75% $\neq$ 2.0/4.0 and What is Passing? Grading Scale

Interpretations from Students and Teachers
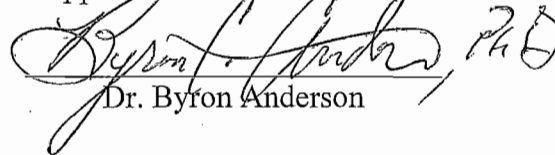
at Sun Prairie High School

by

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ABSTRACT

Grading and reporting methods for student achievement has become an increasingly popular topic in education. Informed decisions need to be made about any change to grading and reporting procedures to ensure the purpose of the education to be gained remains intact. The purpose of this study was to identify grading scales used in education and determine how teachers and students at Sun Prairie High School in the 2009 spring semester interpret the uses of these scales when used to evaluate attendance, behavior, assignments, projects, and assessments in a classroom.

A survey was delivered to 146 certified teachers at Sun Prairie High School asking what grading scales were used to assess achievement factors, what students know and are able to do, and non-achievement factors, how students learn the content through

behavior, attendance, aptitude, participation, and effort. From the results of the survey, a questionnaire of grading purposes and grading scale statements was formed and discussed with a group of students and individual teachers. Students and teachers identified strengths of and barriers to the use of each major grading scale: percentage, categorical, pass/fail, and mastery. Additionally, teacher recommendations to implementing or improving the use of the identified grading scale were provided.

The findings of this study inform us that the major barrier to changing to a different grading system is the familiarity of the system in place. In order for a successful implementation of a new grading and reporting system to take effect, communication amongst all parties involved with students' learning: parents, teachers, administrators, and the students; need to be involved in the process. This study provides information for each major grading system and recommendations for implementing from a traditional grading system to a new system.

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Chapter I: Introduction

Introduction

This chapter provides an introduction to Bloom's Taxonomy, the design of

instructional lessons, evaluation and assessment techniques, a history of grading in

education, and different grading scales used in education. Research questions were

developed from the statement of the problem and the purpose statement given. The

significance of the study, assumptions of, and limitations to the study are described.

Definitions of terms clarify the terminology used throughout the report.

Background Information

In 1956, a committee of university professors headed by Benjamin S. Bloom

introduced a taxonomy for classifying educational objectives to be used in school

classrooms (Bloom et al, 1956). The idea was initiated at the American Psychological

Association Convention in Boston, MA in 1948:

> After considerable discussion, there was agreement that such a theoretical
>
> framework might best be obtained through a system of classifying the goals of the
>
> educational process, since educational objectives provide the basis for building
>
> curricula and tests and represent the starting point for much of our educational
>
> research. (Bloom et al, 1956, p.4)

Problems arose with the development of the taxonomy; including arguments of

subjective versus objective evaluation, teaching to objectives solely and not developing

curriculum around objectives, and the loss of educational purpose through the breakdown

of lessons to meet objectives. To address these problems, Bloom and his team developed

objectives to meet any educational discipline with as much generalization as possible,

using very descriptive words to define what students should be learning in three domains: cognitive, affective, and psychomotor (Bloom et al, 1956).

Cognitive domain objectives deal with simple recall of facts to the development of critical thinking skills. Affective domain objectives explain a student's "changes in interest, attitudes, and values, and the development of appreciations and adequate adjustment" (Bloom et al, 1956, p.7). Psychomotor domain objectives deal with motor-skill development and brain development (Bloom et al, 1956).

Each of Bloom's taxonomy domains contain key words that can be used to describe what should be occurring at each level of the learning and education process. Each level contains the characteristics an educational objective should possess and details what a learner will be able to do at the end of each lesson or activity. The use of Bloom's taxonomy domains can be compared to the use of a ladder, starting at the bottom rung and climbing to the top of the ladder. Cognitive domain utilizes words such as knowledge, comprehension, application, analysis, synthesis, and evaluation, utilized in that same ascending order, to represent what the educational objective should attempt to cover (Bloom et al, 1956; McNergney & Herbert, 1998). The cognitive domain was reworded in 2001 with remembering, understanding, applying, analyzing, evaluating, and creating, where the top level of the domain is meant to generate new knowledge and the process starts over (Anderson & Krathwohl, 2001). The affective domain is concerned with perceptions and values, with each level distinguished by words like receiving, responding, valuing, organizing and conceptualizing, and characterizing by value or value concept (Krathwohl, Bloom, & Masia, 1964). Attempts have been made to complete the psychomotor domain Bloom and his team never finished (Dave, 1970;

Harrow, 1972; Simpson, 1972). The model presented by Dave (1970) states the psychomotor domain is concerned with skill acquisition, and the differing levels of imitation, manipulation, precision, articulation, and naturalization.

Any instructional lesson goes through a process to be developed. However, there is not a specific step-by-step process teachers or lesson designers use to create educational units and lessons as stated by Jonassen, Tessmer, & Hannum (1999):

> Instructional design is replete with uncertain knowledge and multiple interpretations...Not every aspect of human thought and behavior can be identified or articulated. How can we reconcile this discrepancy? We cannot, so live with it. That is the nature of the design process. (p. 5)

Not all lessons and units teachers develop are off-the-wall and have no structure or focus. Much research has been done in the area of instructional design (Gronlund, 2000; Linn & Gronlund, 2000; Mager, 1984; O'Connor, 2002; Wiggins & McTighe, 2005; Wormeli, 2006). All have varying ideas on a plan for instructional design and all methods on designing instruction have a common concern, how do teachers know what a student knows or has achieved.

Some school districts develop content standards that detail what a student should be able to know at the end of a grade or class. National organizations, such as the National Council of Teachers of Mathematics (NCTM), National Committee on Science Education Standards, and the International Technology Education Association (ITEA) develop and adopt standards on a national level. Some states, such as Wisconsin, have detailed academic content standards. Wisconsin has content standards for the areas of Agricultural Education, Art and Design Education, Business, Dance, Family & Consumer

Education, Foreign Languages, Health Education, Information & Technology Literacy, Marketing Education, Music Education, Personal Financial Literacy, Physical Education, School Counseling, Technology Education, and Theatre Education (Wisconsin Department of Public Instruction, 2008). All students should be able to meet the specified standard, however only a few may be able to master the concepts that helped formulate the standard (National Research Council, 2001). This makes each of these content standards a starting point, but as Burger (1998) adds: content standards state what students should know and performance standards or objectives help teachers find the path to get there based on the grade level of the students they teach.

Gronlund (2000) provides a model that teachers are typically taught in their pre-service training programs, which includes "stating the specific learning outcome, teaching the specific task, and testing the specific task" (p. 82). Gronlund goes on to state that this model is very basic and needs to be adjusted for student opportunities to meet objectives. It would be inappropriate for educators to believe in a simple model of: teacher stated, teacher taught, teacher tested and student comprehending.

O'Connor (2002) details how content standards and performance standards should be developed concurrently from the district, the state, or nationally recognized organizations. After the content and performance standards have been identified, the assessment for each standard should be developed. Tasks and scoring tools then follow the assessment design.

Wiggins and McTighe (2005) introduce their "backward design" model for instructional design (p. 17-29). Simply stated, this model has three stages: identify desired results for students, determine acceptable evidence, and plan learning experiences

and instruction. Content standards (district, state, national), teacher goals, and expectations are reviewed to identify desired results. Determining what students should be able to understand, and how a teacher will know, is part of determining acceptable evidence, planning learning experiences and instruction with carefully thought out questions as to how to get students to understand the content round out the backward design model (Wiggins & McTighe, 2005).

Many different techniques have been developed and implemented to evaluate and assess student achievement for educational objectives. The teacher could implement these techniques before instruction takes place, while instruction is taking place, when a teacher recognizes a problem with the learning, and/or at the end of instruction (Linn & Gronlund, 2000).

Paper-and-pencil tests, essays, experiments and data collection, student portfolios, and grading rubrics are just a few ways teachers, at all levels of education, have been evaluating and assessing student knowledge and understanding (Burger, 1998; Linn & Gronlund, 2000). Assessing what educational objectives a student knows, what performance standards a student has shown, to evaluating the effectiveness of individual schools and teachers are some ways assessments assist those involved in the learning process. Those involved may include students, parents, teachers, administrators, school board officials, and government entities (National Research Council, 2001; United States Department of Education, 2001).

According to Bloom's Taxonomy. information about where a student is at cognitively, affectively, and with their psychomotor skills, how a lesson was designed and delivered, and how the student was assessed becomes mashed into one achievement

score, or grade, for the purpose of communication to the student, parents, administrators, college admission officers, government entities, and employers (Burger, 1998; Guskey, 2002; Guskey & Bailey, 2001). Other items such as attendance, participation, and behavior can make the achievement score or grade even cloudier, leading to the question: What does a grade actually mean? (Guskey, 2002; Guskey & Bailey, 2001; O'Connor, 2002; Ornstein, 1994).

Grading Categories

There are many grading methods in use today that have their beginnings documented in the United States university and college systems. Each of these methods has advantages and disadvantages that will be discussed more in CHAPTER TWO. A brief introduction of each grading method (or scale) used in this study will be provided for letter grades, plus and minus letter grading, percentage grading, categorical grading, pass/fail grading, and mastery grading.

Many researchers in the area of educational assessment and evaluation state the act of grading and assigning a grade is not necessarily an integral component of instruction and learning, but communicating and reporting student achievement is the main emphasis of instruction and learning (Guskey, 2002; Guskey & Bailey, 2001; Mager, 1984; O'Connor, 2002; Wormeli, 2006). With that type of educational research completed, where did the idea of assigning a grade for achievement come from?

One of the first documented procedures related to grading and evaluation is from Yale University President Stiles' evaluation of fifty-eight students in 1785, "Twenty Optimi, sixteen second Optimi, 12 Inferiories (Boni), ten Pejores" (Durm, 1993). In 1813, Yale University officials began averaging results of examinations and recording this

information in a "Record of Examinations" (Smallwood, 1935). The "Record of Examinations" was also the birth of a marking scale of 4, but did not have a correlation to a letter grade (Durm, 1993). Between 1817 and 1850, William and Mary University used standardized explanations to describe student achievement ranked one to four, with one representing the best in class and four stating no new knowledge was gained (Durm, 1993; Marzano, 2000).

Between the years of 1851 and 1867, the University of Michigan had tried four different systems: a numerical system from 1850 to 1851, pass-no pass was documented first use in 1851, by 1860 a numerical 100-point scale was used, and in 1867 a letter was used (Durm, 1993; Smallwood, 1935). Harvard began their experimentation of student grading in 1877 with ranked divisions explaining accomplishment: 100 – 90 Division 1, 89 to 75 Division 2, 74 to 60 Division 3, 59 to 50 Division 4, 49 to 40 Division 5, and below 40 Division 6 (Marzano, 2000; Smallwood, 1935).

The first documented reference to a letter grade describing student achievement was in 1883 at Harvard where a student earned a B (Durm, 1993). By 1895, Harvard had dropped 100-point percentage marking and began using explanations of Fail, Passed, and Passed with Distinction (Durm, 1993). In 1897 and 1898, a combination of numbers, letters, and standard descriptors was used at Mount Holyoke: 100-95 was Excellent or A; 94-85 was Good or B/C; 90-94 was categorized as a B; 85-90 was categorized as a C; 84-76 was Fair or D/E; 80-84 was D; 75-79 was E; and below 75 was Failed or F (Durm, 1993; Smallwood, 1935). Many Universities adopted Mount Holyoke's grading scheme and added grade points for each letter grade earned in the following manner, replicating

and building on Yale University's "Record of Examinations" attempts in 1813: 4.0 for A, 3.0 for B, 2.0 for C, and 1.0 for D (Durm, 1993; Marzano, 2000; Smallwood, 1935).

Letter grades have consistently been in use to evaluate and report student learning since the early twentieth century (Guskey, 2002; Linn & Gronlund, 2000). In grading with letters; a symbol, letter, or number represents a level of achievement that is reported to students, parents, teachers, administrators, and whomever reviews what a student has earned for a particular course grade. In an A, B, C, D, F grading system: A represents the highest level of achievement attainable, followed by B, C, and D with F representing the lowest level of achievement (Guskey, 2002). Descriptors of each letter grade, also called narratives, assist in describing what a student knows or are able to do. The types of grading used in a course, norm-referenced or criterion-referenced, will sometimes determine what descriptors are used. Norm-referenced courses compare student knowledge and skill attainment to other students in the course. Criterion-referenced courses compare student knowledge and attainment to the criterion set for the course. Guskey (2002) provides the example of C meaning Average in a norm-referenced grading system, whereas a C could also mean Satisfactory in a criterion-referenced course.

In Letter Grading, sometimes teachers will use descriptors that do not correlate to how a student is graded, which may cause confusion when reported to students, parents, etc. (Guskey, 2002; Guskey & Bailey, 2001; Linn & Gronlund, 2000). For example, using the letter grade of C to evaluate a student as average is communicating that the student is evaluated against his or her peers, even if the purpose is not to compare students to one another. It is important for teachers and administrators to be clear in their

descriptions of letter grades in documentations such as syllabi, family and student handbooks, and other documentation that explains grading so not to confuse the reader whom may not be an expert in the educational field if descriptors are used in addition to letter grades.

Plus and minus grades are used "to provide more precise descriptions of students' levels of achievement or performance," (Guskey, 2002, p. 48). Common uses of plus and minus grading are to place the plus, +, and minus, -, signs at the end of a letter grade to signify that a student may be in the high or low letter grade range. For example, a grade reported as a B+ would signify to the student, parent, and others reviewing the grade that the student is a high B, not quite an A, but better than a solid B. Other uses of plus and minus grades are to combine letter grades with a slash, /. For example, a grade reported as A/B would signify that a student is better than a solid B but not quite a solid A.

Advocates and opponents of letter grades offer their opinions to the use of plus and minus letter grading. Abou-Sayf (1996) states that since variation in student achievement exists there should be variation in the grade that is reported. However, Dwyer (1996) has stated that without learning criteria that is clearly detailed and assessments that have been tested and validated, plus and minus grades do not offer any finer distinction than a solid letter grade.

Percentage grading is the second most used type of grading and reporting method behind letter grading (Guskey, 2002). Percentage grades have been used as a standalone numerical value from zero to 100% or used in combination with letter and plus/minus grading (Guskey & Bailey, 2001).

The location in which the study was conducted, Sun Prairie High School in Sun Prairie, WI, documents the percentage grading scale as one of the scales teachers use to determine a letter grade in documentation provided to teachers, students, and parents. Table 1, Sun Prairie High School's grading system (SPHS, n.d.), is how the percentage grading scale practice was documented and used at Sun Prairie High School in the 2008-2009 school year.

Table 1

Sun Prairie High School Grading System

A = 93 – 100		C = 73 – 76
A- = 90 – 92		C- = 70 – 72
B+ = 87 – 89		D+ = 67 – 69
B = 83 – 86		D = 63 – 66
B- = 80 – 82		D- = 60 – 62
C+ = 77 – 79		F = 0 – 59

The most commonly used method of percentage grading is through an averaging technique for individual scores and overall grades. Individual scores on tests, projects, assignments, or any other learning experience offered to the student from the teacher are derived from evaluating the activity to see how many questions a student answered correctly and dividing that number by the overall number of questions available to calculate a percentage. For example, a student completes a test with 25 questions on it and answered 20 correctly. The student earned an 80% on that examination. On another

test with 50 questions, the student answered 45 correctly. The student earned a 90% on that examination.

For an overall percentage grade, the most common method is to use individual student assignments, tests and examinations, student behavior, and student attendance, compile, or average, all those together and calculate one final numerical value in a percentage format that represents student learning for that marking period. Take the same example student from above and the two examinations taken thus far in a marking period. The student has earned an 80% and a 90% on two examinations. By averaging the two together, an overall percentage grade of 85% is achieved. However, if the total number of examination responses are used instead of the final percentages earned on those tests, a different value is received. 25 questions on test one and 50 questions on test two equals 75 total questions evaluated thus far in the course. The student answered 65 of the 75 questions correctly. Expressed as a percentage, the student has answered 86.667% of the questions correctly, but since a non-decimal percentage system is used, the number is rounded up to 87%. According to the Sun Prairie High School grading system (SPHS, n.d.), if the evaluating teacher averages percentage test scores, a letter grade of B is earned in the course because 85% falls into the 83% - 86% range that B's fall into. If the overall questions answered correctly are used, the student has earned a B+ because 87% falls into the 87% - 89% range that B+'s fall into. This just accounts for two tests that were taken so far in the course. Other factors typically used by teachers in overall course evaluations, such as behavior, attendance, participation, homework, projects, etc. have not even been considered yet!

Categorical grading is a method of assessing student achievement through the use of category labels or symbols instead of letter grades (Guskey, 2002). Students are provided the categories that equate to what grade or level of achievement needs to be earned for that category at the beginning of the activity. The student then completes the learning activity and the instructor evaluates with the grading criteria provided to the student at the beginning of the assignment.

Guskey & Bailey (2001) provide examples of categorical grading systems from Kentucky, Nebraska, and CTB/McGraw-Hill's Terra Nove testing program in Table 2. Other methods of grading and reporting student achievement with the use of categorical grading includes the use of symbols such as check marks, √-, √, √+, or through the use of numerals, 1, 2, 3, and 4 (Guskey & Bailey, 2001).

Table 2

Categorical Grading Systems

Kentucky	Nebraska	Terra Nova
Distinguished	Advanced	Advanced
Proficient	Proficient	Proficient
Apprentice	Progressing	Nearing Proficiency
Novice	Beginning	Progressing
		Starting Out

Pass/Fail grading provides two grading categories for an evaluator to choose from: Pass or Fail. The determining mark of what is Pass and what is Fail is fairly subjective and can be chosen through norm-referenced or criterion-referenced means (Guskey & Bailey, 2001). However the method of determining what mark is Pass and Fail, the implementation is simple. The teacher assigns a minimum level of performance to be achieved by the student in order to receive a Pass mark. If the student does not meet

the minimum level of achievement, then a Fail mark is assigned (Guskey & Bailey, 2001). Pass/Fail grading has been used for individual assignments, participation, performance checks, test scores, and course grades.

Pass/Fail Grading is sometimes modified to use three grading categories: Fail, Pass, and Pass with Distinction or Pass with Honors. The third category of Pass with Distinction or Pass with Honors allows teachers "to recognize achievement or performance that is exceptional" (Guskey & Bailey, p.94, 2001).

Mastery grading is relatively similar to Pass/Fail grading in that two grading categories are provided for teachers to evaluate student performance with, mastery and non-mastery, but different in that mastery is set at a high level of performance (Guskey & Bailey, 2001). Additionally, Mastery grading provides students multiple opportunities to obtain mastery status.

To conclude the introductory discussion about grading scales, Guskey (2002) and Guskey and Bailey (2001) point out that a single letter grading system will provide teachers five-categories to evaluate students with, plus and minus grading will provide twelve categories, a categorical-grading system using a scale from 0.0 to 4.0 will provide forty-one grading categories, percentage grading using 100% will have 101 grading categories as long as decimal points are not used, and pass/fail will give two to three grading categories to evaluate with. Mastery grading will provide two grading categories for teachers to evaluate students with and provide students multiple opportunities to master the learning objectives.

As Guskey (2002) explains about the number of categories provided for teachers to evaluate with:

As the number of potential grades or grade categories increases, especially beyond five or six, the reliability of grade assignments decreases. This means that the chance of two, equally competent judges looking at the same collection of evidence and coming up with exactly the same grade is drastically reduced…The subtle influence that subjective elements exert on teachers' judgments is more likely to show up when they are required to identify such fine differences in student performance (p.49).

Statement of the Problem

As stated by Guskey (1996, p.20) through O'Connor (2002, p.26), "[Grading] practices are not the result of careful thought or sound evidence,…Rather they are used because teachers experienced these practices as students and, having little training or experience with other options, continue their use."

Unclear as to why teachers use certain grading scales, this study seeks to determine what teachers and students at Sun Prairie High School interpret as strengths and weaknesses to different grading scales and identifies what hinders the use of or what barriers contribute to the weaknesses unresolved these parties self identify. As a result, this study helped provide clarity and reasons why teachers use certain grading scales.

Purpose of the Study

The purpose of the study was to identify grading scales used in education and determine how teachers and students at Sun Prairie High School in the 2009 spring semester interpret the uses of these scales when used to evaluate attendance, behavior, assignments, projects, and assessments in a classroom.

Research Questions

The following questions were addressed by the research:

1. What extent do teachers use the four major grade scales as identified by the research to evaluate student achievement and non-achievement factors?

2. What strengths and barriers to the use of an individual grading scale do students interpret of the four major grading scales when provided as statements for grading purposes?

3. What do practitioners for each of the four major grading scales state as strengths and barriers to the use of an individual grading scale from the results of teachers' use and students' interpretations?

4. What recommendations do practitioners provide for implementation of each grading scale in the classroom.

Significance of the Study

"While no grading method is appropriate under all conditions, a better understanding of these methods is sure to result in more effective communication between educators and parents" (Guskey, 2002 p.42).

This study will provide in-depth information about each major grading scale, as identified by research, used in education today. From the information gathered, a survey of the four major grading scales identified was conducted with 146 certified teachers of Sun Prairie High School in the Spring 2009 semester. Grading scale interpretation statements were developed based on the literature review.

From the results of the survey and the interpretation statements, a student focus group identified strengths and barriers to each of the four major grading scales. With the results of the survey, student focus group responses, and grading scale interpretation statements, self-identified practitioners of each grading scale provided reasons for the responses of the grading scale survey, the student responses to the interpretation statements, and contributed strategies for implementing or improving the grading scale's use in the classroom. These interpretations and analyzed results were made available for dissemination to the Sun Prairie Area School District school board and the Sun Prairie Area School District grading for learning initiative.

Limitations of the Study

Limitations of the study include the study being conducted solely at Sun Prairie High School, student participants involved in the focus group discussion, teacher participants of the study, and researcher is the focus group discussion leader and teacher interviewer.

Sun Prairie High School was the only secondary school where the research was conducted. Schools of the similar size, demographics, and locations may consider the results of the study valuable for their situation. However, the study was specifically designed for the Sun Prairie Area School District and Sun Prairie High School. It is recommended that an individual interested in researching this topic complete the same study at the location where data is to be gathered.

