

LearnZillion: Translating Research into Practice

The Challenge



Policy reports and research studies suggest that curriculum can be a significant lever for student learning:

- A 2012 Brookings Institute report found that "instructional materials can have an impact as large as or larger than the impact of teacher quality on student test scores" (Chingos & Whitehurst, p.5).
- An experimental study found that the effect of providing middle school students with well-designed math lessons was equivalent to improving the performance of an average teacher to the 80th percentile level of quality (Jackson & Makarin, 2018).

While there is consensus about the importance of curriculum in student learning, data indicate that teachers lack access to the rigorous curricula needed to transform learning:

- A survey of 5,000 teachers found that 40 percent work without a prescribed curriculum and 92 percent use digital websites such as YouTube, Teachers Pay Teachers, Pinterest, Facebook, Instagram, and Twitter to find lessons (Institute for Arts Integration and STEAM, 2020).
- Many educators report that they lack the data needed to personalize instruction effectively. For example, 67 percent of teachers surveyed for the Bill and Melinda Gates Foundation (2015) report *Teachers Know Best: Making Data Work for Teachers and Students* noted that they are not happy with the quality of data they get from their curricula.

The Solution



LearnZillion is an intuitive, easy-to-use digital learning platform designed to make high-quality core curriculum more supportive for teachers and accessible to students. The platform provides a combination of interactive online and offline math and language arts lessons, instructional videos, activity worksheets, quizzes, and assignments. It tracks student progress and achievement on the lessons and quizzes, and reports the results to the teacher's dashboard for assessment. Rather than forcing teachers to gather, create, or decipher resources from scratch, LearnZillion provides lesson plans and notes that educators can use to more efficiently plan lessons, orchestrate instruction, and act on data. The program offers synchronous and asynchronous tools that can be flexibly incorporated into online, in-person, and blended classrooms.



Theory of Change

The 2015 Every Student Succeed Act (ESSA) encourages districts and schools to adopt evidence-based programs that have a well-specified logic model that explains how the intervention is likely to improve outcomes. Figure 1 provides a conceptual model of how LearnZillion is designed to facilitate learning. This theory of change lists the resources that are needed (for example professional development, computers, headsets, easy-to-use platform, classroom space) to successfully launch LearnZillion and documents the targeted activities and resources (Illustrative Math®, EL Education or Guidebooks curriculum, trade books, decodable readers, letter cards, student consumables, teacher guides, digitized assessments, and lesson plans) needed to generate the outputs (data on student progress, engagement, and achievement) that lead to short-term outcomes (content mastery and engagement). The interactive online curriculum makes learning more accessible and engaging to students. The digitized comprehensive curricula come with built-in lesson plans and in-the-moment supports, so teachers can more easily plan lessons because they don't have to create resources from scratch. Consequently, teachers are able to focus their efforts on providing targeted support rather than trying to decipher teacher-facing materials. Ultimately, these short-term outcomes lead to longer-term outcomes, such as improved academic achievement.

Program Inputs

Edgenuity

- Implementation meeting on roles and responsibilities
- Model for content delivery
- Professional development and coaching

District

- Networked computers with proper memory, media appliances, and headsets
- LearnZillion platform
- Online curriculum (EL Education, Guidebooks, Illustrative Math[®])

Classroom Activities

Student Activities

• Use of curriculum for at least an hour a day

Teacher Activities

 Use lesson plans, notes, and actionable data for continuous monitoring of student learning

Outputs

Student Outputs

- Personalized learning
- Student motivation

Teacher Outputs

 Understanding of individual students' strengths and weaknesses

Short-Term Outcomes

- Improved classroom behavior and attendance
- Increased student engagement (measured by active time and progress)
- Improved content mastery (measured by grades on activities)

Long-Term Outcomes

 Improved academic achievement on state assessments

| Figure 1. How LearnZillion Is Designed to Facilitate Learning

Researchers, practitioners, and experts agree that implementing an effective instructional system—one that simultaneously combines curriculum aligned to college and career readiness standards, formative assessment, feedback, and professional development—is an effective way of fostering student learning (Kaufman et al., 2020). The following research-based practices are the cornerstone of LearnZillion.

1. Start with a coherent, rigorous curriculum.

A coherent curriculum purposefully organizes instruction through an intentional progression of learning activities that is aligned across lessons, assessments, subject areas, and grade levels. Rigorous instruction engages students in deeper learning or "the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations" (National Research Council, 2012, p. 6). According to the RAND Research Corporation, more than 30 years of research suggest that a rigorous, coherent curriculum aligned to college-and career-ready standards can improve and deepen student learning (Kaufman et al., 2020, citing Smith & O'Day, 1991).

