

Technology in Service of Learning

How we determine the role of
technology in our curriculum



Foreword

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The role of technology in classrooms is experiencing a reckoning. Teachers, administrators, families, and students are asking hard questions about screen time, about EdTech overpromising, and about whether schools' technology investments are serving students or quietly displacing the teachers who do. We understand why the conversation is happening, and we're encouraged by educators' steadfast commitment to their students' well-being and academic outcomes.

McGraw Hill has been in classrooms for over 130 years, as a textbook publisher, a workbook maker, a CD-ROM producer, a learning platform, and an adaptive and AI-driven technology company. Across every medium in which we have ever worked, we have always been a **learning science company**: one that builds curriculum according to what research tells us about how learning happens, in whatever format best serves the learning goal.

That question—what does this learning goal require?—has never changed. For us, print is not a legacy format. We keep investing in it because, for many learning goals, it remains the most effective choice. Digital earns its place when it does something print genuinely cannot: ease teachers' administrative burdens, make abstract concepts tangible or bring faraway places to the classroom, adapt to every student's needs in real time, surface student progress data and suggest an instructional response, and personalize instruction at a scale no single educator could manage alone.

The approach outlined here reflects how we have answered the question of how to support learning goals consistently across every format shift we have navigated. It is not new to us. It's a discipline that has carried us for 130 years and will carry us through whatever teachers and students need next.

At the center of all of it is a belief we have never had to revise: that teaching and learning are uniquely human endeavors, and that every student and teacher deserves curriculum built with that truth at its center.

The Learning Goal Determines the Format

When we set out to create instructional materials, activities, and assessments, we don't start with what we want it to look like, or what new tech we want to experiment with. We start with the desired learning outcome and work backward from there. We ask ourselves these questions:



What format will best support a teacher's instructional moves in that moment of a lesson?



How can we most accurately and efficiently gather data about a student's growth?



What does a student need to acquire knowledge and what will best support their skill development?

We leverage what we know about how learning happens to create curricula that make it happen for every learner, in whatever format meets the moment.



When Tech is the Format



*When we use technology, it's deliberate.
We never create tech for tech's sake.*

Tech is leveraged specifically for what it can uniquely do:



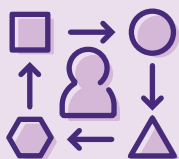
Personalize learning **at scale.**

Technology's most powerful potential lies in its ability to make personalization scalable: to reach every student with exactly what they need, when they need it. Technology can do this by pulling data into one place, transforming it into a visualization, analyzing it, and using it to recommend high-quality instructional resources, grouping, and lessons to target student needs.



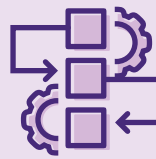
Surface student **progress data.**

Technology—when a human remains in the loop—can create a clear, holistic picture of student progress and needs by drawing on disparate sources. Tech should be every teacher's personal data scientist and instructional coach, doing the heavy lifting of data collection and analysis to help them make instructional decisions.



Adapt learning in real **time for individualized** **practice for every** **student at once.**

Here's what we know: screen-based tech activities are most effective when used in small doses for 1:1 practice time. Highly effective adaptive technology (which uses advanced AI to identify what a student knows and needs to learn next) can deliver efficient, engaging practice that accelerates learning and closes gaps when implemented with purpose and consistency, and within reasonable limits.



Create efficiencies in a **teacher's workflow.**

Technology should free teachers to spend more time on what no tech can ever do: connect with students. Tech should be leveraged to ease the burden in their daily workflow by automating manual labor and administrative tasks. It should clear their plates, giving them time for what brings them (and their students) joy and success.

Here are some examples of our purposeful technology:

Purposeful technology must be purposefully implemented.

A note on purposeful technology: No matter how pedagogically sound and thoughtfully designed, even the most purposeful technology will fail to be effective if it is not purposefully implemented. Educators are right to think critically about the role of technology in their classrooms, to be opposed to excessive screen time. But for many schools, high-quality adaptive tools like *Achieve3000 Literacy* or *ALEKS* have made a significant impact on accelerating their students' growth.

