STANDARDS-BASED GRADING VS. TRADITIONAL GRADING USING MISSOURI MSIP SCORES

By

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ABSTRACT

This study was completed to find if there is a significant difference in student achievement between standards-based grading and traditional grading systems. The traditional way of grading consists of what educational writers have called “inappropriate number crunching” including the averaging of grades. Thomas Guskey, an “assessment guru”, has written, “Averaging falls far short of providing an accurate description of what students have learned. If the purpose of grading and reporting is to provide an accurate description of what students have learned, then averaging must be considered inappropriate” (Oliver 2011, para. 4). A different approach to traditional grading is standards-based grading whereupon a student’s achievement is aligned with a certain learning target and given a grade using a 4-point scale rather than a 100 point scale. Averaging grades and zero grades are not a part of the standards-based approach. Findings of this study show that students Msp Scores in schools which practice the standards-based grading approach do not achieve higher test scores than those students in schools where traditional grading is practiced.
INTRODUCTION

Background, Issues and Concerns

Currently the traditional way of grading is under attack for being antiquated and unfair.

According to Gordon (2010), “Under traditional grading, extra credit, late work, class participation and non-academic assignments (returning a signed progress report, for example) can influence a student’s score (para. 1). This approach to grading does not portray a clear picture of a student’s academic achievement on content learned throughout a unit of study. Instead, the traditional approach uses a law of averaging that incorporates work study habits and learning content to figure a student’s letter grade. An advanced form of assessing students in schools is standards-based grading. Standards-based grading grades a student directly on a learning standard. In standards-based grading a teacher gives a number usually between 0 and 4 with 0 indicating that a learning a standard is not understood or met at all and a 4 meaning that a student exceed the learning standard. The idea of standards-based grading is to give a clear and concise report of how well a student is achieving current learning standards.

Practice under Investigation

The practice under investigation is standards-based grading. There was an investigation to see if there is a significant difference in ELA and Math Msip Scores from three different schools; two schools that use the standards-based grading approach and one school that uses the traditional type of grading. The data will be collected from the Department of Elementary and Secondary Education (DESE) website.
**School Policy to be Informed by Study**

This study will inform educators on what is the best way to grade student’s performance on current learning standards.

**Conceptual Underpinning**

The traditional way of grading a student is antiquated and unclear. It does not give any stakeholder a specific idea how exactly a student is meeting or not meeting a specific learning objective. The concept of standards-based grading ties a grade to a specific learning standard, therefore providing a precise idea of student achievement. According to Marzano (2010) most assessment in the classroom are based on a 100-point scale. The improper use of this scale can lead to incorrect student achievement scores. In standards-based grading the scores may range from 0-4 or 0-5. Marzano (2010) also states that while tracking a students’ performance a zero may not be given for a missing assignment. The idea of this does not give anyone a report on learning content but rather study skills and work habits. We can give grades on study skills and work habit separately rather than tie them into learning content and objectives. Standards-based grading is more informative and accurate than the traditional grading system giving all stakeholders more precise evidence of student achievement. Therefore, students are able to continuously strive to meet and exceed current learning objectives.

**Statement of the Problem**

The problem is traditional grading does not give a true report of whether or not current learning standards are being met.

**Purpose of the Study**

The purpose of this study is to analyze data related to standards-based grading.
Research Question(s)

Is there a difference in student achievement between standards-based grading and traditional grading systems?

Null Hypothesis

There is no difference in student achievement between standards-based grading and traditional grading systems.

Anticipated Benefits of the Study

Understanding a new grading system will benefit the learner by giving he/she a better form of concepts learned and concepts that need to be improved upon. This will help the teacher to better track student achievement. Better tracking creates better data analysis which gives the school an idea where teachers need to improve in order for higher student achievement. Clearly measuring a student’s achievement gives all stakeholders a clear idea of which learning standards are mastered and which learning standards need more attention.

Definition of Terms

Standards-based grading- Grading that involves measuring students’ proficiency on well-defined course objectives.

