Doubling the Speed of Learning: Activating the Keys of Formative Assessment to Create a Culture of Learning

Tim Brown

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Desired Outcomes

- Explore the relationship between formative assessment and student achievement.
- Examine ways in which teams align their assessment practices to increase student achievement.
- Evaluate important considerations in the assessment process

The Half-Life of Facts: Why Everything We Know Has An Expiration Date

"Knowledge in most fields evolves systematically and predictably, and this evolution unfolds in a fascinating way that can have a powerful impact on our lives."

> -Arbesman, The Half-Life of Facts: Why Everything We Know Has an Expiration Date, 2012

"Black and Wiliam (1998b) argue that formative assessment, properly employed in the classroom, will help students learn what is being taught to a substantially better degree. They support this argument with evidence from their research review (1998a), a meta-analysis in which they conclude that student gains in learning triggered by formative assessment are 'amongst the largest ever reported for educational interventions.'"

-Popham, Transformative Assessment (2008), p. 61

Changes in How We Think About Assessment				
I used to think	But now I think			
	it happens throughout the unit for student information use to guide teaching the next day inform instruction and when to move forward compare to the mastery of the standard some assessments are to take the pulse of where they are both teacher and student should track the data application of learning reflection of the student and the teacher to show more complex understandings data shared with team to enhance our skills created by teachers anytime it's a verb it's about feedback it's about feedback			



The Power of Assessment

"You can enhance or destroy a student's desire to succeed in school more quickly and permanently through your use of assessment than with any other tools you have at your disposal."

> —Richard J. Stiggins Assessment Training Institute

Learning Questions of Teams

- 1. What do we want our students to learn? (essential, guaranteed, and viable curriculum)
- 2. How will we know they are learning? (frequent, team-developed, common formative assessments)
- 3. How will we respond when they don't learn? (timely, directive, systematic intervention)
- 4. How will we respond when they do learn? (timely enrichment and extension)



Common Assessments ~ How?

- Agreement on essential skills
- Agreement on dates
- Agreement on the method of assessing those skills (selected response, constructed response, performance, performance task)
- Agreement on how to score and report scores (raw score, percentage, rubric, scaled score, checklist)
- Agreement on proficiency or cut score
- Agreement on protocol for administering
 the assessment

"The education profession will not mature as a profession until professional dialogue focuses on evidence of student learning rather than opinions."

—Hattie (2009), pp. 252, 259

3rd Grade Math							
Teacher: Petty							
A Question of Numbers		Questi	ons				
Student Name	Math CFA	1	2	3	4	5	6
lise	Absent						
Emily		8 X	×	x	x	×	х
Pedro		7 X	×		x	x	x
Alexia		6 x		х	x	x	
Adrian		8 X	x	x	×	×	х
Aaron		2			х	х	
Luis		4	×	х	x	x	
Cristal		3	×		x	x	
Brendon		3	×		х	x	
Janyxa		5 x	×	х		x	
Brandon	Absent						
Ashia		2			х	х	
Seleste		5 X	×	х		x	
Andrew		5 X	×		х	х	
Anahi		7 X		х	х	х	x
Meleny	Absent						
Guadalupe		4	×			×	x
Angel		5 X			х	х	х
Luis		8 X	×	х	х	х	х
Juan		1		x			
Jasmine		3	x		x	x	
Jenifer		8 X	×	х	х	х	х
Salvador		6 X	×	x	x	×	
La-Bria		6	×	х	x	x	x
Dela		4 X		х		x	
Jorge		2			х	х	
Litzi		5	х		x	x	х
Issac		8 x	×	х	x	x	x
Percentage at mastery							
	•		•		•	•	

Charting Our Results—How Did We Do?								
	As	sessmen	t Result	s: A Qu	estion o	fNumbe	ers	
Teachers	Total Number of Students	Percentage of Students Who ar of Mastered Each Question						
		1	2	3	4	5	6	
Mrs. Petty	25	48	60	48	72	88	36	
Mr. Garcia	27	67	85	74	96	100	52	
Mr. Swift	26	15	37	48	56	96	52	

Flexible Grouping Plan (3)					
	Students who need more time	Students who will benefit from more practice	Students who will benefit from enrichment or extension		
Question 1					
Question 2					
Question 3					
Question 4					
Question 5					
Question 6					

