TeachSim Overview

AI-enabled simulations to accelerate teacher development

The Challenge

Teachers can most effectively implement high-quality instructional materials (HQIM) when they have opportunities to practice key instructional skills, receive targeted feedback, and try again. Most new teachers are forced to develop these skills through trial and error with students. Simulations can provide a safe and low-stakes practice space to develop the skills to teach effectively with HQIM. Customized coaching between simulation sessions dramatically enhances their efficacy. The challenge has been that high-quality simulations have traditionally required trained actors and expert coaches, making them too expensive to implement at scale.

Our Solution

TeachSim at Cambiar Education in partnership with the TeachSim Lab at University of Virginia is developing AI-enabled simulations and coaching that make high-quality, deliberate practice affordable and scalable for teacher preparation programs, school districts, and educator development organizations. This solution comes from a decade of systematic, causal research at the TeachSim Lab at University of Virginia with more than a thousand pre-service and in-service teachers. Unlike multi-day professional learning sessions, each component of this cycle takes less than 20-minutes to complete.

Supported by the Gates Foundation and the Charles and Lynn Schusterman Family Philanthropies, we have developed AI-enabled prototypes that combine instructional learning, guided practice, coaching, and classroom feedback into a single professional learning experience. Our first modules focus on high-leverage ELA and mathematics instructional skills for novice K–8 teachers.

ELA Demo | Mathematics Demo

How Teachers Develop Skill

Each practice cycle includes:

- Learn: Brief learning experiences build pedagogical content knowledge in the context of HQIM.
- Practice: AI-enabled teaching simulations allow teachers the chance to practice authentic instructional interactions while teaching real HQIM lessons, receive immediate coaching, and try again.
- Apply: Followup resources that help teachers transfer new skills directly into their own classrooms.

To measure classroom transfer, teachers complete digital classroom walkthroughs before and after each module. For each digital classroom walkthrough, teachers upload approximately 15 minutes of classroom video and receive:

- AI scoring aligned to the same instructional rubric used in simulations
- Immediate strengths- and growth-focused feedback

What Makes TeachSim Different

- A grounding in a decade of research on simulation-based teacher learning
- AI-enabled simulations and coaching that dramatically reduce the costs of professional learning
- A focus on subject-specific instructional practices embedded within HQIM
- Connections between simulated practice and classroom implementation with aligned observation scores and feedback

If you would like to learn more, we'd love to connect.

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