Traditional grading- Grading system that typically uses a 100-point scale and averages student’s work in order to give a letter grade of A, B, C, D, or F.

Msip- Missouri School Improvement Plan

DESE- Department of Secondary and Elementary Education
BB, Basic, Proficient, Advanced- Numeric values that are assigned to each achievement level.

BB has an achievement level score of 1. Basic has an achievement level score of 3. Proficient has an achievement level score of 4. Advanced has an achievement level score of 5.

ELA- English Language Arts

Summary

The current system for grading does not provide clear and concise results for better student achievement. Traditional grading is usually based upon a 100-point scale and most often involves the averaging of assignment, quizzes and test scores. On the other hand, a new form of assessment is on the rise. Standards-based grading is a form of assessment directly tied to current learning standards or objectives. Standards-based grading provides a clear understanding whether or not a specific learning standard has been met and/or exceeded. The purpose of this study is to collect data in order to calculate if there is a direct relationship between standards-based grading and higher student achievement. The benefits of this study include the opportunity for teachers and students to achieve higher scores on current learning standards. The idea of being able to give feedback on specific learning standards will help the student, teacher and parents collectively identify with learning outcomes.
Review of Literature

Yale University historian George W. Pierson writes “According to tradition the first grades issued at Yale (and possibly the first in the country) were given out in the year 1785 (Pierson 1983). As early as 1897 there is record of a letter grade system from Mount Holyoke College in Massachusetts (Palmer 2010). Many schools in the United States measure students’ achievement by assigning a letter grade consisting of A, B, C, D, or F for each content area.

Understanding and being able to measure a child’s academic achievement is imperative, but does it require a letter grade or the 100 point scale? Perhaps a different approach is more effective for the student, the teacher, and the parent. “Standards based grading is a new approach rather than traditional grading that deems itself to raising student achievement by clearly communicating students’ progress towards learning outcomes in a timely, accurate, fair and specific manner” (Five Star Education Foundation Standards-Based Grading FAQ, para. 4).

Students have been receiving letter grades for as long as most of us can remember. Advocates of traditional grading believe that letter grades have sustained through many educational changes throughout the decades so they should remain in place now and in the future.

Certainly there are pros to keeping the traditional grading system being that students, parents, and teachers are all very familiar with the A, B, C, D, and F letter grades. However, there are schools that are transitioning to another form of grading called standards based grading. In fact, standards-based grading has been a prominent way of tracking student’s grades for more than fifteen years in Australia, but it is still a new form of grading in the United States (Phillips 2011).
The easiest way to explain standards-based grading is a method of grading in which students are assessed based on their mastery of a specific skill (standard), versus traditional grading in which a letter grade is assigned based on a combination of either related or unrelated assessments of skills (Phillips 2011). Letter grades often assess more than just academic performance. Factors such as attendance, class participation and late assignments can have a sizable impact on a student’s final letter grade. As a result, traditional letter grades don’t always portray an accurate reading of a student’s purely academic abilities (Phillips 2011).

When educators use the traditional form of grading, they most often also utilize the 100-point scale. For example if you receive an 86% on a test that would be 86 out of 100 points and result in a B. Another way the 100-point scale manifests itself is when teachers set their classes up by points such as: Project A = 25 points, and Lab B = 50 points, Notebook/Journal = 10 points, etc. At the end of the marking period or semester, the teacher tallies up all of the points earned and divides that number by the points possible and if you received 60% of the points, you receive a D-. Mathematical and statistical evidence can prove that a 100-point scale is incredibly flawed; unfortunately, this has not stopped the use of this system on an alarmingly broad scale (Mainka 2010).

There are several instances that are a point of contingency when it comes to traditional grading. For instance, giving a zero to a student who has failed to turn in a missing assignment can lead to an inaccurate grade at the end of a marking period. For example, John Smith received a C in Math. When looking at his itemized grades on his assignments and tests he received A’s and B’s on everything with the exception of one missing assignment which resulted in a zero. Because of that one zero, John received a C, although all the assignments completed
were B’s. This grade simply does not portray whether or not John has the ability to perform the math concepts asked of him, but rather whether or not John is responsible about turning his work in on time. This leads students, parents, and teachers to wonder if, in fact, John is a “C” student or a “B” student. Based upon his assignments he is a “B” student, but because he had a missing assignment he is considered a “C” student. These types of inaccuracies have led many educators to consider a different approach when it comes to reporting student learning.

