

Balanced, Accurate & Authentic Assessment

Tom Schimmer



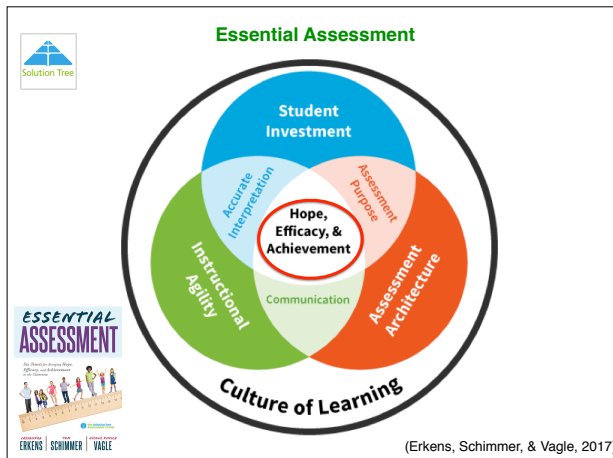
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"The formative and summative purposes of assessment can be so intertwined that they are **mutually supportive** rather than conflicting. Unless this is done, formative assessment cannot achieve its full potential to improve learning."

-P. Black (2015)



Inaccurate **formative assessment** has the potential to misinform students about what comes next.



Inaccurate **summative assessment** has the potential to misinform others about levels of proficiency.

“Validity is in question when grades mean different **things** in different **schools** or **subjects**, in different **teachers’ classes**, and for different **types of student**.”

-Susan Brookhart (2013)

Validity & Reliability

(Heritage, 2010)

- **Validity** refers to whether an assessment is measuring what it is intended to measure...and is related to a specific use of an assessment or the interpretation of the data
- **Reliability** refers to how consistently an assessment measures what it is intended to measure. If a test is reliable, the results should be repeatable.

“Failure and success are not episodes, **they are trajectories.**”

-Rosabeth Moss Kanter
Confidence, p. 9

“Expectations about the **likelihood of eventual success** determine the amount of effort people are willing to put in. Those who are convinced that they can be successful in carrying out the actions required for a successful outcome - who have the **self-efficacy** - are likely to **try harder** and **persist longer** when they face obstacles.”

-Rosabeth Moss Kanter
Confidence, p. 39

“It’s not mistakes that cause winners to lose, **it’s panic**. Panic is a sudden, **anxious feeling of loss of control**, and panicking can make a small fumble worse, by causing people to lose their heads and forget to think clearly.”

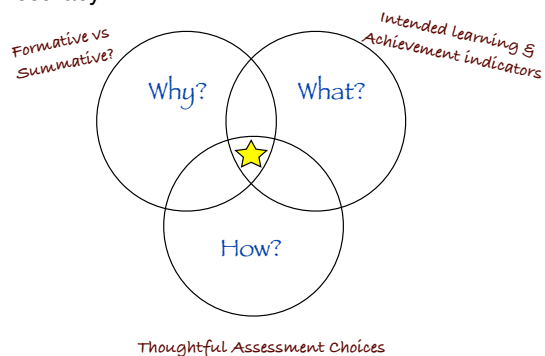
“Panic is the **enemy of good decision-making** under pressure.”

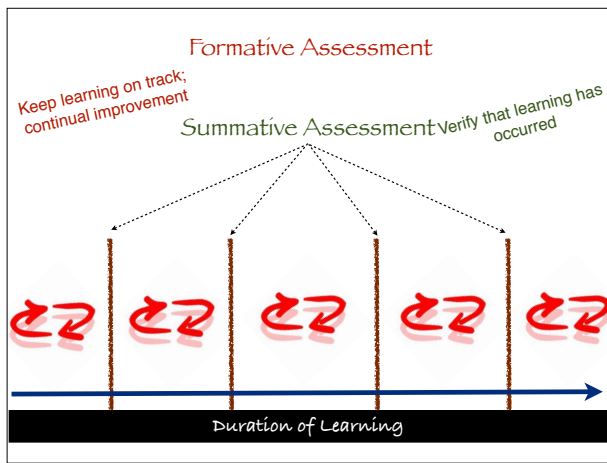
-Rosabeth Moss Kanter
Confidence, p. 68



Accuracy

Assessment Accuracy





Analyzing Standards

Nicole Dimich Vagle (2015) "Design in 5"

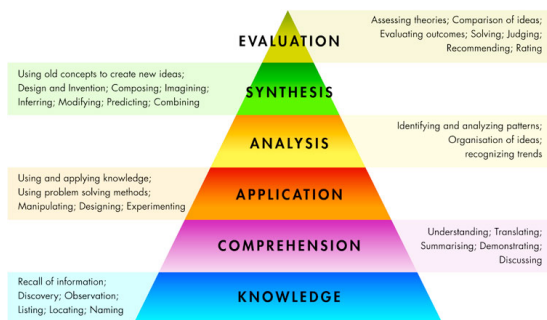
1. Circle the **verbs** (and other words that indicate what students should do) in the standards.

