Teach. Learn. Grow.
the education blog

Help kids make big gains with research-backed instructional strategies

nwea

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What are the most effective ways for educators to close opportunity gaps and support students in making big academic gains? Our High Growth for All study set out to answer that question and uncovered ten distinct instructional strategies proven to help students reach their potential:

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With this compilation of posts from our blog, *Teach. Learn. Grow.*, we invite you to learn more about each strategy and how to bring it to life in your classroom. Ready to get started? Just scroll to the next page.

High growth for all kids: 4 guidelines for supplemental instruction

Mary Resanovich

We all know the challenges of the last three years. We've read the headlines and heard the research about the impact of COVID-19 on education. Given the stress that the pandemic put on educators, reading about the continued low rates of growth and the increasing inequity among students can be quite overwhelming. Teachers and administrators are well aware of the issues; they see them play out in their classrooms every day, where it is estimated that more than half of students enter below grade level.

The question of how to best address these issues has led to a debate over teaching grade-level content versus differentiating based on each student's level. To help teachers navigate this question, our High Growth for All project has identified 10 effective strategies—the Transformative Ten—to help teachers differentiate while still providing access to on-grade content. The first strategy centers on providing supplemental instruction time so that kids can practice skills they're still developing.

Supplemental instruction for all

Supplemental instruction is a common component of most classrooms. In a previous post, I referenced a WestEd survey that named the need to differentiate and personalize learning as one of the top three reasons teachers turn to supplemental resources.

When we think about supplemental resources and differentiation, we tend to think about students at the extremes: those who may need support to access on-grade content and those who are whizzing through on-grade content at high speed. But targeted differentiation and supplemental instruction time are valuable for all students.

Schiller Park has implemented an approach to supplemental instruction that leverages multiple researched-backed strategies. Instead of implementing a pull-out model for below-grade support and above-grade enrichment, they have created a supplemental learning block in which all students are divided into small groups to receive targeted activities and instruction designed to support their understanding of current on-grade content. Let's unpack the learning science behind Schiller Park's approach to identify practices you can incorporate into your own classroom.

1. Practice good grouping

A key structural component of supplemental instruction for all is the formation of small groups. While long-term tracking by ability has been shown to have negative effects on both achievement and confidence, short-term, flexible groups designed for a specific purpose have been shown to support learning.

If your school tests with MAP® Growth™, your Class Profile Report is a good place to start when thinking about groupings, as it provides a high-level picture of the academic diversity of your class. Next, formative assessment that zeroes in on the skills and concepts related to your current whole-group lessons should form the foundation for your groupings. You'll want to have recent, relevant evidence of students' knowledge of the current topic. Thankfully there are a lot of quick ways to gather this evidence, including classroom conversations, student work, and short, frequent, ungraded assessments.

Once you have created your initial groups, formative assessment data can inform the learning goal for each group, and the learning approaches, activities, and type of grouping that support this goal. As you progress through the whole-class core content, use ongoing formative assessment

to alter both your group composition and learning goals as appropriate. Because each group's learning goals are targeted to the current core learning, these groups should not be fixed over the course of the year or even the current unit but should be adjusted in real time.

Check out NWEA's guidance for student grouping for more information on forming effective, short-term learning groups.

2. Get in the zone

As you gather your formative data and begin grouping your students and establishing learning objectives, keep students' zone of proximal development, or ZPD, in mind. As a reminder, the ZPD is the sweet spot between what a student can do independently and what they can't do independently just yet. The skills and content that lie within a student's ZPD are ones they can access with teacher guidance and scaffolding.

I bring up ZPD here because regardless of what group they are in, all students need access to rich, engaging content designed with the end goal—accessing on-grade content—in mind. So, while some students may need to review or practice precursor skills, this is the starting point, not the end goal.

Unfortunately, grouping students has sometimes led to those in what are deemed lower groups being consistently subjected to less challenging, more skills-based content that is never connected to on-grade expectations. This can have a cumulative effect where students get further and further behind.

When designing your groups, learning objectives, and pathways, always keep the whole-group, on-grade content at the center of your planning:

- For students who need support to access on-grade content, what is the roadmap of scaffolds you will provide, gradually taper back on, and ultimately remove as students grow their knowledge? How will you know when students are ready to drop a piece of scaffolding?
- For students who can frequently, but not consistently, access on-grade content independently, what new models, contexts, problem types, or modes of instruction can you provide to help them move to full independence?
- For students who can consistently access on-grade content independently, what can you do to deepen and challenge their knowledge of this content? Remember that challenging content doesn't always mean jumping to the next topic or grade.

Like the Transformative Ten, there are many scaffolding strategies that can be applied to multiple subjects and topics. Need more support on scaffolding? Check out our post on strategies for using scaffolding while still challenging students or this short module from the IRIS Center, which gives examples of different types of scaffolding.

3. Give kids some space

In "Maximum impact: 3 ways to make the most of supplemental content," I highlighted some best practices for supplemental instruction. One of these practices is connecting supplemental learning to core content. I talked about the benefits of developing a web of connected concepts and skills, versus amassing a collection of isolated and unrelated facts. There is another research-backed benefit to connecting supplemental and core learning: doing so leverages the highly effective learning strategy of spaced retrieval practice.

To understand spaced retrieval practice, think back to your own experience as a student. If you are like me, your typical learning experience looked something like the following: Sit through a lesson on a topic. Practice that topic with a batch of similar exercises. Sit through a lesson on a new topic. Practice that with a batch of similar exercises. Rinse and repeat with a quiz every couple of lessons and a test at the end of the

unit. (And how did you study for that test? Did you cram by reviewing all the information the night before? If you did, you are not alone.)

The problem is, research shows that although procedures like cramming may get you through your test, you likely won't retain much of the information. To embed concepts into long-term memory, students need to practice retrieving it multiple times, ideally over a period of days or weeks.

When you connect supplemental content to your core work, you provide students with the opportunity to retrieve and apply what they have learned during whole-class work. There are a variety of ways in which students can practice retrieving knowledge during supplemental work:

- Before starting a small group lesson or whole-group supplemental instruction, **have students do a "brain dump"** of what they know about a current or recent topic. Students can do this individually and then compare their responses with one another. As students move through their supplemental learning, have them review their brain dump to look for connections and add new learning.

- After working on a supplemental activity, including independent work in an online program, **have students pair up to share what they learned**. Provide pairs with questions like those in "Putting it all together: Real examples of how to integrate supplemental content into your core work," which prompt students to connect current work with past learning to build that interconnected web of ideas while simultaneously giving them practice retrieving previously learned content. Research suggests that retrieving information soon after engaging with it is more effective than repeated rereading, so build this or a similar activity into the last few minutes of your intervention block.

- As students progress through content, **give short, ungraded quizzes**. They are a fantastic way of helping kids practice recall. To make this even more effective, be sure to provide feedback that includes concepts students either forgot or didn't remember correctly, as studies indicate quick feedback may increase learning. To get students used to this idea, compare quizzing with feedback to doing drills and being coached in sports. Although these quizzes can inform updates to groupings, goals, and assignments, don't make changes too quickly. Students should be able to accurately retrieve information multiple times over a period of several days or weeks to demonstrate more than a short-term retention.

- **Take advantage of mixed practice options offered by many online supplemental programs**, like MAP Accelerator™. This combines both retrieval practice and something called interleaving. Interleaving is where the types of questions or problems are mixed up. So instead of practicing 20 addition word problems, interleaved practice could be composed of word problems that require different operations, formulas, or procedures to solve. This type of practice forces students to actively select the appropriate strategy based on the context. When selecting products, make sure they provide immediate, high-quality feedback to maximize effectiveness.

4. Leverage technology wisely

The wealth of educational technology available today represents a large toolbox teachers can choose from for differentiation and targeted supplemental instruction. Among other things, technology can support formative assessment, boost engagement, provide opportunities for targeted and mixed practice, give in-the-moment feedback, adapt to students in real time, offer new ways for students to demonstrate their understanding, and connect learning to the real world. Our Instructional Connections program connects MAP Growth data to over 40 popular supplemental instructional resources. These predetermined learning pathways can be an effective and time-saving way to differentiate while retaining the flexibility to adapt supplemental instruction based on ongoing formative assessment.

Grounding in the learning objective is critical to selecting the right tool or product for each student or group of students. Learning goals should drive the product choice, not the other way around. While educational technology offers great options for teachers and students, as pointed out in our Transformative Ten white paper, "Teachers must still ensure that students receive the right content given their learning needs, that the content is engaging, and that students stay on task."

When integrating technology into supplemental learning, you should still ask the same questions as when choosing nontechnology resources:

- Does my formative data indicate that this is the right content and level for this student?
- Will this product, pathway, or activity provide the right level of scaffolding and challenge?
- How will this product, pathway, or activity support access to, provide varied practice for, or deepen understanding of on-grade content?

One strategy at a time

Being a teacher has always been challenging, and the pandemic truly put every educator's mettle to the test. Despite all the challenges you face, we know you are a dedicated and resilient group who will do whatever you can to help your students grow and learn. We hope the Transformative Ten will go a long way in helping your students thrive and achieve.

Here are some additional links to help you learn more about our work and strategy 1.