The key lies with implementation. Here is what we know: Students who use a purposeful, evidence-based supplemental tool for about an hour a week make meaningful gains in reading and math. That's roughly forty hours across an eight-hundred-hour school year, or about five percent of instructional time. Our adaptive, supplemental technology is not meant to dominate class time or to replace a teacher. It's meant to be used consistently, limited in scope, and guided by a master teacher.

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Modest, Sustained Use Produces Meaningful Gains

Visualizing the usage of a well-designed supplemental tool vs. its learning impact

This is an illustrative figure based on observed implementation patterns, not a specific measured study.

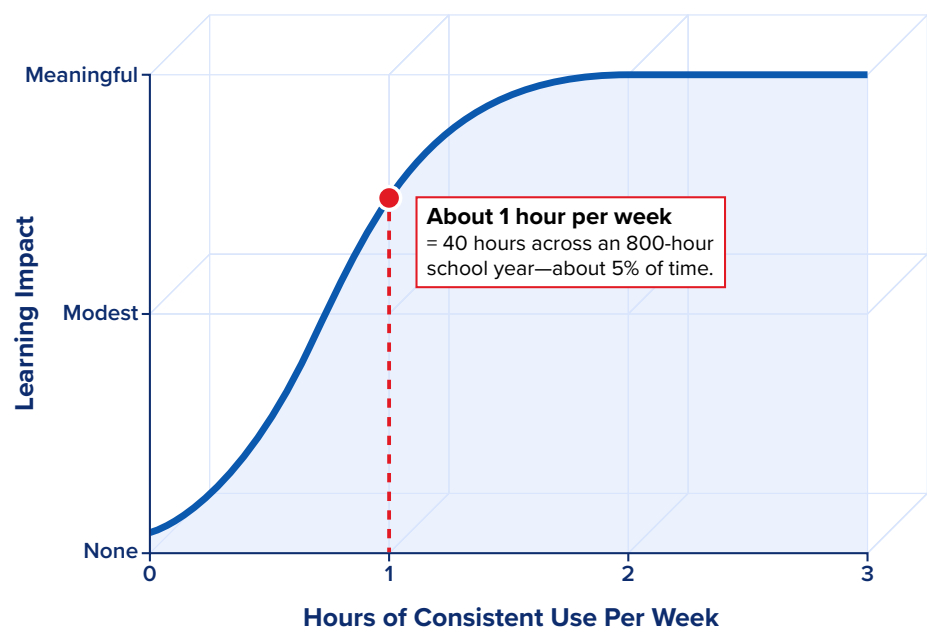


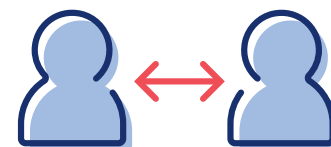
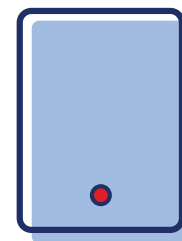
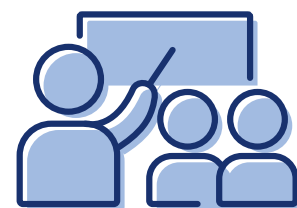
Figure 1 – Adaptive programs like ALEKS and Achieve3000 Literacy have demonstrated patterns as depicted in this graph.

Imagine a middle school classroom studying ancient Egypt. The teacher begins by projecting a single grade-level article for the class, introducing key vocabulary, activating prior knowledge, and facilitating a whole-group discussion around the central questions. Every student participates in the same conversation and explores the same concepts.

Next, students transition to *Achieve3000 Literacy*, where each receives a version of the article written at an appropriately challenging Lexile level. Although every student is engaging with the same topic and learning objectives, the text complexity is personalized to maximize comprehension and growth. Students annotate digitally, answer text-dependent questions, and complete a short written response, generating actionable insights that help the teacher identify who is ready to move forward and who may need additional support.