The 4-point Scale is a more simplistic scale that lends itself to a more precise interpretation of a student’s academic achievement. The basic premise to this scale is that teachers would use rubrics with various indicator levels (depending on the assignment) with the highest level work being four and the lowest level being worth zero. Teachers are able to assign a zero on this scale without causing statistical inaccuracy. This can occur because zero is the lowest score which is only one interval below the next lowest score just like all the others. The principal of ratios remains in-tact (Mainka 2010).

Marzano’s 4-Point Rating Scale

(Based on Marzano, 2006)

**Student version of the scoring scale**

<table>
<thead>
<tr>
<th>I don’t know (can’t do) any of it.</th>
<th>With help, I know (can do) some of what was taught.</th>
<th>I know (can do) all the easy parts, but I don’t know (can’t do) the harder parts.</th>
<th>I know (can do) everything that was taught without making mistakes.</th>
<th>I know (can do) it well enough to make connections that weren’t taught.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 pts</td>
<td>1.0 pts</td>
<td>2.0 pts</td>
<td>3.0 pts</td>
<td>4.0 pts</td>
</tr>
</tbody>
</table>
Many of today’s educators follow traditional grading practices even though they are required to base their instruction on the standards for their subject or grade level. If the goal of today’s educational structure is to determine when (and if) students have met course standards, should we not be keeping achievement records that match the standards we are expected to teach instead of records that are labeled test, homework, book report, class work, quiz, project, presentation or class participation? Standards-based grading is a method of reporting what students have learned and how they demonstrated their learning of the content standards required by the state in which they reside. The U. S. Department of Education includes the following guidelines for standards-based grading:

- Grades must be related to academic standards and course expectations
- Public criteria and student work samples are reference points for grading
- Grades should be based only on individual academic achievement
- Grades are based on quality assessments and properly recorded achievement evidence (Oliver 2011)

Teachers keeping records using the standards-based approach list the standards that students are expected to learn in the columns across the top of their grade book page. The standards may be summarized (e.g., understanding the elements of a story) or indicated by a designated link to a public list of standards. In a standards-based grade book, a teacher would not necessarily record a final grade variety of designations such as the examples below:

A-Advanced  P-Proficient  PP-Partly Proficient  M-Mastery  BB-Below Basic
The standards-based grade book gives all stakeholders a wealth of knowledge. It clearly states what standards are mastered, what standards still need work and what standards have not been met at all. This approach allows all stakeholders the ability to focus on those standards which have not been met. It creates authentic learning and assessment. Students are able to see exactly what they have learned and what lies ahead. Parents, in return, are also able to see a clear dashboard of what concepts will be learned throughout the year and closely monitor where their child is excelling and where they may need extra attention.

“Various grading and reporting methods are used to: (1) communicate the achievement status of students to their parents and other interested parties; (2) provide information to students for self-evaluation; (3) select, identify, or group students for certain educational paths or programs; (4) provide incentives for students to learn; and (5) document students’ performance to evaluate the effectiveness of instructional programs” (Polio 2014 Research Findings section, para. 5).

The debate over traditional grading and standards-based grading continues to challenge educators. “Advocates of standards-based grading strongly believe that we should not hold fast to an outdated system that no longer makes sense in the current educational climate. Furthermore, proponents of standards-based grading believe that we must challenge the status quo and move to a system that is sensible, realistic, and up-to-date” (Oliver 2011, para. 1).
RESEARCH METHODS

Research Design

A quantitative study was conducted to see if there was a difference in student achievement in schools that use the standards-based grading approach as opposed to a school that uses the traditional grading system. The independent variables are the current learning standards or objectives and student achievement scores are the dependent variables.