- "These words lead us to the cognitive level required and the type of work in which our students need to engage." (pg. 25)

2. Underline **key concepts**, **vocabulary words**, and **contextual information**.

- "Consideration of concepts and vocabulary also helps inform instruction and the type of academic language pertinent to the grade level and content area." (pg. 26)

BLOOMS TAXONOMY



Altard, G., Herbert, P., & Frangenheim, E. (2006). Bloom's Taxonomy Overview. Innovative Teachers Companion, 176 - 224. ITC Publications.

15
20

First five incorrect?

Last five incorrect?

One question worth five incorrect?

75%

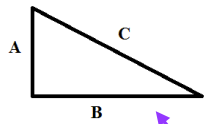
The raw score doesn't always tell the whole story

Are all questions at the same cognitive complexity?

Could you utilize more "scalable" questions?

Could I create a "level" progression?

Outcomes vs Targets



$$A^2 + B^2 = C^2$$

$$\frac{35}{50} \quad 70\%$$

TEST

Section (A)

$$\sqrt{25} \quad 9^2$$

$$\frac{24}{25}$$

Section (B)

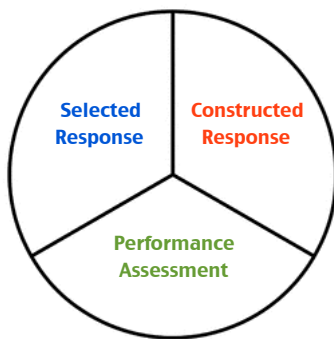


$$\begin{aligned} 6^2 + 8^2 &= x^2 \\ 36 + 64 &= x^2 \\ 100 &= x^2 \\ \sqrt{100} &= \sqrt{x^2} \\ x &= 10 \end{aligned}$$



$$\begin{aligned} 12^2 + 5^2 &= 13^2 \\ 144 + 25 &= 169 \\ 169 &= 13^2 \\ \sqrt{169} &= \sqrt{13^2} \\ x &= 13 \end{aligned}$$

Under what circumstances or conditions would each of the following assessment methods be most appropriate?



Which two fractions are equivalent?

(A) $\frac{6}{2}$ & $\frac{2}{6}$ ←

(B) $\frac{5}{9}$ & $\frac{10}{18}$ *It comes at a "pivotal" moment.*

(C) $\frac{1}{5}$ & $\frac{2}{5}$

(D) $\frac{4}{7}$ & $\frac{4}{9}$

Exit Slip

$$\frac{1}{3} + \frac{3}{7} =$$

$$\frac{3}{5} - \frac{2}{7} =$$

$$\frac{5}{12} + \frac{11}{18} =$$

Math Practices	Meeting	Approaching	Beginning
Problem Solving (claim)	A reasonable answer is clearly provided in a written sentence	A reasonable answer is provided, but is not written in a complete sentence	The claim is not reasonable or does not answer the problem being asked to solve
Concepts & Procedures (support)	The model visually represents the situation; the equations support the model; the answer is reasonably accurate	The connection between the model and the equations is unclear; or there is a significant calculation error	Either the model or equations are missing
Communication & Reasoning (explain)	The strategies used to solve the problem are clearly explained with words (units). For example, "I <i>divided the original cost into fourths to find the discounted percentage of 25%.</i> "	The strategies used to solve the problem are explained with numbers. For example, "I <i>divided 150 by 4 to get 37.5</i> "	The strategies are not clearly explained. It's difficult for the reader to understand the procedures used to solve the problem.

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Name:
Period:
Date:

Summative Assessment: Ratios and Proportional Relationships

Reflecting on my understanding of the concepts

Common Core Math Standards	Meeting	Approaching	Beginning	Insufficient Evidence
CCSS.MATH.CONTENT.6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	The student clearly described the relationship with unit labels when appropriate.	The student described ratios, but did not clearly label the units.	The student attempted to describe the ratio relationships, but the ratios were inaccurate.	The student did not attempt to describe the ratio relationships.
CCSS.MATH.CONTENT.6.RP.A.2 Understand the concept of a unit rate, and use ratio language in the context of a ratio relationship.	The student identified and clearly named the unit rate when appropriate.	The student identified the unit rate, but did not clearly label the units.	The student attempted to describe the unit rate, but the rates were inaccurate.	The student did not attempt to describe the unit rate.
CCSS.MATH.CONTENT.6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	The student consistently provided clear reasoning through models and words, and correctly solved all of the problems involving ratios and percents.	The student provided reasoning through models and/or words, and correctly solved most of the problems involving ratios and percents.	The student attempted to show reasoning using models, but the models and/or answer was unreasonable.	The student did not attempt - or showed no understanding - to solve the ratio and percentage problems.