The lesson concludes away from the screen. Students return to small-group or whole-class discussion, compare perspectives, debate ideas, and may annotate printed excerpts or complete an offline writing activity that extends their learning.

This is technology earning its place in the classroom. The digital component is limited, intentional, and grounded in learning science. It is not replacing instruction or simply digitizing a worksheet. Instead, it enables something static print cannot: personalized reading experiences at scale while preserving a shared classroom experience. Since students typically engage with *Achieve3000 Literacy* just a few times per week, screen time remains purposeful and focused on active reading, critical thinking, and writing, not passive consumption.



When Print is the Format



Tech isn't always the answer. If a learning goal is better served another way, we build it another way.

We've been producing high-quality print materials to support foundational skills for a long time.

- An evidence-based approach with more than 60 years of demonstrated efficacy, the Direct Instruction (DI) methodology was delivering results long before computers were ubiquitous in schools. Our DI programs offer a blend of flexible print and digital resources.
- Proven programs like *Reading Mastery®* and *Corrective Reading®* are built around physical presentation books and teacher guides with scripted lessons. These programs combine explicit routines that guide teachers step by step, cumulative progression that builds skills with confidence, and daily reinforcement, all of which are structural features of the print curriculum. A teacher can deliver a complete, evidence-based lesson with a book, paper, and pencil.

For districts navigating screen time restrictions, device bans, or simply a preference for keeping learners off screens, we have a direct answer: our core and intervention programs deliver rigorous, evidence-based instruction that doesn't depend on compliance with any technology policy, because many of them don't depend on technology at all.

Tech isn't always the answer. If a learning goal is better served another way, we build it another way. Sometimes, paper, pencil, workbooks, flashcards, dry erase boards, picture books, chapter books, and textbooks (you might even know us for those) are the best tools for teaching and learning at a particular moment, and we're proud to say we have over a century of experience refining print resources to be engaging, effective, easy to use, durable, and even delightful.

We continue to leverage print in our most recently released programs. Here are just a few examples of print doing what only print can do within our K–5 core ELA program, *Emerge!*:

- **Literature Big Books:** In kindergarten and the first half of Grade 1, *Emerge!* offers oversized picture books for whole class read-alouds. We also provide a printable template that some teachers elect to print on sticky notes and attach to book pages, enabling them to easily ask students questions about the story as they read.
- Our **Student Companion** puts all the texts in students' hands (decodables, authentic texts, additional companion texts in different genres) so they can underline, annotate, circle, and answer questions in response to the text on the page, all in the same book. It also includes daily writing practice and culminating tasks, so students are reading and writing every day in this same consumable book.

- **Response boards** are a write-in/wipe-off reusable, double-sided, study resource students use to practice various foundational skills routines, as well as spelling and handwriting. The front of the board has an Elkonin box for phonics practice, as well as writing lines, and the back has print handwriting support for Grades K–2 or cursive handwriting support for Grades 3–5.

All of these elements are also going to be offered in Spanish for our *¡Emerger juntos!* program, with some authentic Spanish big book texts, authentic Spanish texts in the student companion, and a response board that has larger Elkonin boxes for dual literacy classrooms, because Spanish is a syllabic language, and bigger boxes are necessary to accommodate a syllable vs. a letter.

Here are a few examples of what purposeful print looks like in *Reveal Math*, our core math program:

- **For K–8 Students:** The program includes consumable Student Editions, which provide a structured learning experience where students explore concepts, model their thinking, engage in mathematical discourse, and apply learning through purposeful practice. The consumable format encourages students to annotate, show their work, and document their mathematical thinking throughout the year. Spanish-language materials are also available, giving learners multiple opportunities to engage with concepts, build fluency, and strengthen mathematical thinking through meaningful practice.
- **For High School Students:** High school courses feature Teacher Editions, hardbound and consumable Student Editions, and Language Development Handbooks for both students and teachers. These resources support rigorous mathematics instruction while strengthening academic vocabulary, mathematical discourse, and conceptual understanding.