Student participants were sought out from a number of Technology Education courses at Sun Prairie High School. A limitation of the study is participants were sought

from the entire school population, but not as aggressively as the students in the Technology Education courses, as such it was a convenience for the researcher.

Teachers of Sun Prairie High School were invited by the Sun Prairie Area School District Administration to be members of a grading for learning initiative. The researcher was one of these members on the grading for learning committee. Other grading for learning committee members were not disallowed from participating in the study and may have participated. A limitation of the study is some of the grading for learning members may have participated in the survey after receiving information about the contents of the survey, but not for the purpose of the study.

The researcher served as the student focus group moderator and teacher interviewer. A limitation of the study is the translation of the statements, if needed by the focus group or interview participants, came from an individual knowledgeable about the topic, possibly providing inside information about the grading interpretation statement or question asked by the participant.

Assumptions of the Study

Assumptions of the study include the data gathered from study discussions from Sun Prairie High School only. Additionally, efforts were made to gain a representative sample of students and teachers for the discussions. It is assumed the students represent the views of the school population and the teachers represent the views of their respective departments.

The use of the percentage grading scale is documented in the Sun Prairie High School Family and Student Handbook, as well as the Sun Prairie High School Faculty and Staff Handbook for the 2008-2009 school year as the method teachers shall use to evaluate student coursework. It is an assumption of the study that all faculty and staff involved with the study utilize a percentage grading scale to assess and evaluate student coursework.

Standards-based grading, or grading student achievement based upon pre-established criteria also known as Power Standards in the Sun Prairie Area School District, is the main method faculty and staff involved with the study use to evaluate student understanding of concepts related to their specified courses.

Definition of Terms

Absolute grading: Synonymous with Criterion-referenced grading. Students evaluated on pre-established objectives for an achievement score that does not use a normal distribution curve to grade (Linn & Gronlund, 2000). If all students perform well to the objectives, all students are able to earn the highest grade possible.

Achievement factors: Grading criteria evaluating subject-specific content, thinking and reasoning skills, general communication skills and product criteria (Guskey, 2002; Guskey & Bailey, 2001; Marzano, 2000).

Art education: Courses at Sun Prairie High School relating to 2-dimensional and 3-dimensional drawing, painting, graphic design, photography, and sculpturing. Classified as elective credits towards graduation requirements (SPHS, n.d.).

Assessment: Any method used to gain information about student learning (Linn & Gronlund, 2000; Marzano, 2000).

Bloom's taxonomy: Benjamin S. Bloom, an educational psychologist, headed a team that developed two taxonomies and introduced a third to assist in developing educational objectives to students. The two taxonomies developed were for the Cognitive and Affective domains. Cognitive domain objectives deal with simple recall of facts to the development of critical thinking skills. Affective domain objectives explain a student's "changes in interest, attitudes, and values, and the development of appreciations and adequate adjustment" (Bloom et al, 1956, p.7). The third domain, the psychomotor domain, was introduced as objectives that would tend to deal with motor-skill development and brain development (Bloom et al, 1956). The Psychomotor domain was not developed by Bloom and his team, but was completed with the introduced theory in mind (Dave, 1970; Harrow, 1972; Simpson, 1972).

Bloom's taxonomy revised: Bloom's taxonomy, cognitive domain was reworded in 2001 with remembering, understanding, applying, analyzing, evaluating, and creating, where the top level of the domain is meant to generate new knowledge and the process starts over (Anderson & Krathwohl, 2001).

Career and Technical Education: Secondary and post-secondary career preparation programs in the areas of Agriculture, Trade and Industrial, Business and Marketing, Family and Consumer Sciences, Health Occupations, Public Safety Security, and Engineering and Technology (ACTE, 2008). Courses at Sun Prairie High School relating to careers and technical occupations in the areas of engineering, health occupations, business, marketing, agriculture and animal science, trades, family and consumer science, and technology. Classified as elective credits towards graduation requirements (SPHS, n.d.).

Categorical grading scale: Grading method used by teachers to evaluate student coursework under different descriptive performance categories. Three to five different categories are the most commonly used number of categories to describe student performance. Category types can be numerals (zero through four), checks (4+, 4, 4-), words such as those used in the Terra Nova testing program of CTB/McGraw-Hill (Starting Out, Progressing, Nearing Proficiency, Proficient, and Advanced), or verbal labels describing each category. Combinations of the category types have also been used for reporting student performance (Guskey, 2002).

Content-standards: Nation and state developed standards that guide what should be taught and assessed in schools in reference to what students should know and be able to do (Marzano, 2006; WI DPI, 2008). For the state of Wisconsin, content-standards, called Model Academic Standards, have been developed for the secondary areas of English Language Arts, Mathematics, Science, Social Studies, Agricultural Education, Art and Design Education, Business, Dance, Environmental Education, Family & Consumer Education, Foreign Languages, Health Education, Information and Technology Literacy, Marketing Education, Music Education, Personal Financial Literacy, Physical Education, School Counseling, Technology Education, and Theatre Education (WI DPI, 2008)

Criterion-referenced grading: Grading method used by teachers to evaluate student coursework against pre-defined learning tasks developed by: a teacher, group of teachers, state association, national association, or the student (Guskey, 2002; Guskey & Bailey, 2001; Linn & Gronlund, 2000; Marzano, 2000).

Diagnostic assessment: Assessment strategies used during an instructional lesson to determine if learning difficulties exist (Linn & Gronlund, 2000).

English education: Courses at Sun Prairie High School relating to English comprehension, communication, reading, speech, and literature. Four credits of English are required for graduation requirements of which Exploring English, Communications, and American Dream or Heritage is required (SPHS, n.d.).

Evaluation: "The process of [a teacher] making judgments about the level of students' understanding or performance" (Marzano, 2000, p.13).

Foreign language education: Courses at Sun Prairie High School relating to Spanish, German, and French language reading, writing, and speech. Classified as elective credits towards graduation requirements (SPHS, n.d.).

Formative assessment: Assessment strategies used "to monitor learning progress during instruction" (Linn & Gronlund, 2000, p.40).

Grade inflation: Educational theory describe by Guskey & Bailey (2001), "Many argue that more students today receive high grades not because of excellence in achievement or performance but because of new grading schemes and teachers' concerns about students' self-esteem" (p.135).

Grading: Teacher's comparison of what a student has learned to pre-determined criteria: objectives, learning tasks, the student's peers performance, and/or teacher's observations. Used synonymously with evaluating and reporting. (Bott, 1996; Guskey, 2002; Guskey & Bailey, 2001; Lewin & Shoemaker, 1998; Linn & Gronlund, 2000; Marzano, 2000; O'Connor, 2002)

Grading method: Synonymous with grading scale. The system to assigning a mark, number, or letter associated with the evaluation of student performance on coursework and in a course by the teacher, or other assessing figure, for the course (Bott, 1996; Guskey & Bailey, 2001; Linn & Gronlund, 2000; O'Connor, 2002).

Grading on the curve: See norm-referenced grading.

Letter grading: Grading method of assigning a letter to represent student performance. Typical letter grading scale utilizes the letters A, B, C, D, and F with "A" representing the highest level of achievement and "F" representing the lowest level of achievement. Found to be used in conjunction with other grading methods (Guskey, 2002; Guskey & Bailey, 2001)

Mastery grading: Grading method of assigning two grade categories for student performance. One grade category represents students have met, with clear distinction, the course objectives. The second category represents students have not met the course objectives. A typical percentage grade representing Mastery has been documented to be between 80% - 90% (Guskey & Bailey, 2001). See Mastery learning.

Mastery learning: Associated with Mastery grading. Objectives for the course are organized into learning units lasting one to two weeks. Upon completion of the unit, a formative assessment is provided for the student to show Mastery of the content. Any student not meeting the Mastery level is provided corrective action until Mastery of the content is shown by the student through a formative assessment (Bloom, 1968; Bloom, 1971; Guskey & Bailey, 2001).

Mathematics education: Courses offered at Sun Prairie High School in Algebra, Geometry, Pre-Calculus, Calculus, and Computer Science. Two credits are required for graduation requirements (SPHS, n.d.).

Measurement: The act of a teacher, or other educational authority, assigning a grade mark based upon the evaluation of the student's performance (Marzano, 2000).

Music education: Courses offered at Sun Prairie High School in band, orchestra, and choir. Classified as elective credits towards graduation requirements (SPHS, n.d.).

Narratives: Grading method with teacher written descriptions of student achievement or performance containing areas of accomplishment and needing improvement (Guskey & Bailey, 2001).

Norm-referenced grading: Grading method in which students are awarded a grade based on compared performance to their peers. The normal probability curve is used to determine how many of each letter grade is given. Using the normal probability curve will result in a small but equal number of A's and F's (2.27% of each), a larger proportion of B's, and D's (13.59% of each), and the largest of the grades (68.26%) being C's (Crocker & Algina, 1986; Guskey & Bailey, 2001).

No Child Left Behind (NCLB): In 2001, the United States of America Congress revisited the Elementary and Secondary Education Act, which affects education from kindergarten through grade twelve. NCLB is developed around four pillars: accountability of results, scientific research backing what and how something is taught, expansion of options for parents, and local control and flexibility (United States Department of Education [USDE}, 2001).

Non-achievement factors: Grading criteria evaluating student behavior, effort, attendance, aptitude, participation, and process criteria. (Guskey, 2002; Guskey & Bailey, 2001; Marzano, 2000).

Objectives: Also called Performance Objectives. Informs a student and teacher what a student should and will know, and to what degree by the end of a unit and/or course. Three elements make up an objective: action capable of performing, conditions under which to perform, and standards of performance to be reached (Bott, 1996). See Performance-standards.

Pass/Fail grading: Grading method of assigning two categories of grades: Pass and Fail. The initial purpose of Pass/Fail grading was to increase the student attachment to learning and less to the assigned grade (Durm, 1993). The cutoff between Pass and Fail is typically criterion-referenced, with a Pass level set between a D and F in a letter grading system (Guskey & Bailey, 2001).

Percentage grading scale: Grading method of assigning one of 101 grade categories of a scale from zero to 100 to report student performance. Percentage grading scales have been used as standalone reporting methods or in conjunction with letter grading to report student performance (Guskey, 2002; Guskey & Bailey, 2001).

Performance-standards: Indication of how a student will show they are meeting a content-standard (WI DPI, 2008).

Physical and Health education: Courses at Sun Prairie High School in general fitness, strength and conditioning, and health education. One and a half credits of physical education and a half credit of health education are required for graduation (SPHS, n.d.).

Placement assessment: Assessment strategies used prior to an instructional lesson to determine a student's previous knowledge and comprehension of the lesson topics (Linn & Gronlund, 2000).

Plus and minus letter grading: Grading method used in conjunction with letter grades where a plus (+) or a minus (-) is added to provide a more precise description of a student's achievement or performance. This also allows a letter grade to be split into three levels. Other methods of plus and minus letter grading include using A/B, B/C, C/D, or D/F grading categories instead of the plus or minus sign (Guskey, 2002; Guskey & Bailey, 2001).

Power standards: Sun Prairie Area School District and Sun Prairie High School method of standards-based grading. See standards-based grading.

Process criteria: Process learning criteria describe how a student learned the content and objectives of a unit or course. Items such as effort, work habits, classroom quizzes, homework, class participation, or attendance are classified as process criteria (Guskey, 2002; Guskey & Bailey, 2001).

Product criteria: Product learning criteria describes what a student knows and is able to do at any particular point in time. Items such as final examination scores, final reports, final projects, overall assessments, or any other cumulative demonstration of learning are classified as product criteria (Guskey, 2002; Guskey & Bailey, 2001).

Proficiency standards: How well a student has performed on a content-standard though a performance-standard (WI DPI, 2008).

Progress criteria: Progress learning criteria describe how much a student has learned from the educational experience. Grading criteria may become individualized as

the amount of information learned during the instructional unit or course is evaluated, not just the objectives of the unit or course (Guskey, 2002; Guskey & Bailey, 2001).

Relative grading: Synonymous with Norm-referenced grading. A method of ranking students from highest to lowest achievement score and assigning letter grades based on a normal distribution curve (Linn & Gronlund, 2000).

Reporting: The method of describing student performance in a lesson unit or course to the student, parent, administration, and guidance. Reports can be described in terms of letter grades, categories, pass/fail, mastery, summaries, and/or narratives. Reporting methods can be delivered as a document such as a form or report card, and/or verbally through conferences, telephone conversations, or meetings (Guskey & Bailey, 2001; Linn and Gronlund, 2000; O'Connor, 2002).

Science education: Courses at Sun Prairie High School in Biology, Chemistry, Physics, Environment, Aviation, Genetics, Physiology, and Kinesiology. One credit of Biology and one credit of a physical science are required for graduation (SPHS, n.d.).

Social Studies: Courses at Sun Prairie High School in Geography, Government, Economics, Legal Studies, Psychology, Sociology, United States History, and World History. Three credits are required for graduation of which World History, U.S. History, Economics, and Sociology or Psychology are required (SPHS, n.d.).

Special education: Designated and certified teachers at Sun Prairie High School that provide assistive education services for at-risk, emotionally disabled, behavior disabled, and cognitively disabled students.

Standards-based grading: Also called Standards-based education. Educational philosophy and grading method where students are evaluated on pre-established

objectives or standards set by an educational expert for the course (Guskey & Bailey, 2001; Linn & Gronlund, 2000). Called Power Standards in the Sun Prairie Area School District.

Students: Sun Prairie High School Freshmen, Sophomore, Junior, and Senior students in the 2008-2009 school year whom volunteered to participate in the study. Students under the age of eighteen were required to have parental consent. All students had the opportunity to participate in the study.

Summative assessment: Assessment strategies used "to assess achievement at the end of instruction" (Linn & Gronlund, 2000, p.41).

Sun Prairie High School: Located in the city of Sun Prairie, WI, approximately ten miles northeast of Madison, WI. As of the third Friday in the 2008-2009 school year, the student population was 1,802 with a faculty of 146. Abbreviated SPHS (SPHS, n.d.). Sun Prairie Area School District, in which Sun Prairie High School is located in contained the following demographics for the 2008-2009 school year: 6,171 total students of which 5.0% were classified as Asian, 12.6% as Black, 5.3% as Hispanic, 0.6% as American Indian, and 76.5% as White. 22.0% of the district population received free or reduced lunch, 5.5% were classified as Limited English Speakers, and 11.6% were students with disabilities (SPASD, 2008).

Teachers: Sun Prairie High School educators whom volunteered to take part in the study. Areas of art, career and technical, English, foreign language, mathematics, music, physical and health, science, social studies, and special education had the opportunity to be involved.

Technology and Engineering Education students: Abbreviated TEE. Sun Prairie High School Technology and Engineering Education students enrolled in the Introduction to Technology and Engineering course or Fundamentals of Technology and Engineering course whom provided examples for the focus group discussions about grading scales.

Test: Specific instrument or procedure used to measure student learning and understanding (Linn & Gronlund, 2000).

Chapter II: Literature Review

Introduction

The primary purpose of the study was to identify grading scales used in education and determine how students and teachers at Sun Prairie High School in the 2009 spring semester interpret the uses of these scales when used to evaluate attendance, behavior, assignments, projects, and assessments in a classroom.

This chapter focuses on grading: purposes of grading and grading criteria; grading methods: percentage grading, categorical grading, pass/fail grading, and mastery grading; reporting grading methods: letter grades, +/- grades, and narratives; and reporting tools. Each of these topics shall be defined and explained with information and evidence from other studies and reports conducted.

Grading

The ancient Greeks assessed their students using non-evaluative tools to discover what their students knew and did not know (Guskey, 1994). One of the first documented procedures related to grading and evaluation of student achievement in the United States is from Yale University's President Stiles' evaluation of fifty-eight students in 1785, "Twenty Optimi, sixteen second Optimi, 12 Inferiories (Boni), ten Pejores" (Durm, 1993). Much research was completed at the post-secondary levels regarding grading and reporting methods, especially at Yale University, William and Mary University, the University of Michigan, Harvard University, and Mount Holyoke between the years of 1785 and 1900 (Durm, 1993; Marzano, 2000; Smallwood, 1935). It was not until the late 1800's that primary and secondary schools in the United States showed the first documentation of student learning in the form of a written grade (Guskey, 1994).

Just as the ancient Greeks used assessments as a non-evaluative tool of student learning, primary and secondary students in the late 1800's were issued progress evaluations that were personalized and hand-written by the teachers and detailed out what the student knew and was able to do (Guskey, 1994). As the number of students entering primary and secondary schools increased, so did the number of schools required to educate these students, with more teachers teaching elementary school than high school (Guskey, 1994).

In the early 1900's, elementary teachers continued using the personalized hand-written descriptions of student knowledge, do to small class sizes, while the high school teachers, whom are seeing more students daily than elementary teachers, introduce percentage grading as a way to mainstream and lower the amount of time needed to evaluate student's knowledge and skill-sets (Guskey, 1994).

The process of grading and the result "is one of the most sacred traditions in American education" (Olson, 1995, p.24). What makes the grading process so sacred? What is the purpose of grading in the first place? How are teachers' at the primary and secondary levels evaluating, assessing, and grading?

Purposes of Grading

There are supporters and opponents for grading and the purpose behind why teacher's grade (Airasian, 1994; Austin & McCann, 1992; Dressel, 1957; Guskey & Bailey, 2001; Kohn, 1999; Linn & Gronlund, 2000; Marzano, 2000; Stiggins et al, 1986; Wolansky, 1985; Wormeli, 2006). Some of the major supporters of grading with detailed purposes include Airasian (1994), Guskey & Bailey (2001), Stiggins et al (1986), and

Wormeli (2006). The major supporters have unique as well as shared ideas about why grading is utilized.

Airasian (1994) states there are five purposes of grading, as can be viewed in Table 3, Airasian's Major Purposes of Grading.

Table 3

Airasian's (1994) Major Purposes of Grading

1	Administrative purposes.
2	To give students feedback about their progress and achievement.
3	To provide guidance to students about future course work.
4	To provide guidance to teachers for instructional planning.
5	Motivate students.

Marzano (2000) elaborates on each of Airasian's (1994) major purposes of grading. Administrative purposes relate to the promotion to the next level of schooling, student's rank in class, credits accumulated for graduation, placement in classes when student transfers from one school to another, and entrance into college (Airasian, 1994; Marzano, 2000; Wrinkle, 1947). Austin & McCann (1992) conducted a study of school board policies, district guidelines and teacher handbooks and found that 7% of school board policies, 10% of district guidelines, and 4% of teacher handbooks explicitly state administrative purposes as a main function of grading.

Feedback about student achievement means providing recommendations to the student about how to maintain their learning or improve (Marzano, 2000). A study by Austin & McCann (1992) shows that 25% of school board policies, 45% of district

guidelines, and 65% of teacher handbooks mentioned feedback to students as a main function of grading.

Providing guidance to the student about future course work relates to adult figures involved with planning the student's future. A guidance counselor, career counselor, parent, or teacher, would provide direction of what class the student should take next, post-secondary options, and careers the student should look into (Airasian, 1994; Marzano, 2000; Terwilliger, 1971; Wrinkle, 1947). The Austin & McCann (1992) study found that 82% of school board policies, 40% of district guidelines, and 38% of teacher handbooks show that guidance is the main purpose of grading.

Providing guidance to teachers for instructional planning relates to the use of grades by the teacher to ability group a student within a class, for an assignment, or a future project (Marzano, 2000). Austin & McCann (1992) found that 44% of school board policies, 20% of district guidelines, and 10% of teacher handbooks state instructional planning is the main purpose of grading.

Motivation of students is used to push students earning a low grade to try harder, while students earning a passing grade are encouraged to maintain or, if possible, improve their grade to the next level (Marzano, 2000). Even though there are strong opinions for and against using grades as a motivating factor, Austin & McCann (1992) report that 7% of school board policies, 15% of district guidelines, and 10% of teacher handbooks state that the motivational use of grades is the main purpose.

As can be seen in the study provided by Austin & McCann (1992), some school district policies, district guidelines, and teacher handbooks state that more than one of Airasian's (1994) purposes of grading are important. If school officials were to rank on a

likert-scale from one to five the importance of each purpose of grading, we can see the variation of opinions of school boards, administrators, and teachers as seen in Table 4, Ranking Importance of Airasian's Major Purposes of Grading as provided by Marzano (2000, p.16).

Table 4

Ranking Importance of Airasian's Major Purposes of Grading (Marzano, 2000, p.16)

Purposes	Austin and McCann			Marzano Informal Survey		Average Rank
	Board Policy	District Guideline	Teacher Handbook	Teachers	Admin	
Administration	4	5	4	3	2	3.6
Feedback - Achievement	3	1	1	1	1	1.4
Guidance	1	2	2	5	3	2.6
Instructional Planning	2	3	3	4	5	3.4
Motivation	4	4	3	2	4	3.4

Wormeli (2006) provides insight to the reasons teacher's grade, as can be seen in Table 5, Why Teacher's Grade.

Table 5

Why Teacher's Grade (Wormeli, 2006)

1	To document teacher and student progress
2	To provide feedback to the student and family, and the teacher
3	To inform instructional decisions
4	To motivate students
5	To punish students
6	To sort students

According to Wormeli (2006), there is a defining line between the top three reasons and bottom three reasons. Wormeli (2006) states that the top three reasons of why teacher's grade should be maintained (pp.102-103):

The first three reasons seem the most useful and worthy…[They] enable us to live up to the promise of schooling, helping teachers teach and students learn. We need to document, provide feedback, and guide our decisions on a regular basis in order for students to achieve in our classes.

Wormeli (2006) also provides his viewpoint on why the bottom three reasons of why teacher's grade should be avoided (p.103):

When we grade to motivate, punish, or sort students, we do three things: we dilute the grade's accuracy; we dilute its usefulness; and we use grading to manipulate students, which may or may not be healthy.

