Analyzing Student Work
That’s All About the Kids

Presented by
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Research for Better Teaching

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The Formative Assessment for Results Cycle (Lesson Level)

STEP 1
Clarify the Learning Journey
- Learning Targets & Success Criteria
- Communication w/ Students

STEP 2
Infuse Formative Assessments
- After Multiple Lessons
- Daily

STEP 3
Analyze Formative Assessments
- Data-Driven Dialogue
- Data & Student Work Protocols

STEP 4
Take FIRME Action
- Feedback
- Investigation
- Reteaching/Re-engaging/Regrouping
- Moving On
- Extension
Criteria Analysis Protocol

Purpose
- To analyze student work in relation to pre-established success criteria, determining from the evidence in student work the degree to which each communicated criterion is met—does not yet meet, meets, or exceeds—and noting individual student misconceptions, gaps, errors, and insights
- To lead to effective and targeted FIRME action

Suited for Which Type of Data
- Any constructed-response item for which the success criteria have been identified and communicated to students (during or after the unit)

Materials
- Criteria Analysis Table: Success Criteria or Criteria Analysis Table: Rubric (depending on if using a list of success criteria or a rubric)
- Data-Driven Dialogue: Note-Catcher
- Student work to be analyzed (generally recommended to select work with a range of quality)

Process

<table>
<thead>
<tr>
<th>Review and do task</th>
<th>Engage in Data-Driven Dialogue</th>
<th>Prepare to take FIRME action</th>
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<td>Phase 1: Predict</td>
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<td>Phase 2: Go Visual</td>
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<td>Phase 3: Observe</td>
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<td>Phase 4: Infer/Question</td>
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Review and Do Task
- Review relevant unit essentials, learning targets, success criteria, and assessment items.
- Do the task with your team, share solutions and strategies, and consider how students might have approached the task.
- Brainstorm what students would need to know and be able to do to complete the task successfully.

Phase 1: Predict
- How do you think students performed?
- What criteria/criterion do you think they will do well on?
- What criteria/criterion do you think they will have trouble with?
- What errors or confusions do you anticipate students will make/have?
- Based on what assumptions?

Phase 2: Go Visual
- Use either the Criteria Analysis Table: Success Criteria or the Criteria Analysis Table: Rubric, illustrated below.
- Examine each piece of work, determining to what extent each student meets each criterion.
- Input the data into the table.

(continue next page)
Phase 3: Observe

- What patterns do you observe across several pieces of work? Examine the table by columns. Examine the summary data for each criterion.
- What do you notice about individual students? Examine the table by row.
- What specific criteria are our students' strengths? Which pose difficulties for them?
- Identify the criteria for which there are a significant number of not-yet performances or low rubric scores.

Phase 4: Infer/Question

- What possible explanations do we have for the patterns we are seeing?
- What criteria are met? On which criteria did students score high on the rubric? Why?
- What criteria are not yet met? On which rubric criteria did students score low? Why? What might students have been thinking? What knowledge and skills seem to be missing?
- What errors are students making? What confusions might students have? Why? What might students have been thinking?
- How can we find out which of our hypotheses is right?
- What questions do we have?
- What additional data might we explore to verify our explanations?

Prepare to Take FIRME Action

- Identify priorities for FIRME action (e.g., “We need to focus on feedback or reteaching”).
- Transition to Step 4: Take FIRME Action.
Criteria Analysis Table: Success Criteria Checklist

Learning Target(s): ____________________________________________

Formative Assessment: ____________________________________________

- Insert your success criteria for the work being analyzed under the criterion headers.
- For each student, insert ✓ for criterion met, – for not yet, and ✓ + for exceeds (optional) for each criterion.
- Note specific errors or confusions in the final column.
- Summarize data in the final two (or three) rows.

<table>
<thead>
<tr>
<th>Students</th>
<th>Criterion 1</th>
<th>Criterion 2</th>
<th>Criterion 3</th>
<th>Criterion 4</th>
<th>Criterion 5</th>
<th>Notes/Errors</th>
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<tr>
<td>Summary Data</td>
<td># &amp; % Met</td>
<td># &amp; % Not Yet Met</td>
<td># &amp; % Exceeds</td>
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Data-Driven Dialogue: Note-Catcher

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<th>Predictions</th>
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<table>
<thead>
<tr>
<th>Observations</th>
<th>Inferences/Questions</th>
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Preparing to Take FIRME Action

What will be the focus of our FIRME action? Check all that apply. What actions will we take?