Data Protocol

1. What Does the Data Tell Us?

- What are possible causes for these data and results?
 - Student? (knowledge, skills, and dispositions)
 - Infrastructure? (schedules, programming, and resources)
 - Curriculum? (design and implementation)
 - Instruction? (methods, materials, and resources)
 - Teachers? (knowledge, skill, and dispositions)

Data Protocol

- Was there a consistent pattern in the mistakes?
- Which instructional practices proved to be most effective?
 - Time?
 - Resource?
 - Strategy?
 - Product?
 - Motivation?

Data Protocol

2. What are we going to do about it?

- What will be our intervention plan?
- What classroom checks will we use and when?



Principles of Assessment for Learning

I understand and can articulate in advance of teaching the achievement targets students are to hit. Low 1_____ 2____ 3____ 4____ 5____ High My students are informed regularly about those targets in terms they can understand, in part through the study of the criteria by which their work will be evaluated and samples of high-quality work. Low 1 2 3 4 5 High My students can describe what targets they are to hit and what comes next in their learning. Low 1_____ 2____ 3____ 4____ 5____ High I can transform those targets into dependable assessments that yield accurate information. Low 1 2 3_____ 4 5____ High I use classroom assessment information to revise and guide teaching and student learning and share this information with students. Low 1_____ 2____ 3____ 4____ 5____ High The feedback I give to students is descriptive, constructive, frequent, and immediate, helping students know how to plan and improve. Low 1 2 3 4 5 High My students are actively, consistently, and effectively involved in assessment, including learning to manage their own learning through the skills of self-assessment. Low 1 2 3 4 5 High My students actively, consistently, and effectively communicate with others about their achievement status and improvement. Low 1_____ 2____ 3____ 4____ 5____ High I understand the relationship between assessment and student motivation and use assessment to build student success and confidence rather than failure and defeat. Low 1_____ 2____ 3____ 4____ 5____ High

Scenario What Happens When a Student Fails a Test

This is a teacher's response to a parent who requested a conference with the math teacher when he found out that their child had failed a recent test. The teacher opted to write a response to explain his teaching and grading practices. Read the scenario and process the questions at the end.

"I try to teach my math class much as a coach would teach fundamentals in a sport. I teach; we practice; I drill; I re-teach; I ask if students have questions; we have a final rehearsal the day before the quiz/test; and then I assess. On the assessment, the student must show they understand the concept being tested in order to receive partial credit. In the instance with Kendall the concept was adding and subtracting decimals. The key rule is you must line up the decimals and place the decimal point in the correct place in the sum. He did not do this, instead, he confused the rule with one for multiplying decimals. His incorrect answer was 0.23488; the correct answer was 23.488. It might seem like a small error, but the process was completely incorrect, and the answer was off by a factor of 100 times. That's the type of error that results in catastrophic results in the real world. On the other hand, had Kendall simply made an error in addition, but had placed the decimal in the correct place, I would have given partial credit. I hope this explanation helps.

I do not feel a conference is necessary at this point. Kendall is doing fine; he just needs to be more disciplined and careful in his math."

Reaction Statement

Parents should know what happens for their child if they do poorly on an assessment.

Reflection Questions

What are some solid assessment/instructional practices you noticed in the response? What are some "red flags" you noticed in his response? How would teachers at your school respond?

How Can We Create a Result Orientation and Foster Continuous Improvement?

In schools that double student performance, teachers use results from common unit and interim assessments to help members of collaborative teams compare strategies and adopt those that are most effective. Instructional practice is out in the open, the subject of public and professional conversation, and the source of ongoing, job-embedded professional development (Odden & Archibald, 2009).

PLCs "require that [team] members reflect openly and honestly together about their own practice, intentionally seeking ways to do their work better and continually building their capacity to do so." Failure to collect, present, and analyze evidence of student learning and the reluctance to make work public are major barriers to effective professional learning communities (Annenberg Institute for School Reform, 2005).