Study Group Description

The study group is elementary students. The students attend elementary schools in a Midwestern metropolitan area. All three school districts in this study have over a 90% graduation rate and the Free/Reduced Lunch rate ranges from 29% in School District B to 56% in School District A.

Data Collection and Instrumentation

The data will be collected from the DESE website. English Language Arts and Math Msip Scores were collected from the DESE website.

Statistical Analysis Methods

The methods used for analysis will be descriptive analysis of Msip Scores for ELA and Math. The data will be compiled from the DESE website for the descriptive analysis. Two t-tests will compare data from the Missouri DESE website. For the t-test, the scores were broken into two categories: standards-based scores from and traditional grading scores. The mean, mean D, t-test, df, and p-value were concluded from this test. The Alpha level was set at 0.25 to test the
null hypothesis: There is no difference in student achievement between standards-based grading and traditional grading systems.
FINDINGS

ENGLISH LANGUAGE ARTS-Descriptive Analysis

Figure 1

School District A-Standards-Based Grading

<table>
<thead>
<tr>
<th>English Language Arts Msip Total Percentages</th>
<th>BB</th>
<th>Basic</th>
<th>Prof</th>
<th>Adv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>7.2</td>
<td>40.1</td>
<td>30.9</td>
<td>21.7</td>
</tr>
<tr>
<td>2013</td>
<td>8.1</td>
<td>42.2</td>
<td>32.4</td>
<td>17.3</td>
</tr>
<tr>
<td>2012</td>
<td>5.6</td>
<td>50.0</td>
<td>29.0</td>
<td>15.4</td>
</tr>
<tr>
<td>2011</td>
<td>5.7</td>
<td>33.1</td>
<td>36.3</td>
<td>24.8</td>
</tr>
</tbody>
</table>

Mean                     6.65  41.35  32.15  19.8
Median                   6.45  41.15  31.65  19.5
St. Dev.                 1.212436 6.956292 3.096773 4.251274
Max                      8.1   50.0  36.3  24.8
Min                      5.6   33.1  29.0  15.4

When analyzing the English Language Arts percentages for School District A, the highest percentage is in 2012 where 50% of the students scored in the Basic category. The lowest
percentage was also in 2012 where 5.6% of students scored Below Basic in ELA. In the Advanced category for ELA, the highest percentage was in 2011 with 24.8% and then in 2012 it dropped to 15.4%. In 2013, the students in the Advanced category rose to 17.3% and continued to raise in 2014 to 21.7%, just a bit below the highest percentage in 2011. In the Proficient category for ELA, the highest percentage was in 2011 with 36.3% and then dropped to a low of 29% in 2012. The percentage jumped again in 2013 to 32.4% and then dropped slightly again in 2014 to 30.9%. In the Basic category, the highest percentage rate was in 2012 with 50%, raising its percentage considerably higher than in 2011, where the percentage was at a low of 33.1%. This is the largest increase on the chart. In 2013, the percentage dropped from 50% to 42.2% and continued to drop in 2014 to 40.1%. In the Below Basic category, the lowest percentage was in 2011 with a percentage rate at 5.7. The following year, 2012, the rate dropped very slightly to 5.6%. In 2013, the students who scored Below Basic jumped to a high of 8.1% and then dropped slightly to 7.2%. In 2011, the percentages were the highest in the Proficient and Advanced category. In 2013 and 2014 the percentages rose in the Below Basic category with 8.1% and 7.2% of students scoring low in ELA.
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Figure 2

School District B- Standards-Based Grading

<table>
<thead>
<tr>
<th>English Language Arts</th>
<th>Msip</th>
<th>Total Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB Basic Prof Adv</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>40.9 33.9 23.9</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>29.6 37.4 30</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>34.9 31.8 31</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>31.2 35.6 29.6</td>
</tr>
</tbody>
</table>