- [ ] Move On (no FIRME action needed)

<table>
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<tr>
<th>Feedback</th>
<th>Investigation</th>
<th>Reteaching and Re-engaging</th>
<th>Regrouping</th>
<th>Extension</th>
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How will we assess impact?
Grade 6 Mathematics Assessment: Question 10

Task Name: Question 10: Patterns, Relations, and Algebra

Grade: 6
Subject: Mathematics

Assessment Task:

Lucinda earns $20 each week. She spends $5 each week and saves the rest. The table below shows the total amount that she saved at the end of each week for 4 weeks.

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Amount Saved</td>
<td>$15</td>
<td>$30</td>
<td>$45</td>
<td>$60</td>
</tr>
</tbody>
</table>

Lucinda continues to save at the same rate.

a. What will be Lucinda's total amount saved at the end of 7 weeks? Show or explain how you got your answer.
b. Use numbers, words, or symbols to write an expression that represents Lucinda's total amount saved at the end of $n$ weeks.
c. How many weeks will it take for Lucinda to save $300? Show or explain how you got your answer.

Criteria for Success: The response includes:

1. An explanation of how you got the answer to part a in either words or mathematical representations
2. Accurate computation in part a
3. A mathematically correct expression for solving the problem for $n$ weeks
4. Accurate computation in part c
5. An explanation for how you got the answer to part c in either words or mathematical expressions

Related Standards: Common Core Grade 6

Expressions and Equations 6.EE
Use variables to represent numbers and write expressions when solving a real-word mathematical problem

The Number System 6.NS
Compute fluently with multi-digit numbers

Sources: Task adapted from Massachusetts Department of Elementary and Secondary Education’s Comprehensive Assessment System (MCAS, 2007); Council of Chief State School Officers, Common Core State Standards, 2010.
Grade 6 Mathematics Assessment:
Student Work Question 10

Grade 6 Mathematics
Question 10 - Sample A

a. Lucinda's total amount saved at the end of 7 weeks would be $105. I got my answer by multiplying $15 by 7 weeks.

b. $15 \cdot n = t$

\[ n = \text{number of weeks} \]
\[ t = \text{total amount saved} \]

c. It will take Lucinda 20 weeks to save $300. I got my answer by dividing $300 by 15.

Grade 6 Mathematics
Question 10 - Sample B

A. $05, 15.7$

B. $15. N.$

C. 20 weeks, $300 \div 15 = 20.$
Grade 6 Mathematics
Question 10 - Sample C

(a) Week x $ = total amount saved
7 x $15 = $105

(b) Week (n) = total amount saved

0 2 0
1 5 3 0 0
- 3 0
0 0

20 weeks

Grade 6 Mathematics
Question 10 - Sample D

A. Lucinda's total amount would be $105 saved by the end of week 7th.
B. N + 15
C. It would take week 20 to reach $300.
Grade 6 Mathematics
Question 10 - Sample E

a) I added 60 + 15 to get 75, 75 + 15 to get 90 and 90 + 15 to get 105. Lucinda saved $105.

b) My formula is 100 + 5.

c) It will take her 14 weeks to save $300.00 because I added 7 + 7.
Grade 6 Mathematics
Question 10 - Sample F

A) week | TA |
1 | $60 |
2 |
3 | $55 |
4 |
5 | $50 |
6 |
7 | $45 |
Answer

B) T x N = N

Total - Number = Number

50 - 5 < 45

C) It wasn't because she always spend $
An Introduction to High-Impact Teacher Teams
by Nancy Love, Nina Smith, and Robin Whitacre

“Of all the things that are important to having good schools, nothing is as important as the teacher and what that person knows, believes, and can do.”
— Jon Saphier, Mary Ann Haley-Speca, and Robert Gower (2008, p. v)

High-impact teacher teams—teams that know how to improve their teaching and their students’ learning together—are not a luxury. They are vital to the success of our schools and to our students’ futures. According to John Hattie’s research, when teachers gain collective confidence and skill in how to improve student achievement, they can quadruple the speed of learning, literally obliterating achievement gaps (www.corwin.com/visiblelearning.org). This effect is simply too powerful to ignore. Hattie’s research reaffirms what we have known for decades: that nothing matters more to student achievement than teacher expertise. And there is no better way to build teacher expertise than in teacher teams.

While many more schools now have structured team time into the school day, far fewer would claim that their teams are high impact. We often ask teams: “Imagine that seated at the table with you are some of your struggling or unchallenged learners, or even your own children, nieces, nephews, or grandchildren. Now stop and ask yourself, is the conversation you are having right now likely to help them be successful, stretch them to their capacity, build their belief in themselves? And if it isn’t, what else could we be talking about?”

Cracking the code on what high-impact teams talk about and do is precisely our purpose. In our 30 plus years of working with teachers and teacher teams at Research for Better Teaching, we have been inspired by and learned from such teams in action. And here’s what we have discovered in a nutshell: First, such teams have a clear purpose—they know why they are a team. Second, they know what they are doing together—building their collective expertise in the practices that matter most for their students. Third, they know how they are going about impacting their practice and student achievement—they transfer what they are learning in their team into their classroom practice. Finally, they are guided by evidence of their impact on student learning and self-reflection, every step of the way.