- **High Growth for All:** This site provides an overview of the research behind the High Growth for All project and of each of the Transformative Ten strategies.
- **"Jump-Start High Growth Instructional Strategies with MAP Growth":** This guide gives insight into how MAP Growth data can be used to inform and support the Transformative Ten instructional strategies.
- **"The Transformative Ten: Instructional Strategies Learned from High-Growth Schools":** This white paper gives an in-depth look at the research behind the High Growth for All project. It also provides more information and specific examples of how the Transformative Ten strategies were implemented in SD81.
- **"Transformative: An NWEA story of extraordinary growth":** This video gives an overview of the work Chase did with Schiller Park teachers, which led to the development of the Transformative Ten.
- **"Provide supplemental learning time for targeted retrieval practice | Transformative Ten #1"!** This short video shows how Schiller Park approaches supplemental learning time for all students.
- **"So many to choose from! 3 tips for selecting high-quality, supplemental digital resources":** This first *Teach. Learn. Grow.* blog post in our supplemental approaches series gives tips for selecting high-quality resources based on your reason for using supplemental content. It also provides links to five resources that can help you evaluate supplemental offerings.
- **"Maximum impact: 3 ways to make the most of supplemental content":** This second post in our supplemental approaches series discusses three strategies—connecting to core content, leveraging metacognition, and student pairings—to maximize supplemental instruction.

- **"Putting it all together: Real examples of how to integrate supplemental content into your core work":** This final post in the supplemental approaches series gives concrete examples of best practices for incorporating supplemental content into math and reading classrooms.
- **"7 ways to use ZPD and scaffolding to challenge and support students":** This post lists seven strategies that can be used to scaffold content in multiple subjects. It also provides specific examples of scaffolding in reading and math.
- **Retrieval Practice:** This comprehensive website includes background information, links to research, and strategies related to retrieval practice. It features two guides that provide overviews, describe the benefits to students, and give suggestions for how to implement retrieval practice and spaced retrieval practice in your classroom. **TLG**

Cooperative learning: 4 steps for effective student grouping in a dynamic classroom

Tatiana Ciccarelli

Neat rows? Always. Groups of five? In June, if ever. As far as variety in student grouping for cooperative learning goes, my experience as a student in the ’90s was pretty limited.

There was an obvious rationale when I was a kid: you sat next to those whose names came before and after yours in the roll book because alphabetical order was tidy and easy. I became lifelong friends with some Bs and Ds, but I often wonder what could have been had the Cs been able to mingle with the Rs. Now that I’m an educator myself, I realize that when left to chance or, in the case of my school years, alphabetical order, the possibilities for student collaboration and growth become limited.

My teachers, though seasoned educators, didn’t step too far outside the seating box. They were products of their times. Today we know that a dynamic classroom environment empowers learners. Jonathan Ryan Davis, a professor at The College of New Jersey, refers to this as “a re-conceptualization of classroom management.” I suggest we go a step further and pair re-conceptualization with intentional grouping, a research-backed strategy for supporting student growth studied by my colleague Chase Nordengren as part of our High Growth for All project.

In this article, I'll be focusing on cooperative learning. It calls on us to mix whole-group, small-group, and individual activities, and my aim is to help you know when to do which and how to use each approach effectively.

Step 1: Set clear goals

When you begin to think about cooperative learning, I recommend you establish a clear goal. What is your intention when using groups? Is it to promote more productive conversations? Is it to allow students to showcase certain skills? The answer, to both of those questions, should be yes.

Next you'll want to think about how to make groups function at a high level. Start by looking at your scope and sequence. Where you are in the learning matters. Sending students off in a small group or in pairs might not work at the beginning of a new unit, for example, so ask yourself, what works best for where we are right now?

I think it is also important to confront any discomfort you might understandably have about dynamic classrooms. Asking questions like the ones that follow can help you prepare for the reality that some friendly group conversations may lead to unfinished learning, which you'll need to address.

- Am I comfortable with the groups occasionally going off topic?
- How important is ensuring all groups have a certain outcome?
- What activity do I have planned to summarize the learning?

Student groupings without clear expectations and outcomes will almost certainly lead to chaos. While a dynamic classroom can appear to be chaotic, the key to its success is intentionality. Setting clear goals will help you start from a firm foundation.

Step 2: Put data and observations to work

Once upon a time, we used to think about grouping as either hetero- or homogeneous, based on ability and instructional level. I challenge you to expand that definition and think of groupings as intentional. Whatever combination you choose for a group, a topic, or a marking period, make sure it is data-driven and capable of creating the conditions for success. Information about your students is all around you. Look to it when making student grouping decisions.

When I was teaching, my classroom was open to visitors and observers daily, so I had to be ready to discuss not only lesson content but my differentiation and grouping rationale, too. I would look to everything

I knew about my students when making decisions. I would consider formative assessment data, from things like entrance slips on a Monday morning. I would refer to diagnostic data, like unit exam scores, but also interim assessment performance. (My school used MAP Growth, so I would focus on RIT scores and bands, displayed on reports like the Class Profile report) I would also consider my observations of student friendships and dynamics, plus one-on-one conference notes. All of these things, when looked at holistically, helped guide my decisions around cooperative learning.

Step 3: Consider different configurations

Group work can take a few different shapes: whole group, small group, and pairs. Some work is best done individually.

Whole group instruction is the tried-and-true method of classroom grouping simply because it works most of the time. When you are starting a new topic, when you want to create a cohesive vision, when you want to get everyone on the same page, whole group just works. Whole group instruction does not mean that we ignore all the ability levels in the classroom, however. It just means that we have decided that a lesson, or a moment in a lesson, is appropriate for all levels.

What I love about whole-group instruction is the sense of unity it creates. We all enter a moment of new learning together, as a class family. It is great to help students feel that their learning is bespoke to them, but it is equally important for them to feel like a valuable member of the whole. Whole-group instruction is also an excellent opportunity to model academic thought, metacognition, and discourse. I love taking that time to think aloud, brainstorm, plan, and convey to students that inquiry is a necessary part of the learning process.

When to use whole-group instruction: When the benefits of having everyone involved won't isolate students at different levels and prevent them from feeling valuable and contributing.

Small groups, typically between three and six students, are common in most classrooms today. This could be due to the frequent departure from rows to a more communal classroom environment. Small groups naturally promote discussion, which comes with its own challenges and triumphs.

If you're an elementary teacher and juggle multiple subjects a day, I encourage you to look at dynamic small groups as a way to signal the transition from one subject to another. After all, your data will probably affirm that students rarely remain static in their achievement and level from subject to subject.

Teachers of older kids can allow for student choice in groupings if the activities are differentiated to support the students' various levels. When I was a middle school teacher, I would occasionally permit my students to select their own groups from a choice of four. I made sure that regardless of their decision, however, the tasks at each group provided multiple entry points. While I used this more casual style of grouping less frequently, say, before a holiday, a dynamic classroom culture and high expectations maintained the integrity of my lesson. We had fun, too!

When to use small groups: When a conversation or activity would benefit from a small number of students with varied levels of expertise.

Using the same foundation as small groups, pairing opens students up to sharing in half of the ownership of a project or discussion.

I liked to pair some of my emerging math students with their classmates who possessed not only sound understanding of a concept but also the empathy needed to foster productive collaboration. Pairing students of similar levels serves when you want to reduce hesitation because similar levels even out the playing field and make routine practice more useful.

When to use pairs: When the goal is to have both students benefit from concentrated collaboration.

Sometimes, students need the space to think and learn on their own. While whole group is great for creating a theme or introducing a topic, and small groups and pairs promote discussion, sometimes the quiet of one's mind is best. Think of individual work time as providing a meditative moment, where students can withdraw from the noise of the class and work in a space most comfortable to them.

Ten years ago or so, a "successful" classroom was a noisy one. Students had to be in groups, at the board, or in the hall to appear to be actively working and successful in their learning. The key word here is "appear." Without systems in place to evaluate learning goals, these classrooms were often more razzle-dazzle than successful, and the chaos didn't enhance learning or help students meet objectives. The takeaway from that movement was the (triumphant) return of individual practice time. Teachers began to see the need for and value in balance between intentional groups and time for students to practice on their own.

In many ELA classes, you'll observe students participating in independent reading or writing time. It's a quiet time planned into the week where students can work at their own pace on their own work. I've extended this practice to math, too.

To make the most of this groupless configuration, you should model metacognition and academic thought for your students first. They need to learn about that from you and be familiar with the internal dialogue needed to be a quiet critical thinker first.

When to have students work independently: When a quiet moment to reinforce skills or to work at a more comfortable pace, without the pressure of another voice, is necessary.

Step 4: Understand your role

While the teacher is seen as being front and center during whole-group instruction, you're also modeling conversation and teaching your students that their feedback and participation should be routine and that both are expected. When students are working in small groups, pairs, or individually, you can wear several hats, such as facilitator, coach, or thought partner.

Many teachers set up a desk for themselves with a group so they can really embed themselves in a discussion, observe the group dynamic, and elicit feedback from their students. These observations can serve as another data point you can triangulate with your formative and summative data when planning more cooperative learning opportunities in the future.

Pairing in particular lets you zoom in a bit more closely without feeling like you're having a conference with a student. Having one other student present reduces intimidation for a lot of kids, while also helping them avoid feeling that the eyes of the crowd of a small group are on them.

When students work independently, take this moment to conference or spiral in topics specific to that student's needs, based on the most recent data you have for them.

Before you go

Whichever method of grouping you choose during cooperative learning time, mix it up. During your weekly planning, try to incorporate as many different grouping styles as are suitable for that week's learning. Here are a few additional things to keep in mind:

- **Students can be startled by novelty.** If changes to your classroom groupings happen infrequently, transitions could unintentionally create distraction that does more harm than good. So, the earlier in the year you begin using dynamic groups, the better.
- **Don't feel pressured to try all types of student groupings all at once.** Some weeks will naturally lend themselves to more creativity than others.
- **If something doesn't work, learn from it.** There will be times when a lesson just doesn't go the way you'd hoped. Consider that data that can inform what you avoid next time around. Trust me when I say that you won't break the profession or cause years of learning loss if you went with pairs when whole group may have been the better choice. Give yourself grace.