Mean
Mean
Median
Median
St. Dev.
St. Dev.
Max
Max
Min
Min

District B Eng. Language Arts

- Blue: 2014
- Red: 2013
- Gray: 2012
- Yellow: 2011
When analyzing the English Language Arts percentages for School District B, the highest percentage rate was in 2014 where 40.9% of the students scored in the Basic category. The lowest percentage was also in 2014 where 23.9% of students scored in the Advanced category in ELA. In the Advanced category for ELA, the highest percentage was in 2012 with 31% just a bit above the percentage in 2011, which was 29.6%. In 2013, the students who scored in the Advanced category in ELA dropped slightly from the year before to 30% and in 2014 the percentage dropped the most to 23.9%. In the Proficient category for ELA, the highest percentage was in 2013 with 37.4% which raised the most from the lowest percentage rate in 2012 with a percentage rate of 31.8%. In the Proficient category, the percentage rates start high in 2011 and drop in 2012. It elevates in 2013 and then drops again in 2014. The trend in this category rises and falls. In the Basic category, the highest percentage rate was in 2014 with a percentage rate of 40.9. The highest increase in percentages was in 2014. In 2011, the percentage rate was 31.2 and increased in 2012 to 34.9%. In 2013, the percentage dropped to a low of 29.6% and then increased to its highest percentage point in 2014. Zero percent of students in School District B score Below Basic in ELA.
Figure 3

School District C- Traditional Grading

<table>
<thead>
<tr>
<th>English Language Arts Msip Total Percentages</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BB</td>
<td>Basic</td>
<td>Prof</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>48.4</td>
<td>32.8</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>44.9</td>
<td>34.1</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>39.2</td>
<td>35.4</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>37.4</td>
<td>36.2</td>
</tr>
</tbody>
</table>

Mean 0 42.475 34.625 19.675
Median 0 42.05 34.75 19.3
St. Dev. 0 5.081584 1.493039 3.233548
Max 0 48.4 36.2 23.3
Min 0 37.4 32.8 16.8
When analyzing the English Language Arts percentages for the School District C, the highest percentage is in 2014 where 48.4% of the students scored in the Basic Category. The lowest percentage rate was also in 2014 where 16.8% of students scored in the Advanced category in ELA. In the Advanced category for ELA, the highest percentage rate was in 2012 with 23.3% just elevated a bit from 2011 where the percentage rate was 21.5. In the Advanced category, the percentage rates start in the 20th percentile and then drop to the 17th and 16th percentile in 2013/2014. In the Proficient category, the highest percentage rate is in 2011 with 36.2%. During the years of 2012-2014, the percentage rates slightly declines each year. In the Basic category, the percentage rate increases each year. In 2011 the percentage rate is 37.4% and increases slightly to 39.2% in 2012. In 2013, the percentage increases the highest to 44.9% and continues to rise in 2014 to 48.4%. Zero percent of students in School District C scored Below Basic in ELA.
MATH

Figure 4

School District A - Standards-Based Grading

<table>
<thead>
<tr>
<th>Math Msip</th>
<th>Total Percentages</th>
<th>BB</th>
<th>Basic</th>
<th>Prof</th>
<th>Adv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td></td>
<td>7.9</td>
<td>41.4</td>
<td>35.5</td>
<td>15.1</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td>5.2</td>
<td>53.2</td>
<td>33.5</td>
<td>8.1</td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>0</td>
<td>40.1</td>
<td>45.1</td>
<td>11.1</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>0</td>
<td>30.6</td>
<td>47.1</td>
<td>19.7</td>
</tr>
</tbody>
</table>

