Including Students with Disabilities in State Science Assessments

Christopher Rogers

NATIONAL CENTER ON EDUCATIONAL OUTCOMES

Independence Science, Learning A New Direction (ISLAND)

Conference on Disability

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INCLUDING STUDENTS WITH DISABILITIES IN STATE SCIENCE ASSESSMENTS

Christopher Rogers

roge0229@umn.edu

National Center on Educational Outcomes

Providing leadership on the inclusion of students with disabilities, English learners (ELs), and ELs with disabilities in comprehensive assessment systems, NCEO has been a research and technical assistance center since 1990. Website: https://nceo.info/

Central focuses:

- Knowledge Development
- Technical Assistance and Dissemination
- Leadership and Coordination

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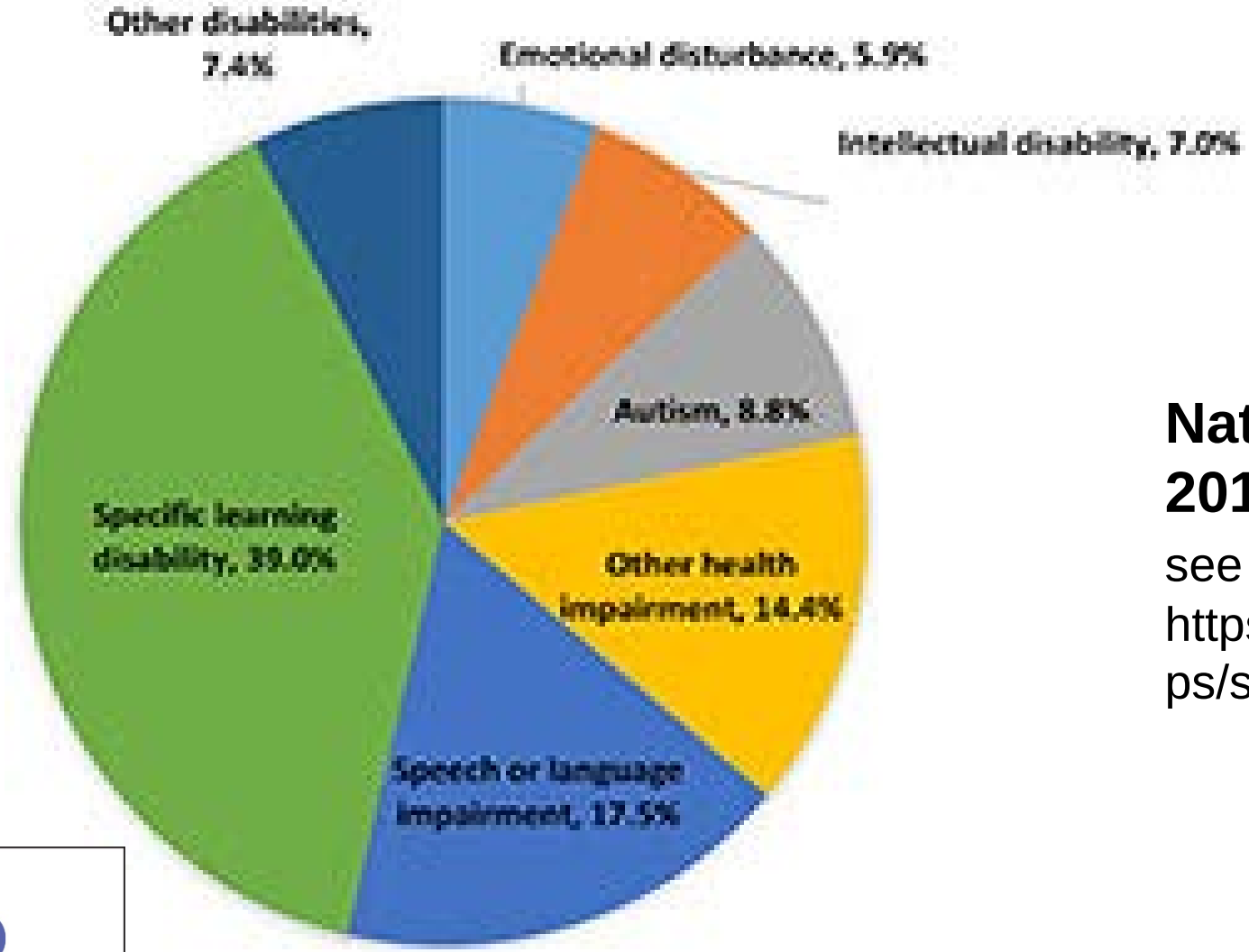
OUTLINE

I. Policy Context
II. Accessibility Features
    A. New Paradigm
        1) Universal Features
        2) Designated Features
        3) Accommodations
III. NCEO Report
    A. Content Domains
    B. Assessment Approaches / Response Formats

Who Are the Students?