Wormeli (2006) continues to state that when a teacher begins to negotiate a grade or assignment with a student, the purpose of grading for learning is lost and the emphasis is placed on compliance. Guskey & Bailey (2001) have documented that motivation through low grades does not inspire the student to do better, but rather detracts a student from wanting to learn all together. Kohn (2000) states that high grades have the same effect as low grades, a detractor from learning as it is an extrinsic motivator to learn, as the payment is a grade, and the student never develops the intrinsic motivation to learn something new without payment.

Wormeli (2006) provides a purpose of grading statement (p.103):

A grade represents a clear and accurate indicator of what a student knows and is able to do--mastery. With grades, we document the progress of students and our teaching, we provide feedback to students and their parents, and we make instructional decisions regarding the students.

The study conducted and reported by Stiggins et al (1986) shows that teachers agree with the main purposes of grading including: communicating achievement to parents, students, and school officials the mastery of the content; aids in the offering of program content; provides administrators data for student promotion, placement, and graduation; and the motivational factor it serves to students.

Guskey & Bailey (2001) Major Purposes of Grading & Reporting can be found in Table 6. It is interesting to note that Guskey & Bailey point out that not only is it the purpose of grading that is important, but also the purpose of the reporting tool used to communicate to parents. For the purpose of this study, the main focus has been on the purpose of grading and not reporting, although research shows they are very intricately intertwined.

Table 6

Guskey & Bailey (2001) Major Purposes of Grading & Reporting

1	To communicate the achievement status of students to parents and others.
2	To provide information that students can use for self-evaluation.
3	To select, identify, or group students for certain educational paths or programs.
4	To provide incentives for students to learn.
5	To evaluate the effectiveness of instructional programs.
6	To provide evidence of students' lack of effort or inappropriate responsibility.

These purposes of grading and reporting presented by Guskey & Bailey (2001) are not much different than those presented before. Purposes range from communicating to parents/guardians about their child's progress with hope of involving them in the educational process, informing the student about their achievement and performance, using data to place students in gifted programs or finding that a student has a learning disability, motivation to perform well or do better, using data to determine if a course or

unit of study is required or needed, and using the data to prove to a stakeholder in a student's education (parent, guardian, administrator, another teacher) that they are not performing well because of a negative behavior or attitude (Guskey & Bailey, 2001).

Linn & Gronlund (2000) mention that grading and reporting tools serve multiple reasons for Instructional, Parental, and Administrative and Guidance uses. When serving Instructional reasons, Linn & Gronlund (2000, p. 378) state, "The focus of the grading and reporting system should be the improvement of student learning and development." Linn & Gronlund (2000) go on to state this is completed by (p.378):

1) Clarifies the instructional objectives.

2) Indicates the student's strengths and weaknesses in learning.

3) Provides information concerning the student's personal-social development.

4) Contributes to the student's motivation.

These methods to meet the instructional needs can be completed by the use of everyday feedback as well as feedback on assessments, outgoing and developing portfolios of work and examples of learning, and periodic reports on progress (Linn & Gronlund, 2000). However, Linn & Gronlund (2000) warn that using progress reports as motivation tools needs to be done with care and tact. An opportunity exists to inform the student of their strengths and weaknesses and assists in goal planning and what content needs to be learned, but if not done properly progress reports can be used as a weapon by threatening students to do better or continue performing poorly and earning a low grade (Linn & Gronlund, 2000). Additionally, progress reports could assist in teaching the content, allowing the teachers and administrators to see areas where improvement is needed (Linn & Gronlund, 2000).

"Informing parents (or guardians) of their children's school progress is a basic function of a grading and reporting system" (Linn & Gronlund, 2000, p.379). Assisting parents or guardians in understanding the objectives of the classroom and how well their child is achieving those objectives is the purpose (Linn & Gronlund, 2000). In turn, by understanding what their child should know and where their child is at, parents and guardians can: assist their child in their learning and development process; give their child positive support based on successes, failures, and special problems; and assist the child in developing post-secondary plans (Linn & Gronlund, 2000).

Administrative and guidance uses of grading "are used for determining promotion and graduation, awarding honors, determining athletic eligibility, and reporting to other schools and prospective employers" (Linn & Gronlund, 2000, p.379). Additionally, Guidance Counselors utilize grades in classes to assist students in post-secondary planning and personal and social development. There is some argument that the reason more advanced grading and reporting tools, especially the use of a single letter grade and grade point average, have not and cannot be developed at the high school level is because of the administrative and guidance functions (Linn & Gronlund, 2000).

Some researchers make the purpose of grading really simple. For example, Bott (1996) and Wolansky (1985) believe the necessary purpose of grading is to show what a student knows and is able to do and what they do not know or are not capable of doing. Mager (1984, p.9) states, "Traditionally, a grade has intended to say something about how well a student has performed (or tried) in relation to his or her peers." This simple purpose of grading idea may not be all that disagreeable as Austin & McCann (1992) through Guskey & Bailey (2001) states that no matter what the number of purposes of

grading are stated, if teachers, administrators, and school board policy-makers cannot agree which purpose is most important and try to address all purposes with one reporting tool, the end result is achieving no purpose very well.

Just as there are supporters of grades and their purpose for use in education, there are also those that oppose grades use. As Dressel (1957) states (p.6):

Grades:…an inadequate report of an inaccurate judgment by a biased and variable judge of the extent to which a student has attained an undefined level of mastery of an unknown proportion of an indefinite material.

One of the most documented opponents for the use of grades in education is Kohn (Guskey & Bailey, 2001; Kohn, 1993, 1996, 1999, 2000; Marzano, 2000; Wormeli, 2006). Some of the reasons Kohn (1999) offers why grades should be abolished from the educational system and learning process include (pp.59-60):

1. Grades tend to reduce students' interest in learning itself.

2. Grades tend to reduce students' preference for challenging tasks.

3. Grades tend to reduce the quality of students' thinking.

Other reasons Kohn (1999) provides for eliminating grades include:

- Grades aren't valid, reliable, or objective.

- Grades distort the curriculum.

- Grades waste a lot of time that could be spent on learning.

- Grades encourage cheating.

- Grades spoil a teachers' relationship with students.

- Grades spoil a teachers' relationship with other teachers.

Reasons Kohn (1999) provides to back his statements include: making learning more of a chore when a grade is attached; learning becomes extrinsically motivating instead of intrinsically motivating; finding the path of least resistance to get the highest grade or in other words: choosing the easier class, assignment, or teacher (if possible) to get that A so it boosts the GPA instead of taking a class because an interest or challenge exists; and not willing to take a chance to be creative due to a lower grade being assigned for the risk, if not successful.

Kohn (1993) provides educators recommendations to try and make a grade more meaningful (pp.208-209):

1. Limit the number of assignments for which you give a letter grade.

2. Do not grade assignments using an A/B/C/D/F scale. Rather, use a scale like the following: check-plus/check/check-minus.

3. Reduce the number of possible grades to two: A and incomplete.

4. Never grade students when they are still learning something.

5. Never grade for effort.

6. Never grade on a curve.

7. Bring students in on the evaluation process as much as possible.

Linn & Gronlund (2000) provide a middle ground about the issue of grading purpose. There is an issue with the purpose of grading, however letter grades serve a major purpose administratively, thus methods of providing feedback to the students and parents on how to improve their learning, and as a byproduct the grade, should be the next step (Linn & Gronlund, 2000). To achieve this, major ideas need to be considered about the grading and reporting system: how achievement and non-achievement factors

are evaluated; developing the system as a collaborative community containing parents,

students, teachers, guidance counselors, and administrators; containing clear objectives of

the learning to occur to be evaluated; consistency amongst the district and school content

and performance standards; assessments serving their purpose in obtaining reliable data

about student learning of content; system needs to be a diagnostic tool but practical in its

use for students, parents, teachers, and administrators; and the system should not be used

to replace interaction between the teacher and student or teacher and parent if a

conference, face-to-face or otherwise, is needed (Linn & Gronlund, 2000).

Grading Criteria

Although the purposes of grading differ according to pedagogy, research

completed, studies conducted, or even personal opinion, the things that are graded can be

classified into different categories, or grading criteria. Some of the lead researchers in

this field are Linn & Gronlund (2001), Marzano (2000) and Guskey & Bailey (2001).

Linn & Gronlund (2000) do not take a stand on what to include or not to include

in grading; rather they pose questions in assigning a letter grade (p. 387):

1. What should be included in a letter grade?

2. How should achievement data be combined in assigning letter grades?

3. What frame of reference should be used in grading?

4. How should the distribution of letter grades be determined?

As can be noted, Linn & Gronlund (2000) are referring to the use of letter grades

as the method of evaluating student achievement and non-achievement factors. To

support their questions, Linn & Gronlund (2000) state (p. 384), "Schools have used

traditional letter grades (A, B, C, D, F) to report student progress for more than 80 years,

despite efforts to replace them with a more meaningful report." Additionally, Linn & Gronlund (2000) elude to the issue that teachers will have to assign a certain letter grade sooner or later to students for at least achievement, but possibly achievement and non-achievement factors, but very rarely non-achievement and not achievement unless special circumstances exist.

Marzano (2000) identifies four grading criteria that practicing teachers commonly use in determining a student's grade: academic achievement, effort, behavior, and attendance. Academic achievement is what a student knows or has learned, effort is the timeliness an assignment was completed, behavior is how well a student follows classroom rules, and attendance is a student's presence in the class on a day-to-day basis (Marzano, 2000). Table 7, Marzano (2000, p.30) Summary of Findings on Grading Criteria from Four Studies, details out the major research findings in grading criteria by Robinson & Craver (1989), Austin & McCann (1992), Nava & Lloyd (1992), and Stiggins, Frisbie, & Griswold (1989) and how many districts, schools, and/or teachers use each criteria in the building or classroom to determine a student's overall grade.

As can be seen from Table 7, the overall majority of the study results show that academic achievement is the biggest grading criteria teachers, administrators, and school boards identified as should be included in a students grade, with effort, attendance, and behavior following respectively. Marzano (2000) states that although items such as effort, attendance, and behavior are important for classroom management and in some cases motivation, they should be removed from the overall course grade as they are nonachievement factors. Items such as subject-specific content, thinking and reasoning

skills, and general communication skills would make up the achievement grade for a

course (Marzano, 2000).

Table 7

Marzano (2000, p.30) Summary of Findings on Grading Criteria from Four Studies

Study	Robinson & Carver (1989)	Austin & McCann (1992)	Nava & Lloyd (1992)	Stiggins, Frisbie, & Griswold (1989)
Method and Population	Survey of policies in 1,733 districts	Analysis of 116 school board and district documents and 116 school-level documents	Survey of 829 elementary and secondary teachers in 18 districts	Case studies of 15 high school teachers
Academic Achievement	Percentage of districts that include achievement as grading criterion by grade levels: K: 54.6% 1-3: 89.1% 4-6: 91.2% 7-9: 93.1% 10-12: 94.0% Average: 84.4%	• 79% of school board and district documents include achievement as a grading criterion • 99% of school-level documents	52% of the criteria identified as most important to grades addressed achievement factors	100% of the teachers used achievement as grading criterion
Effort	Percentage of districts including effort: K: 25.9% 1-3: 25.7% 4-6: 26.0% 7-9: 31.7% 10-12: 33.4% Average: 28.5%	• 27% of school board and district documents • 44% of school-level documents	8% of the criteria addressed effort factors	87% of the teachers used effort as a grading criterion
Behavior	Percentage of districts including behavior: K: 4.3% 1-3: 3.9% 4-6: 4.1% 7-9: 6.5% 10-12: 8.2% Average: 5.4%	• 11% of school board and district documents • 21% of school-level documents	8% of the criteria addressed attitude and behavior factors	13% of the teachers used attitude and behavior as a grading criterion
Attendance	Percentage of districts including behavior: K: 6.3% 1-3: 7.0% 4-6: 7.1% 7-9: 13.6% 10-12: 17.4% Average: 10.3%	• 14% of school board documents • 17% of school-level documents	4% of the criteria addressed attendance factors	No information

Subject-specific content relates to what is taught in an individual classroom specific to the class, whether the content is governed by the textbook for the course, teacher-based outcomes, or state developed standards (Marzano, 2000). Thinking and reasoning skills deal with the higher levels of Bloom's Taxonomy and being able to synthesize and analyze the subject-specific content (Marzano, 2000). A specific list of thinking and reasoning skills was developed by the Mid-continent Research for Education and Learning, McREL, and can be found in Table 8, McREL Thinking and Reasoning Skills for Classroom Use (Marzano, 2000, p.36). General communication skills being used in the classroom are evaluated by a student's ability to communicate in written, verbal, or another method or methods other than written or verbal by conveying ideas clearly, modifying for a particular audience, and modifying for particular purposes (Marzano, 2000).

Table 8

McREL Thinking and Reasoning Skills for Classroom Use (Marzano, 2000, p.36)

General Information Processing Skills
Identifying similarities, dissimilarities, and patterns
1) Comparing and contrasting
2) Analyzing relationships
3) Classifying
Logic
4) Argumentation
5) Making inductions
6) Making deductions
Knowledge Utilization Skills
7) Experimental inquiry
8) Investigation
9) Problem Solving
10) Decision Making

Guskey & Bailey (2001) identify three general categories for grading criteria: product criteria, process criteria, and progress criteria. Product criteria is providing a snap-shot of student knowledge and ability at any point in time using final examination scores, projects, reports, unit tests, or other culminating learning activities that rely on students knowing the criteria before hand through the use of rubrics or another method of knowing the learning criteria (Guskey & Bailey, 2001). Process criteria contains evaluation material that figures "how a student got there" (Guskey & Bailey, 2001, p.41) through evaluating effort, quizzes, homework, participation, and/or attendance (Guskey & Bailey, 2001). Progress criteria are classified as those items evaluating the growth of student learning and knowledge throughout a particular time period (Guskey & Bailey, 2001).

However vague the categories Guskey & Bailey (2001) offer may be, they also identify the major sources of evidence in determining a student's overall grade: major exams or compositions, class quizzes, reports or projects, student portfolios, exhibit's of student's work, laboratory projects, student's notebooks or journals, classroom observations, oral presentations, homework completion, homework quality, classroom participation, work habits and neatness, effort, attendance, punctuality of assignments, class behavior or attitude, and progress made. Table 9, Guskey & Bailey (2001) Typical Sources of Grading and Reporting Evidence, offers brief descriptions of each piece of evidence.

Table 9

Guskey & Bailey (2001) Typical Sources of Grading and Reporting Evidence

Evidence Artifact	Brief Description	Criteria Type
Major Exams or Compositions	Aligned assessments that measure what a student knows from the last unit	Product and Progress (if pre- and post-tests used)
Class Quizzes	Frequent use assessment to determine how a student is learning and if problems exist	Process
Reports or Projects	Demonstrations of learning and higher thinking skills not possible through a quiz or test	Product (if rubric used)
Student Portfolios	Collection of student writing, activities, reports, projects, papers, etc.	Product, Process, and Progress
Exhibits of Students' Work	Showcase of a final product, such as a project, art piece, or exhibit	Product
Laboratory Projects	Completion of step-by-step activities, but may also have opportunities for higher thinking	Process and Product
Students' Notebooks or Journals	Collection of notes from lectures and additional thoughts	Process
Classroom Observations	Teacher views student actions and interactions in classroom	Product, Process, and Progress
Oral Presentations	Responses to questions, explanations of answers, or structured speech	Product
Homework Completion	Tracking whether or not a student has completed an assignment	Process
Homework Quality	If assessed, should be used as a formative tool to recognize and remedy learning issues	Process
Class Participation	Tracking student responses and contributions to class discussions	Process
Work Habits and Neatness	Credit awarded for neatness and organized or taken away for careless and sloppy	Process
Effort	Motivational factor to evaluate learning attitude or work ethic	Process
Attendance	Did a student attend or not, typically penalized for not there	Process
Punctuality of Assignments	Motivational factor for responsible behavior, late work penalized regardless of quality	Process
Class Behavior or Attitude	The way a student is perceived to act in class and towards learning	Process
Progress Made	Clear indicators of improvements or gain in learning with descriptions	Progress

Another grading criteria method to be considered comes from Linn & Gronlund

(2000) methods of assigning grades (p. 390):

1. Performance in relation to other group members (relative grading).

2. Performance in relation to specified standards (absolute grading).

3. Performance in relation to learning ability or learning amount.

Relative grading

Relative grading is a method of evaluating student achievement amongst the peers

of individual students in a particular class or course, also known as norm-referenced

grading (Guskey, 2002; Guskey & Bailey, 2001; Linn & Gronlund, 2000). The typical

manner such a method is used is: assessment of learning is completed by students,

assessment is scored, scored assessments are rank ordered from highest grade to lowest

grade, and grades are assigned based upon the normal distribution curve or a teacher

rationalized scale as can be seen in Table 10, Relative Grading scores by Normal

Distribution Curve and Teacher Rationalized Scale (Linn & Gronlund, 2000).

Table 10

Relative Grading Scores by Normal Distribution Curve and Teacher Rationalized Scale

Letter Grade	Percentage of Students Receiving Grade	
	Normal Distribution Curve (Bott, 1996, pp.197-198)	Teacher Rationalized Scale (Linn & Gronlund, 2000, p.392)
A	3.4%	10% - 20%
B	13.3%	20% - 30%
C	66.6%	30% - 50%
D	13.3%	10% - 20%
F	3.4%	0% - 10%

Absolute grading

Absolute grading is evaluating student performance against a pre-determined set of objectives and standards that are clearly stated for the course, also known as standards-based grading or criterion-referenced grading (Guskey, 2002; Guskey & Bailey, 2001; Linn & Gronlund, 2000). Any grading method may be used, but as can be seen in Table 11, Absolute Grading Scores and Narratives, a level of mastery must be identified not only with the grading method used, but also within the objective or standard the student is to obtain (Linn & Gronlund, 2000).

Table 11

Absolute Grading Scores and Narratives (Linn & Gronlund, 2000, p.393)

Letter Grade	Narrative
A	Outstanding. Student has mastered all of the course's major and minor instructional goals.
B	Very Good. Student has mastered all of the course's major instructional goals and most of the minor ones.
C	Satisfactory. Student has mastered all of the course's major instructional goals but just a few of the minor ones.
D	Very Weak. Student has mastered just a few of the course's major and minor instructional goals and barely has the essentials needed for the next highest level of instruction. Remedial work would be desirable.
F	Unsatisfactory. Student has not mastered any of the course's major instructional goals and lacks the essentials needed for the next highest level of instruction. Remedial work is needed.

When it comes to using absolute grading for assessment instruments such as tests, it is imperative to identify what course objectives or standards the test is being used to measure, otherwise it is a test producing only a number and no usable data on student data (Linn & Gronlund, 2000). A typical grading scale such as that in Table 1, Sun

Prairie High School Grading System, will be sufficient in determining a grade if such a scale is required or wanted (see Table 1 on page 10).

Grading methods

As stated by Guskey (1996, p.20) through O'Connor (2002, p.26), "[Grading] practices are not the result of careful thought or sound evidence,...Rather they are used because teachers experienced these practices as students and, having little training or experience with other options, continue their use." Multiple methods have been documented in the process of evaluating and reporting student achievement and non-achievement factors, including Letter Grading, Plus and Minus Letter Grading, Narratives and Comments, Percentage Grading, Categorical Grading, Pass/Fail Grading, and Mastery Grading (Bott, 1996; Guskey, 2002; Guskey & Bailey, 2001; Lewin & Shoemaker, 1998; Linn & Gronlund, 2000; Marzano, 2000; O'Connor, 2002).

Letter grading

Letter grades are the most commonly known and used method of grading and reporting student achievement at the primary, secondary, and post-secondary levels (Guskey, 2002; Guskey & Bailey, 2001; Marzano, 2000; O'Connor, 2002; Robinson & Carver, 1989; Wolansky, 1985). Letter grading is documented as first being used in the United States of America at Yale University in 1780 with the use of a four-point category scale to provide students feedback on their achievement (Durm, 1993; Marzano, 2000). In 1877 Harvard University implemented a six-division scale, with division one representing the highest achieving students and division six representing the lowest achieving students (Marzano, 2000). Mount Holyoke College was the first United States institution; primary, secondary, or post-secondary; to implement an actual letter grade

system using A, B, C, D, and E to represent student achievement with A representing the

highest achieving students and E representing the lowest achieving students (Marzano,

2000).

Letter grades have three to five categories to represent a student's achievement

and/or non-achievement factors (Guskey, 2002; Guskey & Bailey, 2001; Marzano, 2000;

O'Connor, 2002). Such categories can be labeled with symbols, letters, or phrases and be

used to evaluate students in a relative or absolute grading manner factors (Guskey, 2002;

Guskey & Bailey, 2001; Marzano, 2000; O'Connor, 2002). Such categories can be found

in Table 12, Relative and Absolute Letter Grade factors (Guskey, 2002; Guskey &

Bailey, 2001; Marzano, 2000; O'Connor, 2002).

Table 12

Absolute and Relative Letter Grade Categories

Absolute Categories			Relative Categories			Both
Excellent	High Pass	A	Excellent	Excellent	Outstanding	A
Satisfactory		B		Good	Above Avg.	B
	Pass	C	Average	Average	Average	C
Needs	Low Pass	D		Poor	Below Avg.	D
Improvement	Incomplete	Pass	Failing	Failing	Failing	F

The grade categories of A, B, C, D, F can be both absolute and relative grading

categories due to how the letter is interpreted or by the descriptor used. As with absolute

and relative grading, if performance is evaluated by comparing student work to student

work, as noted by phrases such as "Average," the interpretation is relative or norm-

referenced in nature (Guskey & Bailey, 2001; Linn & Gronlund, 2001).

Regardless of the absolute or relative nature in which letter grading is used, the

reasons make it the most popular and commonly used scale in education today (Guskey,

2002; Guskey & Bailey, 2001; Marzano, 2000; O'Connor, 2002; Robinson & Carver, 1989). The majority of these reasons are not documented as valuable reasons, but more for the familiarity and comfort reasons to keep the grading system. Already mentioned was Guskey (1996) stating teachers use the grading system because that was what they were taught with and know no better. Another major influence on the continuing use of letter grading is parent preference and for much of the same reasons why teachers use letter grades, it is what was used to evaluate them, therefore they believe they understand it (Guskey, 2002; Guskey & Bailey, 2001). However as Waltman & Frisbie (1994) found, what teachers communicate and parents interpret are, most times, two separate meanings. The use of descriptors attached to a letter grade such as A, B, C, D, F assists with the communication issue, but does not solve the problem (Guskey, 2002; Guskey & Bailey, 2001; Linn & Gronlund, 2001).

