency scale for each one (Drake, 2012). Standards allow guardians to help students with the objectives they are struggling with and celebrate the success and growth of their children.

Since the work habits, social, emotional, and behavioral pieces are separated, guardians can also see where their student is with non-academic standards. This separation ensures that the academic grades are not muddied by the non-academic skills that are just as important but should be separated from the grades. Standards will give the guardians a complete picture of their child instead of just a letter grade.

Summary

Traditional grading has been the standard for many years in education. It gives guardians and students a single grade that informs them how their student is performing in a particular content area. Typically, all assessments are graded and added into the final grade a student receives which can really hinder a student who does poorly on a few assignments. Traditional grading also allows students to "play the game" of getting good grades by just completing work on time or doing extra credit.

Standards-referenced grading allows for the standards to show what learning targets or standards the students have mastered or where they are in their proficiency. The learning targets allow guardians to get a full picture of how their student is doing in a content area instead of a single grade. Behavior and work habits are scored separately, so

students cannot receive a lower grade in a content area for not completing their work. Finally, assessments are used to give feedback and inform the teacher of the proficiency of the students.

Chapter III: Implementation

Introduction

Salem students have always used the traditional grading method. This method focuses solely on the grade received rather than the material and concepts that should be learned in each subject area. This field project aims to assess whether switching to Standard-Referenced grading helps students focus on the learning targets rather than the overall grade on the top of their assessments.

The author chose to do standard-referenced grading instead of standard-based grading, because staying with certain learning targets for as long as it takes for the student to master them will not allow the teacher to get to the necessary content. Opportunities for the students to show mastery of previous learning targets will be present in this process to allow students to show their mastery of previous learning targets as they continue to progress through the material.

Another by-product of switching to standard-referenced grading is the communication given to the students and guardians. Standards are laid out in a way that allows both students and guardians to know what the students have mastered, need improvement on, or are on their way toward mastery of the learning target. This change allows students and guardians to see the strengths and areas of improvement in a content area, as many students typically assume they are good or bad at an entire subject. Standards allow them to break down a subject like math and see that they have success and areas of improvement.

Utilizing standard-referenced grading will achieve the following goals:

1. Communicate clearly and effectively what a student has mastered and needs to master in a curricular area.
2. Create assessments that clearly assess the learning targets being taught by the teacher.
3. Allow the teacher to assess how the students are progressing towards mastery of specific learning targets.

Procedures

The first step was to figure out who would be a part of the project and how to assess the changes throughout the project. Salem's Algebra class was chosen to be the subject of the data. The class is a mixture of 7th and 8th graders consisting of one girl and two boys. All of the students are Caucasian. None of the students had previously been exposed to standard-based grading.

The next step was to create a list of learning targets for Algebra and the method for which they would be graded. The learning targets were created in a spreadsheet (Appendix A). With the help of a fellow teacher at Salem, a grading system was created that incorporated a 0-4 system (Appendix B). Each learning target was given a number to correspond to their mastery level. Those numbers were averaged to create a grade at the end of the quarter.

A survey was given to the guardians and students at the start of the second quarter. The students continued using the traditional grading system for the first quarter, and the second quarter was when standard-referenced grading was utilized. The first survey gathered information on how guardians and students felt about the traditional

grading method and what it conveyed (Appendix C and D). A post-survey was given at the end of the second quarter to gather information on how students and guardians felt about the standard-referenced grading system (Appendix E and F). Throughout the process, reflections were taken by the author to get a sense of what was going on in the mind of the teacher throughout the process (Appendix G).

These data points were assessed for themes that help determine whether standard-referenced grading improved communication of learning target mastery. Student grades were evaluated to see how the shift to standard-referenced grading impacted them. The communication of mastery and the feelings about standard-referenced grading were given greater weight for determining the success of the project. Student's grades should not have necessarily been affected, but should have given both student and guardian a better picture of growth towards mastery.