Mean 3.275 41.325 40.3 13.5
Median 2.6 40.75 40.3 13.1
St. Dev. 3.939014 9.265483 E3:E6 5.030573
Max 7.9 53.2 47.1 19.7
Min 0 30.6 33.5 8.1
When analyzing the math percentages for School District A, the highest percentage is in 2013 where 53.2% of students scored in the Basic category for Mathematics. The lowest percentage rate was in 2013 where 5.2% of students scored in the Below Basic category in Math. In the Advanced category for Math, the highest percentage rate was in 2011 at 19.7%. The percentage rate then drops sharply to 11.1% in 2012 and continues to drop in 2013 to a low of 8.1%. In 2014, the Advanced category rises to 15.1%. In the Proficient category, the highest percentage rate is in 2011, with 47.1% of students scoring in this category. The percentage falls slightly in 2012 to 45.1% and then drops significantly to 33.5% in 2013. In 2014, the percentage rate in the Proficient category rises slightly from 2013 to 35.5%. In the Basic category, the 2011 percentage rate was at its lowest rate on the chart at 30.6%. It continues to rise to 40.1% in 2012 and increase to its highest rate in 2013 at 53.2%. In 2014, the percentage rate drops significantly to 41.1% just slightly higher than 2012. In the years 2011 and 2012, zero percent of students scored in the Below Basic category in Mathematics. However, in 2013 the percentage rate increases to 5.2% of students scoring Below Basic in Math. In 2014, the percentage of students who scored in the Below Basic category increases again to 7.9%. This is the highest percentage rate for the Below Basic category on this chart.
When analyzing the Math percentages for School District B, the highest percentage rate is in 2011 where 41.3% of the students scored in the Proficient category for Math. The lowest
percentage rate was in 2014 where 19.9% of students scored in the Advanced category in Math. In the Advanced category, the percentages begin in 2011 with a percentage rate of 25.5 and then drop slightly in 2012 to 22.9%. They rise again in 2013 to 25.1% and then drop the most in 2014 to 19.9%. In the Proficient category, the percentages begin in 2011 at 41.3%. The percentages fall in 2012 to 39.5% and in 2013 to 36.1%. In 2014, the percentages in the Proficient category rise to 39.8%. In the Basic category for Math, the percentages begin with a low of 29.1% and significantly rise in 2012 to 36%. In 2013, the percentage rate falls slightly to 34.6% and then increases in 2014 to the highest rate of 38.1%. Zero percent of students in School District B score in the Below Basic category in Math.

Figure 6

School District C-Traditional Grading

<table>
<thead>
<tr>
<th>Math Msip Total Percentages</th>
<th>BB</th>
<th>Basic</th>
<th>Prof</th>
<th>Adv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>0</td>
<td>40.6</td>
<td>37.7</td>
<td>17.2</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>48.8</td>
<td>34.6</td>
<td>14.1</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>33.9</td>
<td>46.5</td>
<td>16.9</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>38</td>
<td>42.9</td>
<td>16</td>
</tr>
</tbody>
</table>

| Mean                        | 0  | 40.325 | 40.425 | 16.05 |
| Median                      | 0  | 39.3   | 40.3   | 16.45 |
| St. Dev.                    | 0  | 6.287222 | 5.303694 | 1.396424 |
| Max                         | 0  | 48.8   | 46.5   | 17.2  |
| Min                         | 0  | 33.9   | 37.7   | 14.1  |
When analyzing the percentage rate for Mathematics in School District C, the highest percentage rate is in 2013 in the Basic category with 48.8% of students scoring in this category. The lowest percentage rate on the chart is in 2013 in the Advanced Category where 16% of students scored in this category. In the Advanced category, the percentage rates are close in number with a slight increase from 2011 at 16% to 16.9% in 2012. In 2013, there is a slight decrease in percentages to 14.1%. In 2014, the percentage rate in the Advanced category rises to a high of 17.2% which is a slight increase from 2011 and 2012. In the Proficient category, the highest percentage rate is in 2012 where 46.5% of students scored in this category. This is an increase from 2011 where the percentage rate was slightly lower at 42.9%. In 2013, the percentage rate dropped significantly to 34.6% in the Basic category and then in 2014 the percentage rose slightly to 37.7%. In the Basic category, the highest percentage rate was in 2013 where 48.8% of students scored in this category. The trend in this category drops slightly
then rises significantly and then drops again. In 2011, the percentage rate is 38% and then it falls to 33.9%. In 2013 the percentage rate increases significantly to a high of 48.8% and then drops to 40.6% in 2014. Zero percent of students in the School District C scored Below Basic in Mathematics on this chart.
t-Test Results

Figure 7

School District A compared with School District C ELA and Math Msip Scores (Basic Scores)