Neat rows sure look great, but there is no reason we should cling to that old model too tightly for fear of chaos. Considerate, deliberate planning will reveal the difference between intentional chaos and just chaos. **TLG**

3 ways to use flexible grouping in real time to support student growth

Tatiana Ciccarelli

In my previous article, I discussed various classroom configurations and why you might choose whole-group instruction one day and pair work, for example, the next. In this post, I'd like to expand on those ideas and explore an element of flexible grouping that many educators would agree is easier to implement successfully after a few years of teaching: changing student groups in real time.

Have you ever witnessed someone who is in their element? A comedian who nails every line. An athlete moving with instinct and ease. A chef who takes a bare cupboard and creates a masterpiece. I find myself captivated, almost mesmerized, by someone who is at such a full expression of their craft that what they're doing doesn't look like work at all.

If you were to ask any person at the pinnacle of their career how the journey to the top was, they would probably recall a trail of emotional bumps and maybe a few bruises to the ego. For a teacher, making in-the-moment changes to grouping requires some years of practice—and even some missed marks. The fullest expression of flexible grouping is adjusting student groups in real time, and I'm here to help you avoid as many bumps and bruises along the way as I can.

A quick reminder: What flexible grouping is

Adjusting student groups in real time is an advanced skill inside the larger teaching strategy that is flexible grouping. Let's start by ensuring we're working from the same definition of "flexible grouping."

Flexible grouping is a cornerstone of differentiation, and it encourages teachers to view their classroom as a dynamic environment with purposeful seating. It refers to frequently assessing student skills and ensuring they're in a group that will provide enough just-right challenges to keep them engaged and learning when you choose to switch from whole-class instruction to group or pair work.

For many of us, flexible grouping becomes less of a planned teacher checklist item and more of a habitual best practice after we spend some time (often years) trying out groups, using student data to evaluate group success, and going back to the drawing board as many times as we need to, to get it all right.

If you're at the point where flexible grouping is a comfortable habit for you, I'd like to challenge you to take things to the next level with your students by beginning to think about how to adjust groups in real time, if you're not already doing so. If flexible grouping is still somewhat new and difficult for you, the advice that follows can help you set some long-term goals for your practice.

Start with a flexible mindset

Before we can even begin to think about keeping groups fluid, low-stakes, or purpose agnostic, it's critical that we explore the idea of flexibility more generally. Think about how you embody flexibility in your practice every day. What does it look like when you make changes midstream to something you're doing in your classroom?

There are certain occasions when making adjustments in real time is a bad idea, of course. When riding a roller coaster or getting a tattoo come to mind. Then there are times when changing your mind at the last minute could mean a world of difference. When filling in a lottery ticket or saying "yes" to a blind date, for example.

What happens when your planned grouping starts to fall apart a little? Should you throw your hands up and call that lesson a bust? Of course not. (Though I totally get why you might be tempted to. I've been there plenty of times myself.) Powering through and making small, well-informed adjustments midstream can help you get things back on track and help students be successful. Flexibility in the classroom looks like responding

to what is happening in the moment and making deliberate changes, adjusting as needed to get the lesson right. It means knowing your content and students so well that you can make changes with confidence.

When I think of "maximum flexibility," I think of Gumby: that lovable, green clay character who can bend and stretch and shrink, all with a smile on his face. You aren't Gumby and neither am I. Being flexible can be hard, and I don't want to suggest it isn't. But I do believe we can all strive to have a Gumby-like mindset. By that I mean that we can be prepared to adapt and have the confidence that we can make changes in the moment that will help us be more successful in meeting our teaching objectives. This requires planning, of course, but also having a backup plan (or two) that doesn't sacrifice the integrity of a lesson or send the students into a frenzy.

Step #1: Keep groups fluid by knowing your students

The first step for adjusting students in real time is to keep groups fluid. I'm not suggesting a free-for-all all here. When planning your groups, I encourage you to commit to that plan about 90%. I like to leave a little wiggle room in my planning, around 10%, to give myself room to make adjustments. That's fluidity.

The same process that informs my initial plan for grouping (that 90% I'm committed to) typically informs my adjustments (my fluid 10%). I take all my data into consideration in both cases: my observations of student dynamics, assessment results, and our learning goals. I remind myself that I have to be able to let go of what I planned if that's what's required to provide the most impactful experience for my students. For example, if I initially have a group of five students working on an entry-level task and I see one student is quickly outpacing their peers, I need to be ready to move that student to a group where a productive challenge is possible for them. Conversely, if I placed a student in a higher-level group and observe them floundering, I should move them to a group where they can reinforce their skills. I can notice these types of things by making rounds during group work and by reading between the lines of what students are doing and saying, especially because they're likely to adjust their behavior, at least a little bit, when I pull up a chair and sit down with them and their peers.

Keeping groups fluid doesn't apply to making adjustments within a group only. If I planned a task for pairs, for example, but see there is more deliberation on the goal of the task than actual academic conversation, I may pause and bring the students back to whole group for a little bit.

It's more than okay to make a change like that when it serves the larger purpose of helping kids meet a learning goal.

Step #2: Seize low-stakes opportunities to pivot

The best time to make grouping decisions in the moment is almost all the time. I'd like to add one small asterisk to that, though: If you are at a high-stakes moment, that is, if a lesson is vital to subsequent learning, think carefully about your grouping decisions. For example, if I am starting a unit with presumed prior knowledge and would like to take a class period to do a multi-station, multi-level review, I can probably do that and be flexible with in-the-moment grouping. However, if I am starting a new unit with brand-new content and I need maximum buy-in and focus, I may want to have a more structured approach to the lesson.

Any time you select group or pair work, you are opening yourself up to the possibility of a game-time adjustment. Thus, it is best to use groups when:

- Student engagement is a priority
- You feel confident all your students have the required amount of prior knowledge
- There is time to incorporate a planned summary or regroup if necessary

Step #3: Aim to have groups be purpose agnostic

Maybe the most important step is this last step. The purpose of groups—and of changing those groups in the moment as needed—is to find the best placement based on the student, activity, content, and goal. We don't ever want to keep kids cast in roles they may have outgrown.

Student needs should dictate the group, and that's what we mean by "purpose agnostic": student needs are the priority, not whatever goals you may have for groups at the outset. The groups are there to serve each student's immediate academic need and create the optimum opportunity for a productive challenge. This is a shift in mindset from "These are our low-performing kids, our middle kids, and our high kids" to "This is where the student will work best right now. I, as the teacher, am flexible and prepared to move them to a different group if I need to."

The challenge here is that you must be confident you know both your content and your students well so you can provide access to grade-level content while also giving every student the support they need at their level.

Go boldly, Gumby!

Wherever you are in your teaching career, your students are going to benefit from a teacher like you who is willing to develop the skills and habits necessary to elevate their learning. Observing you making confident, deliberate changes helps them learn both what it means to be adaptable to change and what can be gained from it. It's good for your students to see that changes can happen on the fly but that your high expectations don't waver.

Flexible grouping, in all its fullness and actualization, includes changing groups in the moment, and that's a skill that takes time to develop. Most experienced teachers would tell you that it becomes second nature (the key word being "second") after years of careful consideration. By starting from the foundation of flexible grouping and being willing to dig deeper into understanding your students as scholars and individuals, you'll become fluent at being flexible. Just remember to stretch! **TLG**

3 ways to bring effective co-teaching strategies to life in your classroom

Lindsay Prendergast

When I was a classroom teacher (and later a school principal), there wasn't a day that went by when I didn't wonder if the instructional practices I chose to implement (or encouraged others to use) were likely to have any impact on learning for my students. I sure loved teaching Hatchet, using the latest digital apps to capture students' focus, and leaning into my favorite co-teaching strategies. But the concern was ever-present: What if it was all a waste of time?

Today, as I support educators in one of the largest school districts in the nation as they face the consequences of staggering interruptions to student learning following COVID-19 school closures, I see the same look of uncertainty on the faces of teachers almost every day. They are working as hard as ever, tying themselves in metaphorical knots to meet the needs of each and every learner in their classroom, all while teaching grade-level standards.

Let's zero in on strategy #4: Share students and strategies within a grade level.

What does it mean to share students and strategies?

I'll take a guess that you have heard the term "co-teaching" plenty. My first experience with this concept was as a push-in special education teacher, but neither the math teacher I was working alongside nor I had ever been trained to co-teach. This led to me spending an awful lot of time watching great math instruction instead of teaching alongside my colleague, and I also found myself struggling to find one-on-one time with my students, both for conferences and to check their work.

Was that time impactful? It for sure helped me sharpen my skills for reducing fractions in the kitchen, but my students would have benefitted from a more collaborative approach. They needed—and deserved—more meaningful instruction from me, and they didn't get it.

Proven to work

Our High Growth for All research shows that when sharing students and strategies within a grade level, we need a far more sophisticated set of co-teaching strategies than the ones I relied on early in my career. Research related to an initiative by Public Impact called Opportunity Culture presents similar results.

The co-teaching strategies should be characterized by strategic student grouping, with equally strategic instruction provided by different teachers of the same grade level or content area. Think "no limits" when it comes to this concept: sharing spaces, flexibly shifting student groups in the moment, collaborative planning times that surface new ideas for leveraging each teacher's strengths, and more.

