

Recommendations for Improving the Provision and Use of Braille for State- Mandated Assessment

By National AEM Center at CAST

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Introduction

The [National Center on Accessible Educational Materials for Learning at CAST](#) (AEM Center) is funded by the Office of Special Education Programs (OSEP), U.S. Department of Education, to increase the availability and use of accessible educational materials (AEM) and related technologies for learners with disabilities who need them. AEM is defined as “print- and technology-based educational materials, including printed and electronic textbooks and related core materials that are designed or enhanced in a way that makes them usable across the widest range of learner variability, regardless of format (e.g., print, digital, graphic, audio, video)” (Footnote 10, Federal Register / Vol. 79, No. 90 / Friday, May 9, 2014 / Notices, page 26728). The provision of AEM is an obligation of state and local education agencies under the Individuals with Disabilities Education Act (IDEA).

Supporting the participation of students who need AEM and related technologies in state-mandated assessment is an extension of the AEM Center’s technical assistance activities. The needs of students who rely on AEM for daily learning transfer to state-mandated and large-scale assessment. As stated by OSEP, “Far too often, [students with disabilities] cannot use their accommodations or assistive technology (AT) on State-mandated tests due to issues with interoperability, privacy, and security concerns. These problems persist even when the AT is an approved device or resource” (Federal Register / Vol. 84, No. 148 / Thursday, August 1, 2019 / Notices, page 37634).

The Mandate

Federal education law requires that students participate in state and district-wide assessment to measure what is retained from instruction. In turn, data from assessment results are used to determine the effectiveness of instruction on the tested population. Procedures are put in place to ensure fairness and equity in assessment for all students, including students with disabilities. For example, testing conditions are held constant as much as feasible for all test takers so they are given an equal chance to demonstrate what they know and can do as a result of their education. And those conditions are presumed to be familiar to the test taker and protect construct validity, such as the language of the assessment, the format in which material is presented, and the test delivery technology. Since the procedures required by state-mandated assessment may be unfamiliar to students, practice sessions may be offered.

A unique testing consideration for blind students is the provision of braille. Under disability law, blind students are presumed to be braille users, unless an IEP or 504 team determines otherwise. Therefore, blind students participating in mandated

assessment are presumed to be users of braille for decoding text, calculating numbers, or interpreting graphics.

The Challenge

For blind students, braille provides direct and independent contact with alphanumeric text-based systems. For students with vision impairments who cannot read print with any reasonable degree of efficiency, braille offers the only direct contact with graphical representations of speech (orthography). Access to orthographic information allows the user to master spelling, analyze the linguistic structures of language, and ultimately, read and write. Without a means of connecting orthography to spoken language, blind students would be deprived of the opportunity to learn, and express that learning, as experienced by sighted peers.

At the same time, braille presents limitations. For example, braille requires extra time to decode, as does note taking and copying from braille. Interacting with braille embedded in tactile graphics, including math and science content, requires manual movements that impose greater cognitive load and working memory. Consequently, while the provision of assessment in braille is essential for blind students, the policies and practices that support that provision are equally critical.

Purpose

This practice brief outlines a series of recommendations for improving the timely provision and use of high-quality braille – both embossed and electronic – and tactile graphics for state-mandated assessment. The primary target audience for these recommendations is State Education Agency (SEA) assessment leaders and others at the State-and national level who are responsible for ensuring that braille readers are full participants in their state assessment, whether general or alternate. Most desirable is that these recommendations will initiate conversations between and among states, districts, braille service providers, and test developers.

Process

The AEM Center established a workgroup of experts in services for blind and visually impaired (B/VI) students in late summer 2022. The expertise of these individuals extended to the provision and use of braille for state-mandated assessment. The stated purpose of the workgroup was to assist the AEM Center with developing recommendations for supporting States in achieving timely and high-quality braille provision for large-scale assessment.

The AEM Center convened the workgroup in a half-day meeting over video conference. In preparation, the members of the workgroup were given several weeks to contribute what they believed to be the primary challenges related to the provision and use of braille for state assessment. Thoughts and perspectives were collected in a shared online document. Additionally, the group offered shared readings to prepare for the half-day meeting (see Suggested Publications and Resources at the end of this brief).

Before the meeting, the AEM Center team coded and sorted the challenges pre-identified by the experts into the following four general categories, each with areas and sub-areas of concern: Test Components & Requirements; Accommodations; Test Administration; and Procurement. During the meeting, the AEM Center team facilitated multiple breakout group activities to guide deliberation and consensus-building among the experts. In the process, workgroup members collaboratively edited and revised language, refined categories, and provided further considerations for the AEM Center team.

Following the meeting, the AEM Center team reconciled the feedback from the workgroup and developed a series of draft recommendations to address the challenges conveyed by the experts. These recommendations were re-categorized and returned to the workgroup for asynchronous feedback. The AEM Center team then used the comments and suggestions to develop the final list of recommendations, presented in the following section.

Recommendations

The following recommendations are offered for consideration by States, districts, braille service providers, and test developers to improve the provision and use of braille for state-mandated assessment.

1. For the Provision of Accommodations for Braille Users

- 1a. Use and type of accommodations during instruction must be allowable for and available during assessment.
- 1b. Use of media, including manipulatives and audio (for input and output), that does not interfere with construct relevance.
- 1c. Availability of a separate item bank optimized for braille.
- 1d. Availability of technical materials in both UEB with Nemeth and UEB Math/Science via IEP/504 team recommendation.

1e. Image descriptions provided in both accessible digital text and hard copy braille for all tactile graphics.

2. For the Administration of Assessments in Braille Format

2a. Provision of SEA-developed guidance documents for LEAs.

2b. Provision of practice tests, modified as appropriate for braille users, with equitable number of test items in the same format and using the same media, materials, and supports used during instruction.

2c. Coordination and consistency among SEAs.

3. For Test Requirements and Components

3a. Review of assessment items by a fairness/bias committee with membership criteria, credentials, and procedural requirements.

3b. Use of MathML for interoperability with a variety of assistive technologies.

3c. Production of braille and tactile graphics, including quality assurance reviews by certified transcribers.

Next Steps

The AEM Center, in collaboration with members of the workgroup and other experts, is developing a series of resources to support State assessment leaders and other state- and national-level decision makers in understanding the recommendations presented in this brief. These will include Q&A documents, guidance on available best practices, and recommendations for areas of additional investigation. If you are interested in contributing to these activities, please contact the AEM Center team at aem@cast.org.

To stay up to date on resources as they become available, [follow the publication page for this practice brief on the AEM Center website](#).

Suggested Publications & Resources

[ACT, Inc: ACT Test Accommodations and English Learner Supports](#)

[American Printing House for the Blind \(APH\): Accessible Tests Resource Center](#)

[College Board: Accommodations on College Board Exams](#)

[GED Testing Service LLC: Accommodations](#)

National Center on Accessible Educational Materials (2022). *Improving the Accessibility of State-Mandated Assessments: Findings from a Focus Group of State Education Agency Representatives*. Lynnfield, MA: National Center on Accessible Educational Materials. Retrieved from: <https://aem.cast.org/get-started/resources/2022/improving-the-accessibility-of-state-mandated-assessments-findings-from-a-focus-group-of-state-education-agency-representatives>

[National Center on Educational Outcomes \(NCEO\): State Policies for Students with Disabilities by Topic](#)

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