Artifacts

The results from the pre-survey about the traditional grading system were interesting from the student and guardian perspectives (Table 2, pg. 35). The guardians felt that the traditional grading method told them how their children were doing in math but needed to be more specific. They did not know what their students needed to improve for them to have a better grade or why they received the grade they did. The students stated that if the grade was bad, they needed to fix it, and if it got better, they were improving. They did not specify if they knew what they were improving or why it was increasing.

Throughout the project, the author noted many themes in his reflections. Students started by wanting to redo their assignments to show their mastery of a learning target.

They knew they needed to get them right to get a three or higher grade. After the chapter test, students were also allowed to show mastery of their learning targets. The teacher was not at school the first time this happened, so it did not go well. The students have since understood that they need to find the problems that match their learning targets to show their mastery to improve their grade.

Some negative themes also emerged from the reflections. The students became afraid to ask questions. They were told their standard number would be lower if they received help with the assignment. They thought that just one question would lower their standard. The author explained to them a few times that it only lowers their mastery level if they need help with the whole question and the ones following. If they ask a single question, it will only affect their standard if they can do the rest of the problems independently.

The student's grades were inconsistent with how they were affected. Below is table 1 with their grades from the first quarter to the second quarter:

Table 1

Student Grades and Changes from Quarter 1 and Quarter 2

Algebra Students	Quarter 1 Grade	Quarter 2 Grade	Change
Student 1	A-: 93%	A: 95%	+2%
Student 2	A: 98%	B+: 91%	-7%
Student 3	B-: 82%	B-: 85%	+3%

To calculate the grades in quarter 1, assignments were entered into Tads Educate, Salem’s gradebook program, and it averaged all of the points to create a grade. For

quarter 2, the author averaged all of the points associated with each learning targets mastery level (Appendix F) to create their grade for the quarter. The spreadsheet with each students learning target mastery level was included in the envelope with the report card for quarter 2.

Student 1 was the student who started out fixing the assignments and was concerned about the standards. Student 2 became very disconnected from math and seemed unaffected, but that apathy began to show as the quarter progressed. Student 3 was one of the students afraid to ask questions. When the student asked questions, the standards improved.

The post-survey also had interesting results when comparing the student and guardian responses (Table 2) about standard-referenced grading. The guardians were in favor of the standard-referenced grading. They felt that it gave them more details on what their students had mastered and what they needed to improve. They felt it was an excellent addition to the traditional grading method. The students did not prefer the standard-referenced grading. They liked the simplicity of the traditional method. The interesting comment was that a student only knew the grade at the end of the quarter rather than knowing throughout the quarter. The last insightful comment was that a student mentioned that with the standards, they know what they need to improve on instead of just getting a grade.

Results

The guardians of the students seem to like the shift from the traditional grading method to the standard-referenced one. They liked the extra detail to explain why their

student received the grade on the report card. They also had access to the standards throughout the quarter, so they could check throughout the quarter if they wanted to.

The students needed help getting familiar with the new system. They needed clarification about how asking questions affected their learning targets and standards, which did not help them improve their mastery of a particular learning target. However, the students found a groove with the learning targets and were starting to understand how they affected their grade.

The student's grades changed from one method to another, but the results do not clearly show whether they were affected by the change to standard-referenced grading.

Limitations

The small group of students in the algebra class and small response to the survey limited the data collected. Having a larger group would allow for a researcher to ascertain more quantitative data rather than relying solely on qualitative data.

The authors limited experience with standard-referenced grading created times where the students were not clear on the grading procedures and how the process would work. The author was working through some of the trouble-shooting of using standard-referenced grading for the first time and made changes based on student's responses to make it more effective.

Chapter IV: Reflective Essay

Introduction

Salem's students do not have any connection between their grades and what they are learning in each content area. Their grades do not communicate to guardians what the students have mastered and what skills need improvement. Utilizing standards-based grading will achieve the following goals:

1. Communicate clearly and effectively what a student has mastered and needs to master in a curricular area.
2. Create assessments that clearly assess the learning targets being taught by the teacher.
3. Allow the teacher to assess how the students are progressing towards mastery of specific learning targets.

