INSIGHTS FOR POLICYMAKERS

AIR®
Advancing Evidence. Improving Lives.

Using Artificial Intelligence and Intelligent Tutoring Systems To Enhance Workforce Training Programs

Our economy and the way we work is changing at lightning speed. How do we help our workforce, especially those with barriers to opportunity, keep pace? How can we do so cost-effectively when automation and artificial intelligence (AI) are rapidly changing the nature of work and employers' skill needs? Helping underserved workers efficiently learn new market-relevant skills is crucial to improving access to economic opportunity. Unfortunately, workers without degrees who are looking to upskill or reskill face many barriers, including time, training, transportation and child care costs, and the need to juggle training with working. These barriers either exclude many workers from the labor market or keep them trapped in low-wage jobs, even as the U.S. faces a nationwide shortage of skilled workers.

While AI can displace workers and change the skills workers need, it can also be a powerful lever for helping workers adapt. In an environment where most of the effective programs are labor and time intensive for both instructors and learners, AI offers a potentially cost-effective solution to accelerating skill acquisition and work readiness. **The American Institutes for Research (AIR)** is exploring how to effectively use automation and AI to promote learning and equip workers with the necessary skills for the future of work. The **PROMISE Center**, with funding from AIR's **Opportunity Fund**, looks to create solutions that provide equitable pathways to a thriving workforce. This pilot project on leveraging AI in training was funded to surface types of evidence-based innovation that may merit more investment.

In partnership with Per Scholas and the University of Memphis, we are developing an intelligent tutoring system (ITS) that leverages AI as a way to help Per Scholas' successful sectoral training programs scale and serve more diverse learners. An ITS is a type of adaptive software that provides immediate and personalized instruction and feedback to learners that can be accessed at the learner's convenience. Although ITS use has been explored in K-12 contexts, ITS have not been leveraged much as a way of developing skills for workers. Per Scholas' proven programs provide adult learners who are underrepresented in tech fields with an opportunity to quickly skill into information technology (IT) and earn the certifications needed for high-growth careers. However, these programs can be resource intensive and require instructors to dedicate significant amounts of time to help learners prepare for their certification exams.

AIR's ITS helps train Per Scholas learners for their certification exam, relieving some of the burden on instructors. The ITS also focuses on developing skills needed for future jobs by presenting real-life, complex scenarios. Exposing workers to the kinds of problems they may face in the workplace helps to create work-ready individuals who have the skills and training they need to navigate their new careers. We are conducting a rigorous evaluation on ITS use to understand whether and how it improves learner outcomes. Final results will emerge in Fall 2025.

Early feedback from instructors and learners suggests that the ITS has the potential to meaningfully supplement live instruction and assist learners who need more intensive, personalized supports. Unlike human tutoring, intelligent tutoring can be used by learners at any time of day or night and can be considerably more cost-effective than tutoring programs. Findings from this effort will be especially useful for workforce programs, sectoral training programs, and community colleges that seek cost-effective ways to use AI to help diverse individuals access economic opportunity.

CONTACTS

Samia Amin
Managing Director
samin@air.org

Whitney Cade
Senior Researcher
wcade@air.org

Cecilia Xuning Zhang
Researcher
xzhang@air.org

For further information about AIR, contact Natalie Coupe, Senior Manager, Public Affairs at ncoupe@air.org

Since its founding in 1946, the American Institutes for Research® (AIR®) has conducted rigorous research and used evidence to address complex social issues and improve the lives of people, both in the U.S. and across the globe. The AIR Opportunity Fund is predicated on these same principles and strengthens AIR's commitment by investing in the generation and use of high-quality evidence to address the harmful effects of inequality.

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