Why a Team? What’s Our Purpose?
“If you want to lift five pounds, you can do it yourself. But if you want to lift 100, it takes a team.”—old adage

“Research has found that faculty in successful schools always question existing instructional practice and do not blame lack of student achievement on external causes….The “source of the problem” in ordinary schools is always someone else: the students, the parents/caretakers, the school board, and so on.”—Carl Glickman, 2002

The fundamental purpose of a teacher team is to improve student learning by continually reflecting on and assessing the impact of their teaching on student achievement. High-impact teacher teams make a collective commitment to lift each and every student in their grade-level, their department, their school, or their district to proficiency and beyond—no excuses.
To achieve their purpose, they commit to developing their teaching expertise. No profession is more complex or cognitively demanding than teaching. It requires constant learning, experimentation, and reflection. Teachers on a high-impact team are willing to be vulnerable, and learn from each other’s successes and failures. In the highest-impact teacher teams, teaching is no longer the private domain of the teacher behind closed doors, but rather a practice that is “public” in that it is shared with colleagues. Teachers engage in what Jon Saphier (2017) calls “non-defensive self-examination of practice.” They do not blame lack of achievement on external causes, but rather look to improve their own teaching, by far the greatest influence on student achievement. And they look to evidence, constant formative assessment about where students are in their learning, to assess their impact and adjust their teaching. But that’s not all...

As any teacher knows, teaching requires more than expertise. It takes courage. Sometimes that courage is hard to sustain in isolation and through the heartbreaks and headaches of a school day. In addition to developing expertise, high-impact teacher teams grow collective courage, courage to examine their own practices and biases, take a stand against racism and for equity, and enact the growth mindset—the belief that “smart is something you can get.” If one team member flags, another is there to encourage him or her.

A close cousin of courage is conviction, the belief that every student, regardless of circumstance, can and has the right to achieve rigorous standards; and that the teacher's job is to make sure they do. While most teachers enter into the profession brimming with conviction and hope, it is not easy to remain steadfast and unwavering when our culture and our schools are rife with contradictory messages and policies. High-impact teacher teams cheer each other on, but they also challenge each other when the fixed mindset—the belief that intelligence is fixed at birth—creeps into the conversation or a culturally blind or insensitive comment is made. High-impact teams are single-minded about their purpose: to strengthen their courage, conviction, and expertise so that they can teach with skill, with heart, and with maximum positive impact on students' learning and lives.

**What Are High-Impact Teams Focused On?**

To achieve their purpose, high-impact teams build their collective expertise in the practices that matter most for student achievement. While there are many high-leverage practices and ways to build teacher expertise, we have distilled what high-impact teams do into a practical, four-step approach: (1) They clarify learning goals so students are crystal clear about what they are learning and what success looks like; (2) they plan for and infuse formative assessment practices throughout their instruction; (3) they analyze results based on pre-established success criteria and identify specific errors in student thinking; and (4) they take timely, targeted action to provide feedback, reteach, and extend learning. As illustrated below, these four steps are interconnected and act as a cycle we call the Formative Assessment for Results (or FAR) cycle.
Formative Assessment for Results Cycle with John Hattie's Effect Sizes

1.57: Collective Teacher Efficacy
1.44: Visible Learning
.90: Formative Evaluation
.75: Feedback
.75: Teacher Clarity
.75: Teacher Clarity

**Why these four steps?** Because individually and together these four practices are among the strongest influences on student achievement. According to John Hattie's (2012) research on formative assessment, students and teachers using evidence of student learning during instruction, our Step 2, has a .90 effect size. Note that a .40 effect size represents about a year of growth for students, based on Hattie's scale. So a .90 effect size represents more than two years’ growth in one! However, formative assessment is not a solo act. Rather, it works in concert with clear learning goals and success criteria (referred to by Hattie as teacher clarity, which has a .75 effect size), thoughtful analysis of results, and timely and targeted action in response to evidence, such as feedback (.75 effect size) to students and reaching.