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards (n=4)</td>
<td>41.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional (n=4)</td>
<td>25.82</td>
<td>1.13</td>
<td>0.26</td>
<td>6</td>
<td>0.802686</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The data collected from the Missouri DESE website contains the percentage of students that scored in the Basic category in ELA and Math. The scores were reported from School District A which uses the standards-based grading approach in their elementary schools and School District C which uses the traditional grading approach in their elementary schools. The mean of the standards-based grading scores was 41.35 and the mean of the traditional grading scores was 25.82. The Mean D, or difference between the two groups, was 1.13. The t-test result was 0.26 and the df was 6. The null hypothesis states that there is no difference in student achievement between standards-based grading and traditional grading systems. The null hypothesis is not rejected because the p-value, 0.802686, is higher than the alpha level, 0.25. This test shows that the standards-based grading approach does not significantly impact the Msip Scores in ELA and Math in Schools Districts A and C.
**t-Test Results**

Figure 8

**School District B compared with School District C ELA and Math Msip Scores (Basic Scores)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards (n=4)</td>
<td>38.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional (n=4)</td>
<td>40.33</td>
<td>1.58</td>
<td>0.47</td>
<td>6</td>
<td>0.652985</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The data collected from the Missouri DESE website contains the percentage of students that scored in the basic category in ELA and Math. The scores were reported from School District B which uses the standards-based grading approach in their elementary schools and School District C which uses the traditional grading approach in their elementary schools. The mean of the standards-based grading scores was 38.75 and the mean of the traditional grading scores was 40.33. The Mean D, or difference between the two groups, was 1.58. The t-test result was 0.47 and the df was 6. The null hypothesis states that there is no difference in student achievement between standards-based grading and traditional grading systems. The null hypothesis is not rejected because the p-value, 0.652985, is higher than the alpha level, 0.25. This test shows that the standards-based grading approach does not significantly impact the Msip Scores in ELA and Math in School Districts B and C.
CONCLUSIONS AND RECOMMENDATIONS

The outcomes reported from this study show that Missouri Msip scores do not show a difference between schools that use standards-based grading and schools that use the traditional grading approach. The findings show that there is not a significant difference in student achievement between standards-based grading and traditional grading systems. Both t-test results indicated that the p-value was slightly higher than the alpha level of 0.25 with one test having a p-value of 0.65 and the other p-value of 0.80. If the p-value is higher than the alpha level it is not rejected. In this study, the null hypothesis was not rejected.

The conceptual underpinning of this study emphasizes the benefits of standards-based grading. Tying a specific grade to a specific learning standard defines the idea of a standards-based grading approach. Although standards-based grading lends itself towards a more reflective approach to a student’s academic achievement, it does not lend itself to higher student achievement according to this study. This study does not reveal a significant difference in student Msip Scores in school districts that use the traditional grading approach and school districts that use the standards-based grading approach. The findings reveal that standards-based grading approach does not prove to be a factor when comparing student Msip Scores.

The benefits of effective grading do not solely need to be based upon one approach. Perhaps a combination of different approaches would increase student achievement. This study defines many benefits of the standards-based grading approach and emphasizes the importance of aligning grading with standards. Standards-based grading does not entail giving a zero for missing work, nor does it rely upon differently weighted assignments that are averaged at the
end of the marking period. Educators should consider using more than one approach when assessing a student’s work. “Because no single grade method adequately serves all purposes, schools must first identify their primary purpose for grading, and then select or develop the most appropriate approach” (Guskey 2001 Grading and reporting serve a variety of purposes section, para 4).

After concluding this study there are further studies that could be conducted. Comparing specific grade level test scores with a year when the traditional grading approach was used and a year when standards-based grading was used would perhaps portray a better picture of whether or not there is a significant difference between standards-based grading and traditional grading. Comparing specific grade level test scores gives educators precise evidence whether or not a change in grading approaches is beneficial. Although as educators we are always trying to find the best and most accurate way to measure our student’s performance, the one thing that we must always keep in mind is “formative or otherwise- all assessments are imprecise to one degree or another” (Marzano 2010).
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