

What *is* the Science of Teaching?

The Science of Teaching is a mindset and evidence-based approach that puts **classroom teaching and learning at the heart** of education systems. While other factors like attendance or school infrastructure matter, the core belief is that great teaching — grounded in strong instructional practices and pedagogical knowledge — is the key driver of student learning.

It's about breaking **open the "black box"** of the classroom, using research to understand and improve what teachers do and how students learn. Whether through effective instructional strategies, smart use of assessments, or supportive coaching models, the Science of Teaching focuses on what works to help all children master foundational skills.

The Science of Teaching program, funded by the Gates Foundation and implemented by RTI International, in partnership with over 65 partners across the global education sector, ran for five years from 2020 to 2025. As it concludes, it calls for educators, researchers, and policymakers to **keep building, sharing, and applying evidence to strengthen teaching** — because everything else in education should revolve around making learning better in the classroom.

CORE PRINCIPLES OF SCIENCE OF TEACHING:

Quality curriculum and resources

Teachers need to understand the curriculum, including learning goals, and how to select and/or use instructional materials effectively to support progression toward curricular goals.

Content knowledge and pedagogical skills

Teachers need to have a good understanding of the content they are teaching, specifically around foundational reading and math, and of strategies for supporting learners to master this content.

Learners and context

Teachers need to know their learners, their learning levels, and their context, and be able to use this knowledge to inform their instruction and create a positive learning environment.

The Science of Teaching program developed research studies, how-to-guides, training modules and other tools rooted in evidence about these core principles and what impacts them. The following diagram maps the research and public goods that have been developed, all of which are available at scienceofteaching.site.

	SOT TOPIC AREAS	RESOURCES AVAILABLE: How-To Guide / Guidance	Checklist	Research Study	Online Training Modules
What have we learned about the core principles?	Curriculum Development Developing a quality curriculum and scope and sequence for foundational learning				
	High Impact Teaching Strategies Identifying the most impactful strategies teachers can use when teaching literacy and numeracy				
	Assessment-Informed Instruction Capturing information on learner progression and adapting instruction based on this				
	Remediation Supporting struggling learners to acquire key skills through targeted support				
	Materials Development Designing teaching and learning materials to help develop FLN skills in line with the curriculum, scope, and sequence				
	Numeracy Programs and Instruction Building strong mathematical foundations in the early grades				
What can impact these core principles and how?	Teacher Professional Development Supporting teachers through pre-service teacher education, in-service training and on-going teacher support				
	Middle Tier Leadership Examining the role of subnational actors in ensuring high-quality education delivery				
	Behavioral Science Deploying behavioral science to support teachers to adopt pedagogical best practices (partner developed resources)				
How can / do system-wide/ large-scale efforts impact these core principles?	Structured Pedagogy Designing and delivering Structured Pedagogy programs to improve FLN at scale				
	Language of Instruction Navigating the complexities of language of instruction options for FLN programs				

All of the Science of Teaching resources can support different groups involved in designing and delivering foundational learning programs (implementing partners, ministries, teacher trainers). For development partners, we have developed the Development Partner Resource Guide - a toolbox of resources, curated to meet the informational needs of development partners (i.e. entities working with, or in alignment with, governments to achieve development goals). For those managing, providing, or requesting technical assistance, we have released the How-to-Guide on Providing Effective, Quality Technical Assistance for Foundational Learning.