Additional issues documented about the use of letter grades includes averaging multiple letter grades from multiple artifacts together to calculate a progress report or final grade, the inclusion of achievement and non-achievement factors in the one grade assigned, interpretation of parents and students in competitive/relative ways, and used alone separate of anything else does not detail the strengths and weaknesses of the student (Guskey & Bailey, 2001; Linn & Gronlund, 2001). Some of the above issues can be alleviated by considering the questions posed by Linn & Gronlund (2001, p.387):

1. What should be included in the letter grade?

2. How should achievement data be combined in assigning letter grades?

3. What frame of reference [absolute or relative or progress reporting] should be used in grading?

4. How should the distribution of letter grades be determined [absolute or relative]?

Plus and minus letter grading

Plus and minus letter grading is adding a plus (+) or minus (-) sign after a letter grade of A, B, C, and D, with F not receiving a plus nor a minus sign and A rarely receiving a plus sign (Guskey 2002; Guskey & Bailey, 2001). Twelve grading categories are generated with the use of a plus and minus letter grading system: A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F (Bott, 1996; Guskey, 2002; Guskey & Bailey, 2001).

Advocates and opponents to plus and minus letter grading exist (Abou-Sayf, 1996; California Community College Academic Senate, 1996; Dwyer, 1996; Ebel, 1979; Frank & Feeney, 2006; Guskey, 2002; Guskey & Bailey, 2001; McClure & Spector, 2005). Documented benefits include the motivational factor for student learning, accurate information about student performance, and parents favoring the use of the plus and minus letter grading system (California Community College Academic Senate, 1996; McClure & Spector, 2005). Additionally, advocates of the plus and minus letter grade system argue the system is fairer to students than regular letter grading of A, B, C, D, and F, the system has lower gaps within the levels of achievement and evens out the distribution between levels. For example, if Table 1 on page 10 is used, the B range would have ten numbers if solid letter grades were used but with plus and minus letter grading there are three distinct levels within B, consisting of B+, B, and B- with each containing three to four numbers. Therefore, the change from B to A is not as drastic if plus and minus grades are used (Abou-Sayf, 1996; California Community College Academic Senate, 1996; McClure & Spector, 2005).

Opponents of the plus and minus letter grading system argue that not enough qualitative research and data is gathered to make educated decisions about implementing plus and minus letter grading (Frank & Feeney, 2006; McClure & Spector, 2005). McClure & Spector (2005) and Frank & Feeney (2006) conducted studies at their respective post-secondary universities and found the effects of plus and minus grading had little to no effect on student achievement at their institutions. No studies were found at the time of this study to support a notion that plus and minus letter grading motivated, detracted, or maintained a status quo in student achievement.

Guskey & Bailey (2001) and Dwyer (1996) state that twelve different categories explaining how to earn each plus and minus letter grade is required if an absolute system of grading is to be used to generate reliable student achievement data. Additionally, Guskey & Bailey (2001) argue the parental preference for plus and minus letter grading is due to their want of more detailed information of student progress. Although advocates advise that the use of plus and minus letter grading provides accurate information (California Community College Academic Senate, 1996), opponents show how a plus or minus diminishes statistical reliability (Ebel, 1979; Guskey & Bailey, 2001). A prime reason for the diminishing statistical reliability includes misclassification of a student in a category, especially around the boundaries from one grade category to another (Dwyer, 1996; Ebel, 1979; Guskey & Bailey, 2001).

Narratives and comments

"The most powerful single modification that enhances achievement is feedback," (Hattie, 1992, p.9). Narratives and comments may take many different forms. Guskey & Bailey (2001) define narratives and comments as teacher developed, open-ended,

personalized feedback tools for strengths and weaknesses and also detail how to maintain strengths and remedy weaknesses.

The use of formative assessment, evaluating student learning progress but not including such evaluations in an overall grade, has been around since the Greeks (Guskey & Bailey, 2001; Linn & Gronlund, 2001). The use of such techniques has been documented to be fairly successful, Black & William (1998) found utilizing formative assessments, and not including those evaluations in overall grades, improved student achievement, especially in low-achieving students. However, as O'Connor (2002) and the National Research Council (2001) emphasize, it is not the tool of formative assessment that increases student achievement, it is the timely and informative feedback on such assessment that will improve learning.

Page (1958) conducted a study on the use of feedback in measuring student learning. Seventy-four secondary school teachers gave a test to their students and scored the test as they normally would using whatever grading system they were accustomed to. Three random groups were formed with the scored tests. Group one was given feedback of a numerical and letter grade only; group two was given feedback of a numerical and letter grade and a standardized comment to the letter grade earned; and group three was given feedback of a numerical and letter grade with a personalized comment from the teacher. Students proceeded through the next lesson and took another test in which the scores were compared. Group two performed significantly higher than group one with group three performing the highest. Stewart and White (1976) completed the same study and confirmed the results of providing feedback that stresses high expectations, teacher's

willingness to assist with the student's learning, and effort as pertaining to their achievement, even if not evaluated as a factor in the overall grade.

Factors to consider when providing a student a narrative or comment include relating to learning goals, keeping educational or technical jargon to a minimum, the amount of formative assessments provided, and the timeliness of the feedback after an assessment (Guskey & Bailey, 2001; Marzano, 2006; National Research Council, 2001). Table 13, Achievement gain associated with assessments over 15 weeks (Marzano, 2006, p.10), illustrates the point of the amount of formative assessments provided and the achievement gain by students.

Table 13

Achievement Gain Associated with Assessments Over 15 Weeks (Marzano, 2006, p.10)

Number of Assessments	Effect Size	Percentile-Point Gain
0	0	0
1	0.34	13.5
5	0.53	20.0
10	0.60	22.5
15	0.66	24.5
20	0.71	26.0
25	0.78	28.5
30	0.80	29.0

The drawbacks of narratives and comments may be the reason why more teachers do not utilize them in their grading practices. Guskey & Bailey (2001) report that specific guidelines for writing feedback allow for different teachers providing different types of feedback, very time consuming to prepare individualized statements, and as time progresses the statements start looking and sounding the same.

Caution must be made in what type of feedback is provided. If feedback is consistently promoting the lower levels of Bloom's Taxonomy, students' will be less likely to take ownership of their own learning and thinking processes (National Research Council, 2001). However, having students practice without providing feedback produces little learning (Thorndike, 1931 through National Research Council, 2001).

O'Connor (2002) provides a statement to sum up the importance of narratives and comments in the learning process (p.116), "Words open up communication, whereas numbers close it down." Marzano (2006) reports that students whom are provided feedback on whether a question was right or wrong, marking with no feedback, received a percentile loss of three, whereas an explanation of the right or wrong answer produced a percentile gain of twenty. Narratives and comments are preferred by parents on reporting tools such as progress reports and report cards. Students learn from their mistakes and perform better on summative assessments (Guskey & Bailey, 2001; Hall, 1990; National Research Council, 2000).

Pass/Fail grading

Pass/fail grading limits the number of grading categories to two, acceptable achievement, or Pass, and unacceptable achievement, Fail (Delohery & McLaughlin, 1971; Guskey & Bailey, 2001; O'Connor, 2002). Pass/fail grading can be used to evaluate a single assignment or project within a course or be used as the final course grade (Guskey & Bailey, 2001; Linn & Gronlund, 2001; O'Connor, 2002). Linn & Gronlund (2001) point out that pass/fail is used heavily in courses using the mastery grading system as the only important information is if the student passed the criteria or not.

Marzano (2000) reports that the use of the pass/fail grading system varies at each grade level at the elementary and secondary levels by providing the results of a Robinson & Craver (1989) study that showed 50.8% of Kindergartens, 36.1% of grades 1-3, 17.0% of grades 4-6, 7.8% of grades 7-9, and 6.5% of grades 10-12 utilizing pass/fail grading.

As with percentage grading, the selecting of the cutoff between Pass and Fail is subjective and left to the teacher, administrator, school district, or school board's discretion (Guskey & Bailey, 2001; O'Connor, 2001). Research has uncovered multiple cutoffs between pass and fail with letter grades of D and C being mentioned and plus and minus letter grades of C- and D- as the minimum passing grades (Guskey & Bailey, 2001; Wolansky, 1985). A poll about the minimum cutoff for a pass/fail grade of the Introduction to Technology & Engineering and Fundamentals of Technology & Engineering students at Sun Prairie High School in semester two of the 2008-2009 school year resulted in respondents (N=51) selecting an average percentage grade of 67%, letter grade of D, and a median and mode percentage grade of 70%, letter grade of C-, as the minimum cutoff for passing in a Pass/Fail system, see Appendix D for survey instrument. Both percentage grades classified as the corresponding letter grades according to the Sun Prairie High School grading system, Table 1.

The cutoff mark for what represents passing and what does not may not be clear, Guskey & Bailey (2001) make clear that absolute grading criteria should be used if evaluating with a pass/fail grading system as relative grading criteria would mean a certain percentage of students would fail the course no matter what. Additionally, the criteria for what constitutes passing and failing needs to be very explicitly stated (Guskey & Bailey, 2001).

Documented benefits of pass/fail grading include: removing the anxiety of a course or homework score lowering a course grade or grade point average; providing students opportunities to explore areas or courses, especially in college programs if the course is not part of their major's program work; attention is focused on learning rather than the grade wanted; and motivation can be improved with a reduction in competition in classes of highly motivated and high ability students (Delohery & McLaughlin, 1971; Guskey & Bailey, 2001; Linn & Gronlund, 2001).

The issues of pass/fail grading include providing little information to students about strengths and weaknesses they possess with a letter only, P or F, and if the expectations of the course or project are unknown, learning and testing criteria are unknown, and anxiety amongst students about the learning progress is documented (Guskey & Bailey, 2001; Linn & Gronlund, 2001).

Mastery grading

Mastery grading, part of the mastery learning process (Bloom, 1968, 1971), establishes two categories for learning, mastery and non-mastery of the course content objectives (Guskey & Bailey, 2001; Linn & Gronlund, 2001; Wiggins & McTighe, 2005; Wormeli, 2006). Unlike the pass/fail grading system, mastery is established at a high level of achievement or performance for each objective and non-mastery is not equated to failing (Guskey & Bailey, 2001).

Setting the cutoff for mastery and non-mastery is fairly arbitrary. Guskey & Bailey (2001) report that the A to B letter grade range has been documented as used by teachers. A poll about the minimum cutoff for a mastery grade of the Introduction to Technology & Engineering and Fundamentals of Technology & Engineering students at

Sun Prairie High School in semester two of the 2008-2009 school year resulted in respondents (N=51) selecting an average and mode percentage grade of 90% and a median percentage grade of 92%, both percentage grades classified as a letter grade of A- according to the Sun Prairie High School grading system, Table 1 on page 10, as the minimum cutoff for mastery in a mastery system, see Appendix D for survey instrument. However, unlike the pass/fail grading system, mastery grading still utilizes letter grading as a form of feedback to students (Guskey & Bailey, 2001).

One of the key differences from mastery grading from the other grading systems is the multiple opportunities provided to students to master the content objective (Guskey & Bailey, 2001; Linn & Gronlund, 2001; Wormeli, 2006). Bloom (1968, 1971) brought up the idea of mastery learning and providing students multiple opportunities to meet content objectives as well as providing enrichment activities to those whom met the objectives the first time and are standing by for the next unit of study.

The idea in understanding what a student knows at a certain point in the lesson to assign a mastery status is through the use of formative and summative assessments (Bloom, 1968, 1971; Guskey & Bailey, 2001; Linn & Gronlund, 2001). Formative assessments are checks during a lesson through the use of in class quizzes, homework, participation questions, or any other method a teacher will utilize to see where a student is at during the lesson (Guskey & Bailey, 2001; Linn & Gronlund, 2001). Summative assessments are used to evaluate students cumulative knowledge of the course content at major points of the course, midterm, final exam, etc (Guskey & Bailey, 2001; Linn & Gronlund, 2001). Both methods may be used by the teacher to see if a student mastered

the content, however only summative assessments should be used in the actual assigning of a course grade (Guskey & Bailey, 2001; Linn & Gronlund, 2001).

Mastery grading has its issues and benefits. Issues of mastery grading include providing students' a second chance at showing they mastered content material, not including enough summative assessments to gain ample information about student learning, time and effort required to set up such a grading system, classroom management of differentiating the classroom while students work on enrichment or corrective activities, ensuring every student meets all of the instructional objectives for the course, and the lack of clearly stated objectives (Guskey & Bailey, 2001; Wormeli, 2006).

Benefits of mastery grading include meeting the individual student needs in learning by providing multiple opportunities, it is based on a solid theory of student learning, feedback is provided as to how students can perform better, and the similarities to the real world (Bloom, 1968, 1971; Guskey & Bailey, 2001). "In essence, mastery grading teaches students the valuable lifelong learning skill that you must learn from your mistakes," (Guskey & Bailey, 2001, p.101).

Categorical grading

Categorical grading looks to use descriptive labels as the method of evaluating student achievement (Guskey & Bailey, 2001). Descriptive labels could come in the form of words, symbols, or numbers such as those located in Table 14, Examples of Categorical grading labels (Guskey & Bailey, 2001; Wormeli, 2006). The statistical benefit to using categorical grading over percentage grading is the smaller the scale, the higher the inter-rater reliability and easier ability to justify a grade with three, four, or five categories rather than 101 categories, such as the percentage scale (Wormeli, 2006).

Table 14

Examples of Categorical Grading Labels (Guskey & Bailey, 2001, p.75)

McGraw-Hill Terra Nova	Nebraska	Symbols	Numerals
Advanced	Advanced	4+	4.0
Proficient	Proficient	4	3.0
Nearing Proficiency	Progressing	4-	2.0
Progressing	Beginning		1.0
Starting Out			0.0

As parents seek to find detailed information about their student's learning process, they will typically assign a letter grade to the given category (Guskey & Bailey, 2001; Wormeli, 2006). Wormeli (2006) suggests generating one more or one less category in the grade system, for example a three-point or six-point system, to avoid letter grades being so easily associated with a category. Sun Prairie High School relates each numerical category to a letter grade, as can be seen in Table 15, Sun Prairie High School Categorical Grading System.

Table 15

Sun Prairie High School Categorical Grading System for Grade Point Average

A = 4.0		C = 2.0
A- = 3.7		C- = 1.7
B+ = 3.3		D+ = 1.3
B = 3.0		D = 1.0
B- = 2.7		D- = 0.7
C+ = 2.3		F = 0.0

If categorical grading is to be used properly, written descriptions should follow each label (Wormeli, 2006). The use of rubrics to define what a student has achieved or

performed according to written descriptions is a very useful tool (Wormeli, 2006). However, such a grading system lacks the ability to provide useful feedback for a student in and of itself (Guskey & Bailey, 2001).

Percentage grading

Percentage grading is a multicategory method used to communicate teacher judgment of student achievement and performance, using 101 categories to differentiate between the different percentages from zero to 100 (Guskey & Bailey, 2001). Percentage grading is the second most popular form of grading, only behind letter grading (Guskey & Bailey, 2001).

The first documented use of 100% as a method of evaluating student achievement was in 1877 when Harvard University developed six divisions to compare student achievement (Marzano, 2000, p.11):

- Division 1 = 90% or more

- Division 2 = 75% - 90%

- Division 3 = 60% - 74%

- Division 4 = 50% - 59%

- Division 5 = 40% - 49%

- Division 6 = Below 40%

Twenty years after Harvard University developed the division scale, Mount Holyoke College assigned letter grades to each percentage range, a first of its kind and still in practice in education today, Table 16, 1897 Mount Holyoke College Percentage and Letter Grade Scale (Marzano, 2000).

Table 16

1897 Mount Holyoke College Percentage and Letter Grade Scale (Marzano, 2000, p.11)

Letter Grade	Descriptor	Percentages
A	Excellent	95% - 100%
B	Good	85% - 94%
C	Fair	76% - 84%
D	Passed	75%
E	Failed	0% - 74%

Advocates and opponents of percentage grading defend or oppose the practices of

determining and using this system. Wormeli (2006) defends the use of percentage

grading by stating it is easier to defend a grade scale when math is used to explain how a

grade is determined. Guskey & Bailey (2001) argue that such a system contains so many

categories that teacher subjectivity is bound to skew educational data of student

achievement. Two other major areas of debate are the setting of cutoffs between

percentages and the subjectivity factor of assigning grades to assignments and as an

overall grade.

As Dockey (1995) argues:

The setting of grading scales is arbitrary. I have found no research to support a

93-100 scale, or any other, as appropriate for an A. Even in the most lenient

scales, an A has a 12-point range, but F will have a 60- to 70-point range.

Somehow that seems a bit skewed.

Although Mount Holyoke College was the first educational institution to assign

letter grades to percentage ranks, no justification or data was found to support this scale.

Bott (1996) reports that the lower cutoff for a letter grade of A should be 89.5%, B at

79.5%, and 10% increments from there until 49.5% where F is the upper cutoff. Sun

Prairie High School (2008) reports the cutoffs for each grade level, A, B, C, D, and F in 10% increments with F being 60% of scale. Much like every numerical, categorical, and pass/fail scale discussed thus far, percentage grading has very arbitrary cutoffs. At the end of an assessment, the teacher needs to make a professional judgment on what the final grade should be (Wormeli, 2006).

Advocates of percentage grading state that mathematical precision helps teachers justify, with numerical data, a student's grade (Wormeli, 2006). Starch & Elliot (1912) conducted a study about teacher subjectivity by providing two papers written by freshmen at the end of the school year to 142 freshmen English high school teachers. Teachers were asked to evaluate the papers using a 100% grading scale and the results showed marks ranging from 64% - 98% on one paper to 50% - 97% on the other (Starch & Elliot, 1912). Differences in scores assigned were attributed to each teacher's evaluation or lack of evaluation of different criteria: neatness, spelling, punctuation, grammar use, and the message being conveyed.

Starch & Elliot (1913) repeated the same study a year later, but this time sent two papers of geometry questions and student responses to 138 geometry teachers. Scores from this study ranged from 28% - 98% (Starch & Elliot, 1913). The right or wrong answer, neatness, form, and spelling were all reasons for the extreme differences in the grade (Starch & Elliot, 1913).

Another issue to be aware of when using percentage grading is a strategy called grading on the curve. In its truest sense, grading on the curve is a relative grading process that evaluates students against one another's achievement (Bott, 1996; Davis, 1930; Guskey & Bailey, 2001). The term originates from how the scores are figured relatively,

by using the normal distribution curve, or bell curve (Bott, 1996). The process of evaluating student achievement on the curve includes: grading student assessments, rank ordering the assessments from highest to lowest, and assigning percentages based on the distributions of the normal distribution curve (Bott, 1996; Davis, 1930; Guskey & Bailey, 2001). By using such a method, letter grades would be distributed as follows: 6% of the students would earn an A, 22% would earn a B, 44% would earn a C, 22% would earn a D, and 6% would earn a F, no matter how the students scored individually (Bott, 1996; Davis, 1930). Students interpret grading on the curve to mean assigning the highest achieving student the amount of points needed to receive the highest grade possible, 100%, and providing everyone else in the class the same amount of points (Guskey & Bailey, 2001). Regardless of the method used, as Davis (1930) points out, teachers do not have to specify specific learning criteria, just teach, give a test, and let the math calculate the scores.

In conclusion of percentage grading, comments provided by Guskey & Bailey (2001, p.78) help clarify the use of percentages as a grading and reporting method:

> The large number of grade categories 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. Therefore...the increased precision of percentage grades is far more imaginary than real.

Chapter III: Methodology

Unclear as to why teachers use certain grading scales, this study seeks to determine what teachers and students at Sun Prairie High School interpret as strengths and weaknesses to different grading scales and identifies what hinders the use of or what barriers contribute to retaining the current grading scales. As a result, this study helped provide clarity and reasons why teachers use certain grading scales.

This chapter focuses on the study methods; the sample population and methods used to select the subjects, the instrumentation used to select subjects and gather data about grading scale strengths and weaknesses as well as recommendations to implementing such grading scales, how the data was collected, how the data was analyzed, and the limitations of the study.

Subject Selection and Description

Sun Prairie High School is located in Sun Prairie, WI. Sun Prairie is a suburban community with a population of 25,810 residents. Sun Prairie is located ten miles northeast of Madison, WI, the capital of Wisconsin, home to Madison Area Technical College, Herzing University, and the UW-System's flagship university, the University of Wisconsin-Madison.

As of September 19, 2008, Sun Prairie Area School District had a student population of 6,171 students in Kindergarten through twelfth grades which is split amongst seven elementary schools (K-5), two middle schools (6-8), one high school (9-12), and an alternative learning center (9-12). Sun Prairie Area School District contained the following demographics for the 2008-2009 school year: 6,171 total students of which 5.0% were classified as Asian, 12.6% as Black, 5.3% as Hispanic, 0.6% as American

Indian, and 76.5% as White. 22.0% of the district population received free or reduced lunch, 5.5% were classified as Limited English Speakers, and 11.6% were students with disabilities (SPASD, 2008).

Sun Prairie High School, in which the study was conducted, is a four-year accredited high school with a faculty of 146 with a student population of 1,802 students as of September 19, 2008.

The 146 teachers at Sun Prairie High School were asked to take a blind survey about grading scales used with different grading criteria, Appendix E. Teachers who chose to identify themselves by writing their name at the bottom of the survey were provided a follow-up demographic survey, Appendix G, and the consent form, Appendix C. Teachers were selected based on the academic areas taught in, number of years teaching, number of years in the Sun Prairie Area School District, number of Advanced Placement or Advanced Standing classes teaching, and the responses to the survey about grading scales and grading criteria, Appendix E.

Students were asked to participate in the study by the researcher briefly discussing the study to every Technology & Engineering Education class at Sun Prairie High School and by having an announcement said during daily announcements. Every student in Technology & Engineering Education and at Sun Prairie High School had the opportunity to participate in the study. Since the attendance rate for student participants was low, if a student showed up with a signed parental consent form, Appendix B, they were accepted as a focus group member for the study. Student demographic information, Appendix F, was taken about each student for statistical purposes.

