



**A Summary of the  
Research on the  
Effects of K-12 Test  
Accommodations: 2022**

**NCEO Report 444**



**NCEO**

National Center on  
Educational Outcome:

# **A Summary of the Research on the Effects of K–12 Test Accommodations: 2022**

Virginia A. Ressa, Sheryl S. Lazarus, Christopher M. Rogers,  
Kascinda Fleming, and Mari Quanbeck

**August 2024**

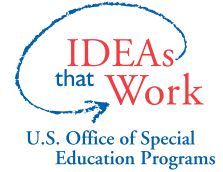
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**Project Officer:** David Egnor



**In collaboration with:**



### **NCEO Core Staff**

Sheryl S. Lazarus, Director  
Jessica Bowman  
Gail Ghere  
Linda Goldstone  
Andrew R. Hinkle  
Kristi K. Liu  
Michael L. Moore

Darrell Peterson  
Mari Quanbeck  
Virginia A. Ressa  
Christopher M. Rogers  
Kathy Strunk  
Yi-Chen Wu

National Center on Educational Outcomes  
University of Minnesota  
2025 East River Parkway, Room 1-330 • Minneapolis, MN 55414  
Phone 612/626-1530  
<http://www.nceo.info>

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## Executive Summary

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Research on test accommodations provides valuable information that informs policy and practice. This report presents a synthesis of the research literature published in 2022 on testing accommodations for U.S. elementary and secondary students (K–12). The National Center on Educational Outcomes (NCEO) has reported on accommodations research since 1999.

In 2022, NCEO identified four research studies on testing accommodations that met the criteria for inclusion. This was fewer studies than in previous years. The limited number of published studies focusing on accommodations may be the result of gaps in testing data due to COVID-19, as well as other lingering effects of the pandemic.

All the studies published in 2022 that met the criteria were dissertations. The studies presented in this report provide an update on the state of the research on testing accommodations. These studies addressed several topics including research on teacher, student, and parent perceptions and perspectives regarding accommodations. Primary data were collected for all of these studies, and most of the studies used qualitative methods. The studies published in 2022 included studies conducted at the elementary, middle school, and high school levels. The studies addressed the use of accommodations on mathematics, reading, and science assessments; one study did not specify the content area.

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## Overview

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The Individuals with Disabilities Education Act (IDEA) requires that all students with disabilities participate in state- and district-administrations of assessments, with appropriate accommodations (or alternate assessments), if needed. Similarly, the Elementary and Secondary Education Act (ESEA), which is commonly known as the Every Student Succeeds Act (ESSA), requires that states ensure that assessments are accessible, and make appropriate accommodations available to students with disabilities. The U.S. Department of Education has an assessment peer review process that is designed to support states in meeting statutory and regulatory requirements for implementing valid and reliable state assessment systems under Title I of ESSA. Peer review Critical Element 6.3 requires states to determine that the accommodations it provides:

- are appropriate and effective for meeting the individual student’s need(s) to participate in the assessments
- do not alter the construct being assessed
- 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 (U.S. Department of Education, 2018).

Research conducted on accommodations can provide states with information and evidence that can help ensure that validity is not compromised. This is useful for making policy decisions. The purpose of this report is to present a synthesis of the research literature on test accommodations for U.S. elementary and secondary students (K–12) published in 2022. The National Center on Educational Outcomes (NCEO) has reported on accommodations research since 1999.<sup>1</sup> This report has a new streamlined format to make it easier to use.

## Review Process

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The criteria for inclusion in this review of the testing accommodations literature were:

- Published or defended (if doctoral dissertation) in 2022.
- Addressed accommodations on general assessments. Studies specific to accommodations for alternate assessments, as well as studies that addressed only instructional accommodations, were not included in this review.

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<sup>1</sup>Previous reports covered the following time periods: 1999–2001 (Thompson et al., 2002), 2002–2004 (Johnstone et al., 2006), 2005–2006 (Zenisky & Sireci, 2007), 2007–2008 (Cormier et al., 2010), 2009–2010 (Rogers et al., 2012), 2011–2012 (Rogers et al., 2014), 2013–2014 (Rogers et al., 2016), 2015–2016 (Rogers et al., 2019), 2017 (Rogers et al., 2020), 2018 (Rogers et al., 2021), 2019 (Rogers et al., 2022), 2020 (Rogers et al., 2022), 2021 (Rogers et al., 2023).