National snapshot, 2014-15 school year; see https://nceo.info/student_groups/students_with_disabilities

I. POLICY CONTEXT

Legislation

Reauthorization of **Elementary and Secondary Education Act**

- December, 2015
- known as “Every Student Succeeds Act” (ESSA)
- Retains requirement that science is to be tested three times between grades 3 and 12

- See weblink for more info: http://www.ed.gov/essa?src=rn

Assessment Types

Based on ***Every Student Succeeds Act***:

- General Assessments – for all students, with or without accessibility needs
- Alternate Assessments for students with the most significant cognitive disabilities, called “Alternate Assessments based on Alternate Achievement Standards” (or AA-AAS)
- English Language Proficiency Assessments

II. ACCESSIBILITY FEATURES

Accommodations – New Paradigm

- **Universal features** – accessibility supports available to all students as part of the technology platform (may need to be turned off for some)
- **Designated features** – accessibility supports available to students for whom the need has been indicated by an adult or team of adults
- **Accommodations** – accessibility supports that are available only to students with disabilities and/or English learners

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Paradigm Shift Context

- This Accessibility Features 3-level paradigm is being used by consortia of states and by many states not in any consortium.
- Consortia include: Smarter Balanced Assessment Consortium (SBAC) and Partnership for Assessment of Readiness for College and Careers (PARCC)
- These consortia have been addressing Reading / English Language Arts and Mathematics state tests.
- Some states have reframed their state science assessment accessibility features in alignment with this paradigm shift.

State Example: **Accessibility Features**

INDIANA

- General Assessment (ISTEP+)
- AA-AAS (ISTAR)

- For Indiana accessibility and accommodations policy information, go to ***2016-2017 Indiana Assessment Program Manual***, Appendix C at http://www.doe.in.gov/sites/default/files/assessment/appendix-c-accessibility-and-accommodations-guidance-2016-17-final.pdf

Indiana Science General Assessment (ISTEP+)

Universal Features

- non-embedded / local [e.g., preferential seating and sound dampening headphones (no music) or noise buffers]
- embedded [e.g., line reader mask and bookmark (for returning to an item)]

Designated Features

- non-embedded / local [e.g., magnification AT and special lighting]
- embedded [e.g., color contrast (background and text colors)]

Accommodations

- e.g., Braille test format and speech-to-text or in-person scribe (for documenting responses)

Indiana Science AA-AAS (ISTAR)

Universal Features

- non-embedded / local [e.g., preferential seating and sound dampening headphones (no music) or noise buffers]
- embedded [e.g., line reader mask and bookmark (for returning to an item)]

Designated Features

- non-embedded / local [e.g., magnification AT and special lighting]
- embedded [e.g., color contrast , but also reverse contrast (black background, white text)]

Accommodations

- e.g., “Alternative indication of a response,” including “circle, point to, state, or otherwise indicate answers to multiple-choice, technology-enhanced and/or gridded-response questions” (p. 11).