Reflecting on my math practices

Math Practice	Description	Self-evaluation (Consistently, Usually, Sometimes, Rarely)
Problem Solving	I provided a <i>claim</i> . My answers were reasonable. I labeled the units.	
Concepts & Procedures	I provided models to show the patterns or rules; my equations used the pattern or rule to find the answer.	
Communication & Reasoning	I clearly explained the patterns or rules in words.	

Reflecting on my learning habits

Learning Habit	Description	Self-evaluation (Consistently, Usually, Sometimes, Rarely)
Respect	I stayed on task during class; listened to others; demonstrated a positive attitude; took care of the materials.	
Responsibility	I completed my homework on time to the best of my ability; I came to class prepared and took notes during class.	
Collaboration	I shared my ideas with classmates and asked questions when I didn't understand.	
Perseverance	I had a growth mindset to learning the concepts; I asked for help (office hours, etc.) when I was confused.	

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Feedback

Five Keys to Effective Feedback

1. Does it elicit a *productive response*?
2. Does it identify *what's next*?
3. Is it *targeted* to the learner?
4. Is it *strength-based*?
5. Does it *cause thinking*?



Keep doing this...

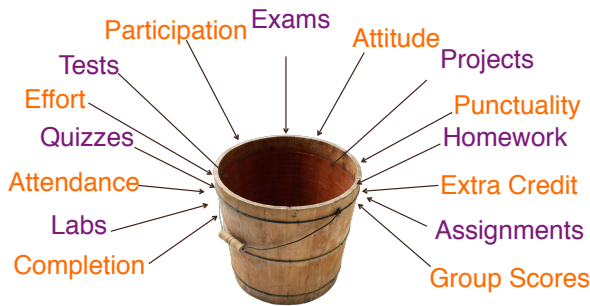


This needs fixing...

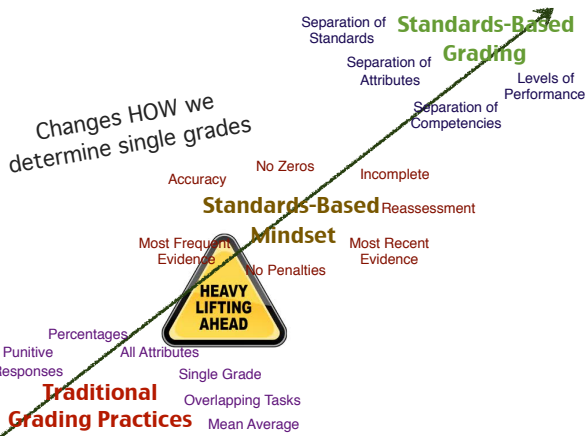


Grading from the Inside Out

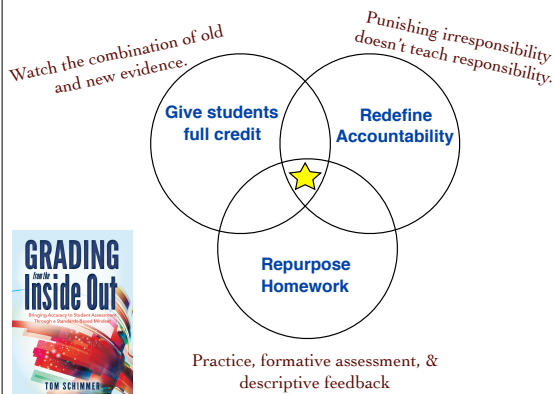
Traditional Grading?



Mathematical precision through the complex combination of weighting and finding the mean average.



The Standards-Based Mindset



"A common purpose for homework...is to provide students with opportunities to **practice skills** and **processes** in order to increase their speed, accuracy, fluency, and conceptual understanding. Students should be **fairly familiar** with the relevant skill if they are going to practice it for homework."

-Classroom Instruction that Works (p. 106)
Dean, Hubbell, Pittler, & Stone

Accuracy Questions related to *Grading Homework*

- *Who* did the work?
- Was our instruction *that flawless*?
- Was the student *clear on directions*? Were we?
- Are you emphasizing *learning* or points/compliance.
- Will your feedback produce a *productive response*?
- When are students supposed to take *academic risks*?
- What is the *intent* of the homework? (Practice v

Homework as Practice?

(Schimmer, 2016)

- Is it learning-centred?
- Is it necessary?
- Is it reasonable?
- Is it of high quality?
- Are the students ready?
- Were the students involved?

Thank You!

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