"One mark of schools that make headway on the achievement gap appears to be their propensity to promote and organize conversations based in evidence of student progress." (Little, 2006, p. 10)

"In our work, we help practitioners frame the next level of work by examining what they are currently doing, looking at evidence of student learning for clues about what is strongest in their practice and where they might see opportunities for improvement, [and] strengthening the capacity of colleagues to work collectively on instructional issues." (Elmore & City, 2007, p. 26)

Excellence in education requires that teachers work in collaborative teams to clarify the learning intentions and success criteria of their lessons, gather evidence of student learning, and discuss the effectiveness of their teaching based on that evidence. "Teachers [need] to share evidence about their teaching with their colleagues"; in fact, "the key question is whether teaching can shift from an immature to mature profession, from opinions to evidence." The education profession will not mature as a profession until professional dialogue focuses on evidence of student learning rather than opinions (Hattie, 2009, pp. 252, 259).

For the first two years, none of the schools in the study experienced gains in student achievement. The dramatic gains only occurred when collaborative teams focused the collaborative inquiry on "jointly and recursively identifying appropriate and worthwhile goals for student learning; finding or developing appropriate means to assess student progress toward those goals; bringing to the table the expertise of colleagues and others who can assist in accomplishing these goals; planning, preparing, and delivering lessons; using evidence from the classroom to evaluate instruction; and, finally, reflecting on the process to determine next steps" (Gallimore et al., 2009, p. 549).

"In high-poverty schools that are helping students learn at high levels, teachers look at student achievement data" to identify which students need additional support and which need greater challenges. But this evidence of student learning is also being used to inform teacher practice. Teachers discuss why one member of the team is having success teaching a particular concept and another is not, and "what the more successful teacher can teach the less successful teacher" (Chenoweth, 2009, p. 41).



Scenario Reassessment: How will we respond when students don't learn?

Ms. Mini Chance is a new member of a dynamic biology team at Still Waters High School. Her team developed common assessments for every unit of instruction. They agreed to stay evenly paced, give the test on the same date, and meet collaboratively to look at results.

As the team reviewed the latest results, discussions quickly circled around to how the team would approach this unit next year in order to get better results. They discussed which materials and strategies seemed to work best and noted them in their team notebook. Mr. E. Nuff reminded everyone that teachers needed to keep these ideas in mind for planning purposes.

Ms. Chance decided to share a practice she currently used with her students when they didn't perform well on a test. She required any student who scored below 80% to re-engage in the missed items by studying more. When they demonstrated they had put in more time and effort on learning the missed concepts, she allowed them to retake that part of the test. Ms. Chance then changed the score from the first test in her grade book. The other team members listened politely and then resumed their discussions about next year.

After the meeting, Mr. Nuff shared with the team his concerns about Ms. Chance's practice. "Isn't this practice one that inflates student grades and potentially skews the grade distributions in the department? Does it prepare students for the real world by giving them a second chance? Isn't it counter to what students experience in college? I'm concerned that students will stop studying for the first test. They'll just wait to see what's going to be on it and then study. That's not fair to our students who do study and do well the first time.

As the veteran team member, he decided to approach Ms. Chance and strongly recommend that she bring her grading practices in line with those of the team. He argued that her practice not only rocked the boat at Still Waters High School, but also lowered team standards and expectations.

Reaction Statement

Schools should have grading guidelines that go beyond designated point values attached to letter grades.

Reflection Questions

Would Mr. E. Nuff fit in at your school? Would Ms. Chance fit in at your school? Is it okay for these practices to coexist in a school? What are some of the essential elements of reassessment?

Essential Standards Unit Plan

What are some assessment	practices that	t address Mr.	Nuff's concerns?

		1	
Essential standard		C Knowledge	
		Reasoning	
		Performance	
		D Product	
End-of-unit assessment			
		When taught	
		Instructional days neede	ed
Knowledge targets	Reasoning targets	Performance skills targets	Product targets
Student-friendly learning	g targets		L
Assessment (Which target or targets are being assessed? How will the assessment be used? Is it a common or individual assessment?)	Connection to standard (How will this assessment set up students for successful mastery of the standard?)	Student involvement (How will students engage in the assessment process?)	Timeline
1			
2			
3			