- Went through the level of peer review typically required for publication in professional journals or through a doctoral committee review. (It excludes presentations and most reports, though reports are included that have gone through a rigorous review process.)
- Involves at least one of the following:
  - o Experimental manipulation of an accommodation
  - o Investigation of the comparability of test scores across accommodated and non-accommodated conditions, or across more than one accommodated condition
  - o Examination of survey results or interview data sets about students’ or teachers’ perceptions or preferences regarding accommodations
- Focused on research on students in schools in the United States
- Pertained to grades K–12
- Was not an advance online publication

Additionally, research on accommodations for English learners was included in this analysis only if the target population was English learners with disabilities. It excluded research on accommodations for English learners who do not have disabilities. For additional information on the search process, see Appendix A.

This report uses the same criteria as was used in the most recent previous report (Rogers et al., 2023) though the search and screening process was refined. For this update, a checklist with the criteria was created and implemented by a team of NCEO staff. To help ensure that the research studies included in this report met the criteria, two NCEO researchers reviewed each study and used a form to indicate whether all the criteria were met. Differences were reconciled by a third NCEO researcher. Once it was determined that the study met the inclusion criteria, researchers conducted detailed reviews of each study. The study characteristics were coded independently by two researchers who then met and reconciled any differences. As needed, a third researcher reviewed the studies and discussed differences with the larger team to reach consensus. For additional information about the search process, see Appendix A.

## Results

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Four studies met the criteria for inclusion in this report. Substantively fewer studies met the inclusion criteria than met them in the previous year (2021) when 12 studies met the criteria (see Rogers et al., 2023). The characteristics of the studies are presented next. For additional details

see Appendices B and C. Appendix B contains an annotated bibliography with the complete reference for each of the studies included in this review, as well as summaries of the studies. Appendix C provides detailed information regarding the characteristics of each study.

### Publication Type

All four of the 2022 studies identified for inclusion in this review were dissertations. This differed from the analysis of the 2021 accommodations research literature when there were also some studies published in journals or as peer-reviewed reports (see Rogers et al., 2023).

### Purpose

As shown in Table 1, only one of the 2022 accommodations research studies compared test scores. The other studies focused on issues around implementation of accommodations, and students’ and teachers’ perceptions and preferences. All four studies included summaries of research literature. This differed from the previous analysis (2021), when studies that compared effects were more prevalent (see Rogers et al., 2023).

**Table 1. Research Purposes of K–12 Studies in 2022**

<b>Purpose</b>	<b>Number of Studies</b>
Compare effects	
only students with disabilities	0
only students without disabilities	1
both students with and without disabilities	0
Discuss issues	2
Report on accommodations implementation practices & use patterns	3
Report on accommodations perceptions & preferences	3
Summarize research	4

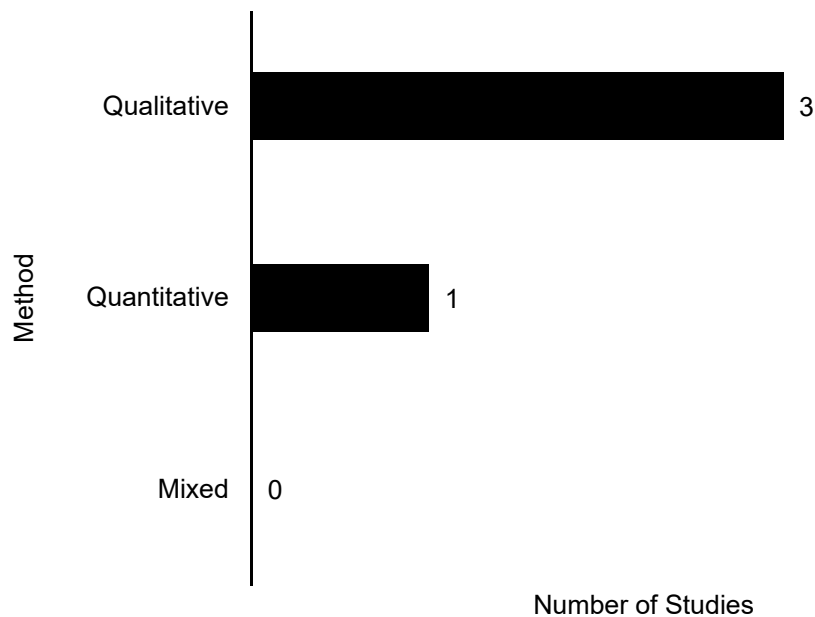
Note: All of the four studies had more than one purpose.