Instrumentation

Four instruments were created by the researcher for data collection of this study. Previously developed instruments researched were not found suitable for this study by the researcher, as such the researcher designed each instrument based upon the information gathered in the literature review. These instruments included: Pass/Fail and Mastery Grading Scale Survey, Appendix D; Survey of Current Grading Scales Used for Evaluating Student Artifacts, Appendix E; Grading Interpretation Questionnaire, Appendix H; and Teacher Interview Questions, Appendix I.

Pass/Fail and Mastery Grading Scale Survey, Appendix D, was developed and used to gather data about what the students of an introductory course in the Technology & Engineering Education department at Sun Prairie High School in the 2nd semester of the 2008-2009 school year believed should be the appropriate passing and mastery grading marks if those scales were used to evaluate their learning.

Data was collected for the Pass/Fail and Mastery Grading Scale Survey as a method to compare student interpretations to the literature review on Pass/Fail and Mastery Grading Scale cutoff points.

The Survey of Current Grading Scales Used for Evaluating Student Artifacts, Appendix E, was developed and used for data collection about how the 2008-2009 2nd semester teachers of Sun Prairie High School evaluated different types of achievement and non-achievement factors. A brief explanation of each major grading scale researched for this study was provided at the top of the document. Five questions were asked of the teachers, with each question relating to an achievement or non-achievement factor and what grading scale, percentage, categorical, pass/fail, or mastery, was used to evaluate

that criteria. There was space at the bottom for teachers to inform the researcher if they wanted to be a part of the follow-up focus group discussing grade scales.

Appendix H, the Grading Interpretation Questionnaire was used to gain data from students and teachers about different grading purposes, grading scales, grading criteria, formative and summative assessments, and interpretations of all four of those items. Twelve statements composed the questionnaire with students and teachers identifying on a five item Likert-Scale whether they Strongly Agreed, Agreed, Disagreed, Strongly Disagreed, or were Undecided in their response to the statement given. Students completed the questionnaire and participated in a focus group with their peers to discuss each statement. Teachers completed the questionnaire and participated in a one-on-one interview with the researcher to elaborate on their interpretation of the statement.

Appendix I, Teacher Interview Questions were developed to gather data and teacher ideas on the different grading scales they used in their classroom. Teachers responded to questions pertaining to the strengths and barriers of the grading scale and recommendations to provide to someone wishing to implement the grading scale. As each teacher may have used a similar or different grading scale in their classroom, questions were tailored for that teacher. For example, a teacher not using the pass/fail grading system in their classroom was not asked pass/fail grading system questions. These interview questions were asked to the teachers participating in the one-on-one interviews.

Data Collection Procedures

The week of January 26, 2009, during the first week of the 2008-2009 2nd semester at Sun Prairie High School, the researcher introduced the study to the Technology Education department and asked if the students of their Introduction to

Technology and Engineering and Fundamentals of Technology and Engineering classes could assist in the data collection of the study. All Technology & Engineering Education teachers complied. On January 28, 2009, the researcher explained the survey to the students of the Introduction to and Fundamentals of Technology and Engineering classes and provided a parental consent form for the students' parents to sign, Appendix A. Responses and preferences of student's parents were all returned by January 30, 2009.

On February 3, 2009 the researcher explained and conducted the Pass/Fail and Mastery Grading Scale Survey, Appendix D, with students of each Introduction to Technology and Engineering class and the Fundamentals of Technology and Engineering class. Data was collected from each student on what the minimum cutoff for Pass/Fail and Mastery should be according to the grade scale provided by Sun Prairie High School.

On April 13, 2009, Sun Prairie High School teachers were sent an email from the researcher informing them of a survey that was going to be placed in their mailbox at the end of the school day. The survey was printed on bright pink paper and a bright pink paper box was created for the participants to return their survey in next to the teacher mailboxes.

At approximately 3:30 pm on April 13, 2009, the survey was placed in their mailbox with a letter, sharpened pencil, and Dum-Dum sucker. The letter thanked each participant for assisting the researcher in the study and asked him or her to enjoy the treat and keep the sharpened pencil. The letter also informed the participants of a drawing for a $25 gift card to a restaurant of their choosing in the Greater Madison Area and that the drawing would occur at the end of the week for those completing the survey. Each survey

was coded with a hand-written number to inform the researcher of who had returned the survey. Surveys were due back to the researcher by April 17, 2009 at 3:30pm.

Surveys were collected throughout the week after 3:30pm and responses were tabulated in a Microsoft Excel spreadsheet. An email was sent each morning thanking those participants who completed the survey and reminding those who didn't to complete and return the survey by April 17, 2009. At 4:00pm on April 17, 2009 the bright pink paper box was removed from its location and all surveys were tabulated. A winner was drawn and awarded their gift card on April 20, 2009.

On May 4, 2009, the researcher asked a student to review a list of grading interpretation statements. The student agreed and provided feedback to help clarify each statement. Changes were made as seen fit by the researcher to make the interpretation statements more readable for a non-education certified reader.

May 4 through May 6, 2009, the researcher informed all Technology and Engineering Education classes at Sun Prairie High School, except for the Introduction to Technology and Engineering and Fundamentals of Technology and Engineering classes, of the research study being held on May 7, 2009 about grading scales. Each student was invited to participate in the study and provided a parental consent form, Appendix B, if interested. In addition to each Technology and Engineering class being informed of the study, an announcement was made to all Sun Prairie High School classes about the study via the morning announcements conducted by the students at 9:02am everyday from May 4 to May 6, 2009.

On May 7, 2009 at 3:30pm, students whom were interested in participating in the study and provided a signed parental consent form were invited to a focus group

discussion about grading scales. Students were informed of the norms of the focus group, the benefits of and risks associated with the study. Additionally, students were informed of the method of gathering conversational data through the use of a digital voice recorder. Students completed a demographic survey, Appendix F, and the Grading Interpretation Questionnaire, Appendix H. Once each student was completed with both items, the researcher lead the focus group into a discussion about grading scales and interpretations of those scales using their responses from the questionnaire, Appendix H. Each student was provided an opportunity to speak his or her opinion for each statement. The focus group discussion concluded at 4:27pm.

The recorded focus group discussion was transcribed on May 9 and 10, 2009. The transcription was evaluated and the main points, issues, and benefits were synthesized for future discussion with teachers involved in the study. Each line of the transcription was identified with a number for easier reference.

On May 11, 2009, a follow-up demographic survey, Appendix G, and consent form, Appendix C, was sent to teachers whom expressed an interest in participating in discussions about grading scales from the first survey conducted, Appendix E. Completed demographic surveys were returned by May 15, 2009 and teachers were selected and notified to set up a day and time to discuss the grading scale interpretations. Teachers were selected based on the academic areas taught in, number of years teaching, number of years in the Sun Prairie Area School District, number of Advanced Placement or Advanced Standing classes teaching, and the responses to the survey about grading scales and grading criteria.

During the week of May 18 to May 22, 2009, teacher interviews commenced with five teachers agreeing to and setting up days and times for discussion of grading scales. During these interviews teachers were asked a series of questions. First, the researcher and teacher reviewed the responses to the Survey of Current Grading Scales Used for Evaluating Student Artifacts, Appendix E, to ensure the responses selected were the correct ones and changes were made if needed. Next, the researcher asked the teacher a series of questions about the grading scales used in his or her classroom and recommendations for implementing such scales, Appendix I. Following the questions and recommendations, the researcher read each Grading Interpretation Statement and provided the teacher time to respond with their response, Strongly Agree, Agree, Disagree, Strongly Disagree, or Undecided, and reasons behind their response if such action was needed. Finally, the researcher shared with the teacher the major points, issues, and benefits the student focus group arrived at and allowed time for the teacher to respond. Teacher interviews ranged from thirty to forty-five minutes in length.

On May 23, 24, and 25, 2009, the researcher transcribed each teacher interview. Each line of the transcriptions was identified with a number for easier reference.

Data Analysis

Qualitative data was analyzed by evaluating participant responses and categorizing the responses into one of the following categories:

- Percentage Grading
- Categorical Grading
- Pass/Fail Grading
- Mastery Grading

Each response was then sub-categorized into one of three categories:

- Strengths

- Barriers

- Recommendations for use

Limitations

Limitations of the study include the study being conducted at Sun Prairie High School only, student participants involved in the focus group discussion, teacher participants of the study, and researcher is the focus group discussion leader and teacher interviewer.

Sun Prairie High School was the only secondary school where the research was conducted. Schools of the similar size, demographics, and locations may consider the results of the study valuable for their situation. However, the study was specifically designed for the Sun Prairie Area School District and Sun Prairie High School. It is recommended that an individual interested in researching this topic complete the same study at the location where data is to be gathered.

Student participants were sought out from a number of Technology Education courses at Sun Prairie High School. A limitation of the study is participants were sought from the entire school population, but not as aggressively as the students in the Technology Education courses, as such it was a convenience for the researcher.

Teachers of Sun Prairie High School were invited to be members of the Grading for Learning initiative. The researcher was one of these members on the Grading for Learning committee. Other Grading for Learning committee members were not disallowed from participating in the study and may have participated. A limitation of the

study is some of the Grading for Learning members may have participated and if so, were provided information from the study, but not for the purpose of the study.

The population used for the study and the researcher are part of the same location. Additionally, the researcher served as the student focus group moderator and teacher interviewer. A limitation of the study is the translation of the statements, if needed by the focus group or interview participants, came from an individual knowledgeable about the topic, possibly providing inside information about the grading interpretation statement or question posed.

Chapter IV: Results

The purpose of the study was to identify grading scales used in education and determine how teachers and students at Sun Prairie High School in the 2009 spring semester interpret the uses of these scales when used to evaluate attendance, behavior, assignments, projects, and assessments in a classroom.

The results of the study seem to suggest more information about different types of grading scales, along with potential uses, needs to be provided to teachers. The majority of teachers utilize percentage grading scales because of familiarity with the scale. The results of the study also seem to suggest students will need to be educated on different grading scales prior to their implementation and while the scale is being used throughout the academic period in which grading occurs.

Four groups of data were collected for this study: Quantitative data from students at Sun Prairie High School enrolled in the Introduction to Technology & Engineering and Fundamentals of Technology & Engineering classes about percentage cutoffs for Pass/Fail and Mastery grading systems, Appendix D; Quantitative data from all certified teachers at Sun Prairie High School and the Grading Scales used to evaluate different achievement and non-achievement factors, Appendix E; Qualitative data from students of Sun Prairie High School and their interpretations of grading scales, Appendix H; and Qualitative data from teachers of Sun Prairie High School and their interpretations of grading scales, Appendix H.

Demographic Information

There were 51 surveys given to students enrolled in the Introduction to Technology & Engineering and Fundamentals of Technology & Engineering classes

about percentage cutoffs for Pass/Fail and Mastery grading systems, Appendix D. There were 51 surveys returned, yielding a 100% return rate.

There were 146 surveys sent to certified teachers at Sun Prairie High School about the grading scales used to evaluate different achievement and non-achievement factors of students, Appendix E. There were 108 of the surveys were returned, with 9 surveys being rendered unusable, yielding 99 usable surveys. This resulted in a 72% return rate.

The demographic information about the students participating in the grading scale interpretation can be found in Table 17, Demographic Information about SPHS Students Discussing Grading Scales.

Table 17

Demographic Information about SPHS Students Discussing Grading Scales

Student ID	Class Standing	Years in SPASD	# of AP/AS Classes Enrolled in	GPA Range
S1	Junior	9+	3	3.7 – 4.0
S2	Senior	9+	1	2.7 – 3.7
S3	Junior	5 – 8	3	3.7 – 4.0
S4	Junior	9+	2	3.7 – 4.0
S5	Senior	0 – 4	1	2.7 – 3.7
S6	Junior	9+	2	2.7 – 3.7
S7	Junior	9+	0	2.7 – 3.7

The demographic information about the teachers participating in the grading scale interpretation can be found in Table 18, Demographic Information about SPHS Teachers Discussing Grading Scales.

Table 18

Demographic Information about SPHS Teachers Discussing Grading Scales

Teacher ID	# Years Teaching	# Years Teaching in SPASD	Academic Area	Number of Student Classes	Number of AS/AP Classes
CTET	$0-5$	$0-5$	Career & Technical Education	$9^{th} = 1$ $10^{th} = 1$ $11^{th} = 2$ $12^{th} = 1$	1
ET	$15-20$	$15-20$	English	$9^{th} = 0$ $10^{th} = 1$ $11^{th} = 2$ $12^{th} = 2$	2
FLT	$20+$	$20+$	Foreign Language	$9^{th} = 2$ $10^{th} = 0$ $11^{th} = 1$ $12^{th} = 1$	1
MT	$20+$	$15-20$	Mathematics	$9^{th} = 0$ $10^{th} = 2$ $11^{th} = 2$ $12^{th} = 2$	0
SST	$10-15$	$5-10$	Social Studies	$9^{th} = NA*$ $10^{th} = NA*$ $11^{th} = NA*$ $12^{th} = NA*$	NA*

*Responses to the survey question not provided

Item Analysis

Students enrolled in the Introduction to Technology & Engineering and the Fundamentals of Technology & Engineering courses at Sun Prairie High School (n = 51) were asked to identify percentages at which a grade of Pass/Fail and a designation of Mastery were to be assigned, Appendix D.

Question one stated, "If you were told letter grades were *not* going to be used anymore and all grades were going to be PASS or FAIL only, identify a single acceptable lower passing percentage for the PASS grade from 0% to 100%." The results were as follows: The mean was 67%, median was 70%, and mode was 70%.

Question two stated, "In addition to a Pass / Fail, grading scale, a level of Mastery could be achieved. This level of Mastery would show others that instead of just knowing and remembering some of the course information, students are able to know and remember almost all of the course information. Identify a single acceptable lower mastery percentage for the MASTERY grade from 0% to 100%." The results were as follows: The mean was 90%, median was 92%, and mode was 90%.

Certified teachers at Sun Prairie High School (n = 99) were asked a series of questions relating to what grading scales teachers used to evaluate different achievement and non-achievement factors in their classrooms, Appendix E.

Question one stated, "Which one of the grade scales detailed above is your primary method of evaluating or grading student attendance, behavior, participation, and/or punctuality to your class." Four responses were available: Percentage, Categorical, Pass / Fail, Mastery. The results were as follows: 49.49% (n = 49) indicated Percentage, 4.04% (n = 4) indicated Categorical, 26.26% (n = 26) indicated Pass / Fail, and 3.03% (n = 3) indicated Mastery. Seventeen respondents, 17.17%, were invalid responses.

Question two stated, "Which one of the grade scales detailed above is your primary method of evaluating or grading student homework and/or coursework." Four responses were available: Percentage, Categorical, Pass / Fail, Mastery. The results were as follows: 60.61% (n = 60) indicated Percentage, 9.09% (n = 9) indicated Categorical, 20.20% (n = 20) indicated Pass / Fail, and 6.06% (n = 6) indicated Mastery. Four respondents, 4.04%, were invalid responses.

Question three stated, "Which of the grade scales detailed above is your primary method of evaluating or grading student quizzes and/or tests." Four responses were

available: Percentage, Categorical, Pass / Fail, Mastery. The results were as follows: 86.87% (n = 86) indicated Percentage, 1.01% (n = 1) indicated Categorical, 1.01% (n = 1) indicated Pass / Fail, and 4.04% (n = 4) indicated Mastery. Seven respondents, 7.07%, were invalid responses.

Question four stated, "Which one of the grade scales detailed above is your primary method of evaluating or grading student projects and/or portfolios." Four responses were available: Percentage, Categorical, Pass / Fail, Mastery. The results were as follows: 63.64% (n = 63) indicated Percentage, 9.09% (n = 9) indicated Categorical, 6.06% (n = 6) indicated Pass / Fail, and 12.12% (n = 12) indicated Mastery. Nine respondents, 9.09%, were invalid responses.

Question five stated, "Which one of the grade scales detailed above is your primary method of determining a student's overall course grade for a marking period." Four responses were available: Percentage, Categorical, Pass / Fail, Mastery. The results were as follows: 92.93% (n = 92) indicated Percentage, 1.01% (n = 1) indicated Categorical, 3.03% (n = 3) indicated Pass / Fail, and 1.01% (n = 1) indicated Mastery. Two respondents, 2.02%, were invalid responses.

Four major themes and three sub-themes were being identified throughout the discussion of grading scales, Appendix J. The four major majors that were identified throughout the discussion and data analysis pertained to the Percentage, Categorical, Pass / Fail, and Mastery grading systems. The three sub-themes to be identified within each major theme were the Strengths of, Barriers of, and Recommendations for each grading system. Each statement made by the participants was analyzed and coded using the coding scheme in Appendix J. The analyzed statements may be found in Appendix K.

Research Question Responses

The following questions were addressed by the research:

1. What extent do teachers use the four major grade scales as identified by the research to evaluate student achievement and non-achievement factors?

2. What strengths and barriers to the use of an individual grading scale do students interpret of the four major grading scales when provided as statements for grading purposes?

3. What do self identified practitioners for each of the four major grading scales state as strengths and barriers to the use of an individual grading from the results of teachers' use and students' interpretations?

4. What recommendations do self identified practitioners and students provide for implementation of each grading scale in the classroom.

Research question one - What extent do teachers use the four major grade scales as identified by the research to evaluate student achievement and non-achievement factors? Survey of current grading scales used for evaluating student artifacts, Appendix E, dealt with this question. Question one related to non-achievement factors and revealed that a little under half of the respondents, 49.49%, utilize the percentage grading scale to evaluate these items. Question two asked about achievement and non-achievement factors when dealing with homework or coursework and indicated 60.61% of the respondents evaluate this factor with the percentage scale. Question three referred to achievement factors of quizzes and tests and revealed 86.87% of respondents use Percentage grading scales to evaluate these items. Question four asked about achievement factors relating to projects and portfolios and showed 63.64% of respondents use the Percentage scale. Question five asked about the overall course grade, which could be a combination of achievement and non-achievement factors, achievement factors only, or non-achievement factors only and showed 92.93% of respondents use Percentage grading to evaluate this item. The full breakdown of grading scales used can be found on Table 19, Grading Scales Used to Evaluate Achievement and Non-Achievement Factors.

Table 19

Grading Scales Used to Evaluate Achievement (A) and Non-Achievement (N-A) Factors

n=99	N-A: Attendance, Behavior, and/or Participation	A & N-A: Homework and/or Coursework	A: Quizzes and/or Tests	A: Portfolios and/or Projects	A and/or N-A: Overall Course Grade
Percentage	49.49%	60.61%	86.87%	63.64%	92.93%
Categorical	4.04%	9.09%	1.01%	9.09%	1.01%
Pass/Fail	26.26%	20.20%	1.01%	6.06%	3.03%
Mastery	3.03%	6.06%	4.04%	12.12%	1.01%
Invalid	17.17%	4.04%	7.07%	9.09%	2.02%

Research question two - What strengths and barriers to the use of an individual grading scale do students interpret of the four major grading scales when provided as statements for grading purposes?

Throughout the discussion about the grading interpretation questionnaire, Appendix H, students made points about strengths and weaknesses about each grading scale: percentage, categorical, pass/fail, and mastery. These strengths and weaknesses of each grading scale as identified by the students can be found on Table 20, Student Identified Strengths and Weaknesses of Grading Scales.

Students identified percentage scale strengths during the discussion about the grading scale interpretation statements. Identified strengths of the percentage grading scale include: Motivation, more chances for success, opportunities for teachers to see the strengths of students, familiarity with the scale and colleges' expectations of how students are graded on transcripts.

Students also identified barriers to the percentage grading scale. Using competition to grade students, evaluating students on a normal distribution curve, being penalized in a class for taking a challenge over someone taking the class for an easy grade, larger percentage range for failure, small perceived range of success with As and Bs, cheating on assignments to raise or maintain a grade in a class, change in pedagogical thought at all post-secondary levels, decrease in motivation for consistently low performance, never being able to be a perfect 100%, and grade inflation as C is no longer seen as satisfactory.

Identified strengths of the categorical grading scale include: clearly detailed objectives to meet for a category or grade through the use of a rubric, defines what a student will learn and to what capacity, easily assess how well a student is learning, lowers teacher subjectivity in grading, and motivation as using rubrics and the scale helps guide where effort should be emphasized.

Barriers of the categorical grading scale include: holding students back creatively if not addressed in a criteria, eliminates the need to "just figure it out," and teacher subjectivity in criteria that is not clearly defined.

Strengths of the Pass / Fail grading scale include: using it to evaluate daily assignments, evaluating homework or first time something is learned as complete or not complete, has possibility to lower cheating of homework, does not count for a grade but feedback on how to do better is provided, focus is on learning rather than the grade wanted, and could provide motivation to low performing students.

Barriers to the Pass / Fail grading scale include: not getting a letter or numeric grade, does not provide enough motivation to students to learn, and leads to grade inflation if included in the overall grade.

Strengths of the Mastery grading scale include: students showing understanding of content before moving to next topic, utilizing multiple opportunities to show mastery, ability to test out of pre-requisite classes into a more advanced class, assesses how well a student is learning by tracking achievements, held accountable to learn content, and it discourages teachers' use of assignments not relating to course objectives or at least discourages the use of the score of such assignments into the overall grade.

Barriers to the use of the mastery scale as identified by students include:
maintains competitive attitude between student's accomplishments, student's have no
need to attend class if they know the content and can master it on the exams, too many
opportunities leads to increased frustration of not mastering the objective, and it does not
address learning for learning sake as much as memorizing for the test and forgetting.

