

Innovative Assessments | Cognitive Labs Findings

Insights from interviews with students and educators

June 8, 2021

Summary

Throughout the month of May, the Friday Institute conducted 12 cognitive labs with three third graders, five fourth graders, and four fifth graders in six districts throughout North Carolina. Participating districts/schools were The Academy of Moore County, Cherokee Central Schools, Granville County Schools, Scotland County Schools, Sugar Creek Charter School, and Watauga County Schools. The cognitive labs, which typically lasted between thirty and sixty minutes, provided insight into how students approached new test questions, such as drag and drop, fill-in-the-blank, and select all that apply. Six girls and boys from multiple racial and ethnic identities and abilities, including EC and gifted students, participated in the labs.

Key Findings

Educators were enthusiastic about adding variety to the tests so that they are more engaging for students. Both students and educators had concerns, however, with some of the piloted questions, including confusion over on-page instructions/directions, misaligned standards, technological difficulties, and inconsistencies between questions.

1. **Directions are inconsistent or tricky.** Teachers and students noted confusion over the inconsistent location of directions and what students were being asked to do. For example, in the math test, “select the *equations* that fit” questions were difficult as students frequently selected only one answer. Further, directions that instruct students to write their answers as an improper fraction or decimal is misleading in questions when only a whole number answer is required.
2. **Dragging and dropping.** Dragging answers took multiple attempts for some students, and educators recommended for there to be minimal dragging across the screen.
3. **Inconsistent display of answer choices.** Students were not aware they should scroll for more answer choices, and the box sizes were much larger than the text that housed them.
4. **Display of reading passage.** The passage only appeared on the first page, leading to difficulties for students who had to click back through multiple test pages to reread.
5. **Reading passage length.** Educators found the reading passages to be an appropriate length for their students.
6. **Students learned quickly.** Once students answered a new question type, they understood what to do and did not need to read the directions again.
7. **Support for varied item types.** Educators noted how the variety of question types offered more stimulation and interaction for students who have a difficult time staying on task, and students could not simply click through the questions without interacting with the test in a more substantive way.
8. **Multiple standards in one question.** Educators noted that multiple standards appeared in a single question, leaving them to wonder which standard was being assessed.
9. **Keying in math answers poses challenges.** Students struggled in multiple ways with fill-in-the-blank math questions. Students are not taught to convert mixed numbers into improper fractions; they are instructed to simplify to mixed numbers. Operation signs and fractions are difficult for students to locate on the keyboard.
10. **Learning curve.** There may be a bigger learning curve for students in schools where they have not used software that offers a variety of question types. Multiple participants advocated for having tutorials for students to show them how to approach (1) new question types and (2) how to use the tools, such as the highlighter.