### Research Type

According to Figure 1, of the four 2022 accommodations research studies, three used qualitative methods, and one used quantitative methods. This differed from the 2021 analysis of the accommodations research literature when quantitative studies were more prevalent than qualitative studies (see Rogers et al., 2023).



**Figure 1. Research Methods Used in K–12 Studies Published in 2022**



### Data Collection Source

Of the four 2022 accommodations research studies, primary data were collected for all of the studies. None of the studies used extant data sources. This is similar to the previous analysis (2021) when most studies also used primary data, though one study that year used extant data (see Rogers et al., 2023).

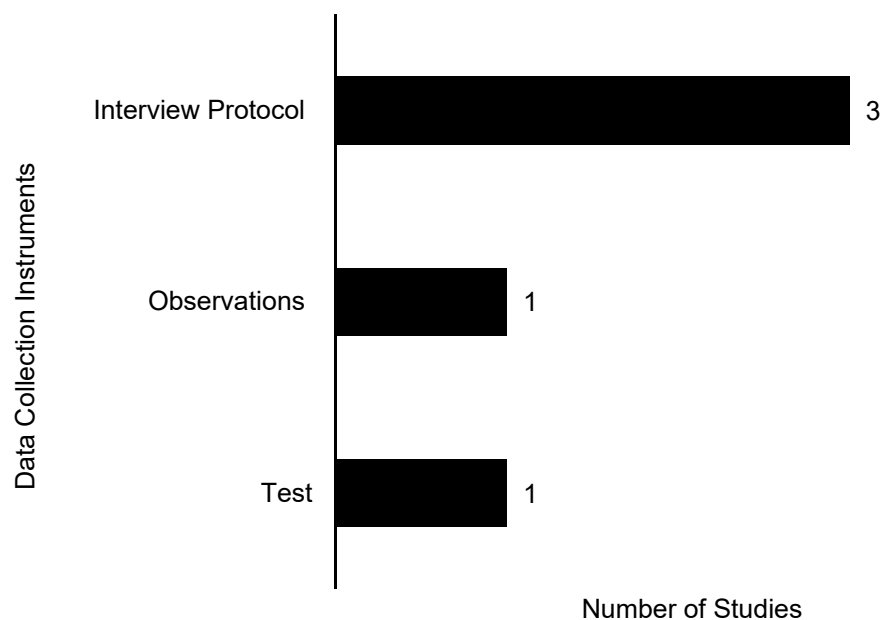
### Data Collection Instruments and Methods

As shown in Figure 2, the research methods used in three of the 2022 accommodations research studies included interviews with students, teachers, or parents. The methods used in one study were observations of students and teachers in classrooms, while another study examined test scores from standardized mathematics tests. One study used more than one method. This differed from the 2021 analysis of the accommodations research literature, when the most common data collection instrument or method was a test (see Rogers et al., 2023).

### Content Areas Assessed

As indicated in Table 2, one of the studies included in this review focused on mathematics, one on reading, and one on science. One study did not specify a content area. In the previous analysis (2021), mathematics was the most common content area (see Rogers et al., 2023).

**Figure 2. Data Collection Instruments and Methods Used in K–12 Studies Published in 2022**



*Note.* One of the four studies used more than one method.

**Table 2. Academic Content Area Assessed in K–12 Studies**

Content Area Assessed	Number of Studies
Mathematics	1
Reading	1
Science	1
Not specified	1