When thinking about all of this, I am also reminded of the phrase "collective teacher efficacy." Does it ring a bell? If you haven't explored the concept, be sure to visit John Hattie's site on Visible Learning, where he defines "collective teacher efficacy" as "the collective belief of the school/faculty in their ability to positively affect students" and goes on to explain that it "has been found to be strongly, positively correlated with student achievement." Hattie's work is rooted in the research of Rachel Eells.

All of these experts studied how the shared belief of teachers that they can influence student outcomes and increase achievement can exponentially increase the likelihood that they will. Consider the operative word here: "shared." When collaborating with colleagues on co-teaching strategies (and when implementing any of the Transformative Ten

strategies), you will likely multiply your effectiveness with students because you are sharing expertise, passion, and belief in their capacity with your colleagues and throughout your school.

So, how does all this impact happen? Let's explore three key practices that can help you bring all of this to life:

1. Set the stage for collaboration
2. Plan and deliver aligned instruction and assessment
3. Include collaborative reflection

1. Set the stage for collaboration

Collaborating with your fellow teachers is paramount to successful coteaching. Rather than jumping right to instructional planning, I encourage you to set the stage with some discussions around how you will collaborate. In Habits of Resilient Educators: Strategies for Thriving During Times of Anxiety, Doubt, and Constant Change, my colleague Piper Lee and I highlight the fundamental principle that "all educators possess strengths, and when they come together and collaborate with a common vision, they can accomplish what seems impossible." To play to your strengths and find your shared vision, consider beginning by having an introductory meeting where you establish the following:

- When and where will you meet
- What roles you will each assume when collaborating (for ideas, check out Doug Fisher and Nancy Frey's PLC+ resources)
- What meeting norms you will uphold (be sure to use the team norm-building process described in chapter 9 of *Habits of Resilient Educators*)
- How you will hold yourselves accountable for the work

After that initial meeting, you'll likely be ready to tackle designing your learning space. Try to remember the merits of remaining flexible. Whatever you decide upon initially can (and perhaps should) change as often as you deem necessary. Build ideas as if you were detectives searching for the best solution: if students respond well to certain seating arrangements or room distributions, for example, take note and repeat. I also encourage you to examine daily and weekly schedules carefully to find opportunities for sharing students and strategies within single instructional periods or finding windows of time at other points during the day.

Remember: when you are working as a team, you'll find you multiply the most important resource (you, the teacher) and mitigate the constraints of time we all face when working alone.

2. Plan and deliver aligned instruction and assessment

Once you've established the structural components for sharing students, it's time to dive into co-planning for instruction.

Many of us often plan instruction in ways that suit our personal preferences, teaching experience, and goals, so you will likely need to lean on the norms you established in your initial meeting to ensure fruitful collaboration. I also encourage you to let data guide your conversations. If your school tests with MAP Growth, leverage the Class Profile report as you make grouping decision and begin thinking about and aligning the instructional resources you will then use to meet your students' needs.

Does your school take time to collectively examine, or unpack, standards together? If not, now is a good time to start. Check out the practical tips for this process in Habits of Resilient Educators. Piper and I argue that doing so can help you gain a "deeper understanding of the appropriate level of rigor when instructing students." While it's easy to assume that your co-teacher is deeply familiar with the standards you'll be teaching together, remember that "this practice of collectively analyzing standards allows teachers to fix their eyes on the goal of supporting growth and achievement for all students."

The process of aligning instructional resources and learning activities may take time to coordinate and implement. However, consistency is key for the sake of the students you are striving to support. Does your school or district use common pacing guides, for example? If so, these can be a great starting point. If not, begin with a calendar of when each standard is taught or by establishing the sequence of instructional units. After that, collaboration meetings will be rich with dialogue as you and your co-teacher explore and choose resources, assessments, student groups, and more.

My colleague Mary Resanovich's advice on supplemental instruction may be particularly handy when you dig into this part of the work.

3. Include collaborative reflection

As your team progresses through the process of designing and delivering aligned instruction, the data you gather will no longer be the outcome of a single teacher's efforts. Each of you will have influenced every student's

learning outcomes! As a result, your opportunity to examine data together becomes even more rich.

It's not unusual for co-teaching teams to drift into the comfortable realm of planning logistical elements of team teaching and sharing students. Leverage your initial collaboration norms yet again to uphold a consistent schedule of opportunities to pause and reflect together. Sharing and examining data on a regular basis will inform the crucial decisions you make to maximize your effectiveness as a team. As noted in *Habits of Resilient Educators*, remember that "by embracing an open mind and constantly endeavoring to uncover new information that empowers our ability to make effective decisions, we move from seeking data as if we were on a witch hunt, to collecting data as if we were on a treasure hunt!"

Slow and steady wins the race

Our High Growth for All study proves that the Transformative Ten strategies can have a big impact on student growth, but it also reminds us that they aren't meant to be used every single day, or in every single lesson. Becoming comfortable with each of the ten practices will give you an excellent toolbox of proven strategies so you can put that nagging voice asking "What works?" to rest. Allow yourself to explore each strategy, and set reasonable goals for your practice, just as you do for your students. **TLG**

4 research-backed ways to differentiate instruction

Piper Nichols

When I think about what it takes for kids to master grade-level content in school and get the support they need to reach their potential, I recall my son's experience. He's in his late twenties now, but his early outcomes in language arts were mixed. His ability to read informational text was way above grade level, but his patience for literature was practically nil—and it showed in his reading scores. It's easy for students like this to feel overlooked and fall behind in certain areas. The fortunate ones have teachers who know how to differentiate instruction so that every student has the right mix of support and opportunity.

But how exactly do you go about differentiating in a way that plays to students' strengths while also challenging them to improve where they need it? It's easy enough to say that all students deserve instruction that recognizes and meets their individual needs. But we can't just snap our fingers and "make it so" at a time of stubbornly low rates of academic growth, increasing inequities, and the lingering effects of the pandemic. And it's not just students who need dedicated support—our busy teachers need it, too.

Differentiating tasks within a unit can help teachers navigate the tricky job of giving each student the personalized instruction and learning opportunities they need to thrive, while continuing to provide all students with access to grade-level content. To help you put this tactic

into practice, I'd like to share four straightforward and impactful tips drawn from my experience working with superintendents, principals, and professional learning communities. I've gotten a firsthand look at the obstacles teachers face in meeting the instructional challenges of our time—and I've also seen the brilliant and inspired work teachers are doing in this area.

1. Start with the evidence of "who"

It may sound obvious, but determining exactly which students need which types of support is a crucial first step before you begin to differentiate instruction. And while there's a lot to be said for teachers' intuition—they do, after all, know their students better than just about anyone—doing this correctly involves more than simply making a judgment call. We all have our blind spots and biases. Like my son, there are an awful lot of students out there who don't fit neatly into a "low" or "high" performing group, depending on the subject, and it does them a disservice to label or tag them as such. That's why, before assigning students into differentiated learning groups, you need clarity on their preparedness for specific tasks within a larger subject area.

And how exactly do you gain this kind of clarity? My best advice is simply this: Look to the data. There's so much valuable evidence to be gleaned from instruments like pretests, summative assessments, and interim assessments like MAP Growth, to name a few. The point isn't to rely entirely on numbers, but rather to combine this quantitative information with your own intimate knowledge of the kids sitting at the desks in front of you. When you figure out how to bring quantitative and qualitative data together, you take a big leap in your ability to sort your students into the learning groups that are best tailored to their needs.

There's no question that data can be a powerful and helpful asset—if we can only learn to trust it. As my colleague Lindsay Prendergast and I write in our forthcoming book, *Habits of Resilient Educators: Strategies for Thriving During Times of Anxiety, Doubt, and Constant Change*: "When paired with the quantity of decisions teachers find themselves facing on a daily, even hourly, basis, data can empower teachers to become masters of highly effective instruction and extraordinarily efficient users of a most precious resource: time."

2. Create small groups

Have you noticed that students often feel more relaxed and confident working in small groups? And have you noticed that small-group work gives you an informal way to watch students more closely and see how the instruction they're getting may or may not meet their needs? There's so much a teacher can learn in these moments, simply by observing.

Nevertheless, there's a persistent myth that tier-one instruction—the curriculum, instruction, and assessments given to all students at a given grade level—is somehow incompatible with small-group learning. Even though we can see the benefits of small-group learning with our own eyes, I've noticed a widespread assumption that when it comes to tier-one instruction, only the traditional "all eyes on teacher" model is appropriate.

I'd like to push back against this assumption. In fact, I'd argue that for all instructional groups—including tier one—the smaller, the better. I encourage you to keep this in mind at the start of each instructional unit. You can do some really great teaching in small groups. Your students can all be working on the same project within the same rubric, and you can deliver targeted support where it's needed as they engage in this work.

When I see small groups in the classroom, I see more kids who are on task, more teachers with greater insight into how each kid is doing, and more overall growth. The challenge, of course, is that it takes time—valuable time—to form and manage small groups. But it's worth it!

3. Know your standards

Many, if not most, of the teachers I know are multitasking geniuses. They manage busy classrooms, extensive to-do lists, and various priorities and directives handed down from the school or district level. It's a juggling act they perform with great skill. But in my observations, there's a common downside to multitasking: a lack of clarity and focus around the academic standards for which teachers are responsible.

Here's how Lindsay Prendergast and I put it in our book: "It is common for teachers to know instructional groups of standards generally but not all of them masterfully. The powerful move of collectively and collaboratively unpacking and investigating standards allows all teachers to gain pedagogical tools and a deeper understanding of the appropriate level of rigor when instructing students. This practice of collectively analyzing standards allows teachers to fix their eyes on the goal of supporting growth and achievement for all students."