The four steps of the FAR cycle work synergistically to achieve what Hattie calls visible learning, “when learning is the explicit and transparent goal, when it is appropriately challenging, and when the teacher and the student both (in their various ways) seek to ascertain whether and to what degree the challenging goal is obtained” (Hattie, 2012, p. 18). In one study that appeared on his website in 2016, Hattie documented the effect size of visible learning as 1.44. Now add to these effects one more—the most potent yet—teachers’ collective efficacy, which develops, according to Hattie, through “conversations based on evidence” (2017). As teachers work together to implement the four steps of the FAR cycle, they gain confidence and skill in their collective capacity to impact student achievement. Collective teacher efficacy has a whopping 1.57 effect size. Virtually nothing makes a bigger difference for students than that! (Note that Hattie’s ranking of effect sizes changes periodically as he updates his research, so you may find somewhat different numbers or categories when looking at his website material.)
If this sounds familiar, it should. The FAR cycle is just an elaborated version of the well-known plan–teach–reflect cycle that teachers engage in every day: planning units and lessons (Clarify the Learning Journey and planning to Infuse Formative Assessments), teaching (Infuse Formative Assessments), then reflecting on that experience (Analyze Formative Assessments) to determine next steps (Take FIRME Action). The difference is that the FAR cycle highlights formative assessment every step of the way, so teachers are planning for how to communicate clear learning targets and success criteria to students (you can’t hit a target if you don’t know what it is) and for how to collect formative assessment data before, during (weekly, daily, minute-to-minute), and after a unit; when teaching, they are infusing formative assessment minute-to-minute, day-to-day, adjusting on the fly; and as they reflect, teachers are analyzing formative assessment results, and then planning for next steps for their instruction and for their students’ learning. They never lose their focus on results for students and take every opportunity to put students in charge of their own learning.

Clearly, teachers can and do engage in this kind of rigorous inquiry on their own. But how much better it is to capitalize on the collective brainpower of a team to do the toughest work! The FAR cycle is designed to guide teams to engage in collaborative inquiry, ground their planning and reflection in solid evidence of student understanding, and grow their expertise together.

Note that the FAR cycle can apply to an entire unit of instruction, including designing instructional units and unit assessments (unit level). It can also apply to an individual lesson or series of lessons (lesson level). In RBT’s Coaching High-Impact Teacher Teams program, the focus is on the lesson level, in part because short cycles of improvement—lesson-by-lesson, day-by-day—turn the wheels of school improvement but are often not the focus of teacher teams. In addition, even if teachers do not share a common curriculum or assessments, they can study and implement the FAR cycle at the lesson level. Finally, other programs focus on unit-level planning, including RBT’s Formative Assessment for Results: A Team Approach and Grant Wiggins and Jay McTighe’s Understanding by Design (1998); and districts often have curriculum units and common assessments in place in core subject areas. However, to give you the complete picture, both the unit and lesson levels of the FAR cycle are described in more detail below. In the graphic of the FAR cycle, the unit-level components appear in gray type while the lesson-level components are in black.
Clarify the Learning Journey
The first component of the FAR cycle is clarifying the learning journey. There are three components that teams learn about and implement in their practice:

- Unit essentials (unit level)
- Learning targets and success criteria (lesson level)
- Communicating with students (unit and lesson level)

**Unit essentials:** In this component of Clarify the Learning Journey, teachers work together to get clear about what is essential for students to learn in an upcoming unit—the unit essentials, which we define as standards (if they are specific enough) or standards broken down into more specific knowledge and skills for the unit. (Note that unit essentials, as we define them, are different from essential questions, which are engaging, rigorous, open-ended questions used to focus both students and teachers on the unit essentials.) Distilling the unit down to the absolute must-knows for all students, team members separate the wheat from the chaff. They dig deeply into the content of a unit, mapping out how the important skills and concepts relate to each other and to previous and future unit essentials. They consider what misconceptions are likely to surface and how to help students unravel them. Finally, they agree on how the essentials for the unit will be assessed, including the product or performance and specific success criteria. In the process, the team strengthens their own grasp of the content and their commitment to teaching those essentials so that every student achieves proficiency.

**Learning targets and success criteria:** Similarly, for individual lessons, teachers in their teams get clear together about what is a worthwhile, lesson-size bite of learning that, in combination with other lessons in the unit, will lead them to mastery of the unit essentials. Whether you call these objectives, mastery objectives, instructional objectives, learning intentions, or learning targets (as we do here), what matters is that teachers are clear on what students are learning, that the targets are expressed in student-friendly language, and that they shape the activities and formative assessments that make up the lesson.

Often the ignored stepchild of unit and lesson planning, success criteria are not to be overlooked. They answer the question for students, “What does success look like and how will I know when I have achieved it?” Serving as the basis for self-assessment and feedback, success criteria create an equal playing field for students who are not skilled at guessing what is on the teacher’s mind. A great use of team time is to refine success criteria for specific learning targets and/or open-response assessment items (sometimes called scoring guides). Then team members can gather or create models of work that bring the criteria to life for students and find exemplars that illustrate varying degrees of proficiency. Often it is helpful for teams to road-test their criteria by analyzing actual student work to make sure the criteria are clear and comprehensive before introducing them to students.