### Sample Size

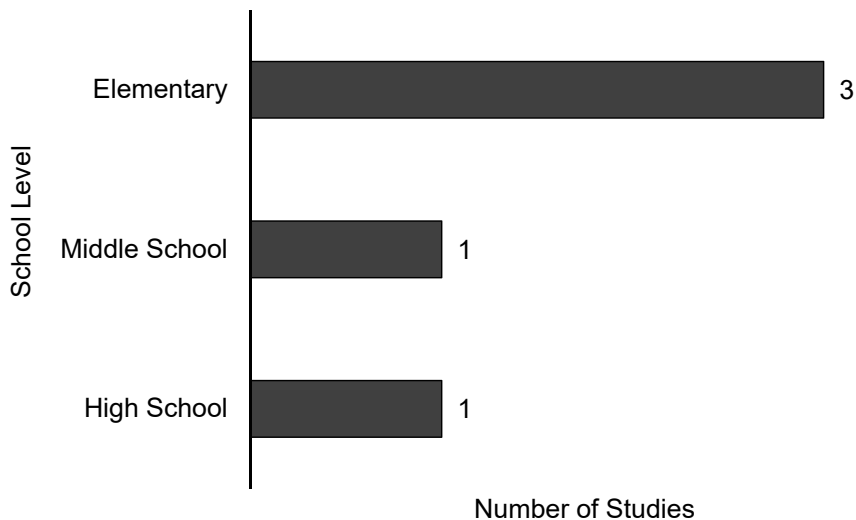
The sample size for all four of the 2022 studies was less than 50 participants. This differed from the 2021 analysis of the accommodations research literature when there was more variation in sample size. The 2021 analysis included a study that examined extant data for more than 400,000 students (see Rogers et al., 2023).

### School Level

Figure 3 shows that three of the 2022 accommodations research studies were conducted at the elementary level, one at the middle school level, and one at the high school level. This differs

from the analysis of the 2021 accommodations research literature when a higher proportion of the studies were conducted at the middle or high school levels (see Rogers et al., 2023).

**Figure 3. School Levels of K–12 Studies in 2022**



*Note.* One of the four studies was conducted at multiple school levels.

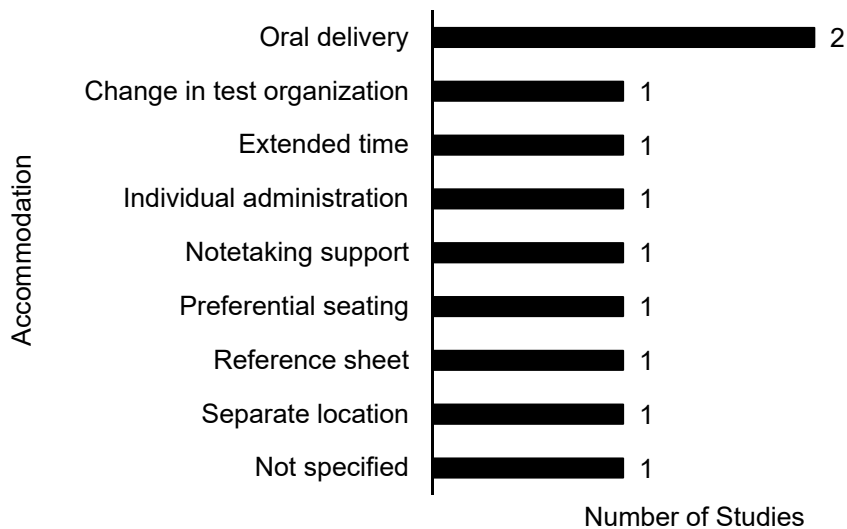
### Disability Category

One 2022 study included only students without disabilities. The other three focused on students with disabilities; one of these studies did not specify a disability category, while learning disabilities were the target population of the other two. In the analysis of the 2021 literature, the accommodations research literature addressed a wider range of disability categories (see Rogers et al., 2023).

### Accommodations

As shown in Figure 4, the most addressed testing accommodation in the 2022 accommodations research literature was oral delivery ( $n=2$ ). Other accommodations addressed in the 2022 literature were changes in test layout or organization, extended time, individual administration, notetaking support, preferential seating, reference sheet, and separate location. Three of the four studies this year examined teacher, student, or parent perceptions of accommodations; one of these studies did not identify specific accommodations, but rather looked more generally at teachers' perceptions of accommodations. In the analysis of the previous year (2021), the most commonly studied accommodations were electronic administration and oral delivery (see Rogers et al., 2023).

**Figure 4. Testing Accommodations in K–12 Studies in 2022**



*Note.* Two of the four studies addressed more than one accommodation.