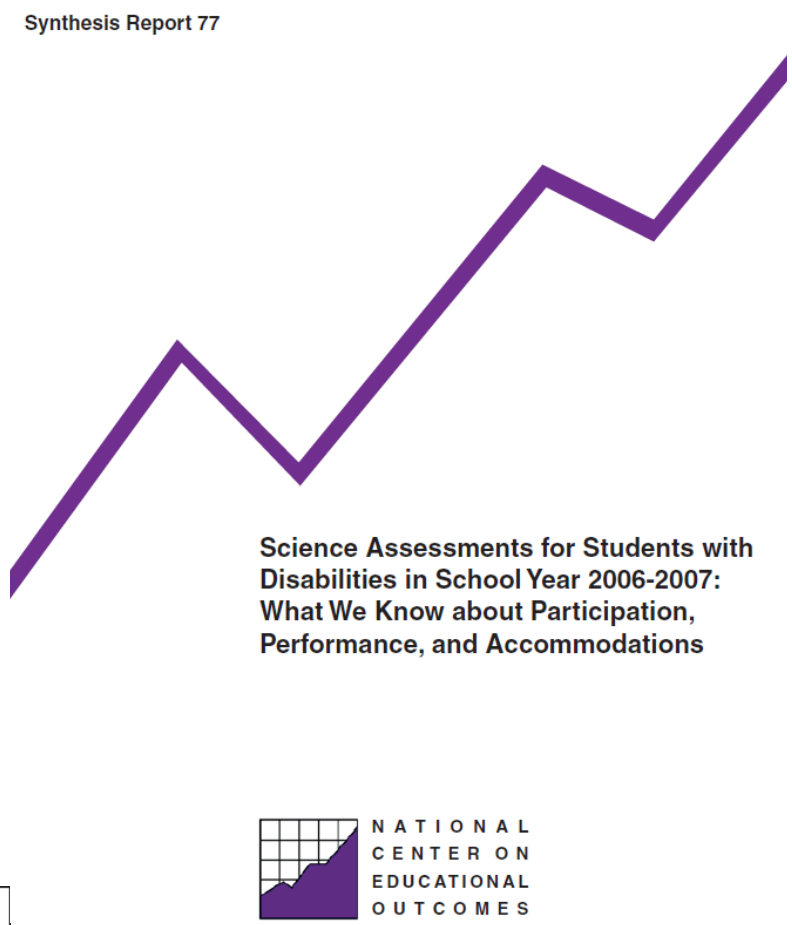
For states' accommodations policy information …

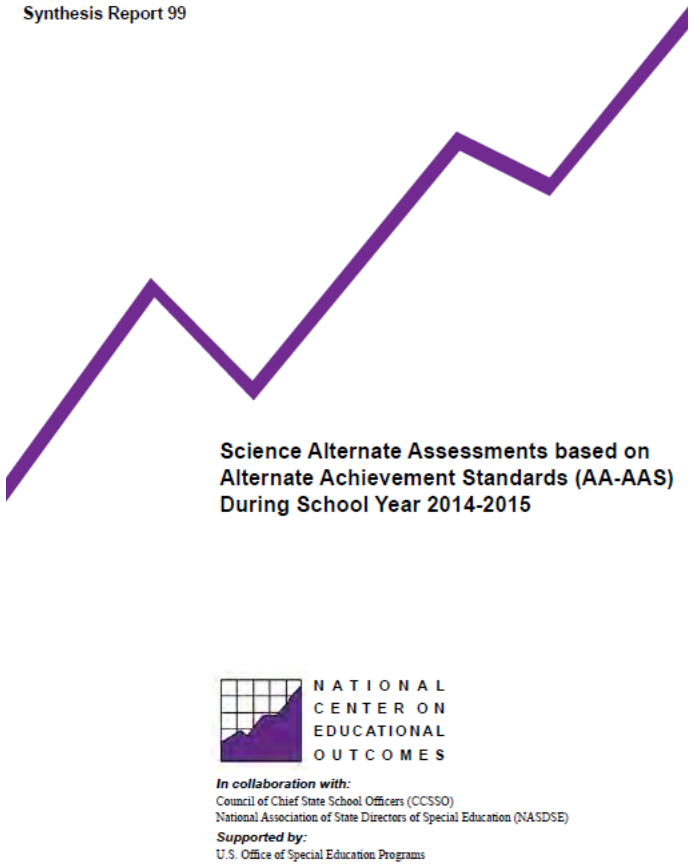
See NCEO's State Policies webpage for Accessibility and Accommodations at https://nceo.info/state_policies/accommodationsswd

Accessibility information source

CCSSO Accessibility Manual: How To Select, Administer, And Evaluate Use Of Accessibility Supports For Instruction And Assessment Of All Students
http://nceo.umn.edu/docs/CCSSOAccessibilityManual.docx

III. REPORTS





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REPORTS Common Inquiry Topics

1. What science **content** domains were examined in science (general assessment, 2006-2007; AA-AAS, 2014-2015)?
2. How did the AA-AAS science content domains **compare** with the general assessment content domains? If different, were there fewer or more content domains on the AA-AAS than the general assessments?
3. What assessment **approaches** did states use for students participating in the AA-AAS in science? What were the **response formats** on the AA-AAS in science?

