# Assistive Technology and Adult Literacy: Access and Benefits

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## RESEARCH QUESTION

The purpose of this project was to explore the efficacy of supported access to assistive technology (AT) for adult students with learning disabilities (LD) to improve their literacy skills and goal attainment as a supplement to regular adult basic education classes. Specifically, the project investigated whether an increased engagement with the multi-sensory presentation of print through text-to-speech and speech recognition software could improve participants’ phonological awareness, decoding, and encoding skills and sought the answers to these questions through traditional assessments as well as reflective dialogue with the learners.

## METHOD-OLGY

A participatory action research model was actualized through the dialogic research technique of the Unfolding Matrix (Padilla, 1993) which structures participants’ involvement in each phase of research and dissemination. The supported access to AT was provided through a coaching model (International Reading Association, 2004) that acknowledged participants as partners in choosing materials, reflecting on their learning needs and skills, and sharing with peers.

The project was undertaken in a large adult education program in the metropolitan Southwest which is a division of the local community college. Data is reported on ten students, ranging in age from 19 – 62, all but one of whom were native English speakers and formerly diagnosed with LD or self-identified based on their educational histories. Students attended 90-minute sessions with AT once or twice a week at community college campuses. Site-based focus groups were held monthly and full group focus dialogues on a quarterly basis.

Data corresponding to the project’s five key components were collected and analyzed as follows:

1. Individual learning was captured through standardized assessments and work samples;
2. Personal reflection was documented in semi-structured interviews, recorded conversations, and written reflections;
3. Focus group dialogues, which discussed the project and personal responses to the experience, were recorded and transcribed;
4. Group social actions, such as workshops for adult and K-12 educators were planned and evaluated; and
5. Role of the researcher, here, the role of the “coach” in the learning environment, was carefully documented and interpreted through group analysis.

| FINDINGS | Adult literacy instruction has the potential to be a site of empowering literacy, but adult students with learning disabilities (LD) struggle to locate the access points necessary to benefit from adult literacy and basic education (ABLE) instruction. Two gaps in particular are exposed as problematic for serving adult students with LD:

1. The gap between secondary and post-secondary research on learners with learning disabilities and the adult education students who have fallen out of those databases.
2. The gap in practice between researched best practice for youth and adults with LD and the practice adult education and literacy settings are able to provide. |

Findings from this study indicate that supported access to AT as a supplement to regular adult education class led to promising practices for adult literacy students with LD. Supported access to the AT made self-study more effective and rewarding and participants grew in self-determination and goal directedness, expanding their dreams in many cases to include community college attendance. Students’ fundamental literacy skill of phonological awareness, as measured on pre and post forms of the Lindamood Auditory Conceptualization test (Lindamood & Lindamood, 1979) was significantly improved through the multi-sensory engagement with print that the assistive technologies offered. Improvements in decoding and encoding, as measured by the Reading and Spelling subtests of the Wide Range Achievement Test-3 (Wilkinson, 1993) were positive, but not statistically significant, for the group average.

<p>| IMPLICATIONS FOR: PRACTICE | A two-pronged approach is necessary to address the “performance gap” for students with disabilities; they need to develop learning strategies for independence as well as build their foundational skills (Deshler et al., 2001). Such an approach requires us as adult educators and researchers to shift our perspectives beyond scrambling to provide accommodations to poorly designed curriculum materials or methods, or insisting that learners with low-level skills master ABE materials before allowing them access to GED and college-prep content. Instead, we must imagine, demand, and create materials and learning environments that provide access and benefits to students at multiple levels and for multiple purposes. Supplemental instruction, including supported access to mainstream and assistive technologies for struggling students, holds |</p>
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<th>POLICY</th>
<th>Programs grapple with resource issues related to technology integration such as professional development, hardware and software costs, maintenance, and upgrading. Program administrators and policymakers can reach out to other programs in the community that serve adults with disabilities. Starting a community conversation can lead to a sharing of resources, knowledge, and commitment. As always, involvement of students in the process leads to more collaborative planning, service, and evaluation. Additionally, federal- and state-level leadership and funds should address this issue in cooperation with program administrators.</th>
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<td>FURTHER RESEARCH</td>
<td>The field of adult education needs a research agenda that builds on what is currently known about both adult and community learning and the effectiveness of AT for secondary and postsecondary students with mild disabilities. The field should outline a research agenda to learn how students benefit from electronic and supported text, how the features of computer-based technologies help users—both native and nonnative speakers of English—learn about language, and how education programs can best integrate their teaching with technology. Furthermore, this agenda needs to investigate how AT can assist youth and adults with mild disabilities to become more self-determined and persistent in their studying, learning, and goal setting.</td>
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<td>IMPORTANCE OF THIS STUDY</td>
<td>This study demonstrates that supported access to computer-based ATs for adult education students with LD provides an enriched and empowering learning environment through multi-sensory, intense engagement with print and opportunities to make personal connections to the standard curriculum. The participants tell of increased self-determination and goal directness as well as increased independence in literacy tasks in their daily lives.</td>
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