## Discussion

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For 2022, four U.S. K-12 testing accommodations research studies were identified. All were dissertations. The limited number of published studies focusing on accommodations may be the result of gaps in testing data due to COVID-19, as well as other lingering effects of the pandemic. Federal and state policymakers, as well as educators, rely on the accommodations research literature to evaluate how accommodations should be used. Continued research on the use of accommodations to provide students with disabilities access to tests is essential to better understanding how accommodations work and ensuring that they are used appropriately.

## References

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Cormier, D. C., Altman, J., Shyyan, V., & Thurlow, M. L. (2010). *A summary of the research on the effects of test accommodations: 2007–2008* (Technical Report 56). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/Tech56/TechnicalReport56.pdf>

Johnstone, C. J., Altman, J., Thurlow, M. L., & Thompson, S. J. (2006). *A summary of the research on the effects of test accommodations: 2002 through 2004* (Technical Report 45). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/Tech45/Technical45.pdf>

Rogers, C. M., Christian, E. M., & Thurlow, M. L. (2012). *A summary of the research on the effects of test accommodations: 2009–2010* (Technical Report 65). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/Tech65/TechnicalReport65.pdf>

Rogers, C. M., Lazarus, S. S., & Thurlow, M. L. (2014). *A summary of the research on the effects of test accommodations, 2011–2012* (Synthesis Report 94). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/Synthesis94/Synthesis94.pdf>

Rogers, C. M., Lazarus, S. S., & Thurlow, M. L. (2016). *A summary of the research on the effects of test accommodations: 2013–2014* (NCEO Report 402). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/Report402/NCEOReport402.pdf>

Rogers, C. M., Lazarus, S. S., & Thurlow, M. L. (2021). *A summary of the research on the effects of K–12 test accommodations: 2018* (NCEO Report 423). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/NCEOReport423.pdf>

Rogers, C. M., Lazarus, S. S., Thurlow, M. L., & Liu, K. K. (2020). *A summary of the research on the effects of K–12 test accommodations: 2017* (NCEO Report 418). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/NCEOReport418.pdf>

Rogers, C. M., Ressa, V. A., Lazarus, S. S., Thurlow, M. L., & Swadek, G. (2023). *A summary of the research on the effects of K–12 test accommodations: 2021* (NCEO Report 438). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/NCEOReport438.pdf>

Rogers, C. M., Ressa, V. A., Thurlow, M. L., & Lazarus, S. S. (2022). *A summary of the research on the effects of K–12 test accommodations: 2020* (NCEO Report 436). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/NCEOReport436.pdf>

Rogers, C. M., Thurlow, M. L., Lazarus, S. S., & Liu, K. K. (2019). *A summary of the research on the effects of test accommodations: 2015–2016* (NCEO Report 412). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/NCEOReport412.pdf>

Rogers, C. M., Thurlow, M. L., Lazarus, S. S., Ressa, V. A., & Swadek, G. S. (2022). *A summary of the research on the effects of K–12 test accommodations: 2019* (NCEO Report 433). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/NCEOReport433.pdf>

Thompson, S., Blount, A., & Thurlow, M. (2002). *A summary of research on the effects of test accommodations: 1999 through 2001* (Technical Report 34). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/TechReport34.pdf>

U.S. Department of Education. (2018). *Peer review guidance—A state’s guide to the U.S. Department of Education’s assessment peer review process*. U.S. Department of Education. <https://oese.ed.gov/files/2020/07/assessmentpeerreview.pdf>

Zenisky, A. L., & Sireci, S. G. (2007). *A summary of the research on the effects of test accommodations: 2005–2006* (Technical Report 47). National Center on Educational Outcomes. <https://nceo.umn.edu/docs/OnlinePubs/Tech47/TechReport47.pdf>

## Appendix A

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### Research Literature Identification

Similarly to the process used in NCEO’s previous accommodations research syntheses, several sources were accessed to complete the review of the K–12 accommodations research published in 2022. Specifically, five research databases were consulted: Educational Resources Information Center (ERIC), PsycINFO, Academic Search Premier, Dissertations and Theses Global, and Educational Abstracts. To help affirm the thoroughness of the searches, the search engine Google Scholar was used to locate additional research, if any. In addition, selected journals were hand-searched in efforts to ensure that no qualifying study was missed. A list of hand-searched journals is available on the NCEO website (<https://nceo.info/Resources/bibliographies/accommodations/methods-for-identifying>).