Our Solution:

LearnZillion offers rigorous curricula from Illustrative Mathematics[®], EL Education, and Guidebooks, all of which scored all green on EdReports, a nonprofit that provides independent reviews of instructional materials designed to improve K–12 education. The EdReports rubric supports a sequential review process through three gateways. Green ratings from EdReports indicate that a curriculum meets expectations for every gateway of the EdReports review system.

• LearnZillion Illustrative Mathematics[®] K–12 is a problem-based curriculum that is designed to provide conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and a productive disposition. Students learn by doing, working their way through problems in both mathematical and real-world contexts and constructing arguments using precise language (Figure 2). EdReports found that Illustrative Mathematics[®] for grades 6–12* meets the expectations for the Focus and Coherence, Rigor and Balance, and Supports and Usability gateways.

*LearnZillion Illustrative Mathematics[®] K–5 will be reviewed by EdReports in 2021.



| Figure 2. LearnZillion Illustrative Mathematics® Framework





• LearnZillion EL Education's K–8 Language Arts is a comprehensive, research-informed curriculum aligned to college- and career-readiness standards. The program is backwards designed, equity focused, and centered on compelling, real-world content (Figure 3). EdReports awarded EL Education the highest score for its K–8 ELA curriculum, receiving 96 percent of available points for Standards Alignment, Quality, and Usability.





| Figure 3. LearnZillion EL Education Language Arts Curriculum Framework

• LearnZillion Guidebooks is a language arts program that fosters a love of deep reading and skilled writing, connecting across multiple genres, and creating a web of meaning critical to the development of reading and writing skills. EdReports found that Guidebooks meets expectations for standards and usability. Included texts were found to be appropriately rigorous, engaging, and organized to support students as they build knowledge of topics and themes. EdReports noted that the questions and tasks students complete as they practice reading, writing, speaking, and listening are focused on close reading.

п	ጤ
$\parallel = \parallel$	

÷	Authentic, grade-level text sets
Ø	Integration of reading, writing, speaking/listening, and language standards
ىر	Backwards design
	Embedded supports for diverse learners
	Consistent unit and lesson structure

| Figure 4. LearnZillion Guidebooks Framework

2. Use technology to make curriculum delivery easier across a range of implementation models.

A large body of research suggests that educators need targeted support to "use standards-aligned curricula in a way that meets their states' standards" (Kaufman et al., 2020, p.4).

Our Solution:

LearnZillion's online platform is designed to save teachers 45 minutes per day by stripping away the drudgery of prep and replacing it with a full suite of effective tools and digital materials, including easy-touse lesson plans and built-in teacher guidance—saving three to four hours a week overall. Digital curriculum editions are user-friendly, accessible, and comprehensive, giving educators the resources they need to launch the curriculum with confidence and fidelity. The program can be used synchronously, asynchronously, or in a hybrid setting.

• **Teacher-facing experience:** LearnZillion helps educators more easily plan lessons, act on data, and target instruction. The program provides lesson plans with easy-to-use slides as well as student-facing materials (lesson cards) and notes for teachers. Lesson cards include student-facing activities, text-dependent questions and prompts, directions and expectations, and daily formative assessments. Teaching notes include pacing estimates for each activity, directions for how to orchestrate the lesson, possible student responses, ideas for differentiation



| Figure 5. Teacher Experience in LearnZillion

for ELL and students with diverse learning needs, and embedded links to protocols used during instruction. The program empowers teachers to assign lessons and assessments to one, some, or all students as needed, collecting instant data and personalizing instruction on the fly.

• *Student-facing experience:* LearnZillion enables students to work on lessons independently. Each lesson includes a warm-up, activities, a cool-down, and practice problems. Student-facing learning goals appear in student workbooks at the beginning of each lesson and start with the word "Let's." They also appear on the first slide of all digital lessons. These goals invite students into the work of that day without giving away too much and spoiling instruction.

ASSURANCEYT Lesson 2: Introducing Proportional Relationships with Tables Assured type 32, 3028 Assured type 32,	Card 28 of 30 2.5 Cool-down When you mix two colors of paint in equ resulting color is always the same. Com answer the questions.	
What are we doing today?		cups of plue paintcups of yellow paint21011
Let's solve problems involving proportional relationships using tables.	 Make up a new pair of numbers that would make the same shade of green. Explain how you know they would make the same shade of green. 	

| Figure 6. Student Experience in LearnZillion

3. Provide high-quality professional development to empower teachers.

Research confirms that the success of any educational program depends on whether the program is implemented with fidelity (Durlak & Dupre, 2008). Studies show that implementation quality is determined in large part by the training and ongoing support school staff receive (Shapley et al., 2010).