Conclusions

Purpose One: Communicate clearly and effectively what a student has mastered and needs to master in a curricular area.

To create communication with guardians and students, a spreadsheet filled with the learning targets for each chapter was shared with the students and their guardians. The spreadsheet allowed students and their guardians to check on the progress toward mastery of specific learning targets.

The pre-survey and post-survey assessed how effective the communication was in connecting grades with learning targets. The guardians enjoyed seeing the "why" behind the grade. By including the learning targets and grade scale with the report card, guardians could see what skills their child excelled at and what skills they still needed to

master. These documents allowed them to see why their student received a particular grade on the report card rather than blindly looking at a letter to decipher what this means about their learning at school. The responses to this change were very positive from the guardians. They now knew what learning targets their child could improve on and why they received a particular grade.

Students liked the traditional grading method better as it was simpler for them. Many commented that the standard-referenced system was complicated and hard for them to know what grade they received before the quarter's end. The goal was to have them focus more on the learning targets, which one student did comment on. They said it helped them know what standards they needed to work on to improve their grade. Having this process of standard-referenced grading starting at a younger grade would be a great benefit as students would be more familiar with and less hesitant to jump into the new system. Switching in 7^{th} and 8^{th} grade is hard when one is used to a different system. The communication worked with students as they had to complete homework after tests that corresponded with the learning targets they were working on in that chapter.

Purpose Two: Create assessments that clearly assess the learning targets being taught by the teacher.

Throughout the quarter, the students were able to complete assignments that were aligned with the learning targets. There were midchapter quizzes that were also aligned with the learning targets. The chapter concluded with an assessment aligned with the learning targets. Many of the assessments were closely aligned with the learning targets created. A few times, some learning targets created were very niche and needed to be

included in the assessment. They were assessed throughout the chapter but were not included in the ending chapter assessment.

Linking the assessments with the standards helped to give the students a final attempt to show their mastery. After the assessment, the students would review the learning target still causing issues. Once the review was complete, they would complete problems from the cumulative review. This part of the project also was a success as the tests were able to be aligned with the learning targets present and gave the students multiple opportunities to show mastery. They had their initial homework, mid-chapter quizzes, end-of-the-chapter tests, and the cumulative review. Having multiple chances to show mastery helped the students grow from beginners of concepts to masters.

Purpose Three: Allow the teacher to assess the how the students are progressing towards mastery of specific learning targets.

Using the spreadsheet of learning targets, the teacher utilized the various assessments to see how the students were improving in their mastery of learning targets. Through student assessments, both formative and summative, the progress towards standard mastery was able to be changed using the coding method to show mastery or lack thereof in a particular content area. Most of the time, this movement was from proficiency to mastery, but there were a few times when it seemed a student had mastered a concept, but after reviewing later work, it still needed to be mastered.

The author was unsure if it would have worked better to color code the growth or decline, but it would have been hard to show all the color changes if they continued to go down and up throughout the quarter. The colors would continue to overlap, and the message would not be clear.

The guardians and students understood what the spreadsheet meant and how it showed where the students were on their continuum of growth. The definitions of the numbers may have been lost when the grading scale rubric was not readily available to be viewed along with the spreadsheet. Students seemed to know they were shooting for a three on the scale, but not why. The author feels this would also be fixed with the more experience the students get with standard-referenced grading.

Recommendations

Recommendation One: Implement standard-referenced grading for a whole year.

Through implementing this process, it is clear that the communication of why a student received a grade was much more apparent with standard-referenced grading. This communication and understanding in one year were not as complete as possible. It would be good to have this process play out throughout the entire year to see if the understanding of how a student receives a particular number in regards to mastery affects their grade.

Recommendation Two: Continue using the formative and summative assessment approach.