Online archives of several organizations also were searched for relevant publications. These archives included the ACT Research Publications (<https://www.act.org/content/act/en/research/reports/act-publications.html>), the College Board Research Library (<http://research.collegeboard.org>), the ETS RESEARCHER (<https://www.ets.org/research/researcher.html>) database, and the Wisconsin Center for Educational Research (WCER; <https://www.wcer.wisc.edu/publications>).

The initial search was completed in December 2022. A second search was completed in May 2023 to ensure that all articles published in 2022 were found and included in this review. Within each of these research databases and publications archives, a sequence of search terms was used. Terms searched for this review were:

- standardized (also large-scale, state, standards-based) test (also testing) changes
- standardized (also large-scale, state, standards-based) test (also testing) modification(s)
- standardized (also large-scale, state, standards-based) test (also testing)
- accommodation(s)
- test changes
- test modifications
- test accommodations

Many of these search terms were used as delimiters when searches yielded large pools of irrelevant documents.

## Appendix B

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### Annotated Bibliography of 2022 Accommodation Research Studies

#### 2022 Research Literature Citations and Summaries

Beasley, L. (2022). *Teaching in the gap: Understanding special educators' experiences teaching in between education policies* (Publication No. 29330637) [Doctoral dissertation, University of Illinois at Chicago]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/docview/2697053457>

**Accommodation:** Accommodations were not specified.

**Participants:** Elementary and middle-school special education teachers (n=10) from the Chicago Public Schools (Illinois) participated. Participants had 2–17 years of work experience. Many held learning behavior specialist credentials. Their students were in various grade ranges, typically across two grade levels, between kindergarten and grade 8. The participants worked in resource rooms (n=6), self-contained classrooms (n=4), and inclusion settings (n=3); some worked in more than one setting throughout the day or week. Information about additional demographic characteristics (e.g., race/ethnicity, gender) was included. Stratified random sampling was used when selecting participants.

**Dependent Variable:** A semi-structured interview protocol that incorporated about 30 questions was used, including follow-up probes addressing the concurrent implementation of both ESSA 2015 and IDEA 2004 in the participants' classrooms. The interviewer sought to understand how these two major education policies impacted the teachers' perspectives regarding accommodations, their roles, and the effects of federal policies on their schools.

**Findings:** The researcher found that educators found it challenging to provide accommodations they believed students needed while complying with federal policies (ESSA, 2015; IDEA, 2004).

Kelley, T. L. (2022). *A phenomenological investigation of student, parent, and teacher perceptions of a school districts dyslexia program* (Publication No. 28968540) [Doctoral dissertation, Tarleton State University]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/docview/2674758562>

**Accommodation:** The following test accommodations were identified by interview participants as being used by students in a dyslexia program: extended time, notetaking supports, oral delivery.



**Participants:** Seven students with dyslexia in grades 3–5 at a school in a small rural community in Texas participated in this study, along with their seven accompanying parents and seven teachers. The students were not proficient on the state reading test. Demographic information was collected for the participants.

**Dependent Variable:** Interviews were held with the participating students, and their parents and teachers. The interviews were recorded and transcribed. The student interviews were face-to-face and included 12 open-ended questions (e.g., What does it feel like to be dyslexic? What do you do during your 45-minute dyslexia pull-out time?). Parent and teacher interviews were conducted via phone or virtually and included 12 open-ended questions (e.g., Tell me what you know about accommodations. What do you think the dyslexia teacher works on with students during the district’s 45-minute dyslexia pull-out time?).

**Findings:** Participants had wide-ranging perceptions regarding dyslexia and participation in the dyslexia pull-out. Very few participants appeared to understand the role accommodations played in making instruction and assessments more accessible for students with dyslexia.

Wall, H. (2022). *The efficacy of test accommodations for students with dyscalculia* (Publication No. 29391197) [Doctoral dissertation, Concordia University]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/docview/2727623757>

**Accommodation:** The accommodation studied in this analysis was a change in test organization or layout. Specifically, this analysis examined the provision of extra blank space. There was 50% more blank space than the usual amount on a mathematics test.