**Communicating with students:** All of the team’s work committing to unit essentials and crafting learning targets and success criteria is for naught if they are not communicated effectively to students. The whole point of “clarify the learning journey” is that students know where they are headed and are motivated to get on the train with us. Once team members are clear on the destination, they plan for how to invite students along, excite them about the destination, give them a map for how they will get there, and provide them with tools to assess their progress. At the unit level, learning maps of the unit, used daily to connect the lesson to the overall plan for the unit, can be a useful tool along with essential and guiding questions and models of the final product or performance they are aiming for.
At the lesson level, posting learning targets on the board is rarely sufficient to get all of the students on the learning journey with you. Student-friendly language goes a long way toward effectively engaging students with targets; but other techniques can also be valuable, such as color-coding the targets and activities, unpacking the targets’ vocabulary, doing activators that brings targets to life, or asking the students to explain what they are learning and why in their own words.

Communication of success criteria can take the form of brief “I can…” statements, checklists, or rubrics. However, just as for learning targets, simply naming the criteria is necessary but often not sufficient for students to “get it.” They need to see models, practice critiquing a range of examples, receive feedback, and ultimately learn to assess their own work. Actively and thoughtfully engaging students with unit essentials, learning targets, and success criteria is more important than how they are worded or where they are posted.

**Infuse Formative Assessment**

The other side of the coin to clarifying the learning journey is infusing formative assessments before and after units and into daily lessons during units. These assessments let teachers and students know whether they have hit the learning target and what adjustments they might need to make to either instruction (teachers) or learning tactics (students). There can be no meaningful formative assessment without learning targets. On the other hand, without formative assessment, we have no way of knowing where students are on their learning journey. Often we find out too late.

In this step of the FAR cycle, teams learn about and implement the following:

*Before- and end-of-unit assessments (unit level):* Pre- and post-unit assessments are important to high-impact teacher teams because they are the most typical form of common assessments for teachers teaching the same units at roughly the same time. However, most teachers have not had good training in how to write valid, reliable, and bias-free assessments. It is not easy. In this step in the FAR cycle, teams may want to take time to improve their skills so that they can either create or become critical consumers of good assessments. Or they may have assessments in place already, which they review to make sure they are aligned with what they are teaching. In addition, teams can consider the pros and cons of a variety of kinds of pre-assessments and determine which to implement.

*Assessments after multiple lessons (lesson level):* Teacher teams might want to plan to give a common formative assessment a week or two into the unit to see how students are doing relative to a few learning targets. This could be a short quiz, a writing prompt, an open-response mathematics problem, a science journal entry, or a partially completed end-of-unit project. These assessments make good fodder for team analysis (see Analyze Formative Assessments below) if a meeting can be scheduled close enough to when they are given.

*Daily assessments (lesson level):* The lifeblood of formative assessment is the daily practices teachers implement to engage all students with diagnostic questions and tasks (products or performances) to make their thinking visible. In this step in the FAR cycle, teams engage in shared learning about these practices, plan for how to incorporate them into upcoming lessons, and share what they are trying and how it is going. While teachers use these practices individually in their classrooms, they may as a team decide to try out some common diagnostic questions or tasks together.
Analyze Formative Assessments
All of the above formative assessments provide good material for team analysis. In this component of the FAR cycle, teams engage in making collective sense of formative assessment results, always with an eye toward what’s next for their students.

Data-Driven Dialogue: A core tool in our data analysis toolkit is Data-Driven Dialogue, a four-phase process for having powerful and focused conversations about data. In Phase 1, teams predict what they will see in their data before analyzing the results. In Phase 2, they go visual, creating colorful, easy-to-interpret representations of their results. Phase 3 is the observation phase, where they describe what they are seeing in the data, being careful to separate the facts from interpretations. This is followed by Phase 4, which entails drawing inferences and surfacing questions the data are raising. The arrow leading to FIRME action in the diagram indicates that dialogue is a precursor to taking action, not an invitation to the “paralysis of analysis.”

Data-Driven Dialogue


Data and student work protocols: Data-Driven Dialogue can be combined with a variety of data analysis tools. Teams choose from among a variety of protocols that align with their purpose and the type of assessments they are analyzing. For example, they may choose one more of the following:

- Item analysis (examining how students perform on individual assessment items, including multiple-choice and open-response) and looking at distractor patterns (wrong answers chosen)
- Error analysis (examining specific errors and misconceptions evident in student work)
- Criteria analysis (determining whether student work provides evidence of prespecified criteria being met or not yet met)
- Quick sort (sorting exit tickets or other brief student work into two or three groups—e.g., exceeds, meets, not yet—to inform next steps for students and teacher)