Standard-referenced grading also helped the author, as a teacher, to stay on top of his student's learning. Sometimes throughout schooling, a teacher can get bogged down by the process and not look into a student's work to see if they are mastering the content. This new grading practice requires teachers to be in tune with their students and give feedback to improve their student's skills. The author believes Salem Lutheran School

and other schools should adopt this practice to convey better what students know in a subject area and give a rationale for the grades they are receiving.

Recommendation Three: Make sure students are clear how their performance is evaluated.

As a teacher implements standard-referenced grading, they should focus time on explaining and reviewing the assessment process. Reviewing will continue to remind students how they are being assessed and what is expected of them. Through the review process, students will have an opportunity to ask their questions right away, rather than just waiting to ask or not asking at all.

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Appendix A: Learning Targets

One Chapter of Learning Targets from Spreadsheet

Chapter 1- Foundations of Algebra	0	0.5	1	1.5	2	2.5	3	3.5	4
The student will be able to...									
Use symbols to represent unknown quantities or that vary.									
Write an equation that represents a mathematical phrase or real-world relationship.									
Create a shortened expression by using powers/exponents.									
Utilize the Order of Operations when solving an equation.									
Solve the square roots of perfect square numbers.									
Estimate the square roots of non-perfect square numbers.									
Classify numbers into the categories of rational, natural, whole, integers, and irrational.									
Identify mathematical properties being used to solve an equation.									
Explain their solution to an equation by using mathematical properties.									
Add and subtract positive and negative numbers or any combination of the two.									
Multiply and divide positive and negative numbers, including fractions.									
Solve equations using the distributive property.									
Combine like terms.									
Utilize different methods to find a missing value in an equation.									
Represent an equation in an equation, graph, and table.									
Identify the solution of a two-variable equation.									

Source: (Lewis, 2020)

Appendix B: Standards-Referenced Grading Scale

Rubric	Grading Scale	
NA- Standard has not been taught/assessed at this time.	Average of all standards for the quarter	
4- **Distinguished Learner:** The student is able to demonstrate the learning target with above grade level expectations.	4.0-3.5	A+
3.5- The student demonstrates some aspects of the learning target above grade level.	3.5-3.0	A
3- **Proficient Learner:** The student is able to demonstrate the learning target.	3.0-2.75	A-
2.5- The student demonstrates components of the learning target.	2.75-2.50	B+
2- **Developing Learner:** The student is able to demonstrate components of the learning target.	2.50-2.25	B
1.5- The student needs prompting to get him/her started and then demonstrates a few components of the learning target.	2.25-2.0	B-
1- **Beginning Learner:** With prompting and support, the student is able to demonstrate the learning target.	2.0-1.75	C+
0.5 - With prompting and support, the student can demonstrate some components of the learning target.	1.75-1.5	C
0- **Below Grade Level:** With prompting and support, the student is unable to demonstrate the learning target.	1.5-1.25	C-
	1.25-1.00	D+
	1.00-0.75	D
	0.75-0.5	D-

Appendix C: Student Pre-Survey

1. Do you understand what contributes to your grade in Algebra?

2. How do your homework, quizzes, and tests help you understand what you need to improve to get a better grade?

3. Do you feel grades show what you know about math? Why or why not?

4. Do you feel grades show your growth in math? Why or why not?

Appendix D: Guardian Presurvey

1. Does your child’s grade tell you the skills they have gained in math class?

No, it does not.

Yes, it does.

1 2 3 4

5

2. Do grades show what your student knows about math?

3. Do your student's grades help you know what your student needs to improve?

4. Do you feel grades show your growth in math? Why or why not?

Appendix E: Student Post-Survey

1. Do you understand what contributes to your grade in Algebra?

2. How do your homework, quizzes, and tests help you understand what you need to improve to get a better grade?

3. Do you feel grades show what you know about math? Why or why not?

4. Do you feel grades show your growth in math? Why or why not?

5. Do you prefer Standard-based grading or the traditional way of grading? Why or why not?

Appendix F: Guardian Post-Survey

1. Does your child’s grade tell you the skills they have gained in math class?

No, it does not.

