New York City Department of Education (NYCDOE) Digital Assessment Research: Evaluating Digital Assessment Readiness for 4-Year-Olds

BACKGROUND

The Need to Transition from Paper and Pencil to Digital Assessments

The New York City Department of Education (NYCDOE) is the single largest school district in the United States, serving 1.1 million students in more than 1,800 schools. The NYCDOE recognizes and supports the accelerated learning needs of its outstanding students with Gifted and Talented (G&T) programs. These programs offer rigorous instruction, featuring Common Core-aligned curriculum.

Each January, New York City children entering kindergarten through grade 2, (ages 4 to 8), may apply for a G&T public school program by taking a placement test. The untimed test features a mix of verbal and non-verbal items, and generally takes less than an hour to complete.

In January 2016, the NYCDOE looked to redesign its paper and pencil G&T placement tests for its youngest and largest audience: 4-year-olds entering kindergarten. The test has historically been administered one-on-one by individual teachers, due to still-developing fine motor skills that made it challenging for young children to bubble in answers themselves. In its January research trial with TAO's testing platform, the NYCDOE hoped to understand the children's comprehension of digital test items and their ability to interact with test items on a digital device, given initial guidance and instruction.

CHALLENGE

Adapting Non-Verbal Digital Questions for Young Children and Finding a Technology Platform That Would Assess with Increased Accuracy and Flexibility

While designing its digital pilot tests for 4-year-olds, the NYCDOE sought to standardize the test instructions to understand how a digital platform could help simplify the test administration process. The district also desired to explore some interactive item types as well as use a platform that could eliminate the need for lengthy access codes its current assessment platform requires. In a future phase of research, the NYCDOE wishes to explore the digital translations of instructions into various languages for English Language Learners (ELL).

The NYCDOE's specific requirements corresponded with their administrative, operational, and technical goals and included:

- Rapid real-time data capture and analysis
- Significant cost reduction by going paperless
- Streamlined management of the platform
- Capability to create and deliver a combination of verbal and non-verbal items
- Ability to incorporate a range of interactive items
- Accuracy and flexibility to effectively evaluate student skills in different languages
- Scalability to effectively support annual G&T Admissions (On average, 35,000 children, ages 4 to 8, take this test each year.)

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SOLUTION

Why TAO

Following careful consideration, the NYCDOE selected the TAO platform for a trial because it met all of the requirements above. Furthermore:

1. TAO's Open Source nature makes it possible to develop innovative test items internally, and with ease.

2. Its standards-compliance ensures compatibility with other systems, and investment protection for the future.

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RESULTS

Implementing the TAO Open Source Solution

The NYCDOE district conducted a feasibility study on transitioning the assessment from paper and pencil to digital to accommodate the eventual testing of approximately 14,000 4-year-olds who sit for the test annually. District staff created a series of non-verbal digital questions, in which students located a missing puzzle piece or dragged and dropped corresponding puzzle pieces.

During the study, held at five sites across the city on weekends, forty 4-year-olds took the short fifteen-minute digital assessment after completing their operational 70-question paper and pencil test. The digital assessment consisted of three practice questions, which the test administrator helped the children understand. After test administrators guided the 4-year-olds through the answer process, the children used either a tablet (50%) or a desktop (50%) to independently answer ten questions.

During this trial deployment, the NYCDOE noted a few subtle design flaws and their easy solutions. For example, due to a muted border color choice, some students weren't sure if a puzzle piece was already selected and as a result would continue clicking on it. Overall, delivery of the digital assessment went smoothly; the district noted the ease of internal control over the testing platform and praised TAO's customizability. As a result, the NYCDOE is exploring the use of TAO as a testing platform not just for the G&T Admissions but also for other assessment programs. The NYCDOE is also considering the feasibility of using other components of the TAO platform for their assessment needs, such as authoring items and storing item banks.

"Experimenting with TAO has given us a boost of confidence that the Open Source assessment solution is a reliable alternative to those offered by traditional vendors in the market. Our experience with TAO has broadened our options for digital assessments in the future," says Anthony Benners, Senior Director at NYC Department of Education. "It was tremendously useful and reassuring to have a no stakes trial-run with this open-source platform. Now that we know what is possible, we'll customize a wider range of item types and identify additional assessment programs that can benefit from our use of TAO."

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