Take FIRME Action

“...the act of teaching reaches its epitome of success after the lesson has been structured, after the content has been delivered, and after the classroom has been organized. The art of teaching, and its major successes, relate to ‘what happens next’...” — John Hattie, 2009, pp. 1-2

“It isn’t just ‘do something.’ It’s ‘do what?’” — Jan Chappuis, 2014

“When [teachers] see learning occurring or not occurring, they intervene in calculated and meaningful ways to alter the direction of learning to attain various shared, specific, and challenging goals.” — John Hattie, 2009, p. 22
Perhaps nothing is more important in the entire FAR cycle than taking action in response to formative assessment data on a daily basis. Stepping on a scale every day doesn't change our weight. What matters is what we do in response to that information. The same is true for formative assessment. The data in themselves do not necessarily improve student learning or teaching quality. But when the data lead to providing targeted, timely feedback to learners and to teaching and engaging them differently than the first time around, that's when students reap the benefits.

The acronym FIRME is a reminder of the kinds of actions that teachers take in response to formative assessment data collected during a lesson, after one or more lessons, and at the end of the unit.

**F:** Stands for feedback. Most students are starved for effective feedback, the kind that causes them to think and gives them specific information on what to do to improve their product or performance. Ramping up both the quality and the quantity of feedback teachers provide to students is one of the most high-leverage actions teachers can take in the FAR cycle. But to be effective, feedback must exhibit certain qualities that distinguish it from generic praise or criticism (statements like “great job” or “this is the worst paper in the class”), which can actually do more harm than good. To be effective, feedback must be:

- Goal-referenced (is tied to learning targets and success criteria)
- Concrete and specific (can include success and next steps)
- Non-judgmental (uses evidence)
- Calibrated (is focused on a few priorities)
- Timely (is given during instruction)
- Scaffolded (provides minimal guidance; students do the thinking)

Though this may initially seem a bit daunting, teams learn together about how to provide effective feedback, including practical and time-saving techniques that give students the feedback they need without overwhelming their teachers.

**I:** Stands for investigation. Investigating student thinking comes into play in every lesson in the daily diagnostic questions and other formative assessment techniques used to elicit evidence of student thinking. Often teachers can quickly discern the cause of a student's error or confusion and adjust on the fly. Sometimes, however, teachers are genuinely stumped about why students made a particular error or offered a particular response. Before proceeding, they need more information. For example, one team we recently observed identified five possible reasons why their students were not performing well on the life science questions at the end of an assessment. They hypothesized that their students (1) were experiencing test fatigue; (2) did not understand how to interpret the diagrams; (3) did not understand the science concepts in the questions; (4) were missing some essential vocabulary; and (5) lacked test-taking skills. Each hypothesis would lead to a very different course of action. If they decided to reteach vocabulary, but the problem actually resulted from students’ lack of understanding of the science concepts being assessed, they were not likely to improve results. So a simple pause to check in with students to get more information about what they were thinking can save time and energy that would have been wasted trying to solve the wrong problem.

**R:** Stands for reteaching, re-engaging, and regrouping students. Teachers reteach to make sure that students who need it get another opportunity to reach the learning target of a previously taught lesson. Re-engaging learners is a close companion of reteaching and extension. It means engaging learners in a different way than was done the first time, for example, through a role-play, computer simulation,
peer feedback, or learning stations employing multiple modalities. The third R—regrouping—entails choosing from a repertoire of grouping strategies, such as grouping based on need or performance, by choice, in carefully structured cooperative groups, or across classrooms in response-to-intervention or flexible groups.

**M:** Stands for **moving on.** Moving on is a legitimate response to formative assessment data. Clearly, if all students have achieved proficiency, moving on is the obvious choice. But when do you decide to move on even when some students have not yet achieved proficiency? A commitment to FIRME does not mean holding up an entire class for weeks until everyone achieves mastery. A reteach may be as simple as taking a few minutes out of a class period for reteaching and extension before moving on to the next lesson. Or a teacher might provide one or two differentiated lessons after an assessment is given, followed by an opportunity for students to revise their products or retake the test. After taking FIRME action, teachers often need to move on when most, but not all, students have achieved proficiency. However, when some students have not yet mastered an important concept or skill, it is important to have a plan for how they will do so.

**E:** Stands for **extension.** For students who master the target before others, teachers provide opportunities for extension, challenging these students with greater rigor and guiding them to take the next step in their learning.

Note that FIRME actions are not mutually exclusive. Nor are the letters in the acronym meant to imply a sequence in which these actions are taken. Rather, teachers choose from and combine elements of FIRME that will move their students' learning forward. For example, in one lesson, a teacher may regroup students for reteaching and extension; in another, feedback may be sufficient. Or feedback may be combined with reteaching and extension. Often, more investigation is needed to unearth students’ misconceptions and inform next steps. What is most important is that FIRME is a constant companion of formative assessment and that teams work together to take high-leverage, committed action to improve results for all students.

