



Gaps in the Accommodations Research Literature

Accessibility features and accommodations reduce or eliminate barriers that can keep students from demonstrating what they know and can do on an assessment. Accessibility features and accommodations do not lower learning expectations. State summative assessments used for federal accountability are required to be technically sound and meet statutory and regulatory requirements. The U.S. Department of Education’s Office of Elementary and Secondary Education (OESE) conducts peer reviews of states’ assessments to ensure that they meet minimum requirements (U.S. Department

of Education, 2018). As part of peer review, states are required to document that they only allow the use of accommodations that do not compromise the validity of the assessment.

U. S. Department of Education Peer Review of State Assessment Systems

Critical Element 5.3 – Accommodations

The State makes available appropriate accommodations and ensures that its assessments are accessible to students with disabilities and ELs, including ELs with disabilities. Specifically, the State. . .

- Has determined that the accommodations it provides (1) are appropriate and effective for meeting the individual student’s need(s) to participate in the assessments, (2) do not alter the construct being assessed, and (3) allow meaningful interpretations of results and comparison of scores for students who need and receive accommodations and students who do not need and do not receive accommodations . . .

Research Gaps

The National Center on Educational Outcomes (NCEO) reviewed the accommodations research literature published between 1999 and 2021.¹ The research findings for specific testing accommodations are summarized in NCEO’s Accommodations Toolkit (2020, 2021, 2022). Gaps in the research were identified in those summaries of the literature. This Brief consolidates the information about those research gaps (see Table 1) with the goal of promoting wider interest in and additional research on accommodations. The primary audience for this Brief is researchers and other persons or organizations interested in conducting or promoting research that supports a better understanding of accommodations. Graduate students looking to identify potential areas for research may also find this Brief useful.

Both the Individuals with Disabilities Education Act (IDEA) and the Elementary and Secondary Education Act (ESEA) refer to accommodations; however, many states use a three-level framework to accessibility that includes universal features, designated features, and accommodations (Larson et al., 2020). The research we reviewed to identify gaps did not typically make this distinction, so we did not make that distinction in this Brief. We use the term *accommodations* to refer to all supports addressed in the research.

¹Thompson et al., 2002; Johnstone et al., 2006; Zenisky & Sireci, 2007; Cormier et al., 2010; Rogers et al., 2012; Rogers et al., 2014; Rogers et al., 2016; Rogers et al., 2019; Rogers et al., 2020; Rogers et al., 2021; Rogers et al., 2022.

Table 1. Identified Research Needed, Selected Accommodations¹

Accommodation ² (number of identified research studies in parentheses)	Research Needs
Assistive Technology (11)	<ul style="list-style-type: none"> • Use of emerging types of assistive technology as assessment accommodations, including studies on effectiveness and teacher and student perspectives
Braille ³ (7)	<ul style="list-style-type: none"> • Use of braille as an assessment accommodation, particularly research on refreshable braille
Calculator (22)	<ul style="list-style-type: none"> • Use of calculators that are embedded in a test platform • Comparison of effectiveness of calculators embedded in a test platform to handheld calculators • Effect of student familiarity with the calculator expected to use on assessment on emotional state and performance
Clarify/ Simplify/ Repeat Directions ³ (5)	<ul style="list-style-type: none"> • Effectiveness of the clarification, simplification, and repeating of directions accommodations
Color Contrast (6)	<ul style="list-style-type: none"> • Effectiveness of emerging options on digital platforms for enhancements in color contrast • Effectiveness of color contrast for students with visual impairments • Students’ perceptions regarding use of color contrast

Table 1. Identified Research Needed, Selected Accommodations (continued)

Accommodation² (number of identified research studies in parentheses)	Research Needs
Extended Time ⁴ (21)	<ul style="list-style-type: none"> • Use of extended time in isolation from other accommodations • Interaction of extended time in combination with other accommodations for students with varying needs across content assessments
Familiar Proctor/Test Administrator ³ (7)	<ul style="list-style-type: none"> • Use of familiar proctor/test administrator as an assessment accommodation, including studies on effectiveness, and teacher and student perspectives
Highlighting (2)	<ul style="list-style-type: none"> • Use of highlighter as an assessment accommodation, including studies on effectiveness and teacher and student perspectives
Human Read Aloud ⁵ (20)	<ul style="list-style-type: none"> • Identification of the specific characteristics and needs of students who may benefit from the human read aloud accommodation • Examination of whether human read aloud is provided in a standardized way across readers
Large Print (8)	<ul style="list-style-type: none"> • Effectiveness of the large print accommodation • Teachers' experiences and perceptions regarding the large print accommodation • Examination of whether large print is useful for students who have disabilities other than visual impairments (e.g., learning disabilities)
Magnification (3)	<ul style="list-style-type: none"> • Effectiveness of the magnification accommodation • Examination of whether large print is useful for students who have disabilities other than visual impairments (e.g., learning disabilities) • Effectiveness of magnification for students with various levels of magnification need (e.g., high level of magnification; lower level of magnification)
Manipulatives ⁶ (10)	<ul style="list-style-type: none"> • Effectiveness of physical manipulatives during testing • Effectiveness of manipulatives for content assessments other than math (e.g., science) • Use of manipulatives during assessment by students who are blind or have low vision
Math Charts/Tables (2)	<ul style="list-style-type: none"> • Effectiveness of the math charts/tables accommodation during testing • Analysis of the characteristics and needs of students who may benefit from using different types of math charts • Comparison of the effectiveness of math charts, calculators, and other accommodations (e.g., manipulatives, abacus) that support math operations
Multiple Days ³ (5)	<ul style="list-style-type: none"> • Use of testing over multiple days as an accommodation, including studies on effectiveness and teacher and student perceptions
Noise Reduction (4)	<ul style="list-style-type: none"> • Use of noise reduction as an accommodation, including studies on effectiveness and teacher and student perspectives
Paper Format ⁷ (3)	<ul style="list-style-type: none"> • Analysis of the characteristics and needs of students who may benefit from the paper format accommodation • Analysis of whether various options for digital administrations, such as adjusting digital format settings like font size, lines per page, and color contrast, may reduce the need for the paper option
Preferential Seating (4)	<ul style="list-style-type: none"> • Effectiveness of preferential seating accommodation
Recorded Oral Delivery ⁸ (12)	<ul style="list-style-type: none"> • Impact of the quality of recordings for oral delivery on student performance
Scribe ³ (6)	<ul style="list-style-type: none"> • Use of scribe as an accommodation, including studies on effectiveness and teacher and student perspectives

