



Rebuilding AutoTutor for Today's Adult Learners

Background and Context

The [AutoTutor for Adult Reading Comprehension \(ARC\)](#) project is developing and testing an intelligent tutoring system (ITS) designed to improve reading comprehension for adults with limited literacy skills. The approach uses collaborative “trialogues” among a teacher agent, a peer student agent, and the adult learner to model effective comprehension strategies. Initial research took place in classrooms, but the project’s long-term goal was to make the tool accessible inside and outside of classrooms, with or without a supporting curriculum. In 2023, this work gained momentum with the opportunity to transition the system to a scalable platform hosted by WorkBay, Inc., expanding its reach to adult learners in education programs, job training, and reentry contexts.



The Challenge of Dated Technology

Although the ARC system was built on a strong research foundation, the technology underpinning it quickly showed its age. The original prototype had been developed around 2012 and was never designed for scalability. By the time the project relaunched in 2020, the infrastructure was outdated, the content needed updating, and the system lacked the flexibility required for modern web-based delivery. The pandemic sharpened this challenge. On one hand, it closed in-person programs; on the other, it raised learner and instructor expectations. Many adults had grown accustomed to using edtech platforms for remote learning, and they expected ARC to match the sophistication and usability of commercial products.

The university team overseeing the rebuild did not have the technical resources or in-house expertise needed for a full modernization. As costs mounted and the scope of the necessary overhaul became clear, the team faced difficult trade-offs. They had to balance ambitious goals for scalability with limited human and financial resources, all while ensuring that the system remained accessible to learners with low literacy and digital skills.

Navigating Program Expectations and Recruitment

Compounding these technical hurdles were challenges in program recruitment. Many well-resourced, tech-savvy adult education programs had already adopted comprehensive commercial platforms like Aztec or Burlington English. Meanwhile, less resourced, community-based or tutor-driven programs often had weak technology infrastructures, limited devices, or staff who were either untrained or averse to adopting new digital tools. These realities narrowed the project's pool of feasible partners and shaped its eventual strategy.

The Strategy: Targeting Community and Tutor-Based Programs

Despite these obstacles, the team leaned into the opportunity to serve programs that had traditionally been underserved by large edtech providers. They concluded that it was no longer enough for adults to advance their literacy only through paper-based genres. Because digital environments are integral to workforce, family, and educational literacy tasks, building digital literacy alongside reading skills was essential.

The pandemic also offered a silver lining. With the widespread diffusion of smartphones and increased familiarity with web-based platforms, both adults and instructors had stronger baseline skills to draw on. ARC had been originally designed for learners with limited digital experience, so its usability aligned well with this moment. To support instructors—many of whom lacked deep training in teaching reading—the team created professional development materials that explained the research base behind ARC's evidence-based comprehension strategies and guided teachers in effective implementation.

Moving Toward Scale with a New Partner

The turning point came when WorkBay, Inc., agreed to host the ARC system on its national platform. This partnership gave the project an infrastructure capable of supporting broader access, ongoing updates, and a path toward sustainability. As the project entered its final stage, the team focused on refreshing outdated content, reconfiguring the system for web delivery, and preparing for an evaluation of promise study. These steps were not simply about technical fixes—they represented an effort to bring a research-based intervention up to the level of polish and usability expected by today's adult learners.

Outcomes and Lessons Learned

The ARC project illustrates both the opportunities and risks of developing technology-based instructional systems in adult education. Research-supported designs may have strong potential, but unless the technology itself is kept up to date, the tool will fall short of learner and program expectations. Building scalable systems requires not only good ideas but also the resources and partnerships to sustain development in a rapidly evolving digital landscape.

Key Takeaways

The ARC experience underscores the need for educational technology to evolve alongside learners and programs. Adults expect systems that are user-friendly, web-based, and mobile-accessible, reflecting their everyday digital lives. For researchers, the lesson is clear: developing scalable, sustainable interventions requires adequate technical capacity and investment, as well as strategic partnerships that bridge the gap between research prototypes and real-world deployment.