Let's bring this to life with an example. Say you have a literature standard that pertains to identifying the character and setting of a book. This is a simple enough task, but you're excited about the material and your mind is racing ahead not only to other standards, but also to your own ideas for what you'd like your students to know. You may be tempted to launch into the lesson with a discussion of other elements—the front and back cover, the title page, the author, the illustrator—before getting to the standard. All these things can and should be covered, but you need a game plan.

To home in on standards and make them second nature, I recommend two powerful tools that you already have in your toolkit: conversation and collaboration. By getting together with your peers and sharing what you know while remaining open to their insights, you can all benefit from collective teacher efficacy, a concept that's been studied and affirmed by numerous educators and researchers.

Maybe you have a knack for informational standards and you've become skilled at differentiating instruction of these standards in your classroom. Bring what you know to a professional learning community, and you will probably find that others have brought different but equally valuable perspectives, tips, and tricks to the table. You can use these collaborative environments to drill down into the substance of what you're teaching this year. Try breaking down clusters of standards in particular units with graphical tools like T-charts (yes, T-charts can be for teachers, too), for example.

One final note on getting the upper hand on standards: Make it a daily practice. Start each day in the classroom by getting as clear as possible about your learning intentions for the day, and know when your strengths—e.g., multitasking skill, adaptability—could also inadvertently cause you to lose focus. Identify which standard, or which part of a standard, has the potential to deliver the most impact for the day, and be sure to hit that one first.

4. Get support—and get vulnerable

I know the tactics to differentiate instruction I've described so far aren't just minor adjustments or quick fixes. It might sound like a lot of work. That's why the last tactic I'd like to share is one that will make the other three possible. To put yourself and your students on the strongest footing possible, I encourage you to seek out, use, and trust the resources available to you.

It's understandable when teachers, who usually (and for good reason) feel they know their students best, strike out on their own with their own materials. But they—and their students—may miss out on readily available, evidence-based instructional resources that are getting better all the time. Our mission of partnering to help all kids learn reflects the importance of getting these resources into teachers' hands and fostering the equal opportunities that kids deserve. However, to be frank, there is currently a gap between the availability of superb resources and teachers' willingness to use them. I encourage you to be open in this regard. You may be pleasantly surprised.

That said, resources are best thought of as a menu, not a script you have to follow. Order from the menu as you see fit. You can find resources to help guide you through all phases of instruction, from whole-group to independent to small-group learning. If you find yourself thinking that every step you take to seek out resources or support has an associated cost in terms of your time, you're right. There's no denying that. But just as your second year of teaching was probably a bit easier than your first, the investment you make in reaching out for support will pay dividends over time.

Finally, remember that no teacher is an island. You may sometimes feel alone in your classroom, but so many of your peers are grappling with the same issues. Be vulnerable and give yourself permission to seek out support. Tell your principal what your goals are and what you need. Your administrative leadership may already have prioritized getting more curriculum-based resources into teachers' hands and will do what they can to facilitate this for you or offer incentives to stretch yourself in this way.

Find other teachers in your building who seem to have figured some of this out already. And, of course, as you learn from others, you can share your own expertise, too.

Putting it all together

As you ponder the ideas I've shared above and how you might be able to put them to work in your classroom, there are a few additional pitfalls and key principles to consider:

- **Beware the implementation dip.** We know from research that in the immediate aftermath of rolling out a new resource or instructional strategy, academic data may temporarily move in the wrong direction. But we've also learned the importance of sticking with it.
- **Differentiating instruction does not mean lowering rigor.** We want to accommodate all our students, but that doesn't mean bringing the overall standard down to a point where our grade-level and advanced students no longer have what they need to feel engaged.
- **Set ambitious, achievable goals.** As Lindsay and I write in our book, "clear and attainable goals allow students to have a vision of where they need to go while providing checkpoints along the way to help them monitor their progress and celebrate their small milestones toward academic growth."
- **Seek out feedback** from supervisors, mentors, coaches, fellow teachers, parents and guardians, and students themselves. The great thing about feedback is that you get to decide how, when, and why to receive it—and how to integrate it into your work. **TLG**

5 tips for practicing foundational skills

Anita Brown & Kailey Rhodes

Teachers, raise your hand if your classroom has at least one student who is practicing foundational skills. Keep them up if it's five or more students. Ten or more? Most students? Yes, we see your hands. Hi! We're waving back at you!

In our math classrooms, fractions were when we felt it. How were we supposed to teach dividing fractions when some of our learners couldn't add fractions? When some of our learners didn't know what fractions truly are?

Whether it's math or reading, science or social studies, it's almost impossible to find a classroom where all learners are exactly where they "should" be. But when we remember that all learners go at different paces, and that children of the same age aren't necessarily all ready to learn the same things, we begin to have more empathy for our students, for their previous teachers, and for ourselves!

We know academic growth happens when learners receive rich exposure to grade-level content, yet we must face the facts: our learners have gaps that need addressing. Teachers, we don't need convincing. We need know-how!

Let's unpack how to make intentional, focused time for practicing foundational skills that are necessary building blocks, while avoiding getting stuck in past years' standards. It's undeniable: this year's standards + every previous year's standards = our work cut out for us. But, luckily, one district's proven methods are here to add new support.

Practicing foundational skills: 3 myths to bust the stress

Half of the stress of providing targeted foundational support is not necessarily the doing of it; it's the looming omnipresence of "My students need review!" There are many teachers who can reteach previous years' concepts with fluidity and engagement. In fact, we may have favorite review lessons. But this haunting idea that students are perpetually behind plagues our teacher brains all year long until, surprise! New year, new students, same stressful specter.

It is an educational reality that we need learners to meet certain targets by certain points in the year. But the sooner we accept that "review" is actually a natural part of the learning progression—especially after the pandemic—the less stressed we as educators will be. And let's face it: we're much better at our jobs when we're a bit less tense.

Myth #1: "But they learned this already!"

Not necessarily. Raise your hand if you ever had to skip standards because your school year ran short or because you were, you guessed it, reteaching? Raise your hand if you had to abandon at least one standard because "power standards" needed your attention?

Or maybe a student switched schools or teachers while learning a new concept. Maybe they had something going on at home, like the death of a pet, a new sibling, or a move. Perhaps COVID massively interrupted their learning of a foundational concept or they never fully understood a concept in the first place because their brains simply weren't ready.

The good news is, each day, you're dealing with older, more developed brains. Just-in-time support like a mini lesson on "What exactly is a fraction?" could be exactly what they need to ignite their understanding—and even unlock old learning memories that just now make sense to them.

Myth #2: "Nothing truly 'learned' needs to be retaught."

Hmm. Maybe. The science of forgetting is complex. If we had to retake physics, for example, we'd have some relearning to do, because it's not a subject we use every day. Not because we didn't know it in the first place, but because the neural pathways in our brain need reminding of what they understood long ago. Sometimes, we forget procedures and need simple reminding of the concepts behind them.

Imagine a student who "doesn't remember" how to turn fractions into decimals. It turns out, their previous teacher used money manipulatives to teach this concept and the student hasn't dealt with physical money since. A

simple mini lesson linking money to the larger concept may be all they need. Their older brain will likely re-meet the concept with a bit more of a foothold.

Of course, sometimes educators correctly assess that a student who can't read a paragraph of text doesn't need "reminding" of phonics; it's that there are gaps in the learning that may need deeper intervention.

Myth #3: "My exceptional students will be underserved by revisiting previous years' content."

Here's the truth: if all we ever did was review, we would underserve all our learners. Research repeatedly shows that all learners need rigorous instruction of on-grade-level content. Yet it's also true that what's good for one learner is good for everyone, like written instructions benefitting more than just those with hearing impairments. This Universal Design for Learning (UDL) approach is not only compassionate; it's also common sense. In fact, many tips on supporting kindergarten math students would support first- and second-graders as well.

What we label as "reteaching" can become reconceptualizing, reconnecting, and reinvigorating. This benefits all the learners in the classroom.

5 tips for practicing foundational skills and filling in the gaps

Educators, now that we've taken some deep breaths and know we're in this together, here are five tips for supporting your learners with targeted foundational skills support.

Tip #1: Normalize review by carving out consistent whole-group time

Looking back on the school year, wouldn't it be great if there were a consistent review time as a "catch-all" for those gaps you notice during formative assessment? Students do well with routine—and they love a good hashtag—so maybe it's time to riff on #ThrowbackThursday.

Perhaps each Thursday, you protect time for a twenty-minute whole-group review session on a deeper, "older" concept that would benefit all voices in the room. Consider going full old school and bringing back physical or digital manipulatives that remind them of their younger classrooms.

Elevate this to a pro tip by bringing it back around on Monday for a quick review. Recalling the skill after the weekend is great practice for retention.

Tip #2: Invite students to teach

Sometimes, the best teachers for your students are other students. Let's return to our fraction example. Perhaps a couple of learners need a review on adding fractions. Instead of asking students to explain the concept, try this workflow:

1. **Write student responses to two lists**! List A: "Student errors when adding fractions." List B: "Math vocab words you might hear when adding fractions"
2. **Invite a student to the board.** Their job is to explain one student error when adding fractions (from list A) using at least one math vocab word (from list B).
3. **Invite another student to be the elaborator**, that is, the person who explains, clarifies, or corrects any instruction from the previous student. Bonus points if they include another student error or math vocab word from your lists.
4. **Invite a third student** (perhaps one who rates themselves as shaky on the concept) to recap what the two students just taught. They can pick what explanativon made more sense to them, or they can create a mashup.