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REPORTS Data Sources

- State website information about science general assessments and Alternate Assessments based on Alternate Achievement Standards (AA-AAS)
- Checked between January and June, 2015 about the 2014-2015 school year assessment cycle [SR #99] and completed retrospective document review for various state sources for 2006-2007 school year assessment cycle [SR #77].

REPORTS FINDINGS: Content Domains

Descriptive

Earth Science / Earth & Space Science
Environmental / Ecological Science
Investigation / Inquiry Process
Life Science / Biology
Nature of Science / Characteristics of Science / History of Science
Personal and Social Impacts of Science
Physical Science / Physics / Physical & Chemical* Science
Technology / Engineering
Unifying Concepts / Common Themes
Unique Categories / Uncategorizable

***Chemistry was a separate domain at the high school level.**

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Content: Elementary (grades 3-5) AA-AAS

SYNTHESIS REPORT #99

Most frequent:

- Life Science / Biology (49 of 51* states)
- Earth Science / Earth & Space Science (47 states)
- Physical Science / Physics / Physical & Chemical (43 states)

Least frequent:

- Unifying Concepts / Common Themes (2 states)
- Personal and Social Impacts of Science (8 states)
- Environmental / Ecological Science (9 states)

*** includes Washington, DC**

Content: Middle School (grades 6-8) AA-AAS

SYNTHESIS REPORT #99

Most frequent:

- Earth Science / Earth & Space Science (47 of 51* states)
- Physical Science / Physics / Physical & Chemical (46 states)
- Life Science / Biology (44 states)

Least frequent:

- Unifying Concepts / Common Themes (4 states)
- Personal and Social Impacts of Science (8 states)
- Environmental / Ecological Science (9 states)

*** includes Washington, DC**

Content: High School (grades 9-12) AA-AAS

SYNTHESIS REPORT #99

Most frequent:

- Life Science / Biology (50 of 51* states)
- Physical Science / Physics (35 states)
- Earth Science / Earth & Space Science (29 states)

Least frequent:

- Unifying Concepts / Common Themes (3 states)
- Chemistry (7 states)
- Personal and Social Impacts of Science (8 states)