**Participants:** One grade 5 student participated in this single-case design study. The participant had a specific learning disability with a severe impairment in mathematics (dyscalculia), moderate impairment in reading and writing; the participant also had attention-deficit hyperactivity disorder (ADHD). The participant attended a small private school in Florida.

**Dependent Variable:** Baseline performance data were gathered from regular classroom grade 5 math tests. Intervention data came from similar math classroom tests that contained a 50% increase in blank space. Details were reported for each of the classroom tests. These tests included a mixture of multiplication and division items, word problems, and other types of problems.

**Findings:** The comparison of performance data from the two phases—baseline and intervention—found preliminary evidence that the increased blank space had no significant effect on the student’s academic performance.

Waters, C. (2022). *Science teacher beliefs, knowledge, and skill in accommodating and modifying curriculum for students with disabilities* (Publication No. 28868166) [Doctoral dissertation, Washington State University]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/docview/2709978947>

**Accommodation:** The following test accommodations were identified by interview participants: individual administration, oral delivery, preferential seating, reference sheet (e.g., math equations that needed to be used, separate location).

**Participants:** Four high school science teachers from a large suburban high school in a western U.S. state completed surveys and participated in interviews. The participants were identified or recommended by colleagues and administrators for participation because they were perceived to show success in working with students with disabilities. Data on work experience and demographics were collected.

**Dependent Variable:** Data were collected in various ways. Interviews were conducted with teacher participants that asked for information on: (a) their feelings or thoughts on teaching science to students with disabilities, including their perceptions of accommodations, students’ needs, and their own teaching skills, as well as the indicators that they used to determine student success; (b) the accommodations and modifications that they have applied in their teaching practices and their views on their selected student work samples—including tests, labs, written work, and verbal work. Additionally, a classroom observation protocol was used that documented the learning objectives for the observed lesson, as well as a narrative of teacher and student actions, teaching strategies, and the teachers’ reflections after the class sessions.

**Findings:** Teacher participants reported their knowledge of universal design practices, and their approaches for broadening access to instructional accommodations—such as graphic organizer notetaking supports, student read-aloud of textbook passages and lab and other assignment instructions, scaffolded tasks, and providing paraeducator-read text recording. These were available to all students at their request. The teachers generally believed that their high school students with disabilities would not feel self-conscious requesting instructional accommodations when any student could request them. They also discussed test accommodations that their students used: individual administration, oral delivery, math reference guides (e.g., equations that needed to be used), preferential seating separate location. Some of the participants perceived that some test accommoda-

tions identified in one or more of their students' IEPs were not helpful (e.g., preferred seating).

## Appendix C

### Study Characteristics

**Table C1. Research Purposes of K–12 Studies, 2022**

Author	Purpose				
	Compare Effects of Accommodations for Students with Disabilities	Discuss Issues Related to Accommodations	Report on Accommodations Implementation Practices and Use Patterns	Report on Accommodations Perceptions and Preferences	Summarize Research
Beasley		X	X	X	X
Kelley		X	X	X	X
Wall	X				X
Waters			X	X	X
Total	1	2	3	3	4

**Table C2. Content Areas Assessed, 2022**

Author	Content Area							Not Specified
	English Language a Arts (ELA)	Reading	Writing	Mathematics	Science	Social Studies	Multiple Content Areas	
Beasley								X
Kelley		X						
Wall					X			
Waters				X				
Total		1		1	1			1

**Table C3. Study and Participant Characteristics, 2022**

<b>Author</b>	<b>School Level</b>	<b>Sample Size<sup>1</sup></b>	<b>Disability Categories Included in Sample</b>	<b>Assessment Accommodations</b>
Beasley	Elementary, Middle School	Small	Not Specified	Not Specified
Kelley	Elementary	Small	Learning Disabilities (dyslexia)	Extended Time, Oral Delivery
Wall	Elementary	Small	Learning Disabilities (Dyscalculia)	Change in Test Organization or Lay-out (i.e., Extra White Space)
Waters	High School	Small	Not Specified	Individual Administration, Oral Delivery, Preferential Seating, Reference Sheet (e.g., Math Equations that Needed to be Used), Separate Location

<sup>1</sup>Small sample size = <50; medium sample size = 50-499; large sample size = 500+ (See the *Participants* section of the Annotated Bibliography in Appendix B for more detailed information about the sample size.)

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