**The FAR Cycle and School and Team Improvement Goals**

Typically, teacher teams launch their work by setting annual SMART (Specific, Measurable, Attainable, Relevant, Time-bound) goals. To arrive at these goals, they examine multiple sources of data, including, if relevant to their content-area focus, state assessments. They also consider their school and district plans so that their team’s improvement efforts are sure to advance school and district goals. Then they flesh out the details of a plan to achieve their SMART goals, identifying specific activities they will undertake and benchmarks for measuring progress toward these goals.

The FAR cycle kicks into gear after the team has developed its annual plan. It is what teams do, unit-by-unit and week-by-week, to implement and monitor their annual plan. These short cycles of improvement continue throughout the school year. So, when those summative assessments are given at the end of the year, there are no surprises. The team knows that they are on track for success. The Total Quality Management movement coined the phrase “100% improvement—1% at a time.” The FAR cycle is that slow, steady progress toward 100% improvement.
How Are We Impacting Student Achievement?

“It is a community of teachers that is needed to work together to ask the questions, evaluate their impact, and decide on the optimal next steps; it is the community of students who work together in the pursuit of progress. Such passion for evaluating impact is the single most critical lever for instructional excellence—accompanied by understanding this impact, and doing something in light of the evidence and understanding.” — John Hattie, 2012, p. viii

In addition to knowing why they are a team and what they are focusing on (the FAR cycle), high-impact teacher teams know how they are impacting their practice and student achievement. They enact a theory of action for transferring what they are learning into their classrooms and team practice and assessing its impact. The diagram below illustrates a simple theory of action for a high-impact teacher team.

A Theory of Action for High-Impact Teacher Teams

If teams are going to achieve their overarching purpose of getting every student to proficiency and beyond, then they must move from learning together in their team, to taking action both in their teams and in their classrooms, to reflecting on and assessing impact. Learning Together, Taking Action, and Reflecting/Assessing Impact are three core and distinct functions or purposes for team meetings. Each is a vital link in the chain of actions leading to improved achievement.

Learning Together
Team meetings should always be learning experiences. However, we use the term “learning together” here to refer to studying a high-leverage FAR cycle practice together, such as analyzing videos to learn more about effective feedback or reading and discussing an article about formative assessment practices or developing a common language for what is meant by learning targets and communicating success criteria. A teacher team is a rich environment for learning together in these ways, as each member brings their different expertise and everyone benefits from multiple perspectives.

But if all your team meetings are study groups, and there is no accountability for transferring learning into practice, the team is not very likely to climb the stairs to improving achievement. Even when analyzing data, if there is no collective commitment to take action in response to the data, how can we be sure the students will benefit? What is missing is the bridge between what teachers learn in the meeting and what they do in their teams and in their classrooms.
Taking Action

High-impact teacher teams learn together, but they also take action, individually and collectively, to implement new practices in their teams and classrooms. Some action is best taken in a team. For example, the team together develops a unit plan with learning targets and success criteria for a series of lessons. Or they pull their “road-tested” diagnostic questions into an item bank for future use. Or they craft a reteaching plan to be implemented across classrooms. Other action, however, takes place in the classroom. Team members, for instance, practice communicating success criteria to students, using examples of strong and weak examples of student work. Or they try out a technique for providing feedback or use A-B-C-D cards to collect formative assessment data during a lesson.

Teacher practices can be deeply ingrained and tough to change. There is a big leap between learning about a practice at the surface level to actually implementing it, let alone implementing it well. Teacher teams can provide an ideal venue for making that leap. First, they provide a structure for providing just-in-time and ongoing support, one feature of teacher teams that impact teaching practice (Wiliam, 2009). The advantage of developing expertise in a team is that teachers can help each other before they end up getting too frustrated and giving up. They can improve their practice in small steps (one meeting at a time!) rather than trying to implement too many practices at once, getting overwhelmed, and, ultimately, reverting to more comfortable and familiar ways. And that support comes from other teachers, so the learning is practical and directly tied to classroom practice. In addition, colleagues are learning and experimenting at the same time, so the team gets the benefit of everyone’s experience. Wiliam compares changing formative assessment practice to Weight Watchers. Everyone knows they need to eat better and exercise more. But it’s hard to change habits without support.

While teacher teams provide support, they can also hold members accountable for improving their teaching, another powerful advantage of collaboration, according to Wiliam’s research; they balance support with accountability. As Michael Fullan observed, “it turns out that blatant accountability, focusing on tests, standards, and the like, are not the best way to get results. Rather, successful systems combine strategies of capacity-building and transparency of results and practice. There is no greater motivator than internal accountability to oneself and one’s peers” (Fullan, 2011, p. 8).