Essential Standards Unit Plan

Es m de re	ssential standard: Stud ultiplication of two-digit k escribe how that represe lated number sentence.	lent will represent by three-digit numbers and ntation connects to the	 Knowledge Reasoning Performance Product 		
Er wi ite dig sc	nd-of-unit assessment th five items: one digit X ems with two digits X two gits X three digits, and te plution with description	Twenty-five-item test two to three digits, five digits, five items with two en points for problem	When taught: March Instructional days neede	ed: 16	
Kı	nowledge targets	Reasoning targets	Performance skills targets	Product targets	
 Know basic facts 0– 10 Know and use several models to represent number sentences Identify and explain strategies used to solve problems. Compute multiple- digit problems accurately. 					
St	Student-friendly learning targets				
•	 I can recall basic facts, 0–10, quickly and accurately. I can set up multiplication problems 				
	I can use two ways to	solve multiplication problem	IS.		
•	I can use effective stra	tegies to solve problems ar	nd find a workable solution.		
•	I can explain my thinki	ng and strategies.			

As (W are Ho be or as	sessment (hich target or targets be being assessed? ww will the assessment used? Is it a common individual sessment?)	Connection to Standard (How will this assessment set up students for successful mastery of the standard?)	Student Involvement (How will students engage in the assessment process?)	Timeline
1.	Ongoing daily quizzes of basic multiplication facts 0– 10; one formative quiz—that the student chooses— per week (individual)	Students develop accurate and fluent recall of multiplication facts to successfully compute multiple-digit problems.	Students track daily progress and determine when they are ready for a formative quiz each week.	Ongoing, daily
2.	Single-digit X two to three digits using two different models and with explanation of models (formative and summative, common formative)	Students develop fluency with multiple algorithms and mathematical language to explain their thinking.	Students self-assess and peer-assess the pretest and make corrections.	Day three: Pretest (formative)
3.	Two digits X two digits using different models and with explanation of models (formative and individual	Students develop fluency with multiple algorithms and mathematical language to explain their thinking with problems that have two-digit multipliers.	Student self-assess the pretest, make corrections, and set goals for the end of unit test.	Day nine: Formative Day twelve: Formative
4.	Two-digit X three- digit numbers (mysterious multiplication) (formative, common)	Students use multiplication understanding to solve problems and identify workable solutions.	Students self-assess, select appropriate practice activities, and set goals for end of unit assessment.	Day fourteen: Formative Day sixteen: End of unit

Essential standard: W.9–1 analysis of substantive topic sufficient evidence.	0.1—Write arguments to supp is or texts, using valid reasonin	ort claims in an g and relevant and	 Knowledge Reasoning Reasoning 	kills
End-of-unit assessment: F persuasive essay that includ and defend it with relevant: A choice of coveral articles u	tead an article on a contentiou es an analysis of the topic. The and sufficient evidence.	s topic, and write a n, take a stand	When taught: November Instructional days needed: Nineteen	
Knowledge Targets	Reasoning Targets	Performance Skills Targets	Product Targets	
 Organize essay and paragraph. Demonstrate basic writing mechanics. 	 Analyze text for key ideas. Explain reasoning for stance taken. Identify and include relevant and sufficient evidence. Select and use persuasive language. Sequence written text in a cohesive and organized manner. 	 Demonstrate word processing skills. Demonstrate understanding and use of all steps in the writing process. 	 Write an effective introductory sentence. Craft a cohesive, well-organized, and mechanically corre analysis, and support of a claim. Draft multiple-paragraph essay. 	paragraph, text
Student-friendly learning	targets:			
 I can analyze nonfiction 	text for key ideas.			
 I can make a claim and 	use relevant and sufficient evi	dence to support it.		
 I can organize and expl 	ain my ideas in writing.			
 I can use correct spellin 	g, punctuation, and grammar.			

Sample ELA Essential Standards Unit Plan

This is a sample essential standards unit plan for grade 9 English language arts.

I can explain my thinking and strategies.