Yes, it does.

1 2 3 4

5

2. Do grades show what your student knows about math?

3. Do your student's grades help you know what your student needs to improve upon?

4. Do you feel grades show the growth of your student? Why or why not?

5. Did you like Standard-based grading? Why or why not?

Appendix G: Author's Reflections

10/25/2022
Today was the first day we corrected using the new Standard-Referenced system. One of my students wanted to correct their assignment to prove they could master the standard, because they knew they wouldn't get a proficient mark. It is already making the students want to do more work to perform at a higher level.

10/28/2022
Two of the students seem unaffected by the change to grading. One of the students wants to redo the assignment given to increase the performance on the standards. This student is very motivated through this procedure.

11/10/2022
The Standard-Based grading has been going well. The one student continues to show interest in doing her best to be the best at her standards. One student continues to seem to not care and is just doing his own thing. One student was getting very overwhelmed, because he felt he couldn't ask questions. I explained that the questions are to show the growth and asking just one question here or there would not give him a 1 in the standard. It is if the students need help on all of the questions they have been assigned. I have been watching their skills and doing extra practice when it seems their skills in a particular standard could use more work.

11/15/22
I have found that students are not understanding that asking questions is still a good thing. They think it that ask a question their standard will decrease. I will have to do some teaching explaining that the standard level will only decrease if they need help with the entire problem or section. The students are working well to accomplish their standards and prove they have mastered them.

11/28/22
After their first test with the system, the students are starting to understand how their grading works. I adjusted their scores on their spreadsheet and now it is up to them to show me their mastery. I gave them the day after the test to do some work to show me what standards they have mastered. This didn't go well, and they were confused what to do. I explained again on the following day, and they seem to understand it better now. We will see how the next test goes.

12/16/22
We are finishing up our second chapter utilizing standard-referenced grading. The students are working well, but I think they are losing sight of the learning targets. I will be reviewing the standards from this past chapter with them to help them figure out how to show mastery of the concepts. I also plan on going through the learning targets each day, so the students are focusing more on which learning targets we are hitting in a lesson.

Appendix F: Student's Spreadsheet Showing Learning Target Mastery

Chapter 3- Solving Inequalities	0	0.5	1	1.5	2	2.5	3	3.5	4
The Student will be able to...									
Write inequalities that represent a verbal expression.									
Identify the solution to an inequality.									
Graph an inequality on a number line.									
Solve inequalities with addition and subtraction.									
Solve inequalities with multiplication and division.									
Solve multi-step inequalities.									
Create a set in roster form and set-builder notation.									
Create a list of subsets from a given set.									
Find the complement of a set.									
Write a compound inequalty from a verbal expression.									
Graph a compound inequality.									
Solve compound inequalities.									
Graph inequalities when shown in interval notation.									
Solve absolute value equations.									
Identify when there is no solution to an inequality.									
Identify the unions and intersections of different sets.									
Chapter 4- An Introduction to Functions	**0**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**
The Student will be able to...									
Create a graph to show the change in a real life situation.									
Analyze a table to show which graph belongs to the specified table.									
Represent functions using words, graphs, tables, and an equation.									
Analyze a function to determine if it is a linear function.									
Represent non-linear functions with words, graphs, tables, and an equation.									
Graph function rules.									
Write function rules for real life situations.									
Analyze a function to determine if it is continuous or discrete.									
Graph non-linear function rules.									