Table 20

Student Identified Strengths and Weaknesses of Grading Scales

Grading Scale	Strengths Identified	Barriers Identified
Percentage	- Motivation - Increased chance for success - Provides teacher insight of student's learning - Familiar with how scale works - College expectations of how students are graded on transcripts	- Competitive grading - Using normal distribution curve to grade - Penalizing students who challenge themselves with difficult class - Large failure range - Cheating - Consistent poor performance leads to discouragement 100% is impossible to achieve - Grade inflation
Categorical	- Motivation to achieve a certain category - Objectives clearly define what is needed - Defines what a student will learn and to what capacity - Self-Advocacy - Lowers subjective grading	- Creativity not assessed - Eliminates the need to "just figure it out" - Subjectivity in criteria that is not clearly defined
Pass/Fail	- Motivation - Daily assignment evaluation - First learning experience evaluation - Lower cheating rates - Not "graded" - More feedback provided - Focus is on learning	- No Letter Grade assigned for completion only - Possible disincentive for no letter or numerical grade - Grade inflation if included in the overall grade
Mastery	- Having to show understanding before moving to next topic - Multiple opportunities - Ability to test out of classes - Tracks achievements - Student accountability to learn - Discourages use of non-related assignments in overall grade	- Competitiveness between students' accomplishments - Increased truancy due to showing understanding of course objectives - Increased frustration with each failed opportunity - Promotes memorization and regurgitation of facts

Research question three - What do self identified practitioners for each of the four major grading scales state as strengths and barriers to the use of an individual grading scale from the results of teachers' use and students' interpretations?

Teacher identified strengths for the percentage grading scale include: motivation, familiarity with the scale of students, parents, and the community, increased student effort to achieve a passing grade, easier to make grading fair, one indicator to evaluate student's educational needs, special education, remediation, etc., helps student identify who they are and where they belong after high school, can be used to track students to post-secondary plans and careers, and the scale can be objective if defined carefully.

Teacher identified barriers to the use of the percentage grading scale include: inflation of grades to mask poor teaching, lack of criteria makes it hard to differentiate between two percentages that bear different letter grades on projects or essays, competition for grades and scholarships, higher stress levels of highly motivated students, subjectivity in assigning grades based on teacher opinion, student's playing the system for the grade to pass without learning, grades are used to select, identify, and classify students into different programs, 100% is unrealistic, lowers teachers perceptions of students abilities, students become burned out from not performing well and give up, students not being aware of their performance due to not tracking their own progress or teachers not communicating their progress to them, the impact of a zero in a 100% grade scale, weighted percentages skewing grades because of one lone weighted assignment lowering the overall grade, letter grade C perception as bad, using grades as punishment, comparing students to one another, and using percentage grade scale on tests to evaluate lower levels of Bloom's Taxonomy only.

Teacher identified strengths to the use of the categorical grading scale: equalizing the grade categories between levels of achievement or letter grades, lessen the need to inflate the grade of a student, clearly defining learning criteria to be obtained, opens opportunity for student to discuss achievement and grade of what was earned, and helps students understand what and how they are learning.

Teacher identified barriers to the use of the categorical grading scale: inclusion of subjective criteria in a rubric, limited imagination by teacher if rubric used to detail out what is to be learned, increased expectations for higher letter grades as C would mean met objectives, unfamiliarity with parents, students, administrators, and community members, and students figuring out the system by earning an A one quarter and then doing nothing the second quarter and resulting in a grade of C as the final due to averaging.

Teacher identified strengths to the use of the pass / fail grading system: using the scale to evaluate daily assignments or homework so to not misrepresent student knowledge or their grade, increase motivation to learn and lower competition for grades, allows for meaningful feedback on what to maintain and how to improve, and it provides lower motivated students an opportunity at being successful.

Teacher identified weaknesses to the use of pass / fail grading systems: grade inflated if pass translated into a letter grade and counted into final grade, parents and students expect a letter grade for everything completed in a class and have it factor into the overall grade, progress reports come too soon and pass / fail needs to be translated into a letter grade making formative assessments summative, colleges require a letter grade, does not put student learning into perspective nor details strengths or areas in need of improvement for students, and teachers not providing usable feedback on pass / fail assignments.

Teacher identified strengths to the use of mastery grading systems include: student has the ability to go back and show they understand a concept, provide students multiple opportunities and methods to show mastery of content, clearly states to students what they will need to know and do and to what degree, emphasizes the intrinsic value of learning, removes non-achievement factors from overall grade, removes anxiety of earning a grade but still motivate to perform well, provides feedback to students on how to maintain or improve knowledge and skills, and it promotes self-advocacy.

Teacher identified barriers to the use of the mastery grading system includes: level at which mastery is assigned, most core courses at Sun Prairie High School are standardized test based and multiple opportunities cannot be provided due to time constraints, dividing achievement and non-achievement factors out of overall grade leads to more work for the teacher to evaluate, expecting students to seek out help when they need it, management of classroom behavior with students at multiple objectives trying to master them, logistical nightmare to track, some students have lost intrinsic value of learning by the time they reach high school, and there needs to be a limit on the number of opportunities provided to a student for mastery.

Question four - What recommendations do self identified practitioners and students provide for implementation of each grading scale in the classroom?

Throughout the discussions of the student focus groups and the teacher conversations, recommendations about implementing the percentage, categorical, pass/fail, and mastery grading systems was provided.

Recommendations for implementing or improving the percentage grading scale include: weighting questions on quizzes and tests differently according to the different levels of Bloom's Cognitive Taxonomy, be cautious of weighting grades as it can severely skew any educational data provided, and set up criteria for what constitutes each letter grade at each percentage.

Recommendations for implementing or improving the categorical grading scale include: state the objectives and how to meet those objectives clearly and concisely, develop rubrics for class assignments, activities, projects, and tests, allow for some freedom with rubrics, and assist the students with self-advocacy.

Recommendations for implementing or improving the pass/fail grading system include: be perceptive of student needs even if the scale is not, monitor the results of students, provide feedback and lots of it, use it as a completion grade for assignments, activities, and daily course work, and do not factor it into the overall course grade.

Recommendations for implementing or improving the mastery grading system include: focus on skills to be gained rather than content to be learned, provide opportunities for students to pass out of pre-requisites so they may challenge themselves with advanced classes, help students develop self-advocacy skills, compare student accomplishments to the standards and criteria developed, provide multiple opportunities but not unlimited for mastery of content or skill, be perceptive to student needs, provide feedback to learning activities, and provide opportunities for students to apply the skills learned.

Table 21

Teacher Strengths, Barriers and Implementation Recommendations for Grading Scales

Grading Scale	Strengths	Barriers	Recommendations
Percentage	• Motivation • Students, parents, and community familiar with scale • Increased effort for passing grade • Easy to make grading fair • One indicator to evaluate student's educational needs • Helps student identify post-secondary plans • Tracking of students in post-secondary plans • Objective if defined as such	• Grade inflation • Lack of criteria identifying each grade category • Competitive attitudes • High stress of highly motivated students • Grade subjectivity • Student's trying for a grade, not learning • Used to select, identify, and classify students into different programs • 100% is unrealistic • Lowers teachers expectations • High burn-out rate of low-achievers • Lack of student self-advocacy • Impact of zero • Weighted percentages • Grades used as punishment • Evaluates lower levels of Bloom's Taxonomy only.	• Weight questions according to the different levels of Bloom's Cognitive Taxonomy, • Do not use weighted assignments • Set up criteria for what constitutes each letter grade at each percentage
Categorical	• Letter grades are equally distributed • Less inflation of grade apparent • Learning criteria clearly detailed • Opens communication with student about achievement	• Subjective criteria • Rubrics are limited to teacher's imagination • Higher expectations for higher letter grades • Students, parents, and community unfamiliar with scale • Students undermining the system to pass	• Clearly state objectives to meet • Develop rubrics for all assignments, activities, projects, and tests • Student assist with developing rubric • Help students become self-advocates

Pass/Fail	• Student knowledge is reflected in grade • Motivation to learn • Lower competition for grades • Feedback on what to maintain and how to improve • Lower motivated students have an opportunity at being successful.	• Grade inflation if pass translated into highest grade possible and factored in • Students and parents expect everything to be graded and factor in overall grade • Timing of progress reports and need for a letter grade on the report • Colleges require letter grades • Strengths and improvement areas not identified • Possible lack of usable feedback provided	• Be perceptive of students' needs • Correct assignments and monitor progress, but do not factor grade into overall • Feedback, feedback, and more feedback • Completion grade where appropriate: daily course work, activities, attendance, participation
Mastery	• Providing students opportunities to succeed • Clearly states learning objectives and to what degree it needs to be mastered • Emphasizes the intrinsic value of learning • Removes non-achievement factors from overall grade • Anxiety lowered • Provides students usable feedback on how to improve • Promotes self-advocacy	• Where to assign mastery • Time constraints with providing opportunities • More work for teacher to evaluate achievement and non-achievement factors separately • Expecting students to be self-advocates • Classroom management • Tracking student progress • Some have lost intrinsic learning value • Limit the amount of opportunities provided	• Focus on skills rather than content • Allow students to pass out of pre-requisite courses • Assist students in becoming self-advocates • Compare students to objectives to be met • Do not provide unlimited opportunities to succeed • Be perceptive to student needs • Feedback to learning activities • Provide opportunities for application of knowledge

Chapter V: Discussion

The purpose of the study was to identify grading scales used in education and determine how teachers and students at Sun Prairie High School in the 2009 spring semester interpret the uses of these scales when used to evaluate attendance, behavior, assignments, projects, and assessments in a classroom.

Questions to be answered by the research and study included: determining what grading scale teachers use to evaluate different achievement and non-achievement factors, what students identified as strengths and barriers to the different grade scales, what teachers identified as strengths and barriers to the different grade scales, and what recommendations students and teachers have for implementing or improving the use of each grade scale.

The study has shown that the majority of teachers use the percentage grade scale to evaluate achievement and non-achievement factors of student learning. Students and teachers have identified strengths and barriers to each grading scale and have also provided recommendations on how those scales could be improved or implemented into Sun Prairie High School courses.

Limitations

Limitations of the study include the study being conducted at Sun Prairie High School only, student participants involved in the focus group discussion, teacher participants of the study, and researcher is the focus group discussion leader and teacher interviewer.

Sun Prairie High School was the only secondary school where the research was conducted. Schools of the similar size, demographics, and locations may consider the

results of the study valuable for their situation. However, the study was specifically designed for the Sun Prairie Area School District and Sun Prairie High School. It is recommended that an individual interested in researching this topic complete the same study at the location where data is to be gathered.

Student participants were sought out from a number of Technology Education courses at Sun Prairie High School. A limitation of the study is participants were sought from the entire school population, but not as aggressively as the students in the Technology Education courses, as such it was a convenience for the researcher.

Teachers of Sun Prairie High School were invited to be members of the Grading for Learning initiative. The researcher was one of these members on the Grading for Learning committee. Other Grading for Learning committee members were not disallowed from participating in the study and may have participated. A limitation of the study is some of the Grading for Learning members may have participated and if so, were provided information from the study, but not for the purpose of the study.

The researcher served as the student focus group moderator and teacher interviewer. A limitation of the study is the translation of the statements, if needed by the focus group or interview participants, came from an individual knowledgeable about the topic, possibly providing inside information about the grading interpretation statement or question posed.

Conclusions

Students and teachers identified main points and purposes of each grading scale as discovered in the research. Some major points of the study concluded: there is a problem with using the percentage grading scale for everything completed in the classroom, Sun

Prairie High School is not ready for a full implementation of the Mastery grading system, however, components of a mastery grading system could be implemented, and the major barrier to change is the familiarity with the percentage and letter grading system in place.

Recommendations

To quote Kraft & Lundquist (1971) and their statements about the use and interpretation of grades (p.4):

Some people believe that grades are the be-all and end-all of education and that they have become moral equivalents. A good grade is often correlated with good behavior and self-worth. One's transcripts become more important than one's education as grades become the substitute for learning.

As indicated through the discussions with students and teachers, there needs to be more education about the different types of grading scales and their uses with students, teachers, parents, administrators, and the school board. Tradition does not make the percentage and letter grading system acceptable, but does provide opportunities for discussion.

Two recommendations for further study of this topic would be to:

- conduct this same study with administrators, teachers, and parents of students in the Sun Prairie Area School District and

- develop a grading and reporting committee consisting of administrators, teachers, parents, students, and school board members to discuss the future of grading and reporting at Sun Prairie High School.

Teachers at Sun Prairie High School may start the process of Grading for Learning, not by redeveloping a reporting system, but by considering what they want students to know and be able to do.

A simple step to begin the grading students for learning process is to remove formative assessing and non-achievement factors such as homework, participation, effort, behavior, and other learning experiences, defined as a student's first time learning or attempting a new skill or acquiring new knowledge, from the overall grade. Instead of grading each and every item and recording it in a grade book with it factoring into an overall grade, consider the following. Assess the student item, provide feedback to the student on how to improve or maintain the level of understanding or performance, and place a tentative letter grade on the top of the formative assessment, record the grade in the grade book or software program as a weight of zero. Parents will be able to see a grade for the assignment and students will be provided the feedback for improvement. As Hattie (1992) stated, "The simplest prescription for improving education must be 'dollops of feedback'" (p.9). Keep the communication lines open for the student and parents and emphasize the feedback for learning, even if they continue arguing the importance of the letter grade.

If the above advice is followed, the use of chapter tests, unit quizzes, culminating projects, and other summative assignments should require little to no feedback, as long as a rubric or defined grading criteria for the assessment exists. Students will have been trained through the feedback given on the formative assessments. It is the teacher's discretion, at this time, to determine if another opportunity is warranted for student

success. These summative assessments would make up the overall grade of what a student knows and is able to do.

As the Chinese proverb states, "Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime" (Moncur, 2007). Consistently mentioned by students and teachers alike in strengths and recommendations, feedback and helping students become self-advocates of their learning was brought up. Feedback will help students learn from their mistakes and build upon their successes. Assisting students in becoming self-advocates of their learning will help them understand how they learn and make informed decisions at the secondary and post-secondary levels.

To conclude: Assessments should be developed from learning criteria and objectives to be completed for the course; teachers should not include non-achievement factors in overall grades, but utilize the information to provide students feedback about the their learning and help them become self-advocates for learning; opportunities should be provided to students on summative assessments, with discretion to how many or what types of opportunities; and those summative assessments should be the factors determining a student's overall course grade as they relate to course objectives.

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Appendix A: Introduction to Technology & Engineering Consent Form

$75\% \neq 2.0/4.0$ and what is passing? Grading scale interpretations from students and teachers at Sun Prairie High School.

Christopher R. Neff, a student of the School of Education at the University of Wisconsin-Stout is conducting a research project in collaboration with his research advisor, Dr. Byron Anderson, Ph.D., an Associate Professor in the College of Technology, Engineering, and Management, for the problems in technology education class, TECED-735, for Industrial/Technology Education. This research is titled "$75\% \neq 2.0/4.0$ and what is passing? Grading scale perceptions from teachers and students at Sun Prairie High School." We wish to investigate the perception of different grading scales from teachers and students at Sun Prairie High School.

Your child will have the opportunity to take part in the study through completing a project already designed for in the class' curriculum about technological systems. Each class involved in the study will be provided a different grading scale that will be used to evaluate the project assigned for the technological system unit. Four samples will be selected from each grading scale group and have all identifying information (name, class, hour, date) removed from the sample. The samples selected will be used as examples for conversation in a group of teachers and students about strengths and weaknesses about the grading scale used. Parents/guardians that choose to have their student not participate in the study will have the student provided the same assignment and be evaluated with the class established grading scale.

The results of this study will be disseminated at the Wisconsin Technology Education Association's Annual Conference at Chula Vista Resort in Wisconsin Dells, WI on March 5th, 2009. The results of this study will also be provided to the Sun Prairie Area School District for use in developing and modifying current assessment practices. Any student or parent that needs translation of the study, or the results, will be supplied with that information provided they indicate that it will be needed on this consent form. Your student's performance will *not* influence his/her grade in the course. This research will benefit the Sun Prairie Area School District assessment policy as it may identify critical information about students' perceptions about grading scales.

The Sun Prairie High School technology education department, principal's office, and Sun Prairie Area School District have approved this project. I am asking your permission for your child to be included in this study.

It is not anticipated that this study will present any medical or social risk to your student. The information gathered will be anonymous in nature and any reports of the findings of this research will not contain your students name or any other identifying information.

Please sign and return this form to the instructor of the course it was handed out in by February 3rd, 2009.

Questions or concerns about the research study should be addressed to Christopher R. Neff, the researcher, (608) 834-6863, crneff@spasd.k12.wi.us, or Dr. Byron Anderson, (715) 232-1299, andersonby@uwstout.edu. Questions about the rights of research participation can be addressed to Sue Foxwell, Human Protections Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research, 152 Vocational Rehabilitation Building, Menomonie, WI 54751, phone (715) 232-2477.

Thank you for your time and support. Please do not hesitate to call or email with your questions.

Sincerely,   Sincerely,

Christopher R. Neff   Dr. Byron Anderson
Researcher   Research Advisor

I agree to allow my child, _____, to participate in this study.

Signature _____   Date _____

Appendix B: Student Consent Form

75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from students and teachers at Sun Prairie High School.

Christopher R. Neff, a student of the School of Education at the University of Wisconsin-Stout is conducting a research project in collaboration with his research advisor, Dr. Byron Anderson, Ph.D., an Associate Professor in the College of Technology, Engineering, and Management, for the problems in technology education class, TECED-735, for Industrial/Technology Education. This research is titled "75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from teachers and students at Sun Prairie High School." We wish to investigate the interpretations of different grading scales from teachers and students at Sun Prairie High School.

All students will have the opportunity to take part in the five-person discussion about grading scales with the researcher, Christopher Neff. Students will be looking at and evaluating grading statements and identifying strengths and weaknesses of each statement both in written and verbal form. Participation in the discussion group will be confidential as meetings will occur outside of the school day and information about the individual will be coded in the research. Additionally, all records of participation in the study will be destroyed upon conclusion of the research project.

The results of this study will be delivered at the 2010 Wisconsin Technology Education Association's Annual Conference at Chula Vista Resort in Wisconsin Dells, WI. The date of this presentation is tentatively set for March 11th, 2010. The results of this study will also be provided to the Sun Prairie Area School District. Any parent/guardian or student that needs translation of the study, or the results, will be supplied with that information provided they indicate that it will be needed on this consent form. Your student's participation in the study *will not* affect their academic career as a student in the Sun Prairie Area School District.

The Sun Prairie High School technology education department, principal's office, and Sun Prairie Area School District have approved this project. I am asking your permission to include your student in this study.

It is not anticipated that this study will present any medical or social risk. The information gathered will be confidential in nature and any reports of the findings of this research will not contain your name, your student's name, or any other identifying information. You or your student may choose to withdraw from participation at anytime.

Please sign and return this form by placing it in Chris Neff's mailbox or physically handing in to him by Friday, May 1st, 2009.

Questions or concerns about the research study should be addressed to Chris Neff, the researcher, (608) 834-6863, crneff@spasd.k12.wi.us, or Dr. Byron Anderson, (715) 232-1299, andersonby@uwstout.edu. Questions about the rights of research participation can be addressed to Sue Foxwell, Human Protections Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research, 152 Vocational Rehabilitation Building, Menomonie, WI 54751, phone (715) 232-2477.

Thank you for your time and support. Please do not hesitate to call or email with your questions.

Sincerely,   Sincerely,

Christopher R. Neff   Dr. Byron Anderson
Researcher   Research Advisor

I agree for my child, _____ , to participate in the focus group discussion.

Parent/Guardian Signature _____   Date _____

Appendix C: Teacher Consent Form

75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from students and teachers at Sun Prairie
High School.

Christopher R. Neff, a student of the School of Education at the University of Wisconsin-Stout is
conducting a research project in collaboration with his research advisor, Dr. Byron Anderson, Ph.D., an
Associate Professor in the College of Technology, Engineering, and Management, for the problems in
technology education class, TECED-735, for Industrial/Technology Education. This research is titled
"75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from teachers and students at Sun Prairie
High School." We wish to investigate the interpretations of different grading scales from teachers and
students at Sun Prairie High School.

All teachers will have the opportunity to take part in the one-on-one discussion with the investigator,
Christopher Neff. Teachers will be looking at and evaluating grading statements and identifying strengths
and weaknesses of each statement both in written and verbal form. Participation in the interview will be
confidential as meetings will occur outside of the school day and information about the individual will be
coded in the research. Additionally, all records of participation in the study will be destroyed upon
conclusion of the research project.

The results of this study will be delivered at the 2010 Wisconsin Technology Education Association's
Annual Conference at Chula Vista Resort in Wisconsin Dells, WI. The date of this presentation is
tentatively set for March 11th, 2010. The results of this study will also be provided to the Sun Prairie Area
School District. Any teacher that needs translation of the study, or the results, will be supplied with that
information provided they indicate that it will be needed on this consent form. Your participation in the
study *will not* affect your professional career as a teacher in the Sun Prairie Area School District.

The Sun Prairie High School technology education department, principal's office, and Sun Prairie Area
School District have approved this project. I am asking your permission to include you in this study.

It is not anticipated that this study will present any medical or social risk. The information gathered will be
confidential in nature and any reports of the findings of this research will not contain your name or any
other identifying information. You may choose to withdraw from participation at anytime.

Please sign and return this form by placing it in Chris Neff's mailbox or physically handing in to him by
Friday, April 24th, 2009.

Questions or concerns about the research study should be addressed to Chris Neff, the researcher, (608)
834-6863, crneff@spasd.k12.wi.us, or Dr. Byron Anderson, (715) 232-1299, andersonby@uwstout.edu.
Questions about the rights of research participation can be addressed to Sue Foxwell, Human Protections
Administrator, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research,
152 Vocational Rehabilitation Building, Menomonie, WI 54751, phone (715) 232-2477.

Thank you for your time and support. Please do not hesitate to call or email with your questions.

Sincerely,   Sincerely,

Christopher R. Neff   Dr. Byron Anderson
Researcher   Research Advisor

I, _____, agree to participate in the discussion about grading scale interpretations.

Signature _____   Date _____

Appendix D: Pass/Fail and Mastery Grading Scale Survey

75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from students and teachers at Sun Prairie High School.

This project has been reviewed by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46

This survey is part of the grading scale perceptions research conducted by Christopher R. Neff of the School of Education at the University of Wisconsin – Stout. Please read the following scenarios and answer the questions. This information is anonymous in nature.

