Assistive Technology - Research Summary and Resources

Research summary statements provided by Dr. Tessie Rose Bailey of American Institutes of Research

"Accommodations for reading are among the most studied, with evidence showing that text-to-speech or read-aloud can significantly increase both pages read by SWDs and test scores (Calhoun, Fuchs, & Hamlett, 2000; Dolan et al., 2005; Elkind & Elkind, 2002; Fuchs et al., 2000)."

"Read-aloud and text-to-speech accommodations can help reduce cognitive load by allowing these students to bypass their issues with decoding and focus on reading and processing the texts (Anderson-Inman & Horney, 2007; Dolan et al., 2005; Fuchs and Fuchs, 2001)."

Citations for above:

Calhoun, M. B., Fuchs, L., & Hamlett, C. (2000). Effects of computer-based test accommodations on mathematics performance assessments for secondary students with learning disabilities. *Learning Disability Quarterly, 23,* 271–282.

Cawthon, S. W., Eching. H., Patel, P. G., Potvin, D. C., & Trundt, K. M. (2009). Multiple constructs and effects of accommodations on accommodated test scores for students with disabilities. *Practical Assessment, Research and Evaluation, 14*(18), 1–9.

Cox, M. L., Herner, J. G., Demczyk, M. J., & Nieberding, J. J. (2006). Provision of testing accommodations for students with disabilities on statewide assessments. *Remedial and Special Education,* 27, 346–354.

Dolan, R. P., Hall, T. E., Banerjee, M., Chun, E., & Strangman, N. (2005). Applying principles of universal design to test delivery: The effect of computer-based read aloud on test performance of high school students with learning disabilities. *Journal of Technology, Learning, and Assessment, 4*(7), 4–32.

Elkind, K., & Elkind, J. (2007) Text-to-speech software for reading. Perspectives on language and literacy. *The International Dyslexia Association*, Summer, 11–16.

Fuchs, L.S., & Fuchs, D. (2001). Helping teachers formulate sound test accommodation decisions for students with learning disabilities. *Learning Disabilities Research & Practice, 16* (3), 174–181.

Lai, S. A., & Berkeley, S. (2012). High-stakes test accommodations research and practice. *Learning Disability Quarterly,35*(3), 158-169.

Division for Special Education Services and Supports

Wina Low
Program Manager Senior
Phone: 404-463-0411
Email: wlow@doe.k12.ga.us

Paula Gumpman
Program Specialist
Phone: 678-340-8118
Email: pgumpman@doe.k12.ga.us

Assistive Technology

Any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities.

The term does not include a medical device that is surgically implanted, or the replacement of such device.

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Tessie Rose Bailey is a principal technical assistance consultant at AIR. Her primary responsibilities include developing high quality technical assistance resources and providing technical assistance to states, districts, and institutions of higher education. She provides support through the Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR) Center, National Center for Systemic Improvement (NCSI), and Center for Response to Intervention (CRTI). She has extensive experience in response to intervention, special education services and law, secondary and transition services, teacher education and evaluation, and scaling up evidence-based practices.

Prior to AIR, Dr. Bailey was an assistant professor at Montana State University Billings (MSUB). In this role, she taught general and special education undergraduate and graduate courses, co-chaired the Montana Higher Education Consortium, and received the 2014 Montana State University Billings Faculty Excellence Award and the 2015 ASMSUB Outstanding Faculty Award. Dr. Bailey has conducted over 100 professional development workshops and presentations in evidence-based practices and publishes in special education law and policy, RTI/MTSS, and teacher preparation. She completed her Ph.D. at the University of Utah in special education curriculum and assessment and post-doctoral work in RTI/MTSS and transition at Lehigh University's Center for Promoting Research to Practice.

Resources and Websites/OSEP funded National Centers:

1. Text-to-Speech Technology: What it is and How it works (http://www.readingrockets.org/article/text-speech-technology-what-it-and-how-it-works)

2. The Difference between Audiobooks and Text-to-Speech (https://www.understood.org/en/school-learning/assistive-technology/assistive-technologies-basics/the-difference-between-audiobooks-and-text-to-speech)

3. Will Digital accessible books improve reading for students with dyslexia? (https://www.edsurge.com/news/2015-01-27-will-digital-accessible-books-improve-reading-for-students-with-dyslexia)

4. The previously funded OSEP Center - PowerUp WHAT WORKS (https://powerupwhatworks.org) and the Technology Research Briefs (https://powerupwhatworks.org/page-puww/technology-research-briefs) -Using Multimedia to Support Reading Instruction

5. The National Center on Accessible Educational Materials (http://aem.cast.org/)

6. Assessment and use of accommodations could be accessed through the Center on Technology and Disability (CTD) https://www.ctdinstitute.org/library/2018-09-19/improving-accommodations-outcomes-monitoring-instructional-and-assessment

7. Accessibility, Assessment and the Law — What State Leaders Need to Know (https://www.ctdinstitute.org/library/2016-10-24/accessibility-assessment-and-law-what-state-leaders-need-know)