Table 2: Results of Pre-Survey for Students and Guardians

Student Pre-Survey Results				
Student	Do you understand what contributes to the grade you receive in Algebra?	How does your homework, quizzes, and tests help you understand what you need to improve upon to get a better grade?	Do you feel grades show what you know about math? Why or why not?	Do you feel grades show your growth in math? Why or why not?
Student 1	Yes.	They help you get better at what you are learning.	Yes. they show how good you understand or don't understand something.	Yes. They show if you have been improving or not.
Student 2	Yes	It helps me understand the material.	Yes because if I get a bad grade I don't understand.	Yes if my grades improve it means I am getting better at math.
Student 3	Yes whether you can do the standard by yourself	it shows me what i did wrong then i can fix it	no because it is just a letter and a percentage and it doesnt show me what i can fix	yes because if it goes up it shows what i know
Guardian Pre-Survey Results				
Guardian	Does your child's grade tell you the skills they have gained in math class?	Do grades show what your student knows about math?	Do your student's grades help you know what your student needs to improve?	Do you feel grades show your growth in math? Why or why not?
Guardian 1	1-No it does not	Yes	No	No not specifically
Guardian 2	1-No it does not	It tells me whether or not she understands what is being taught, not necessarily "what" they know about math.	Not what they need to improve, just whether or not they need improvement.	I think that grades indicate whether or not the students are successfully grasping the concepts being taught.
Guardian 3	3-In the middle of No it does not and yes it does	It shows me that my daughter is getting her work done and doing well on tests and quizzes but not the actual material.	No, they don't.	No, it shows me that my daughter is getting her work done and doing well on tests and quizzes but not the actual material.
Guardian 4	3-In the middle of No it does not and yes it does	It tells you if you are doing well or not, but not specifically.	Not specifically. Not the details.	Not specifically because grades don't tell me what he needs to improve on or what he is doing well.
Guardian 5	3-In the middle of No it does not and yes it does	Depends on how grades are done/weighted. If heavily weighted on homework it will tell you how responsible the student is, but they may not know the material very well. Tests show how much the student understands the	No- Not at all	Somewhat - again depends on what grades are weighted on/formed. From Q1 to Q4 could show limited info but not specific growth.

		knowledge. As just a grade without further explanation no it doesn't tell much.		

Table 3: Results of Post-Survey for Students and Guardians

Student Post-Survey Responses					
Student	Do you understand what contributes to the grade you receive in Algebra?	How does your homework, quizzes, and tests help you understand what you need to improve upon to get a better grade?	Do you feel grades show what you know about math? Why or why not?	Do you feel grades show your growth in math? Why or why not?	Do you prefer Standard-based grading or the traditional way of grading? Why or why not?
Student 1	yes.	It help you get better at what you are learning.	yes. they show what you know and what you don't know.	Yes. if your grades improve, that means you understand better.	Standard. It is harder to find what grade i get when it is posted and it get actively posted in tads educate and not just at the end of the quarter.
Student 2	No	I don't know	Yes it shows if I understand it or not.	Yes	Traditional because standards don't make any sense.
Student 3	yup	I can look at my standards and fix what i did wrong and i can see which part i need to fix.	no because I just see a letter and it doesn't show what i can fix.	yes because i can compare them to the grade i got before and see if its better or worse.	traditional standard is confusing
Guardian Pre-Surevey Responses					
Guardian	Does your child's grade, using standardized grading, tell you the skills your child has gained in math class?	Do the grades, with the standards, show you what your student knows about math?	Does your student's grades, with the standards, show you what your student needs to improve upon?	Do you feel your child's grades with the standards show your child's growth? Why or why not?	Do you like standard-referenced grading? Why or why not?
Guardian 1	4-Yes it does a little.	Yes.	Yes.	Yes.	Yes.
Guardian 2	5-Yes it does.	Yes, in a detailed format.	Yes it does	Yes. It shows in detail how well they know each standard.	Yes because of the details the standards show.
Guardian 3	5-Yes it does.	Yes, it much more clear within a topic what is understood and what areas needs more practice	Yes	Yes, because you can see in each area the specific progress.	Yes, it gives guardians a more comprehensive picture of what the kids are learning in math, and then within those areas what they have mastered or not mastered.