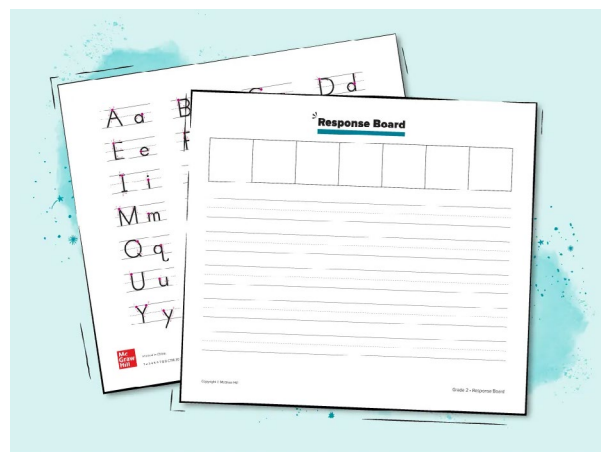
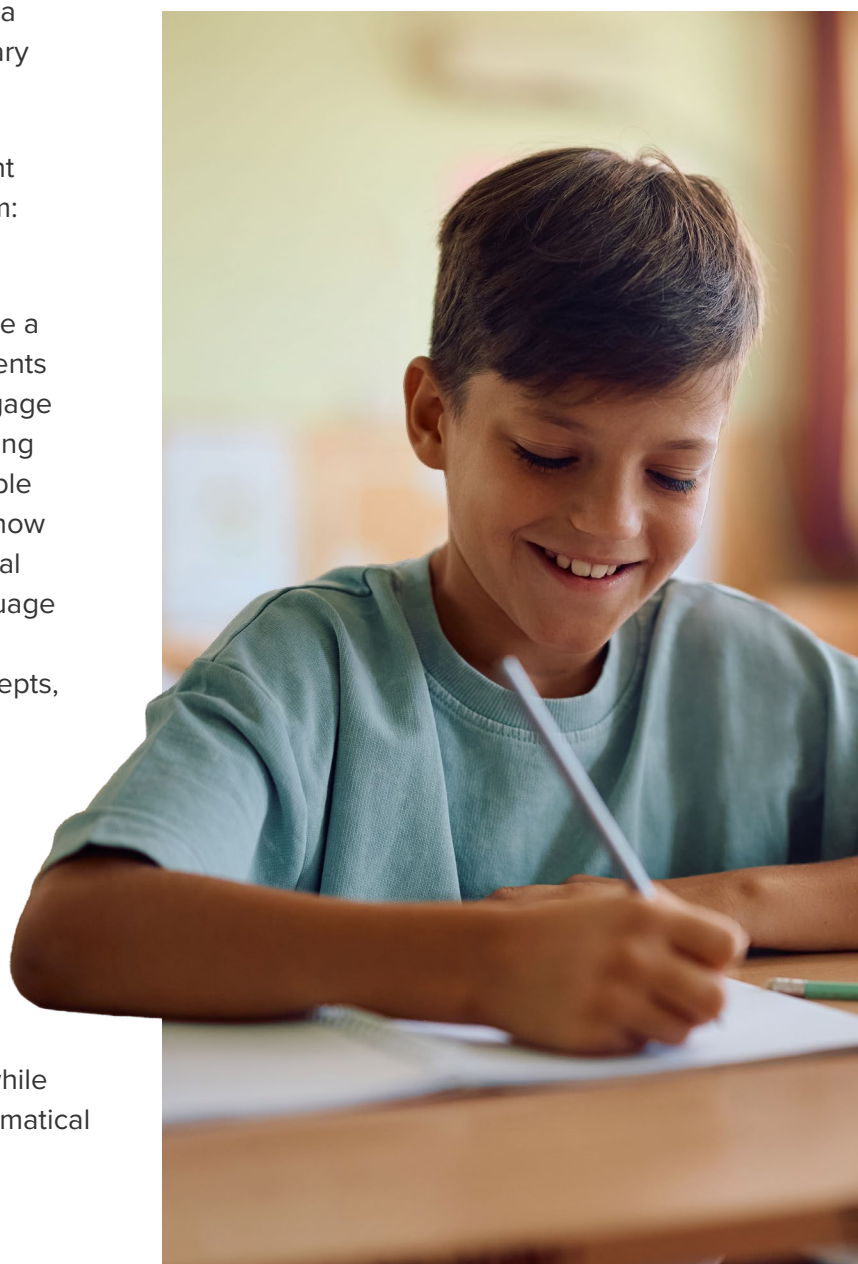