					ι.,
Time Line	Day three	Day six: Rough draft Day eight: Final draft	Day ten	Days eleven through fifteen	
Student Involvement (How will students engage in the assessment process?)	Students self-assess and set goals for improving persuasive writing skills.	Students self-assess and peer-assess the pretest and revise.	Students analyze quiz results to identify growth targets.	Students peer-assess and collaboratively score sample papers.	
Connection to Standard (How will this assessment set up students for successful mastery of the standard?)	Students demonstrate baseline persuasive writing skills.	Students practice comprehension and analysis of text, as well as paragraph organization.	Students develop accurate use of mechanics and ability to self-edit.	Students combine all skills in a finished product.	
Assessment (Which target or targets are being assessed? How will the assessment be used? is it a common or individual assessment?)	 Mascot persuasive paragraph (common formative, individual) 	Text analysis paragraph (formative and summative, individual)	Mechanics quiz and paragraph editing (summative, individual)	 Practice essay (formative, individual and partner classes) 	

language arts and literacy in history/social studies, science, and technical subjects. Washington, DC: Authors. Accessed at www.corestandards.org/assets/CCSSI_ELA9620 Source of standard: National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common Core State Standards for English Standards. pdf on February 24, 2017.

What does the data tell us?

What are possible causes for these data and results?

Student? (knowledge, skills, and dispositions) Infrastructure? (schedules, programming, and resources) Curriculum? (design and implementation) Instruction? (methods, materials, and resources) Teachers? (knowledge, skill, and dispositions)

Was there a consistent pattern in the mistakes?

Which instructional practices proved to be most effective?

Time? Resource? Strategy? Product? Motivation?

What are we going to do about it?

What will be our intervention plan?

What classroom checks will we use and when?

Flexible Grouping Plan

	Students who need more time	Students who will benefit from more practice	Students who will benefit from enrichment or extension
Target 1			
Target 2			
Target 3			

Twenty Strategies for Growing Dendrites Dr. Marcia Tate

Writing Story telling Use of mnemonic devices Visuals Movement Role play Visualization Metaphor, analogy, simile Reciprocal teaching and cooperative learning Music Use of graphic organizers Drawing Humor Discussion Games Project-based instruction Field trips Work-study Technology Manipulative



Weekly Exit Tickets

Weekly exit tickets	Wednesday: GLE/CCSS covered
Monday: GLE/CCSS covered	Thursday: GLE/CCSS covered
Tuesday: GLE/CCSS covered	Friday: GLE/CCSS covered

Student	Monday	Tuesday	Wednesday	Thursday	Friday
	PS.32	PS 32	PS 26	PS 30	
	1 2 3	1 2 3	12	1 2	
	1 2 3	1 2 3	12	1 2	
	1 2 3	1 2 3	1 2	1 2	Review
	1 2 3	1 2 3	1 2	1 2	Day
	1 2 3	1 2 3	1 2	1 2	
	1 2 3	1 2 3	1 2	1 2	
	1 2 3	1 2 3	12	12	
	1 2 3	1 2 3	12	12	
	123	1 2 3	12	12	
	1 2 3	1 2 3	12	1 2	
	1 2 3	1 2 3	12	1 2	
	1 2 3	1 2 3	12	1 2	
	1 2 3	1 2 3	12	1 2	
	123	1 2 3	12	12	
	1 2 3	1 2 3	1 2	1 2	
	1 2 3	1 2 3	1 2	1 2	
	1 2 3	1 2 3	1 2	1 2	

1st-Hour Formative Assessment Results March 28–April 3, 2014

Response to Intervention Pass

Response to Intervention	Response to Intervention	
Student's name:	Student's name:	
Week of:	Week of:	
RTI assignment:	RTI assignment:	
Homeroom teacher's initials:	Homeroom teacher's initials:	
Response to Intervention	Response to Intervention	
Student's name:	Student's name:	
Week of:	Week of:	
RTI assignment:	RTI assignment:	
Homeroom teacher's initials:	Homeroom teacher's initials:	
Response to Intervention	Response to Intervention	
Student's name:	Student's name:	
Week of:	Week of:	
RTI assignment:	RTI assignment:	
Homeroom teacher's initials:	Homeroom teacher's initials:	

(Exit Quiz: Grade 10 English Classes ~ Pittman High School, Turlock, CA Monica Hall, Monica Cooke, Ellen Newman, Katie Jeans)

Name:	Period:

Monday: Glossary of Words Review—it's/its and to/two/too Directions: Review the info, then choose the best word for each sentence.