*** includes Washington, DC**

REPORT FINDINGS: Content Domains

Comparison, AA-AAS::General assessment

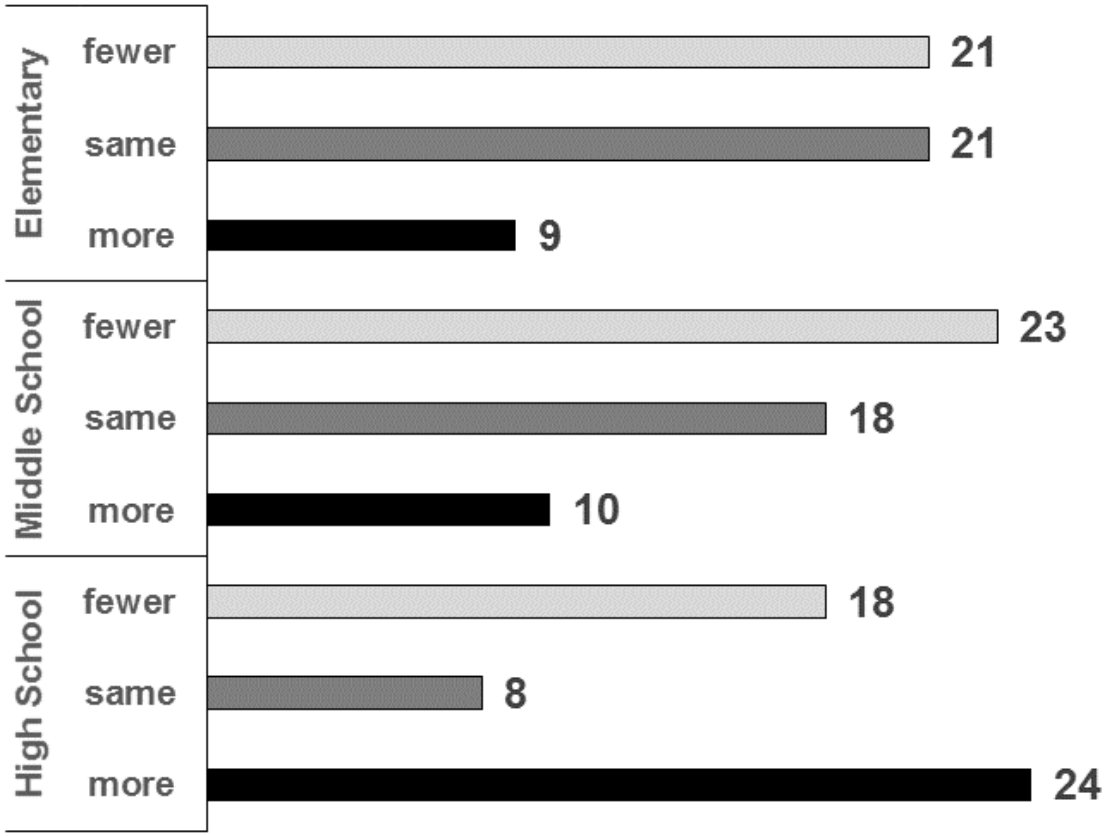

Figure 2. Relative Number of Content Domains – SR #99, p. 6

REPORTS: Alt. Assmt. Approaches/response types

1. Item-based Testing
   - selected-response items
   - constructed-response items
   - performance tasks
2. Student Work Product
   - portfolio
3. Teacher Observation
   - rating scales

FINDINGS: Approaches and Responses

SYNTHESIS REPORT #99

30 states used Item-Based approaches

- 5 states used selected response items only
- 20 states used performance task items only
- 2 states used selected + performance task items
- 1 state used selected + constructed response items
- 2 states used performance tasks + rating scales

- Note: 4 states used more than one approach; also, total was 51 (includes Washington, DC)

See Appendix C in report for state-level information.

FINDINGS: Approaches and Responses

SYNTHESIS REPORT #99

18 states used Student Work Product approaches

- 16 states used portfolios only
- 2 states used portfolios + rating scales

7 states used Teacher Observation approaches

- 3 states used rating scales only

- Note: 4 states used more than one approach; also, total was 51 (includes Washington, DC)

See Appendix C in report for state-level information.

FINDINGS: Approaches and Responses

SYNTHESIS REPORT #99

Specific State Examples:

- CO: Selected response has 3 choices; performance task requires student to complete a chart or graphic.
- FL: Trained personnel transfer students' performance task responses over to scannable answer sheets.
- ID: Portfolio can include various artifacts; e.g., piece of class work, digital video clips, digital photos.
- VT: Portfolio in which each piece of evidence receives a teacher's rating for a set of scoring elements.

Conclusions / Final Points

1. **NCEO is a research and technical assistance center advising on inclusion of all students -- including students with disabilities, English learners, and English learners with disabilities -- in comprehensive assessment systems.**
2. **ESSA 2015 renews expectation that all students have access to state science assessments, through the general assessment or alternate assessment.**
3. **Accessibility Features provide assessment access for all students who have needs.**
4. **Students with significant cognitive disabilities ought to be held to high expectations by providing access to grade-level science content, and alternate assessments with rigorous science content can show what they know and can do.**

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COPIES OF ORIGINAL REPORTS ARE AVAILABLE!

Rogers, C. M., Thurlow, M. L., & Lazarus, S. S. (2015). *Science alternate assessments based on alternate achievement standards (AA-AAS) during school year 2014-2015* (Synthesis Report 99). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.

For electronic copy, go to https://nceo.info/Resources/publications/OnlinePubs/Synthesis99/default.html

For print copies, request from presenter in person.

COPIES OF ORIGINAL REPORTS ARE AVAILABLE!

Thurlow, M., Rogers, C., & Christensen, L. (2010). *Science assessments for students with disabilities in school year 2006-2007: What we know about participation, performance, and accommodations* (Synthesis Report 77). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.

For electronic copy, go to https://nceo.info/Resources/publications/OnlinePubs/Synthesis77/default.htm

For print copies, request from presenter in person.