Figure 2 – Emerge! Response Boards



When Learning Extends Beyond the Page (Or the Screen)



Sometimes, the learning goal can't be reached with a print or a digital resource.

For those moments, we offer manipulatives and kits that work alongside our curricula to make learning tangible and reach every student.

The *Open Court Reading* Foundational Skills Kit for Grades K–3 and Word Analysis Kit for Grades 4–5 are among the clearest examples of what it looks like to let the learning goal determine the format.

The kits are built around physical, hands-on materials:

- Color-coded sound/spelling cards in individual, small-group, and wall sizes representing the 44 most common sounds
- Letter cards students use to physically build and manipulate words
- Word cubes that turn morpheme practice into something students can hold, roll, and construct



Figure 3 – Open Court Reading Foundational Skills Kit

These tactile tools are not supplementary to the instruction. They are the instruction, created based on what the science of reading tells us about how young children build phonemic awareness and orthographic knowledge through multimodal engagement. Print decodable texts and skills practice workbooks extend that learning into reading and writing, and digital versions of the sound/spelling cards recite the sound card story and pair each sound with a motion.

We know that mathematical understanding develops through doing, not just watching. *Reveal Math's* suite of hands-on kits use manipulatives and games, supported by a blend of digital and print resources, to help students practice skills and explore concepts.

- **The Workstation Kit** gives teachers ready-to-use station activities, games, and reusable materials that make daily differentiation possible without hours of preparation, because a teacher who isn't building resources from scratch has more time to observe, coach, and respond to what they see.

- **The Manipulatives Kit** puts physical tools in students' hands in classroom quantities, so that abstract concepts become something students can touch, arrange, and reason through together.



Figure 4 – *Reveal Math Manipulatives Kit*

- **The Fluency Games Kit**, developed in partnership with *Reveal Math* author Cheryl Tobey, is grounded in the understanding that fluency is not the same as memorization. Six card decks built on multiple mathematical representations give students repeated exposure to the same concepts through varied, purposeful play rather than rote repetition, and Mathematical Discourse Table Tents turn that play into conversation.

Determining the format is one decision in a system of equally deliberate choices.

The design principle we've outlined in this document is only a glimpse of our holistic approach to curriculum development. It is grounded in, and made credible by, everything else we know about teaching and learning.

Every format decision we make is guided by the science of learning—by what we know about cognitive load, the Zone of Proximal Development, productive struggle, retrieval practice, and metacognition—because the science doesn't prefer digital or print universally. It tells us when each is right.

We build technology and print programs to elevate teachers' intuition and skills, not bypass them, because research consistently identifies the teacher as the single greatest in-school factor in student outcomes, and because we believe teachers know their students best.

Student confidence is not a byproduct of good curriculum; it is an engineered outcome, the result of deliberately sequenced success experiences that build self-efficacy and unlock the joy of learning. We treat every program we build as a hypothesis worth testing, conducting efficacy studies in partnership with districts, gathering feedback through advisory boards and pilot classrooms, and carrying what we learn into every new edition, copyright, and release.

We build in print, in digital, or somewhere in between, always in service of a belief we have never had to revise: that teaching and learning are uniquely human endeavors, and that every teacher and every student deserves curriculum built with that truth at its center.



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