- 1. (It's/Its) a wonderful day today.
- 2. I always wondered if (it's/its) pronounced toe-mato or ta-mato.
- 3. The umbrella has been unstable and finally (it's/its) pole bent in the wind.
- 4. The car is busted; (it's/its) air intake doesn't work anymore.
- 5. She walked (to/two/too) the store alone yesterday.
- 6. He was going (to/two/too) attend the party with his (to/two/too) kids, but it was cancelled because of the rain.
- 7. I can't imagine (to/two/too) many people would be interested in a sewing class.
- 8. He had (to/two/too) dogs, but one of them was (to/two/too) wild and bit him.

Tuesday: In-Text Citation

Directions: Look at the in-text citation information below; correct any mistakes to make these items correct and in MLA format, then write down the mistakes on the lines provided. Example: Samuels said, "wake up" (page 3). Mistakes:

1) <u>Capitalize "W"</u> 2) erase "page" .

adolescent brains" (Co	llins, page 4)	timost importance for the de	
Mistakes: 1)	2)	3)	
2.Volleyball is the best and it's fun!	sport. Samuel Jenkins stat	es, volleyball is helpful for e	xercise, coordination,
Mistakes: 1)	2)	3)	
Steiner claims that dog	s are the smartest domesti	c animals (Steiner 9, para. 5	, line 2).

Wednesday: Inference and Character Motivation

Directions: Define inference. Then read the passages below and answer the questions that follow each. Be sure to go back and circle clues in the text on number 2.

1. What is the definition of inference? ______

Read the following passage and then answer the question:

The young girl is standing on the corner. She is wearing a bright red jacket, bright red snow pants, and she has a scarf tied around her face and is wearing striped mittens. She looks to the left down the street. She stamps her feet then puts her backpack on the ground and looks to the left down the street again.

2. What inferences(s) can you make from the passage above? Circle the clues that helped you arrive at your inferences(s).

Read the passages and answer the question:

Aaron and his friend Parker play together every day after school. One day Parker showed up with a bell on his bicycle. Aaron knows that his parents believe in earning what you have; Aaron began doing extra chores on his own. He was kind to his sister, helped with dinner, and offered to take the trash out.

- 3. What is Aaron's motivation for doing chores and being kind?
 - a. He knows it's the right thing to do.
 - b. He is hoping his parents will notice and reward him.
 - c. He wants a new bicycle.

It is an election year for local government officials. Previously two of them did not have the support of many government employees in the water treatment facility, but recently the two officials vowed to raise employees' benefits and vote "yes" to give them a raise.

- 4. What is the reason the two government officials are being so supportive?
 - a. It is an election year and they want as many votes as possible.
 - b. They know that giving the employees a raise is the kind thing to do.
 - c. There is no reason; it is a coincidence.

Thursday: Paraphrase

Directions: Read the info and infographic below. Then read the original text below. Highlight or circle the words that you think are specialized words or words that should not be changed when paraphrasing. Underline the words that should be changed.

Reminders:

Paraphrasing should closely follow the sentence structure of the original text.

When using someone else's ideas or opinions, restate them in your own words. Keep in mind that you still need to cite the source.

Paraphrased material is usually shorter than the original passage, taking a somewhat broader segment of the source and condensing it slightly.

The United States, Germany, Japan, and other industrial powers are being transformed from industrial economies to knowledge- and information-based service economies, while manufacturing has been moving

to low-wage countries. In a knowledge- and information-based economy, knowledge and information are the key ingredients in creating wealth.

(Source: Laudon & Laudon 2002, Management Information Systems: Managing the Digital Firm, Prentice Hall, New Jersey.)

Your Paraphrase

Friday: Work Cited

Directions: Look at the works cited page information below; list any mistakes to make these items correct and MLA format.

Johnson, page 7 of 7

Works Cited

Hannes, Evan. "Coming to Terms with Your Grades." Young Adolescent Education Psychology Review, 8.2.

Jensen, Jeremiah. Schools and Their Lunches. Philadelphia, Penguin Press, 1985. Print.

Frank, Janna. McDonald's is Best. New York, Perennial, 1992. Print.

Smith, Katrina. Personal Interview. 10 Oct. 2017.

List the mistakes, then correct them.

1.

2.

3.

4.