Our Solution:

LearnZillion delivers high-quality professional development that prepares teachers to implement curriculum with fidelity. A Customer Success Manager brings together district officials, school leaders, and teachers to develop an implementation model, set measurable benchmarks (e.g., 60 minutes per week), and create a plan to achieve goals. During training, educators learn about the program's theory of change, as well as how to navigate content both inside and outside of the learning management system. Teachers walk away with practical classroom management strategies, as well as best practices for growing relationships with students, facilitating interactive discussions and activities, and using data to drive instruction. Professional development is also embedded in the program.

4. Integrate assessment to provide actionable data that teachers need.

A meta-analysis of multiple studies demonstrates that formative assessment—the process of using ongoing assessment to inform instruction—has a positive effect on student learning, with teacher professional development and technology-based formative assessment among the most effective methods of implementing formative assessment (Kingston & Nash, 2011). Research indicates that formative assessment is most effective for students when assessment data is used to clarify learning goals; continuously monitor and diagnose student performance relative to these learning goals; provide instructional feedback; make instructional decisions in response to students' learning progress; and involve students in their own assessment (National Research Council, 2012).

Our Solution:

LearnZillion has integrated digitized unit assessments and practice items so that teachers get real-time, autocalculated formative feedback on student mastery, and students get more practice with tech-enabled questions. Digital assessment items give teachers the data they need for strategic instruction while providing students with the necessary practice for culminating assessments. Teachers have the freedom to use existing assessments from LearnZillion curricula or create their own.

Use the information in the table to com erms are used more than once.	plete the statements.	Ass Tot	ated August 27, 2020 igned by Courtney Campbel al points 7 essment Lesson 11 - End of What students se	Unit Assessment:		Questions :	about a Liter	ary Text					40 Er
1. The table shows a proportional relationship between	tablespoons of chocolate syrup	once you open it for t	Citics the "Assign" bindbacks to assign to truderors. Studerors will see their assignments on their "My assignments" page, once you speer. If or them bolts. If for attempted/thicampilete										
2. The scale factor shown is	# 4 # cups of milk # cup of milk # $\frac{3}{2}$	 ✓ Class 1 Status ★ Cosed ★ Cosed ★ Cosed 	Student Demo student 2 Demo student 3	Score 92.9% > 6 57.1% >	1	2	3	4 5	6	7	Status: Closed	4 Return	all with gran
3. The constant of proportionality													

| Figure 7. Assessment for Students and Actionable Data for Teachers





References

- Bill and Melinda Gates Foundation (2015). *Teachers Know Best: Making Data Work for Teachers and Students, Report: K-12 Education*. http://k12education.gatesfoundation.org/resource/teachers-know-best-making-data-work-for-teachers-and-students-2/
- Chingos, M., & Whitehurst, G. R. (2012). Choosing blindly: Instructional materials, teacher effectiveness, and the common core. Brookings Institution. https://www.brookings.edu/wp-content/uploads/2016/06/0410_curriculum_chingos_whitehurst.pdf
- Durlak, J. A., & Dupre, E. P. (2008). Implementation Matters: A Review of Research on the Influence of Implementation on Program Outcomes and the Factors Affecting Implementation. *American Journal of Community Psychology*, 41(3–4), 327–350. https://doi.org/10.1007/s10464-008-9165-0
- Institute for Arts Integration and STEAM (2020). 2020 State of Teaching Survey Results: The Institute for Arts Integration and STEAM. https://artsintegration.com/teacher-survey/
- Jackson, C. K. & Makarin, A. 2018. Can Online Off-the-Shelf Lessons Improve Student Outcomes? Evidence from a Field Experiment. *American Economic Journal: Economic Policy*, 10(3) 226-254.
- Kaufman, J., Doan, S., Tuma, A. P., Woo, A., Henry, D., & Lawrence, R. (2020). How Instructional Materials Are Used and Supported in U.S. K–12 Classrooms: Findings from the 2019 American Instructional Resources Survey. RAND Corporation. doi:10.7249/rra134-1
- Kingston, N., & Nash, B. (2011). Formative assessment: A meta-analysis and a call for research. *Educational Measurement: Issues and Practice*, 30, 28-37.
- National Research Council (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Committee on Defining Deeper Learning and 21st Century Skills, J. W. Pellegrino & M. L. Hilton, Eds. The National Academies Press.
- Shapley, K.S., Sheehan, D., Maloney, C., & Caranikas-Walker, F. (2010). Evaluating the Implementation Fidelity of Technology Immersion and its Relationship with Student Achievement. *Journal of Technology, Learning, and Assessment,* 9(4). http://www.jtla.org
- Smith, M. S., & O'Day, J. "Systemic School Reform," in S. H. Fuhrman & B. Malen, Eds., *The Politics of Curriculum and Testing: The 1990 Yearbook of the Politics of Education Association*, Falmer Press, 1991, pp. 233–267.