Grading Scales used at Sun Prairie High School

Most teachers at Sun Prairie High School currently use a 100% Grading Scale to grade student assignments, projects, tests, etc. The percentages with the associated letter grade are located in the Family and Student Handbook and are as follows:

100% - 93%	=	A
92% - 90%	=	A-
89% - 87%	=	B+
86% - 83%	=	B
82% - 80%	=	B-
79% - 77%	=	C+
76% - 73%	=	C
73% - 70%	=	C-
69% - 67%	=	D+
66% - 63%	=	D
62% - 60%	=	D-
59% - 0%	=	F

Pass / Fail Grading Scale

If you were told letter grades were *not* going to be used anymore and all grades were going to be PASS or FAIL only, identify a single acceptable lower passing percentage for the PASS grade from 0% to 100%:

PASS = at least a _____ %

Mastery Grading Scale

In addition to a Pass / Fail, grading scale, a level of Mastery could be achieved. This level of Mastery would show others that instead of just knowing and remembering some of the course information, students are able to know and remember almost all of the course information. Identify a single acceptable lower mastery percentage for the MASTERY grade from 0% to 100%:

MASTERY = at least a _____ %

Appendix E: Survey of Current Grading Scales Used for Evaluating Student Artifacts

75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from teachers and students at Sun Prairie High School.

> This project has been reviewed by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46

This survey is part of the grading scale interpretations research conducted by Christopher R. Neff of the School of Education at the University of Wisconsin – Stout. Please read the descriptions and examples of the four major grading scales used in education today and respond to the inquiries which follow. This information provided will be confidential.

	Percentage	Categorical	Pass / Fail	Mastery
Letter Grades are attached to:	Different percentages	Semi-evenly distributed categories	Completion or non-completion of work	Student mastery of work/content before moving to next level/topic
Example:	90% - 100% = A 80% - 90% = B 70% - 80% = C 60% - 70% = D 0% - 60% = F	4.0 – 5.0 = A 3.0 – 4.0 = B 2.0 – 3.0 = C 1.0 – 2.0 = D 0.0 – 1.0 = F	√, + or P = Pass - or F = Fail **Or** A, B, C, D = Pass F = Fail	M = Mastery P = Pass F = Fail **Or** A = Mastery B, C, D = Pass F = Fail

1) Which one of the grade scales detailed above is your primary method of evaluating or grading **student attendance, behavior, participation, and/or punctuality to your class:**
   ___ Percentage
   ___ Categorical
   ___ Pass / Fail
   ___ Mastery

2) Which one of the grade scales detailed above is your primary method of evaluating or grading **student homework and/or coursework:**
   ___ Percentage
   ___ Categorical
   ___ Pass / Fail
   ___ Mastery

3) Which of the grade scales detailed above is your primary method of evaluating or grading **student quizzes and/or tests:**
   ___ Percentage
   ___ Categorical
   ___ Pass / Fail
   ___ Mastery

4) Which one of the grade scales detailed above is your primary method of evaluating or grading **student projects and/or portfolios:**
   ___ Percentage
   ___ Categorical
   ___ Pass / Fail
   ___ Mastery

5) Which one of the grade scales detailed above is your primary method of **determining a student's overall course grade for a marking period:**
   ___ Percentage
   ___ Categorical
   ___ Pass / Fail
   ___ Mastery

Please print your name below if you would like to be a part of the follow-up focus group for the Grading Scales study being conducted by Christopher R. Neff, Sun Prairie High School colleague and School of Education Graduate Student from the University of Wisconsin – Stout.

_____

(Optional – Please Print)

Appendix F: Focus Group – Student Demographic Survey

75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from students and teachers at Sun Prairie High School.

This survey is part of the grading scale interpretations research conducted by Christopher R. Neff of the School of Education at the University of Wisconsin – Stout. Please read the following questions and answer them to the best of your knowledge.
The information gathered will be confidential.

Grade in School

What is your current grade in school?

Freshmen   Sophomore   Junior   Senior

Years in Sun Prairie Area School District

How many years have you attended schools in the Sun Prairie Area School District?

Under 4 Years   5 – 8 Years   9+ Years   Don't Know

Number of Advancement Placement and/or Advanced Standing

How many classes are you taking this semester that are Advancement Placement (AP) or Advanced Standing (AS)?

0   1   2   3   4   5   6+   Don't Know

Grade Point Average

What is your current Grade Point Average range:

0.0 – 0.7 (F)   0.7 – 1.7 (D)   1.3 – 2.7 (C)   2.7 – 3.7 (B)   3.7 – 4.0 (A)   Don't Know

Appendix G: Focus Group – Teacher Demographic Survey

75% ≠ 2.0/4.0 and what is passing? Grading scale perceptions from teachers and students at Sun Prairie High School.

> This project has been reviewed by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46

This survey is part of the grading scale perceptions research conducted by Christopher R. Neff of the School of Education at the University of Wisconsin – Stout. Please read the following questions and answer them to the best of your knowledge.
This information is confidential.

Number of Years in Education

How many years have you served as a certified teacher?

        0 – 5 years   5 – 10 years   10 – 15 years   15 – 20 years   20+ years

How many years have you served as a certified teacher at Sun Prairie High School?

        0 – 5 years   5 – 10 years   10 – 15 years   15 – 20 years   20+ years

Academic Area

What academic area is your current teaching contract for?

Art	Music
Career & Technical Education	Physical & Health Education
English	Science
Foreign Language	Social Studies
Mathematics	Special Education

Number of Student Classes

How many classes do you currently teach that are primarily:

Freshmen
    1   2   3   4   5   6+   Don't Know

Sophomore
    1   2   3   4   5   6+   Don't Know

Junior
    1   2   3   4   5   6+   Don't Know

Senior
    1   2   3   4   5   6+   Don't Know

Number of Advancement Placement and/or Advanced Standing

How many classes do you currently teach with the Advancement Placement (AP) or Advanced Standing (AS) designation?

    1   2   3   4   5   6+   Don't Know

Appendix H: Grading Interpretation Questionnaire

75% ≠ 2.0/4.0 and what is passing? Grading scale interpretations from students and teachers at Sun Prairie High School.

This project has been reviewed by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46

This questionnaire is part of the grading scale interpretations research conducted by Christopher R. Neff of the School of Education at the University of Wisconsin – Stout. Please read the statements provided and respond by circling whether you Strongly Agree, Agree, Disagree, Strongly Disagree, or are Undecided about the statement given. The information gathered will be confidential.

Students should have to show they understand content material before moving on to the next topic.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Students should be provided multiple opportunities to show they understand content material.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Student grades should be based on defined learning criteria with specific levels of performance in those criteria.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Students should be evaluated and scored against their classmates' scores on coursework.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Many grading categories should be used to evaluate student achievement and performance.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

The major purpose of grading is to select, identify, and classify students for honors and special programs.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Students should be evaluated and scored against pre-determined criteria on coursework.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Verbal and/or written descriptive labels should be used to identify what a student knows and is able to do.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Students should not be assigned a letter grade (A, B, C, D, F) for homework, participation, or other learning experiences.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Student attention should be focused on learning rather than the grade wanted.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Students have a competitive attitude towards grades assigned for coursework and the overall course grade.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Students have high anxiety towards grades assigned for coursework and the overall course grade.

| Strongly Agree | Agree | Disagree | Strongly Disagree | Undecided |

Appendix I: Teacher Interview Questions

What do you think are the strengths to the use of the [Percentage, Categorical, Pass/Fail, and/or Mastery] Grading Scale System in the classroom?

What do you think are the barriers to the use of the [Percentage, Categorical, Pass/Fail, and/or Mastery] Grading Scale System in the classroom?

What recommendations would you provide for the implementation of the [Percentage, Categorical, Pass/Fail, and/or Mastery] Grading Scale System in the classroom?

Appendix J: CODING SCHEME

1. Percentage Grading Scale
    a. Strengths
    b. Barriers
    c. Recommendations

2. Categorical Grading Scale
    a. Strengths
    b. Barriers
    c. Recommendations

3. Pass / Fail Grading Scale
    a. Strengths
    b. Barriers
    c. Recommendations

4. Mastery Grading Scale
    a. Strengths
    b. Barriers
    c. Recommendations

S. Students
    1. Student #1
    2. Student #2
    3. Student #3
    4. Student #4
    5. Student #5
    6. Student #6
    7. Student #7

CTET. Career & Technical Education Teacher

ET.   English Teacher

FLT. Foreign Language Teacher

MT.   Mathematics Teacher

SST. Social Studies Teacher

Appendix K: CODED DISCUSSION DATA

ID #	Code	Qualitative Response
S5	4a	I agree that they should have to show that they understand the content otherwise, like what they…well they don't learn anything. It eliminates the purpose of school.
S6	4a	I agree with that too. Most things later on in the course always relate back to that first initial thing you learned. So if you don't get the initial thing you're not going to get later things in the class either.
S7	4a	That's a good point because exactly you said basically. If you start out…Math is a great example of this sort of a subject where if you don't understand the beginning chapter and it basically just builds on that. So, if you don't understand the beginning, you're not going to understand all of it.
S3	4b	Okay, but you might like they need to show that they understand it but what if like how they're showing that they understand it is a test and they need to get a certain grade on this test to show their understanding. What if this person can't grasp the concept and continues to take this test, then what happens?
S6	4b	Thing is with tests, you can memorize things, but you just throw them out the window the next week when you have to learn something new. If you're going learn it, you have to learn it. If you're going to memorize it, you can do that in a day.
S3	4c	Some kinds of tests. Like an application.
S7	4a	I believe, don't we with the current system we have in place now, don't we get to like take the MAPS test or whatever if we don't pass it the first time then we get a couple other times? Especially with the like 8th grade exams. If we didn't pass it, didn't they gave us a MAPS test. Basically, what we have been tested on before. I think that…Doesn't make any sense. You know, maybe there is something wrong with the way it is being taught?
S4	4b	I first agreed with it, but I kind of disagreed with it. Because you can only get so many chances to actually learn something before you just don't get it anymore. I mean some people just can't grasp the concept of certain things. So, I don't think they should get like 100 opportunities versus somebody who gets it right away. So they showed it to you and they got it. But you should have some chance to learn the material so you do well in the class in the first place.
S1	4c	I think that you should have like more opportunities, not like unlimited, but at least some. Maybe a test, or a project, or something other than a test. Some people just can't take tests very well. Sometimes there is other things going on in their life and that could ruin their grade.
S7	4b	Sort of a point STUDENT 6 was saying earlier. Tests can be, you know, you can get around tests. If you can, you know. I know a couple people that, or I did, know a couple people that would just show up to take the exam and then take the exam and you get an A on the

		exam, then you essentially pass the course without actually doing any work. That's okay for some people, but in the long run you're not going to learn anything if that's all you do. That's just basically bypassing the system, isn't it?
S5	4a	I'd say along with having multiple tests of somebody's skills on some certain topic, you also have to get rid of the system where you're required to take certain classes because if you aren't ever going to understand the concept, there's no purpose in just making you struggle through it when you could be excelling in other topics. Especially at the high school level, it gets to a point where you're no longer preparing for the next level of school, you're preparing for the rest of your life. If you can spend all day working on something that you're going to be paid to do outside of these walls, then why make you sit in a class where you aren't actually learning anything.
S4	4c	That's a good point, because then you don't really need quite as many opportunities to show yourself, you know what you're doing. It kind of eliminates the this person should get so many chances. Like STUDENT 1 said earlier, you should have chances, but it shouldn't be such a big unlimited number that it's kind of ridiculous.
S2	2a 2b	The thing I like about [course A] is that it offers a rubric. On that rubric, is different levels of the work that was done on a project. The phrasing changes on each box. The one that gets the most points has the most phrasing to it and if you accomplish all of those goals in that box, then you get those points. Farther down, if you didn't get…if you didn't do everything in there then at the bottom there's only the one phrase of "Showed Effort," then you only get those points. But some classes it's a 3-2-1, based on teacher objective, which isn't totally fair because what can happen is the teacher could say, "Oh, well this person worked harder than the other person." Which, I have seen happen before.
S5	2a	Maybe it's just the way I read this, but I don't really think this question makes much sense because if you were graded on anything other than the defined learning criteria, that just be absurd. You would just have to kind of hope you do what they wanted you to. Having the teacher objective of what they perceive to be effort being part of your grade is ridiculous. If I can do something with absolutely no work at all but it takes somebody like 100 times more effort to get it done, I should still get the same grade because I still know what I am talking about. It just comes easily to me. I agree with you guys.
S5	1b	That is a load of bologna, Trying to make learning into some sort of competition is absolutely ridiculous. I guess once you get out of high school, it is a competition. If you are just learning something and one of your classmates is learning the same thing and they just happen to be able to do it better than you, there is no reason you should be penalized for that. It's just dumb
S6	1b	I disagree with this because its called the curved scale. If you are at

		the top of the curve it's good for you, where there is a set max amount of points and if you are within the range, it's good. But if you were not within that range, then you get scored poorly. So, it's usually a disadvantage to those students. It becomes not objective, but it should have been done with more of a rubric where the gifted child can get the most points, but it doesn't push the other ones down because they didn't got the most.
S6	1b	Say for the AP courses, someone goes to challenge themselves and try to learn more but the people that are super smart are already in that class and they get all the concepts already. They don't need to try or anything. And they're getting all the scores. But when people are actually trying and still struggling, they get penalized even more.
S3	4c	I mean sometimes though like, not saying that before this, but maybe if like there were different levels of classes in the first place, not like I guess that would be kind of like classifying people as like lower, middle, and upper, but sometimes competition makes you more motivated to do well and learn stuff.
S6	4c	I kind of agree with the separate levels of classes. Over in Europe, how they do it, there are three sets of schools. They have the trade school for people going into plumbing, electricians and stuff. They have the lower end, not lower end but middle and lower because they don't always want to hold back the higher students if that's the case.
S1	1a	I think competition can be good, like to help motivate you to like do better, but I don't think you should grade competitively. I know in [this class] I always wanted to be like top dog, but we weren't graded like that. I think that was a good thing. But in other classes where it has been like one person gets like a point off their test, so it's basically out of 100 anyway and it's stupid.
S6	1a 1b	I think would be kind of good because you have more chances to succeed, but you also have more chances to fail.
S3	1a	Okay yea there might be like more chances to fail but then you see where a person is strong, where their strengths are and they have...if they're like bad at something and that's like say there's only like two categories and they are bad at one of them, that kind of sucks to be that person because then they're like failing.
S4	2c 4c	You would hope a teacher understands what the student actually needs help with and they could help the teacher figure how to teach the class so more than one person can understand. They see that oh wow my entire class is failing except for this one person, maybe I need to change something. If they do it with a rubric they could see what people aren't getting and try to figure out how to change it.
S7	1b	So is this sort of like the...now this isn't obviously [department] that does not use this scale but I think the generalized scale is 0-50% is F, or 59% or something like that. I think that...that's a pretty flawed system, because you are basically set-up to fail. If you completely understand everything that is going on you can still you know you can

		succeed, you can get an A, you don't know everything you can get a B, but I mean sometimes if you know even if you're trying your hardest you can still be barely passing. I think that's a flawed system.
S2	2a 4a	The purpose of grading is to assess how well a student is learning material, not to poke out who the smart kids are and push them into their own classes and separate people.
S5	3a	I see the purpose of grading as it gives some kid's something to bring home to his mom and dad and they say, "Good job you can turn in homework." In all reality, grades don't reflect intelligence in any way. That's why you have 1.0 students getting over a 25 on their A-C-T. And getting high scores on their S-A-T and their placement exams. So, ridiculously flawed if grading is supposed to at all represent someone's intelligence. It really just represents their ability to do busy work in most cases.
S3	1a	I'm not saying this isn't like a flawed system, but this is kind of like how everything works. It's not like a special program. But what do college's look at when you're trying to get into their school? Do you have high grades and you're in a lot of programs and doing well? You're probably going to get in and if you're not, well...
S6	4a	What STUDENT 5 was saying. Anyone can just do busy work and just go go go and get good grades. If people think that's a waste of time and they don't do it, but they can still repeatedly get good grades on the tests but the homework grades keep taking them down, I don't get the point of being graded on everyday little assignments would be.
S3	3a	If you're saying it's all busy work, you're saying what's the point of school...
S6	4a	I'm not saying what's the point of school. I'm saying what's the point of continuous assignments on a subject that if you get it like, going back to the first question, if they understand the content, they should be able to move on. Instead of being stuck behind or being pushed forward, they should just go on and learn.
S5	2a	That goes back to just like going into a classroom blind. If you don't know what like criteria you are supposed to meet, it's all up to teacher discretion to say, "Oh well they really didn't do what you were supposed to." Then you have no way of proving to the teacher that yes you did the work, you just didn't take five hours to do it. And so, I think that's a really good system to have.
S2	2a	I also think it helps a lot to have as phrased, pre-determined criteria, because you know what the goals of the project are and where your efforts need to be put forth. That's something I was faced with a recent project. I had to type a research paper and we really didn't receive anything, it was just kind of willy nilly. So we weren't sure what the teacher wanted when and we didn't really have any deadlines and it was really frustrating. The teacher would pull them out and say, "Oh by the way you have note cards due Wednesday." "How many?" "40." Haha, no. Not going to happen. If I would have known that prior to

		that, it would have been great.
S4	3a	Doesn't that only work with certain classes though? Because like in Math class you can't really…I mean yea, they give you an assignment and they tell you it is due the next day but…as long as you…do it they can't really…never mind.
S3	2b	I think that the pre-determined coursework like sometimes the criteria like might hold back students in a way that you're not going to be like creative, in the engineering case at least, to find their own answers to the problem and not know like exactly what their looking for and to be able to figure it out. I think that's an important skill to have.
S2	2c	So you're saying in the grading there should be more openness to be able to change things outside of the requirements?
S3	2c	Not like in every class, but in engineering I know I ask the teacher if I can have a rubric. Did I get it? Nope. I think some things you just have to be able to figure out on your own. Your not always going to have that…
S1	2c	I think rubrics need to be differentiated. Like obviously like they could be changed. Where maybe some things are not like laid out 100%. So you have a little freedom.
S5	3b	This is like allowing kids to, excuse my language, BS their way through projects. That's really all it is. It's like, yea you got it right, you don't know why you got it right, you just got lucky. And since you are a smooth talker, you get the grade. Which works out really well for those who can actually talk. And then for those who can't, if they can show on paper yea I know what I'm doing, then that works out okay for them too. But I don't know if it's necessary and should be used to show a student's knowledge. Maybe if somebody's already got their degree and they're getting paid to do what they do and they can make it work then it might be okay. But when your purpose is to teach somebody something, so in the future they can apply it to a real world experience, that's kind of just allowing some to just take the easy way out and avoid to actually have to learn anything.
S5	3a	No. Well, I would say no because they can't expect you to do well on something you don't know how to do.
S4	3a	Well for homework, kids that copy. Should they get an A because all they did was copy someone who was smart, so they don't know what they should know in the first place? I agree with STUDENT 5, you should not get a grade on something you do not know how to do.
S1	3a	I think homework should be graded. Like if its something you learned and covered like in class, then it should be graded. But sometimes when you would do homework in like [this one class] and we would have no idea what we were doing and we got graded on it and a lot of us did like really bad because we didn't know what it was and [the teacher] didn't teach it to us. So, eventually [the teacher] realized the error of their ways and graded it completion style, which was way

		smarter.
S5	3b	That's just grade inflation though.
S1	3a	Yea, but [the teacher] didn't teach it to us. So I was like, I don't know how to do this…
S4	3a 4a	I'm not saying don't give homework, just don't grade them on it. See how well they get an understanding of it first and go from there. When you need to teach them, or find what kid's don't understand, teach them.
S7	1b	So this is…I guess I brought it up pre-maturely about the whole 0-59% and all that. The current grade that is utilized by most of the teachers at the school. I believe, like what I brought up before and what a couple of other people have brought up about how sort of cheating your way around to get to the test. That's basically this…or because if you interpret it the other way, just doing the work to get the grade without actually learning it. And if you don't ever learn it, but you get the grade, people will say when you get out of school, "Oh you got a 3.5 GPA, that's terrific. We want to employ you for this position. You got a 93% in the field of study, that we're going to hire you for and you have been there a week and it doesn't look like you understand anything that is going on." So I think, you know, if kids are just taught that you know, you can go through and just you know, without ever learning anything, you're never going to get anywhere in life in the long run if you don't understand it to begin with but you still have the grades. People are going to look at you funny for that. I think that it's sort of a flawed system.
S3	3a	I think it should be focused on the learning, but I'm not worried about that. I'm worried about what's going on that paper and what everyone is going to be able to see. When I'm trying to get into college they're not going to care if I…like yea I learned that and I got like a low grade on it…sure. Yea, flawed system.
S2	3a	I agree that the attention should be focused on the learning and not the letter grade. What will happen is some kids will work for the satisfactory grade of, say a C and will then stop right there because its just good enough. Whereas if they didn't focus on the grade and they had to do a verbal instruction with the teacher, which didn't have a grade except for Pass/Fail, then they might approach it differently.
S5	1b	That's why…then again if you're going to try to change it at the high school level, you have to change it at all levels because if your tested on what allegedly accumulated knowledge on you're A-C-T, S-A-T, and placement exams, then that should be what colleges look at. They shouldn't be looking at the grades that you cried your way to get that B. Even though you're getting a D, just because you didn't want mommy and daddy getting upset with you.
S4	4b 1a	I so agree with that one. In our [class], every time after we do a test or something, it's always the same kids that go up to their friends and say, "Hey, what'd you get?? Oh yeah! I finally beat you!" Or, you know I