Table 1. Identified Research Needed, Selected Accommodations (continued)

Accommodation² (number of identified research studies in parentheses)	Research Needs
Signed Administration (7)	<ul style="list-style-type: none"> • Effectiveness for students who are deaf or hard of hearing with and without the signed administration accommodation at various grade levels (e.g., k-2, high school). • Comparison of various methods of providing this accommodation (e.g., in-person sign language interpretation compared to videos of humans or avatars), especially at the elementary grades for content assessments other than math or reading (e.g., science, social studies) • Examination of whether some students with disabilities other than deaf or hard of hearing (e.g., autism) may benefit from different types of signed administration
Small Group and Individual Administration ⁴ (10)	<ul style="list-style-type: none"> • Use of small group or individual administration in isolation from other accommodations • Students' perceptions of small group and individual administration • Comparisons of small group and individual administration with possible alternatives to these accommodations (e.g., use text-to-speech with headphones rather than a human reader so the student can take the assessment in the same room as other students)
Speech-to-Text (5)	<ul style="list-style-type: none"> • Effectiveness of emerging embedded and non-embedded technologies for providing speech-to-text
Spell Check (5)	<ul style="list-style-type: none"> • Effectiveness of spell check for English learners with disabilities • Examination of teacher and student perceptions of spell check accommodation
Student Reads Aloud to Self ⁶ (5)	<ul style="list-style-type: none"> • Effectiveness of student read aloud to self accommodation
Tactile Graphics (10)	<ul style="list-style-type: none"> • Examination of student perspectives regarding tactile graphics
Test Breaks ⁴ (12)	<ul style="list-style-type: none"> • Use of test breaks in isolation from other accommodations, including studies that examine the effectiveness of this accommodation
Text-to-Speech (Computer Generated Voice) ⁵ (10)	<ul style="list-style-type: none"> • Effectiveness of emerging embedded and non-embedded technologies for providing text-to-speech
Word Prediction ³ (4)	<ul style="list-style-type: none"> • Use of word prediction as an accommodation, including studies on effectiveness and teacher and student perspectives • Effectiveness of spell check for English learners with disabilities

¹For additional information and details about identified research gaps and studies reviewed see the Accommodations Toolkit (NCEO, 2020, 2021, 2022).

²Several studies reported findings for more than one accommodation.

³Much of the research on this accommodation was conducted more than a decade ago.

⁴There is limited research on this accommodation alone because it is often bundled with other accommodations.

⁵Past research on this accommodation shows mixed findings.

⁶There is limited research on the effectiveness of physical manipulatives during testing though several recent studies examined virtual manipulatives.

⁷As more assessments are administered digitally, additional research is needed on a variety of topics related to the provision of the paper format as an accommodation.

⁸Prerecorded audio is not used as much as it once was due to the shift to online assessments that provide oral delivery using text-to-speech technology.

Even though Table 1 is not a comprehensive list of gaps in the literature, the identified areas suggest where there is a need for additional research. Research on these topics could provide valuable information and expand the accommodations' knowledge base.

Conclusions

Federal and state policymakers, as well as educators, rely on the accommodations research literature to evaluate how accommodations should be used to improve accessibility for students with disabilities; however, accommodations research is an area with many unexplored issues. Researchers with an interest in this area have the opportunity to conduct studies that will impact how students navigate barriers on assessments that make it difficult for them to show what they know and can do. Doctoral students will not need to look far to find topics where they can make an important original contribution to the literature.

The research gaps identified in this Brief are not a complete catalog of needed research related to accommodations, but rather should be considered a list of some research priorities and the beginnings of a research agenda. This list is also not static and will need to be updated as additional research is conducted. Hopefully this articulation of needed research will encourage the education research community to support and conduct research that will help fill current gaps. There is an urgent need for additional knowledge about how to appropriately use accommodations to ensure that assessments are accessible and validly measure what students know and can do.

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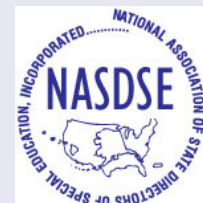
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