5. **Take notes on your students to help inform your decision-making for upcoming small groups.** Maybe student 1 was confident but had an error that needs addressing, for example.

When students teach each other, they reinforce their own understanding, reveal their misconceptions, and deepen conceptual connections for all involved.

Tip #3: Keep your small groups fresh and flexible

Sometimes targeted practice with foundational skills will be more needed by a subset of students, who then benefit more from the smaller setting. My colleague Tatiana Ciccarelli champions flexible grouping in "3 ways to use flexible grouping in real time to support student growth," where she offers three steps to shift the small-group mindset from "These are our low-performing kids, our middle kids, and our high kids" to "This is where the student will work best right now. I, as the teacher, am flexible and prepared to move them to a different group if I need to."

The trick is to stay flexible, both in your groups and with yourself. Tatiana encourages teachers to make ever-evolving small groups that fit the learning goal, and she reminds us to feel free to make last-minute switches. Our students and their relationship to material is always changing, so their groupings should, too.

Tip #4: Remove "Right?" from your vocabulary

Once you start noticing this one, you'll hear it everywhere.

"Right?" is an innocuous little word that we often thoughtlessly use as a synonym for, "Are you with me?" However, this is a cue word for our students to pretend they understand or remember what you're unintentionally labeling as obvious. Students (and your adult friends!) may take this to mean, "Oh, I'm supposed to already understand, even though I'm already lost. This is beneath her to explain, so I will ask no questions."

Ask your students to help you with this. They will surely love to vigilantly tally each time you slip up.

Tip #5: Leverage a digital tool

If your school uses MAP Growth, one more way to make your assessment data work for you is to pair it with a supplemental digital tool. Many of our instructional connections funnel targeted practice to students based on their reading and math scores, accessing a level of personalized, differentiated practice that gives teachers back valuable searching-for-that-perfect-learning-activity time.

An opportunity for depth

As teachers, we regularly encounter skill sets that build on and draw from one another. Thus, it's important that we identify and support our students when something is missing. As we dismiss the "they should be here by now" mindset (when did that ever help anybody?), we free up our energy to explore practicing foundational skills as an opportunity to deepen connections that last longer and longer each time. **TLG**

How teaching multiple standards can improve learning and get you through your curriculum

Mary Resanovich

When I first started teaching, I both looked forward to and dreaded the week break we got for Presidents' Day. The break itself was fine, but afterward I knew I was heading into what I thought of as the spring rush. This period, between late February and the end of the year, became a race of "What do I have to get through before state testing?" and then, "How can I possibly get through the rest of the content in the last six weeks of school?" I can only imagine how heightened this rush is after the COVID-19 pandemic, given the well-documented learning loss. Thankfully, by taking on the approach of teaching to multiple standards, there are ways to lessen or even avoid the spring rush.

Let's examine how Strategy 7, Teach from multiple standards at once, can not only help you get through your curriculum but also help you make learning stick.

About our research on teaching multiple standards

In his observations at Schiller Park Schools in Illinois, former NWEA® researcher Chase Nordengren noticed that teachers used their supplemental-for-all learning block as a way of taking content that is typically taught at the end of the year and interspersing it throughout the year. By using a back-to-front approach, they took topics like data and graphing, which typically fall in the final units of the curriculum and introduced them during intervention blocks earlier in the year. Students then practiced these skills in centers and intervention blocks even while the whole class focus was on other standards.

This approach provided two key benefits. First, by its nature, it allowed students the opportunity for spaced retrieval practice. Research has found that for concepts to be embedded into long-term memory, learners must have the opportunity to practice repeatedly retrieving the information, ideally over a period of time. Secondly, by introducing these concepts earlier in the year, teachers found that students already had a basic knowledge of the content, allowing instruction to go deeper faster.

Of course, this can all work in the opposite direction as well. Students will benefit from spaced practice of content taught earlier in the year, so intervention blocks and centers can be used to both preview upcoming standards and revisit and practice previously taught content.

Leverage the structure of your standards

While it may sound overwhelming or even impractical to try teaching multiple standards at once, most college-and-career ready standards are designed to support such layering. Modern standards are typically designed to have both across-grade and within-grade coherence. In other words, the standards both build upon one another, grade after grade, and support one another within each grade.

As I discussed in a previous post, many college-and-career math standards identify major or focus standards that represent the most critical work of a given grade. The remaining standards often reinforce the major or focus standards. For example, in the Common Core, there are only two data standards in third grade, neither of which are considered major work. One standard introduces scaled bar and picture graphs and the other is about generating data by measuring lengths to the nearest half and fourth of an inch.

Because these standards are not the major work of the grade, curricula often place them late in the year. For example, in Engage NY's third-grade curriculum, the data standards are covered in the second to last unit.

However, each of these standards supports major work in other domains. For example, if you take the time to introduce scaled graphs earlier in the year, the content naturally supports the major work of gaining fluency with multiplication facts. As students read bar and picture graphs with scales of two, four, five, or 10, they gain practice multiplying to find the total number each bar or set of pictures represents. Not only does this give students different contexts within which to practice multiplication, it also builds connections between concepts.

I have discussed the importance of developing a connected view of content before. Having an interconnected schema, or web of concepts, helps students remember and apply content more easily. This is especially important in math, a subject many of us learned as a set of procedures with little or no connection or cohesion.

The other third-grade data standard involves measuring halves and fourths. Introducing the measurement component of this data standard during your unit on fractions allows for additional practice and reinforcement of the critical, and sometimes challenging, concept of fractions as numbers on a number line. The purposeful interconnection of standards also highlights why it is actually important to try to cover all the standards for your grade. Progressions documents, like those for the Common Core, can help you understand and leverage the coherence within the math standards to teach multiple standards.

By their nature, the ELA standards are highly interconnected and offer many opportunities for teaching multiple standards across the discipline's domains. For example, selecting rich, high-quality, on-grade literacy texts allows for exploration of multiple comprehension standards as students examine theme, character development, language and style, tone, and structure. Indeed, solely teaching these components as isolated skills waters them down and negates the ultimate goal of helping students engage deeply with text to uncover meaning and purpose. To illustrate the interconnectedness of the standards, imagine trying to determine the theme of a story without also thinking about how the characters help develop the theme!

Literacy educator and researcher Timothy Shanahan, states that "units—and even individual lessons—will need to address multiple standards. The structure of the comprehension standards is less a detailed list of disparate items than an organized set of cognitive moves one might make in trying to understand a text." Researchers Nell Duke and P. David Pearson also talk about the importance of working with multiple comprehension strategies at a time. In their paper "Effective practices for developing reading comprehension," they step through five components

of comprehension instruction, from explicit teaching and modeling of a strategy to collaborative and guided practice and, eventually, gradual release to independent use. However, they caution that "it is important that neither the teacher nor the students lose sight of the need to coordinate or orchestrate comprehension strategies. Strategies are not to be used singly—good readers do not read a book and *only* make predictions. Rather, good readers use multiple strategies constantly. Although the above model foregrounds a particular strategy at a particular time, other strategies should also be referenced, modeled, and encouraged throughout the process."

Read around the room

Other subject areas, such as science and social studies, provide avenues for teaching multiple reading and writing standards. Shanahan cites a group of studies examining reading instruction within middle and high school social studies classes. The research found that when reading content area texts, applying the knowledge gained there to prior knowledge or to problem-solving activities increased content knowledge, content reading comprehension, and standardized reading comprehension.

Combining content-area reading and writing is also a powerful tool for learning. A meta-analysis of 100+ studies showed increased comprehension and learning of content when students wrote about texts they were reading. For younger students, writing summaries or retellings of a reading proved to be most effective, whereas deeper analyses or critiques were shown to be most effective with older students. Having students write summaries or analyses of science or social studies content that they have read can improve retention of the key ideas, give you another place to address reading and writing standards, and support the increased emphasis on nonfiction texts in college-and-career ready standards.

As you review your science and social studies curricula for the year, actively look for places to integrate your reading and writing standards. Check out Read Write Think's strategy guide series on reading in the content areas and Reading Rockets' content area literacy hub either to help you get started or to deepen your practice in this area.

Use project power

Project-based learning (PBL) is another approach for teaching multiple standards at once, often across several content areas. PBLWorks describes project-based learning as "a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge." To be clear, engaging in project-based learning is not the same as doing a project. PBLWorks makes the distinction between a "dessert" project, one served up as a wrap-up of content taught during a unit, and true project-based learning, in which the project is the vehicle for teaching the content.

Implementing PBL with fidelity is not a light undertaking; it requires professional development to get started and up-front planning to ensure that a given project will provide appropriate opportunities to support the desired learning. Studies indicate that PBL is worth the up-front investment. A recent review of research found several studies showing that project-based learning aligns to ESSA Evidence Levels 1 and 2. One study involved a cohort of 48 second-grade teachers. Half of the teachers were given training, ongoing coaching, and resources in PBL and were asked to teach four project-based units related to social studies. The other group of teachers taught their regular social studies curriculum. The results showed

that, when compared to the control group, the group engaged in PBL had a 63% gain in social studies knowledge, equivalent to about six months of greater learning, and a 23% gain in informational reading skill, equivalent to about two months of greater learning.

If you are interested in exploring PBL, there are plenty of high-quality resources online including PBLWorks' guide to getting started, a compilation of PBL articles on Edutopia, Professor John Spencer's PBL hub, and Magnify Learning's PBL resource center.