We have observed this feeling of mutual accountability in action. For example, if the team agrees to try out a diagnostic question together and report back on their experience or bring samples of their students’ work to analyze, individual members feel the pressure to follow through, at the very least initially, to avoid embarrassment. And nothing ramps up accountability to teach to rigorous standards like common assessments that the team analyzes together. One team leader reported to us, “We used to say we taught to the standards. But it wasn’t until we started administering and analyzing common assessments that we actually did.”

Members of high-impact teacher teams are not satisfied with surface learning. They push each other to put what they are learning to work for their students. Most team meetings end with a commitment to some individual and collective action, whether it’s experimenting with a new practice and bringing the results back to the team, collecting and analyzing student work, or conducting a peer observation.

Reflecting/Assessing Impact

“We do not learn from experience…we learn from reflecting on experience.” — John Dewey

Finally, high-impact teams provide a place for teachers to reflect on their practice and their impact on student learning. In the hectic pace of the school day, teachers rarely have the chance to catch their breath. It is easy to get stuck on the “do” button—without ever knowing whether all of that frantic activity is producing the results we want for students. High-impact teams are reflection and assessment machines. Reflection is built into the Analyze Formative Assessments step in the FAR cycle, where teachers use evidence of student understanding to “determine optimal next steps” (Take FIRME Action). But reflection is not just a step in the FAR cycle. It is a vital function of each step in the cycle and of high-expertise teaching. As team members are trying out new practices, such as communicating success criteria to students (Clarify the Learning Journey) or providing feedback (Take FIRME Action), they collect data on how their experiments went and what the impact was on students’ learning and motivation. They reflect on what went well for them and their students and where each got stuck. They observe each other teaching and act as another set of eyes and ears to facilitate reflection. And they welcome evidence as feedback on their journey to becoming more expert teachers.

Who Is the Team?
A high-impact team can be a grade-level (elementary), subject-specific (middle school), or course-specific (high school) team. In teams where teachers teach the same content, members can focus on developing common learning targets, success criteria, assessments, and FIRME action plans. While there are definite advantages to such teams, other kinds of teams, such as vertical teams or teams by choice, who come together to implement the FAR cycle, can also be high impact. Such teams shift their focus from creating common products to developing their expertise in high-impact practices and then applying them to their own content areas and grade levels. The multiple perspectives diverse team members provide can make for rich learning experiences. What matters most is that teams are consistent in membership, have a regular time and place to meet (45 minutes/week is recommended as a minimum), and share a common purpose.

The Role of the Coach or Team Leader
“Because FAR is being led by teachers, other teachers are buying into it in a way I have not seen with other professional development programs. FAR has penetrated every grade level and classroom.” — Dr. Mary Dill, Principal, Connery School, Lynn, Massachusetts

We rarely see teams stay on track without skillful facilitation and leadership. Coaches or team leaders are the hinge-point for the success of high-impact teams and the primary audience for RBT’s materials and professional development. For each step of the FAR cycle, coaches participating in RBT’s Coaching High-Impact Teacher Teams program receive a set of team activities and materials for each of the three core functions of high-impact teams: learning together, taking action, and reflecting on/assessing impact. (See example for Step 1 below.)

A key component of their role is to collaborate with the team in selecting or creating activities that are the best match for the team’s goals. Then they plan for and facilitate productive team meetings. As important as what they do is who they are: the first to take risks, eager to learn, advocates for students and their families, and focused on the team’s purpose and impact. Leaders like this are contagious: others catch their spirit and commitment.
By leadership, we do not necessarily mean formal or positional leadership. Team coaches or leaders are most often teacher leaders who either teach full time or have a lighter load to allow them to play this role. Instructional coaches or specialists, such as Literacy or Mathematics Specialists, can also act as team coaches. We have found that pairing teacher leaders with a coach or specialist works well, so that two people can share in the preparation and planning, but the coach or specialist doesn't necessarily attend every team meeting. Whoever steps into this role, it is important for them to know that they are not expected to be the experts. In fact, it is preferable that they are experimenting and learning with their colleagues, true co-learners and partners. It is equally important that administrators “bless” their leadership and that team members support them in playing the challenging role of being both a peer and leader, of guiding while co-learning.

**In Conclusion**

Every student has the right to have expert teaching all day, every day. It is not enough for a child to periodically get lucky and “win the teacher lottery.” In other words, “what you get shouldn't depend on who you get.” Within our schools is our greatest resource for spreading expert teaching. When teacher teams are organized for maximum impact, when they focus on what matters most to student achievement and hone their craft collectively, they have the power to wipe out the achievement gaps that have dogged our schools for generations. Why would we squander such a potent resource for even one more day?
References


