Education Technology

RTI leverages technology to improve education and learning. Our work is guided by the principle of offering the right technology in the right place for the right reason in ways that can scale equitably and sustainably.

To improve opportunities to learn and instructional quality in education, RTI designs, implements, and evaluates strategies that incorporate the best use of multimedia, rapid computing, connectivity, and other technology capabilities—especially on mobile devices. We partner with governments to develop focused, practical interventions and deploy them with stakeholders across multiple sectors.

As public education systems expand enrollment, they see the need to improve education efficiency and efficacy to ensure that all children acquire skills critical to learning and success. RTI works with governments and local partners to evaluate how appropriate and scalable technologies can enhance teaching and learning. These technologies include personalized learning tools, games and simulations, digital teaching aids, technology-assisted remote training approaches, coaching resources, and education data collection and formative assessment software. Simultaneously, RTI supports change management for technology integration and sustainability.

Core areas of expertise

- Technologies to improve learning outcomes, student well-being, and accessibility and inclusive education.
- Technologies to enhance K–12 teachers and education administrators' professional development, coaching, and teaching.
- Technologies for data collection, student assessment, and monitoring and evaluation.
- Facilitation of knowledge management through information systems, integrated reporting dashboards, data mining, and visualization.
- Sector assessments, research, and analytical reviews of trends in technology for education.

Recent Project Highlights

- In the **Philippines** (2020–2021), RTI assisted teachers to develop **interactive eBooks** for learning the alphabet and basic reading skills in 13 national languages, supporting the mother-tongue-based multilingual education policy. These books include engaging audio and visuals to bring their content to life as well as self-correction exercises to reinforce learning. Nearly 300 resources were uploaded to the government's central educational resources repository and distributed on tablets to teachers, enabling offline use during pandemic school closures. RTI also supported evaluation of this platform and action research with teachers on children's eBook usage at home and in the classroom.

- Because of a 2008 pilot program in **Bangladesh** that demonstrated the usefulness of **simple phones** and **SMS technology** for teacher professional development, RTI adapted this approach to provide motivation, program updates, and content in many projects. This experience helped us pivot to SMS and interactive voice response technology for remote learning when the COVID-19 pandemic began, assisting training in locations including Liberia and Malawi.
- In **Kyrgyz Republic** and **Uzbekistan**, RTI designed, tested, and implemented **hybrid** and **distance learning** programs for educators. In Kyrgyz Republic, RTI designed and deployed 10 training modules on early reading through an open-source learning management information system (LMIS) usable both online and offline which currently reaches more than 18,000 users nationally. In Uzbekistan, RTI designs and implements professional development programs for teachers, deploying a technology ecosystem consisting of an online or offline LMIS, email, and instant messenger, while also delivering in-person refresher trainings. This ecosystem provides targeted, flexible, and ongoing engagement and support to educators in more than 1,000 schools.
- RTI implemented the evaluation of the **Global Learning XPRIZE** field trial in **Tanzania**, an experimental research program including nearly 2,500 disadvantaged children, designed to evaluate software support of children's learning of basic literacy and numeracy.
- Across our projects, RTI e**valuates**, pilots, **implements**, and **researches** the **use of technology to support inclusive education**. RTI is currently developing a child-friendly technology and approach to assessing the reading skills of children who are deaf or hard of hearing. In **Ethiopia**, RTI supported regional pilot programs that tested technological support for early-reading teacher training and instruction, specifically providing support for children with disabilities.

RTI **developed Tangerine®**, open-source data collection software optimized for mobile devices. Tangerine has been used for more than 2 million surveys and student assessments, in more than 60 countries, in 100 languages, and by more than 80 organizations.

Tangerine: Coach, a version of Tangerine optimized to support large-scale coaching and sector performance monitoring efforts, was found cost-effective during a pilot program in Kenya. Deployment has since been scaled across Kenya, to instructional coaches serving over 24,000 schools. The model has been adapted nationwide in in Sierra Leone to secondary education; across large parts of Cambodia, Kyrgyz Republic, and Liberia; and in Bangladesh, Georgia, and Uganda.

Tangerine: Teach assists teachers to collect, analyze, and use students' results from formative assessments. The software creates individual profiles for each student in a classroom, facilitates capturing and analyzing results, offers easy-to-read student and class-level result reports, and provides data-utilization guidance to improve instruction. Following testing in Kenya and Jordan, Tangerine:Teach has been approved by the Academic Council of Kyrgyz Republic for formative assessments of reading nationwide. In Bangladesh, a 2021 pilot of Tangerine:Teach for Bangla and mathematics is being scaled up, with plans to reach more than 1,000 schools by 2023.

Tools

In addition to Tangerine®, RTI has developed mobile data collection and communication systems applicable for a wide range of technologies and contexts.

Gooseberry System to capture data via interactive text messages/SMS.	**Strawberry** Uses Gooseberry data to streamline the process of paying people for attending training sessions.	**Tangerine: EF Touch** Measures executive function in preschool-aged children through multiple tasks to test inhibitory control, working memory, and cognitive flexibility.
Loquat Applies artificial intelligence and machine learning to analyzing and guiding classroom practice.	**CurrantMobile™** Mobile skills assessment tool that uses a games-based approach to measure employability skills.	**Papaya** Phonological awareness application that assists teachers and students in learning correct letter/syllable sounds in any language.

Visit http://www.tangerinecentral.org for more details on Tangerine.

Explore http://SharEd.rti.org for articles and reports on RTI's work in Education Technology.

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