Small steps can have a big impact

If you are still unsure about teaching multiple standards at once, try starting small. Look for places where your standards naturally dovetail and support one another. Or look for standards that have some relatively discrete concepts that can be introduced quickly and practiced before you dive into the full breadth and depth of the standard later in the year. **TLG**

How to create opportunities for self-directed learning

Joe Anistranski

Over the years, I've experienced some amazing displays of learning. I've taught preschool, led elementary after-school programs, run summer programming for middle-schoolers, tutored and coached high-schoolers, been a college faculty member, and volunteered in adult education. Across these settings, I've encountered people who advanced their own learning in unique ways. And I've always found it interesting to ask, how do they do it? What motivates their self-directed learning?

If you're also curious about what drives students as they learn, you could dive into academic research on the psychology of motivation and learning. It's fascinating. But if you want to skip ahead and observe what some of this research looks like in real life, there's no better place than a certain sixth-grade math classroom in Schiller Park, Illinois. This classroom features a self-directed learning model in which students work autonomously, consult and collaborate with each other, and draw support from their teacher.

Let's explore creating opportunities for self-directed learning.

The building blocks of self-directed learning

Many teachers have seen with their own eyes that students who engage in self-directed learning can make great progress. But how does it work? To understand this, let's unpack the psychological model behind this practice:

self-determination theory, as laid out in the 1970s by Deci and Ryan and elaborated on by many other researchers since.

Deci and Ryan built their theory on one big insight: while external factors can certainly help motivate people—who doesn't like earning a paycheck or getting good grades?—the most meaningful and lasting sources of motivation typically come from within. And when we explore what fuels and sustains this sense of motivation, we find three main components: autonomy, relatedness, and competence. These are the building blocks of self-directed learning.

Let's consider each of these components and explore how you can begin putting them to good use in your classroom. I'll also note some potential barriers and how you can surmount them.

The power of autonomy

We don't need research to tell us what teachers find every day: intrinsic motivation is the key to autonomy. Of course, there are always external expectations in place, and students will often gain satisfaction from meeting or even exceeding these expectations. But as you tap into students' own inner drives, their capacity for self-directed learning increases dramatically.

That's because students love to direct their own development through their interests and needs, and this is especially true as they get older. If we want them to really embrace the learning process and their own pursuit of it, setting them up to work autonomously, based on their own interests, is the way to make this happen.

Here are some practical ways to promote autonomy in the classroom:

- **Get to know your students and their personal interests.** When you have a sense of what your students care about and you can connect their interests to the task at hand, that's a great way to supercharge learning. (This is especially true of writing, as my colleague Kayla McLaughlin notes in "4 ways to get students excited about writing.")
- **Recognize students' successes.** When students are encouraged to celebrate and reflect on their own successes, they come to think of themselves as successful—and they expect that success will continue to be theirs. This kind of mentality, in which students have the confidence that what they need already lies within them, is key to autonomy.
- **Know when to turn things over to your learners.** The Gradual Release of Responsibility Model framework explains why, how, and

when to grant students responsibility for their own learning. You can put this framework into practice by frequently considering when learners are ready for you to turn over a task to them. It might be within a unit, within a term, or over the course of a whole school year—and, of course, it will vary from one student to another. As you engage in this reflection consistently, you'll set your students up for successful, sustainable self-directed learning.

Relatedness is all about connection

School is a social environment, and students have a deep-seated need to form and maintain relationships—with their peers, certainly, but with teachers as well. When we draw on this need for relationships, we can find new ways to promote self-directed learning that will happen not in isolation, but in the context of a social and collaborative environment.

Why does this context matter? Because without these social bonds, students have a harder time accessing the support and help they need—and these are necessary in the classroom, *especially* in the context of self-directed learning. So how can teachers promote relatedness?

- **Demonstrate respect for students.** Know more than just their names. Know who they are. Include many opportunities for students to find themselves represented in what they're learning.
- **Connect with students.** Provide frequent chances for students to show you their personal connections to and interest in what you're teaching.
- **Focus on culture and climate.** Create a classroom culture that encourages students to interact with and support each other, while avoiding competitiveness and any social divisions that may erect barriers between students and the support they need to fulfill their own potential for self-directed learning.

Competence: The art of having what it takes

Does a student have the knowledge, judgment, and skill needed to pursue a given task? That, in a nutshell, is the definition of "competence." A competent student has what it takes to achieve a reasonable goal set out before them. And when that sense of competence is developed, they often feel a sense of mastery over their learning.

However, any student can have the wind taken out of their sails. If a task is too challenging or advanced, or if they receive negative feedback (or no feedback at all, which can sometimes be even worse), their sense of

competence can take a hit. As doubt creeps in, self-directed learning may stall. Here are some ways to build and sustain competence in your students:

- **Establish and share clear criteria for success.** Students need more than an ultimate goal or endgame. They need continuity between the present and a successful future. To accomplish this, create rubrics to outline criteria for success and, more informally, plan a series of conversations or check-ins to help students focus on progress toward learning targets.
- **Think ambitious, but achievable.** If you give a learner something that is genuinely too hard for them or that they're not ready for, your effort to instill competence and confidence may backfire.
- **Trust the data.** As you build students' capacity for self-directed learning, you'll need reliable information about what they know and how they're growing. Data from assessments like MAP Growth can help you track students' accomplishments as you implement a self-directed learning approach in your classroom.
- **Trust your own expertise.** Your own training and experiences provide essential information about how to support your students. As you reflect on what you know about them and use formative assessment to learn more, you can help students achieve and maintain a strong sense of competence in their own capacity to learn and excel.

But the standards! (and other concerns)

As students travel their own personal learning paths, you may find yourself concerned about how to keep all that learning aligned to the standards you're expected to address. How can you be sure every student is engaging with grade-level content that aligns to standards and not clicking through content that's only tangentially related to the standards, if at all?

There are three main steps to addressing this proactively: be clear, implement structure, and gather feedback consistently.

- **Be clear.** State your standards and goals clearly and directly at the outset, both for yourself and your students. Make sure every learner understands the assigned task before engaging with it. If you achieve clarity at the outset, you'll be prepared to let students do their own thing. You could think of it in the context of the backward design process: start with where you want to end, and then plan learning backward from there.
- **Implement structure.** Students learn best when they have a dependable routine to follow. As you focus everyone on the same shared goals, targets, and standards—and the same shared academic vocabulary—think about developing a predictable cadence that you can repeat again and again. Stick to this process as you introduce and work through new tasks.
- **Gather feedback consistently.** Remember, a learning process has an arc. It's important to spend time with what happens in the middle, not just the beginning and the end. Implement regular check-ins at the individual, small-group, and whole-class level—whatever it takes to get a sense of how students are doing and where they might need to be redirected. Toward the end of the time you've allotted for an assigned task, be sure to get a sense of where your students are in their learning, whether that's built into the technology you're using or achieved through other formative assessment strategies.

On their own, but not alone

Even when equipped with the tips and best practices I've shared, teachers may think, "Self-directed learning sounds great, but if I set my students loose to do their own thing, how in the world will I keep them on topic and on task?" It's important to remember that self-directed learning is not necessarily an entirely independent process.

Whether it's engaging students in a discussion about the class's shared academic vocabulary, checking in with individual students, or taking the pulse of small working groups throughout the classroom, there are many touchpoints you can use to make sure self-directed learning takes place in a context of collaboration, sharing, support, and alignment. With each task, emphasize how, as your students direct their own learning, each one of them is helping to push the group toward achieving shared academic goals, mastering the standards, and accomplishing successful outcomes they can all be proud of.

In the end, remember that self-directed learning is about practical approaches to autonomy, relatedness, and competence. As an educator, you're the expert on what works for your students in your specific classroom. Trust your training and experiences as you implement these strategies for self-directed learning, and your students will thank you for the opportunity to author their own experiences. **TLG**

How to use student discourse as a formative assessment activity in the math classroom—and beyond

Ted Coe

Have you ever had one of those experiences where you use a word and soon realize your listener had a completely different interpretation of it? One of the most memorable of those communication breaks happened to me when my wife and I were newly married. We talked about how our apartment needed cleaning, then set off to do exactly that. I went after the irritating clutter; she went for the dirt. To me, "clean" meant getting things in order. To her, it meant wiping down baseboards. I hadn't even noticed the baseboards. Ever. And I certainly didn't think her notion of "clean" was as pressing as mine. We thought we were talking about the same thing, but we each meant something quite different. It led to a playful routine where we would stop and play a quick round of "what I said vs. what you heard" when we had unexpected responses from each other during conversations.

Words are funny that way. We like to think that the other person is hearing certain words in the same way that we mean them. We want

our meanings to be shared. Often, though, that is simply not the case. And while misunderstanding each other's meaning of the word "clean" is innocuous, other occasions of mismatched meanings could be far more, well, meaningful.

Formative conversations can illuminate student understandings

In educational settings, formative conversations can serve to help teachers and students better understand each other, just as my wife and I have tried to do since that fateful cleaning day. Consider the mathematics classroom. There are all sorts of ways people might talk past each other. The word "fraction" is a great example. When I say that word, I have a certain meaning that is grounded in how I think about that term. My listeners, on the other hand, all bring their own ideas to it: I might be thinking about a fraction as a point on the number line. Someone else might be thinking about circular foods. Another might be thinking about part/whole relationships while yet another might completely shut down due to a history that lacks any healthy, meaningful ways to think about fractions. It might look like we are talking, but given our different meanings one might argue there is very little communication actually taking place.