		finally did better than you. It just seems like kids are more competitive about grades. It's just what's on my mind.
S7	1b	I learned to deal with it as far as, okay yea, just kind of block them out and focus on other things. Don't get caught up on being down on yourself because if they keep telling you that eventually you may deep down believe that you are smart, if you keep being told you're not smart, or you know you're being motivated not to be smart by your peers, you lose your confidence and that great job that you want.
S5	3a	Yea, you don't by any means want...to put other students down. That just leads to a negative learning environment, then that's why you have kids dropping out of school.
S1	1a 3a	I definitely know people who have high anxiety, definitely.
S7	1a 3b	I think if you're thinking, high anxiety, no. Some anxiety...anxiety as a whole, you need to have anxiety otherwise there is no pressure to succeed, but if...high anxiety no and some anxiety is good. No anxiety is also bad, you need a certain degree...
S5	1a	I agree with him that you need to have that anxiety to push you to do what you need to get done. On the same token, I don't think there's in general a high anxiety level over an overall course grade, unless...mainly parents are pushing the student because most kids aren't like, "Man, I really need that A," unless their parents are like, "You really need that A." And so, I don't think that the student themselves have the anxiety, its more the parents and the student trying to please their parents and the parents trying to live out whatever they didn't get done through their kids.
S1	1b	I think it's definitely a flawed system, like how are you expected to always get a 100%? Like you are never going to be perfect, ever.
S5	1b	Wait...That reminded me. Too much pressure has been put on being Above Average and like mediocrity has become like a sin. Getting a C is unspeakable. Are you kidding me, that's average! That's what is supposed to be the run of the mill student is. The A is supposed to be for those that go above and beyond. But if you don't get A's, you're a slacker, you don't do any work, blah blah blah blah blah, you don't know anything. But in all reality that's where the middle ground should be. The majority of the student's should not be getting A's and B's unless for some reason you have a phenomenal program. The majority should be the C's. But then again that brings in the curved system.
S1	3b	NO! Because I want a 4.0!!!
CTET	2a	I think it's fair to students. The bandwidth, if you will, for each grading range is the same. As opposed to being laden towards the bottom where 50% is an F and it breaks down. I also think it makes more sense because as we...when we look at how we were evaluated or how I have been evaluated in other jobs it's usually on a four point: meets, exceeds, does not meet, or needs improvement. I think its

		taking the real world grading system and bringing it to the high school, which is what we are trying to prepare our kids for which is the real world.
CTET	2b	While I think it is fairer to students, there are those students that figure the system and realize I can go half the work and get a C. Get half the points and don't even need to turn some assignments in and I'll still get credit for the class. Especially if you have a kid that's very very very good gets complete As and says, enh I got an A for first quarter, I'm done.
CTET	2b 3a	Number one. You have to figure out a way to get rid of that drop-off, the I got my A, I can do nothing and get a C. First off, if you are giving an assignment, the assignment has to matter. BS assignments should not hurt students' grades. On the other hand, projects and assignments that matter should factor into a student's grade. The other thing is, why the heck are you giving BS assignments? If it's busy work, it really shouldn't be graded. The other thing is, get a lot of research and knowledge to back you up. You're going to get fought every step along the way. At least that's what I have experienced from my experience with this experience.
CTET	2b 1a	Percentage grade scale gives…well…Percentage grading system makes student have to work harder to get a decent grade compared to a categorical because 50%, or 60% and lower is an F. So you need to obtain higher grades. Other strengths are it has been in use forever and everybody knows what it is. If you say an A, people automatically think a 90% because that's what it was in 1970 when they were in high school. So it's easily understood by other people.
CTET	1b 2a	One big thing that I find to be a barrier to the percentage grading scale, at least in the way I use it, if I think I got a kid got a D and deserved to pass but they got a F, I find myself inflating grades so they get that 60%. I don't think that its…whereas in the categorical grading system you have more of a…the bandwidth is all the same so you don't need to inflate a grade. A person who got a D by doing the work is going to say I got a D because the work is more cut and dry. Whereas in the percentage grading system, there's more leeway and it is not as objective.
CTET	1b 1c	Make sure the percentage grading system is used in the right places. There are situations where the percentage grading system works great. Tests and things like that where students need to obtain Mastery on certain things, its all in the weighting of the grade scale. If you're going to use the percentage grading system and one question is very very very important and one question is just…or one question would hit retention and one question would hit your higher levels of Bloom, where you could explain the information to someone else or take information and turn it into something, then you have to make sure the questions that are hitting higher levels are weighted heavier so that they are affecting the percentage more than just gimme questions. If

		everything is rated at a one point, your percentage is screwed.
CTET	4a	I do believe that students are able to understand material if they get step A, they get step A, they don't get step B, we move on to step C. Two schools of thought on that. One is, if they don't know B, how the heck are they going to get C? But if they do get C, it might help them understand B. So, I guess I would say if they have opportunities to go back and show that they understood what they did not understand, they can still progress forward. If it becomes too hard because they don't understand, we need to go back to step 1.
CTET	2a	And in that case if it was a power standard type of thing with knowledge and skills. If that's the list and criteria we are talking about I Strongly Agree. However, if we're talking about random things like attendance and attitude are criteria that are used to grade, I don't agree.
CTET	4a	That goes along with multiple opportunities to show understanding of content material I believe.
CTET	4a	The whole reason I am giving students a grade is so I can give them feedback on what they are doing. Also to give myself an identification of how I'm going to give a letter of reference or something for students. It should never be for giving them honors or…yea.
CTET	4a	I think students need to know what they are being graded on before we grade them on it. Otherwise that is kind of a disservice to them.
CTET	1a	I think students should be assigned a letter grade, but shouldn't necessarily figure into their overall grade. It needs to give them feedback on how their doing. If a kid's doing an F in participation, their probably going to realize, holy cow I better kick it in the butt and start doing something or I don't care. At least we give them the opportunity to understand that and have them make changes based on their needs.
CTET	4a	That's why students should be taking classes because they want to learn something. When grades, if their focusing on getting a good grade because they want to learn the stuff very well, then the letter grade that they get is going to correlate with how much we feel they are going to earn, then possibly yea. But if you're just taking the class saying, I want an A, what do I have to do? That's kind of a joke.
CTET	3a	Some students want to be the 4.0 student and the valedictorian and are willing to fight tooth and nail to get there. Some kids don't care at all, they're here just to be here. Otherwise they get tickets and taken to jail. So it depends on what student you're talking about. Generally, and for most of the students I would see, I would have to say Disagree. I really don't think they are competing against each other for grades, they are here to learn what they want to learn.
CTET	4a	The soul reason for that [anxiety] is it determines if they get to move to the next level or out of this place, things like that.
CTET	4a 4c	Well, there needs to be some constraints to that, but I do agree that students should be able to show in different ways. Take a Math test, if you fail a semester exam, what are the chances that you are going to

		take another written test with fill-in-the-blank answers and pass it is very slim. So, differentiation of assessments is necessary.
CTET	4b	But there also needs to be a limitation to what the teacher is willing to do or able to do. The way I would grade somebody on an oral presentation on how to [task here] is going to be a heck of lot different than them using it. So I think there needs to be limitations, but there should be differentiation in assessments.
CTET	2c	Everything should be out on the table.
CTET	2b	The problem with that is, in our society or in our system so far, teachers are accustomed to giving extra points or taking extra points based on perception of effort or learning or what-not, and when you use a categorical based or objective based system, you can't do that because when you do it, it messes with the whole grade. That needs to be taken into account.
CTET	1b	I don't think any student should be compared to another student when you are talking about grading. I think that class ranking is absurd. You're pitting people against each other.
CTET	2c 4c	The whole purpose of this institution right here is supposed to be learning, not beating the other person or getting a higher score or something like that, I don't think that is fair. I think student's work should always be compared to the rubric or to the standards we created and should only be compared to those standards, they should not be compared to others or a curve.
CTET	1c 2c 4c	Not only should we be teaching students course content, but we also need to teach students life skills as well. One of the life skills they need is how to advocate for themselves. And when you have 100+ students on your caseload, it is difficult to figure out which students need help. Especially if that student is not giving receptors to that.
CTET	3a	I'm not saying busy work is not that unnecessary. I'm just saying it shouldn't factor into their grade. If the thing then becomes, well why do we need to do the busy work, there needs to be a different motivation for students than just grades.
CTET	4a	I think the only things that should be graded are those which meet the knowledge and skills and things we feel students need to hit and when they hit that, we give them a grade.
CTET	2b	If it is unfair and provides unfairness to the other students, then we need to eradicate it, or get rid of it, but for that student, they went through the process of figuring out, hey I can do this, they used something in their brain and they got a better score because of it and I am not going to punish them.
CTET	1b	The whole reason we assign grades shouldn't be for a punitive type thing.
CTET	4b 4c	Well yea, the punitive quality of grading. Seeing that I have had 5 kids now who have taken [this class] because [a parent] was [in this field], the kids had no business in that class because they knew everything already. They took it to prove they knew everything and get their A to

		bump up their GPA or whatever. I think that high school should be based more on learning than awarding grades.
CTET	1b 2b	I mean, if you're getting a C, you're getting looked down upon and that means you are meeting all of the goals established by a class, at least in my classes it would.
ET	1b	Ok, if you are looking at straight percentage, see I...I used to do weighted with percentages and I had a student once show me how skewed that could be. We didn't do a lot of writing assignments, but yet that one writing assignment ended up being 60% of the grade. And so I went off of that and went to a Numeric and then a percentage of that total.
ET	1a	Strengths, it tends to be more clean if you...if you...I suppose you're weighting things in a sense by making it worth ten points instead of 100 points. So it's not really a strict percentage because I do points, total points and figure out percentage.
ET	1a	To me, that's easier to make things more fair, instead of the weighted, which I initially did because people are told to do it that way right away at the beginning and I didn't like that at all.
ET	1a	I guess it's that people understand it.
ET	1b	I think there are barriers, one of the barriers when we started looking at all of this is that whole zero to 50. That's not the same increment as 60 to 70 and 70 to 80 and that really hit me pretty strongly and so I still have my system, but I don't really give zeroes anymore...
ET	1b	Unless the kids are tracking their points and able to figure it, then it's not really clear to them how much...I don't know, I don't think a lot of teachers take the time to communicate to the student where they are with their grade and what's happening and how this assignment will impact it and this assignment will impact it.
ET	1b	I don't there are many teachers that will even give the kids their grades even before quarter grades come out. From what I hear and having a student in the high school, now I hear a lot.
ET	1c	I would tell them about what the whole weighted situation with me and to be careful of creating categories and taking those percentages and putting them into one big percentage. That can really skew things.
ET	4a	Especially in coursework that it is a building process. It is silly not to make sure they have it before you move on.
ET	4a	Knowing what I know about the brain and multiple intelligences, and kids need to process things at different rates, they need to show it in different ways. It is important.
ET	2a 4a	Everything should be related to the Power Standards. If we are going to take the time to create these and feel they are the Power Standards. If this is what is most important, kids should know what the criteria are and how to obtain that.
ET	1b	If people see the grading categories as participation, effort, and all of that, then I have an issue because I think those things need to pulled

		out and it should be solely based on the standards and the Power Standards that you're looking at.
ET	4a	But in terms of grading categories, could they show it in a paper, could they show it in a project, show it in a discussion, those categories I am fine with.
ET	1b	Grading is…it shouldn't be to…it's pitting them against each other again, and it's not what it's about, it's about the individual.
ET	1a	If you use some of those things to, to identify sometimes but it's not always the best indicator. There are other indicators.
ET	2a 4a	They should know up front on how their going to be evaluated.
ET	3a	I don't think it should be part of the total course grade, I put disagree. But I think there should be feedback for homework, participation, and other learning experiences. Not necessarily a letter grade.
ET	3b	But it's like we make the kids become obsessed with it by the way we structure things.
ET	4b	But I think at a certain point, especially when you get kids up here, it's been destroyed and they don't even care anymore. Does that make sense?
ET	4a	I think intrinsically they want to do well and achieve and have that, oh look I did this.
ET	1b	Some are so burned out on the system and they feel like they can't win no matter what they do, they don't even care. So how could they have high anxiety, they don't!
ET	2a	It offers them points to discuss.
ET	3a	So they're seeing the value of modeling it and going through it together versus getting instruction and figuring it out on their own. Yea, they're seeing a subtlety there.
ET	1a	Competition can be used to motivate, but you have to be really careful.
FLT	3b	And frankly, I don't really do not look at it unless it becomes an issue.
FLT	3a	But I want the kids to think that I look at that, but the bottom line is, I don't give stupid homework. And I give homework, probably five minutes of homework everyday. I know the kids that do it, many of them are doing it right before the bell rings, to either end the class or begin the class. But I want to teach a skill, have the homework practice it, touch it again, and then move on again. So, I don't give dumb homework. And what I can do is make the next class go a little bit better if they do their homework.
FLT	3c	It's just my leap of faith that they do it. Unless I start running into problems.
FLT	4a	I just find I have a much better class if I can get that angst out of there.
FLT	4a	I'm not going to be able to keep kids if I am an easy A and I'm not going to be able to keep kids if they are like oh my God that course is so hard.
FLT	4a	If we tell the kids that, this is important what we do and it's important that you get it because you will get the whole unit a heck of a lot

		easier. That's more reasonable.
FLT	4b	I think it makes a lot of sense. But I think it is a logistical nightmare. I think that…I am watching this with a middle school teacher who is working on a lot of that. I think that in a sense, it is giving too much power to the kids, that they can turn in late work, they expect to be able to redo things until we fit their time, and there is a certain amount of responsibility that the kids have to adjust to what's going on.
FLT	4b	So about a week into it, we realized [the teacher] didn't know what they were doing. We were really cocky, all good friends, and said to [the teacher], just tell us what we have to do on Friday. We'll come in to take the test, we're going to go play Euchre.
FLT	4b	I think it goes back to classroom management and the barriers of using the Mastery grading system.
FLT	4b	But if it came to…I know what they are doing in the Elementary school…if it came down to giving every kid six grades. I'm not one bit interested in that.
FLT	1b	I sat back there and thought, if you can't tweak out your system to turn 93 to 100 to 90 to 100…there's a…we as teachers, I think we have to use our…we're supposed to be perceptive people and intuitive people
FLT	1b	100% mastery is unrealistic and if I…even 90% sometimes…you just got to tweak it. And I reserve the right to be a tweaker.
FLT	4b	I think we have before a unit test, we have several quizzes, we usually have assignments, and if they don't understand something, then it is their obligation to get the help. It's not our obligation to provide new testing or opportunities. So I want that a little starred. I don't like the fact they expect teacher's to generate multiple tests.
FLT	2b	I think rubrics sometimes are limited by the imagination of the teacher.
FLT	4a 2a 1b	No, the major purpose is to help the students understand how they are doing and…the unfortunate thing is that grades are used to select, identify and classify students for honors and special programs.
FLT	4a	I'm a fan of turning in a preliminary project of this is what I want to do or turning something in and giving the kids a chance for a rewrite, this is how you can make it better, I think that's a much better learning tool.
FLT	4b	I don't want to get into this six grades for one grade. I think what we have, you know A, B, C, D and open up for dialogue is much more useful. And person-to-person dialogue and not…I don't want turn my job of teaching into a clerical job. We have to be real careful of that one.
FLT	3a	I think that's why a lot of homework is graded on to see if they do it because I would really like to go over that…I don't correct their homework.
FLT	4a	I think it has to come from within. Our best students are competitive with themselves. As a parent, I wondered how the heck can you do it, as a teacher I wondered how the heck do you do it. But, I think that if we create…if we're giving grades to please parents, or grades just for

		scholarship, we're setting the kids up at some point to be, to fail.
FLT	3a	I would like the kids to not even think about grades. I would like the kids to come in and think about what they are doing. Not have this monkey on their back.
FLT	4a	And they did have a leap of faith that the teacher might have some insight, that's a good sign.
FLT	1b	Those kids are the kids that know how to play the system.
FLT	1b	It doesn't…it's really interesting because I will give an exam and sometimes I can't use the 100% scale, but I'll have groupings. You look at it and it's like, oh! I guess those are my As and those are my Bs. It doesn't really matter, but you can't say that too loud because people will freak.
MT	3b	But I do convert that to a percentage.
MT	3a 3c	Basically it just for the homework. Either they have done it or they haven't. So it is more like a completion grade. They pass if they completed it, tried the homework. They fail if they come in without any homework.
MT	3b	I don't know if there would be any strengths to this if I used it overall as my primary. I don't think there are any strengths to a Pass/Fail.
MT	3b	You know, it does not put it into perspective.
MT	3b	So the barriers…my theory students, my advanced classes, they need…they need to know where they stand. They need to know if they are doing A work, B work, C work, etc. They don't want to know if they just passed or failed.
MT	3a	You know, if you start talking Pass/Fail, you start talking about students who aren't headed on to a four-year college. You know, when I look at our 1A and 1B classes where knowledge of Math is very weak. To give a student say, you've passed the requirements we need for this curricular. It doesn't matter if it was an A, B, C, or D, you've passed the expectations we had for this class. So in that type of structure, yes, that might work nicely.
MT	3b	Yes, because our colleges require that. That's or society. For better or for worse, yes.
MT	1a	I think that gives a student a concept of where they fit within their peers. Are they eligible to go to UW-Madison? Or should they really be applying to some school with a less rigorous GPA requirement…So, you know they need the percentage grading system for GPA requirements for schools. That's just the way our educational system works.
MT	1b	I think the barriers exist in that we don't have the specific rubrics always set up and in place. So that would be the barrier.
MT	1c 2c	Make sure you can stand behind your tests. Make sure you can stand behind your criteria for an A, B, C, D, and what is considered failing. That's the big one, what is considered failing.
MT	4a	Yes they have to. In Math, they have to. It's sequential, it's linear. There's no way a student can do Calculus without having done Pre-

		Calculus, Algebra 2
MT	4b	And I wrote on my sheet, in an ideal world, yes they should. Unfortunately this is not an ideal world and we don't always have the multiple opportunities. We are pretty standardized test based in the Math Department. Not all of our courses are that way, but for the most part we are.
MT	2c	If those defined learnings is what will carry them through, with a solid foundation, then I would Strongly Agree. Now whether or not our Power Standards do that, I am not sure I would Agree with that. However on the premise that our Power Standards provide that solid foundation, of a defined learning criteria, then yes.
MT	1a	I think of some of the other nations and yea…when they decide when student should go on the academic track or the tech track or you know. When that's done in middle school, as in some countries it is. But yea, that's how we decide, that's who is going to be the brain surgeon, who's going to be the teacher, who's going to be the person drawing those plans for the new high school, you know.
MT	2a	I think we need both basically as we see more and more students with disabilities come through our system, you know. Some students you can tell them certain things and they get it and others really have to have it black and white in front of them. So then as we turn around and write about our students, both should be there
MT	3b	We are a grade driven society.
MT	1b	I teach strongly, highly motivated students, it's important and they stress out.
MT	4a	In my classes, you got one, quizzes only. Quizzes they could retake. Some students really did enjoy that. Ok, this is my dress rehearsal, I can see if I get it or not. And if I don't I can really study, put more time into what I…because they had immediate feedback when they would get that quiz back.
MT	1c	All we do in Math is we let them how many points each problem is worth. So if they want to spend more time on the problem that is four points or they want to get all the one pointers done right away, or whatever they want. Give them the opportunity to pick and choose.
MT	4b	What constitutes knowledge? Should that become then if you have half of the material mastered, should you be considered passing then…good question. Yea, their rhetorical questions, right. But, good point. We struggle with this and I think our current administration has also struggled with this. As to how do we meet that need? What would it be, 50%? 60%!?
MT	1b	That's true! What did you get? And Seniors with the scholarships now.
MT	3a	And that's when you look at the lower achieving students. A Pass/Fail might benefit them. Boost their self-esteem.
MT	1b	I have been in more conversations lately about, why are we penalizing

		students for a C? That means they have met the expectations…Why are we penalizing them? So its starting, maybe there is a mind-set change.
SST	3a	My thinking there is that homework is not part of a summative grade. You are looking to see what a student can do at a given point, making progress towards a final grade. That would be one of the strengths.
SST	3a	Another strength is that it gives you the opportunity to give feedback to the students.
SST	3b	A barrier would be parent expectations. A lot of time parents expect a letter grade for everything that his or her student does.
SST	3b	Another barrier is the school expectations for reporting. If you are using a lot of marks as formative assessment and a progress reporting period comes along, you might not have enough information to justify a letter grade at that point.
SST	3c	If you're going to use that system, you have to do more than just say, yes it is completed. Doing a…doing this system without providing feedback defeats the purpose. If you do that, you are not really collecting any evidence about what the student can do or what the student knows, you are just creating a product. So you still have to look at the homework, even if you are not going to assign a letter grade or a percentage to it. More importantly, you have to get it back to the student in a timely fashion.
SST	3c	Another recommendation is doing something with the results you get. You can't teach what you plan to teach and ignore the information you get from the students based on what they did.
SST	1a	One of the strengths is parent expectations in the system, it is expected by the system as it goes by the school's definition of grades, what they mean.
SST	1a	A strength to using the system is it can be objective.
SST	1b	The biggest barrier is it is not always objective. It's difficult to assign to a percentage grade to a project, to an essay. So, those are harder things to say that's a 92 versus a 89. Where's the criteria?
SST	1c	I would recommend making sure you know what your criteria is for each letter grade. That you really know what the difference between an 89 and a 90 is.
SST	1c	I would recommend you look at what your expectations are because the percentage scale works very well for objective type assessments. But then take a look and see what you are assessing, is it at the lower end of Bloom's Taxonomy, recall of information? How are you assessing the critical thinking or the application of content.
SST	4c	I said Disagree because the way I thought about this was a lot of times they have a chance to revisit content. Next year I think I am going to be more focused on skills than content.
SST	1a	I took grading to mean what we did right now. I think the major purpose it serves is information for parents and students about student performance.

SST	3b	I circled Agree and my only hesitation to not circling Strongly Agree was the idea of it is student and parent expectation that there should be some sort of grade. So that's my struggle there.
SST	2b	Because they like rubrics because they said they are objective, but what if they include subjective criteria that is not connected to a learning goal.
SST	4a	Well that one is interesting too because I know many students with IEPs are really good at helping the teacher identify learning needs and styles. A big part of their IEP is self advocacy. That is an interesting observation that all students need to do that.
SST	4a	That's interesting because part of what they are saying about loopholes in education speak would be having a variety of performance modes. Here's what you have to understand, here are all the different ways you can demonstrate your understanding. Very rarely would you say a paper is the learning. Now if you were in a course where the standard was effective written communication then they are going to have to write, they cannot give a speech to show they can write, So it is interesting to see that they see some those things as loopholes.
SST	3b	Well, so then they are still working within a system that says Pass/Fail somehow gets translated into a grade. So they...because that is what is done to them.
SST	1b	So the teacher inflates grades to not look poorly.

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