"There are certain kinds of higher order thinking that only really express themselves when we talk to each other," says former NWEA researcher Chase Nordengren while describing the strategy of using student discourse as formative assessment. It's the ninth of ten transformative instructional strategies grounded in his research into what approaches work best in high-growth schools.

Chase is right on in the study's accompanying white paper when he calls out that "getting students talking to one another is one of the most important things that can happen in any classroom." The need to "facilitate meaningful mathematical discourse" is also strongly urged by the National Council of Teachers of Mathematics (NCTM). It's one of the eight mathematics teaching practices listed in their *Principles to Actions* document. I often emphasize that meaningful mathematics discourse must focus on mathematical meanings. That is, to enable true communication, we must establish that we are meaning the same things. The trick, however, is to find ways to get such conversations going and to know what to listen for.

How to improve communication with formative conversations

In line with Chase's take, my colleagues and I thought about the formative space as a valuable place to drive powerful conversations. After considerable effort, we ended up building a series of eBooks called Formative Conversation Starters that are available for free on the NWEA website. There, we provide what we call "Big Ideas to Nurture Standards Sense-Making," or BINSS, as a high-level framework of things to listen for, along with clusters of questions that invite opportunities to uncover meanings.

For example, when it comes to fractions, we aimed to highlight the importance of thinking about fractions as a number on the number line: "Fractions: A fraction is a single number. It is a number just as 1, or 100, or 37,549 are, and it has a location on the number line. Students should be able to think of a fraction as a number and treat it as such. The fraction a/b can be thought of as a copies of 1/b, where 1/b is the length of a single part when the interval from 0 to 1 is partitioned into b parts. Two fractions are equivalent when they share a location on the number line."

Then, we provide question clusters that poke at the big ideas. The clusters are organized around individual grade-level tasks, but instead of asking what mathematics is directly needed to answer a given task, we ask about the other mathematics that also plays a role. A particular task may focus on a single idea, but it will require meanings and ways of thinking from a collection of mathematical ideas. Our aim is to never let go of those other big ideas.

Here's one set that invites conversation from page 16 of the eBook for grade 3:

- What is a fraction?
- Is a fraction two numbers or one number?
- What other words do we use with fractions? What do they mean?
- What do the a and b mean in the fraction a/b?

The intent is that these create opportunities to share ways of thinking and meanings. They should be non-threatening in delivery. Try them for yourself. How would you answer these questions? How do you think your students might answer them? Also, if your content area lies outside of mathematics, how could the guidance offered in the eBooks apply to your discipline and classroom?

Regularly revisit big ideas—and prioritize conversations

There are 10 BINSS overall in our Formative Conversation Starters series that focus on things like comparisons, operations, and proportional relationships. The wonderful thing about the mathematical ideas in these documents is that they never expire (unlike other things in math). The question clusters in third grade, for example, could be used in any later grade. In fact, when I wrote some of the middle-school level clusters, I had my former college students in mind. They work well with adults, too, as we all need to find ways to uncover how we are thinking and to clearly communicate our meanings.

I encourage you to give Transformative Ten strategy #9—Use student discourse as formative assessment—a try as you support high growth for the students in your classroom. Feel free to use our mathematical tools to help make it happen and to explore the countless ways the principles could apply in ELA and other classrooms, too. **TLG**

4 ways to teach academic vocabulary and help students master grade-level content

Tiffany Peltier

Who has better reading comprehension of a text, the student with "advanced reading skills" or the one who has a wealth of knowledge about the topic?

If you're familiar with the Baseball Study, then you know this is a simple question with a complex answer—and important implications for how we understand learning and literacy. This study, conducted in 1987, found that having more background knowledge in a specific topic can be more predictive of a student's success in comprehending a written text on that topic than having a high score on an overall reading comprehension test.

In the academic setting, we often call background knowledge a "shared academic vocabulary," and it's a critical component of reading comprehension. Here are a few tips for making better use of the simple but powerful practice of teaching academic vocabulary to improve reading comprehension and achievement.

1. Keep word lists front and center

To succeed with grade-level content, students need a basic set of tools for approaching and understanding the curriculum in front of them—and this includes subject-specific academic vocabulary that helps them feel informed, up to speed, and ready to learn. Whether you're teaching literature or mathematics, creating word lists and making them readily available to your students will greatly increase their preparedness for new material.

And it's not just students who benefit from word lists. You, too, can use them as reminders to use the terms regularly yourself and avoid taking your own background knowledge for granted. We all fall back on our own speaking patterns, which may or may not be helpful to students as they work toward specific learning goals. By creating—and continuously referring back to—word lists that are explicitly connected to the concepts you're teaching, you can help put your students on a level playing field where it's your efforts to build a shared academic vocabulary, rather than students' individual background knowledge, that determines their outcomes and growth.

2. Embrace teachable moments

In the High Growth for All project, NWEA researchers found that the most effective teachers make a habit of creating specific opportunities for students to learn new vocabulary terms. In humanities and mathematics alike, these teachers regularly focus on introducing new words that will allow students to actively participate in all the conversations and academic exercises to follow.

Sometimes, however, learning opportunities arise outside of the structured spaces planned by teachers. When students come across a word they don't know—whether they bring this to your attention themselves or you simply intuit that there's something they're not grasping—take a minute to pause and assess. Take these gaps in understanding seriously, as even a single word could be critical in helping students successfully interpret a text or complete an activity. You might be on a roll with your lesson plan, but these little interruptions represent teachable moments that you can use to your advantage by discussing a word's meaning and adding to your prominently displayed word list.

3. Make the most of morphemes

Because it's easy to get overwhelmed by the sheer number of words in the English language, breaking them down into their functional and meaningful parts—or morphemes—can help make vocabulary instruction a more manageable process with plenty of "aha" moments.

For example, a student may never have seen the word "intractable," but if they learn that the morpheme "tract" means "to pull," then they can infer the meaning of "intractable" to mean, roughly, "you can't pull it." In this way, understanding morphemes can help open a lot of doors for students who may not be familiar with certain words but know where to look for clues as to the words' meaning.

As Margaret McKeown, senior scientist and professor emerita at the University of Pittsburgh, explains in a short video on early vocabulary development, "Morphology is one of those resources where if you're familiar with word parts, whether they're prefixes, suffixes, or roots … those can help you either infer the meaning of a word, or they might help you figure out the pronunciation of a word that you might realize, once you've said it to yourself, you actually know! But you just didn't recognize it in print."

4. Encourage curiosity about words

One of your best assets in the effort to expand the way you teach academic vocabulary is the natural curiosity that kids bring to everything they do. You can tap into this curiosity and get kids interested in—even excited about—the new words they encounter as they approach new subject material.

Along these lines, I highly recommend keeping a tab open for the Online Etymology Dictionary, a website that's a lot more fun and engaging than its name might suggest. Simply type in any word, and you'll get a solid explanation of where the word originated, why it's spelled the way it is, and what other words it's related to.

It's not always easy to make sense of the English language (consider the different pronunciations of "though," "through," "cough," and "rough"), but the goal here is not to solve every mystery but, rather, to encourage and reward curiosity. Research suggests that nurturing curiosity in this way can have a major impact on what students are able to comprehend. And with the right resource at your fingertips, you can always respond to students' questions about particular words with, "I don't know. Let's look it up together and find out."

It starts with you

Because we can't expect students to understand words that we don't actually use ourselves, the critical first step in teaching academic vocabulary is simply to model the vocabulary we need them to know. Your students might think you put that big word list on the wall for them, but it can be just as valuable a resource for you. And with these vocabulary terms front and center, you can then tap into professional development resources to strengthen your pedagogical practice. **TLG**

About the authors

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Joe Anistranski joined NWEA in 2022 after four years as an assistant professor of teaching at the University of California, Davis, where he focused on active learning experiences for undergraduates. Joe has also taught at the University of Wisconsin-Madison and Madison Area Technical College, working with more than 3,700 college students in his career. He has experience in preschool, out-of-school time, summer programming, and adult education, and he has helped run a ski and snowboard school. Joe leverages his eclectic experiences and a PhD in educational psychology to think about NWEA's unique role in shaping the future of education.

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With over 25 years of experience as a teacher, professor, department chair, administrator, and nonprofit director, Ted Coe uses his experiences to weave together thought-provoking perspectives in mathematics education. He has worked full-time as a high school mathematics teacher, a community college faculty member, the mathematics chair at two community colleges, and an assistant dean at the university level. Prior to joining NWEA in 2020 as the director of Content Advocacy and Design, he served as the director of Mathematics at Achieve. Ted earned his BAE, MEd, and PhD degrees from Arizona State University, each with a focus on mathematics education.

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Tiffany Peltier has served as an elementary teacher, instructional coach, and university professor. Her research focuses on reading instruction, intervention, and difficulties, including dyslexia. She now works as a senior consultant for professional learning strategy at NWEA while actively contributing to the field as a recent guest editor for the ILA Literacy Today special issue on dyslexia, a member of the CERI board of directors, and Learning Ally's national advisory board. She holds an MEd in curriculum and instruction, reading specialist, from Texas A&M University and a PhD in learning sciences from the University of Oklahoma.

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As a middle school teacher, Kailey Rhodes is passionate about educational solutions that keep students at the forefront of their learning experience. She has taken this passion beyond the classroom, having authored and piloted various curricula and led webinars on both education technology as well as pedagogical hotspots such as curriculum development, esports in K–12, and how to (really) teach grammar. Kailey teaches sixth-grade mathematics at Northwest Academy in Portland, Oregon, where students spend just as much time in academic subjects as in arts classes.

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