
NAEP's Transition to Digitally Based Assessments

IEA General Assembly Meeting

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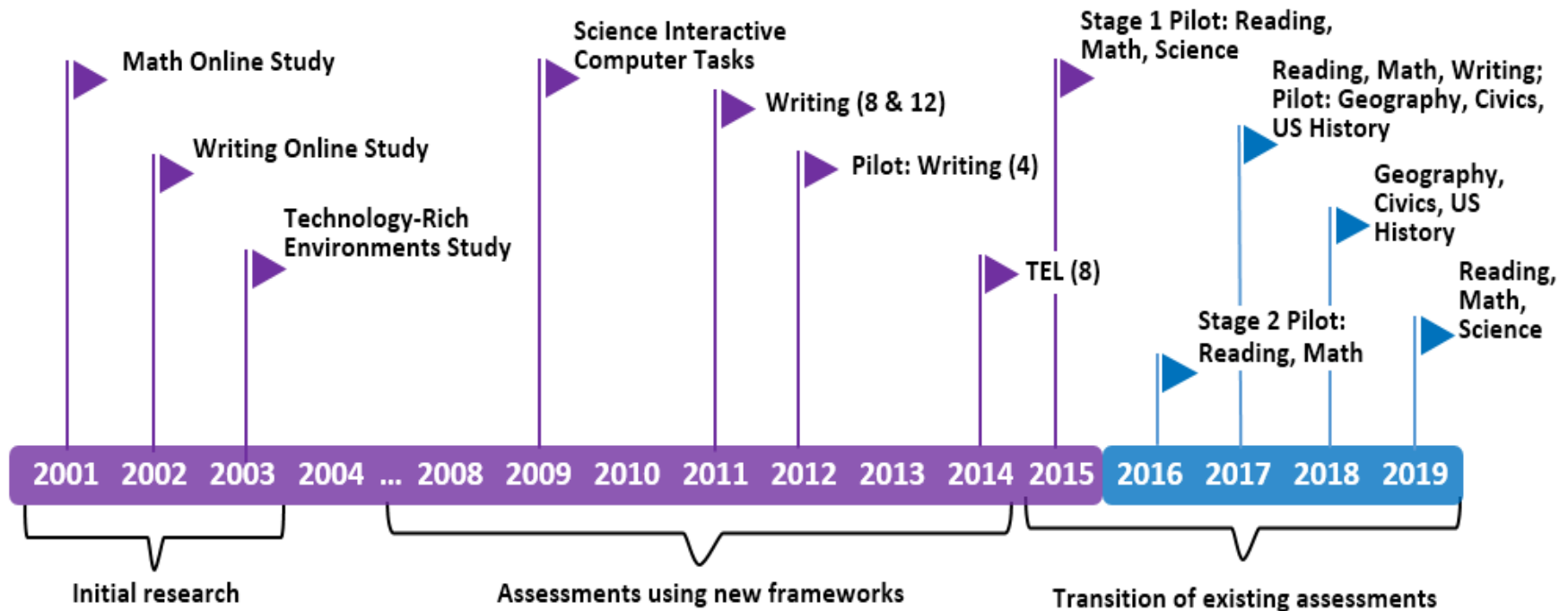




What is NAEP?

- The National Assessment of Educational Progress (NAEP) is a large-scale assessment of samples of U.S. students
- Since 1960s national samples, since 1990s of states, and since 2003 of major cities
- In 2019, over 800,000 students were sampled
- NAEP informs educators, researchers, policymakers, and stakeholders about academic progress in the United States
- Federal law makes NAEP the common measure for comparing education in the 50 states
- Tracks trends in student performance over time

Evaluation and development of NAEP digital-based assessments



NAEP's challenges moving to DBA

1. Platform and delivery system
2. Student experience
3. Item development
4. Scoring
5. Trend
6. Reporting results
7. Quality assurance

1. Platform and delivery system

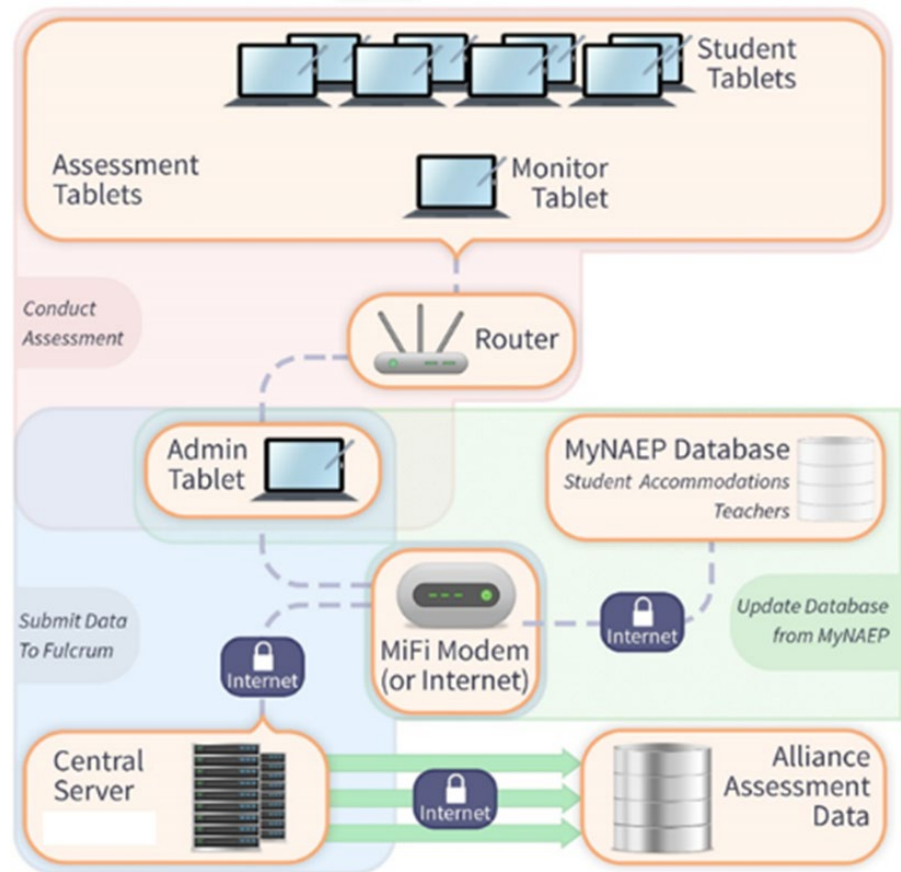
Challenge

What platform (software) and delivery mode (hardware) to use?

Need to consider

- buy or build platform
- digital content
- data capture, transfer and storage

NAEP's Solution



2. Student experience

Challenge

How to design the interface?

Need to ensure

- all students can use easily,
- digital tools are provided,
- universal design elements are included

NAEP's Solution

- Develop tutorials
- Provide practice time with virtual tools (e.g., calculator)
- Incorporate design elements for accessibility
 - Text-to-speech
 - Zoom
 - Color theming
 - Digital “scratchpad”
 - Help menu button

3. Item development

Challenge

How to introduce new digital item formats?

Need to consider

- how to maximize the use of the paper-based item pool to help with cost
- how much interactive content to add over time

NAEP's Solution

- Developed guidelines for adapting paper-based items
- Identified items with potential adaption issues early
- Phased in new innovative digital-based item types over time

4. Scoring

Challenge

How to capture and transfer student responses?

Need to consider moving data from

- student device to data storage system,
- data storage system to electronic scoring system,
- scored responses to data storage system

NAEP's Solution

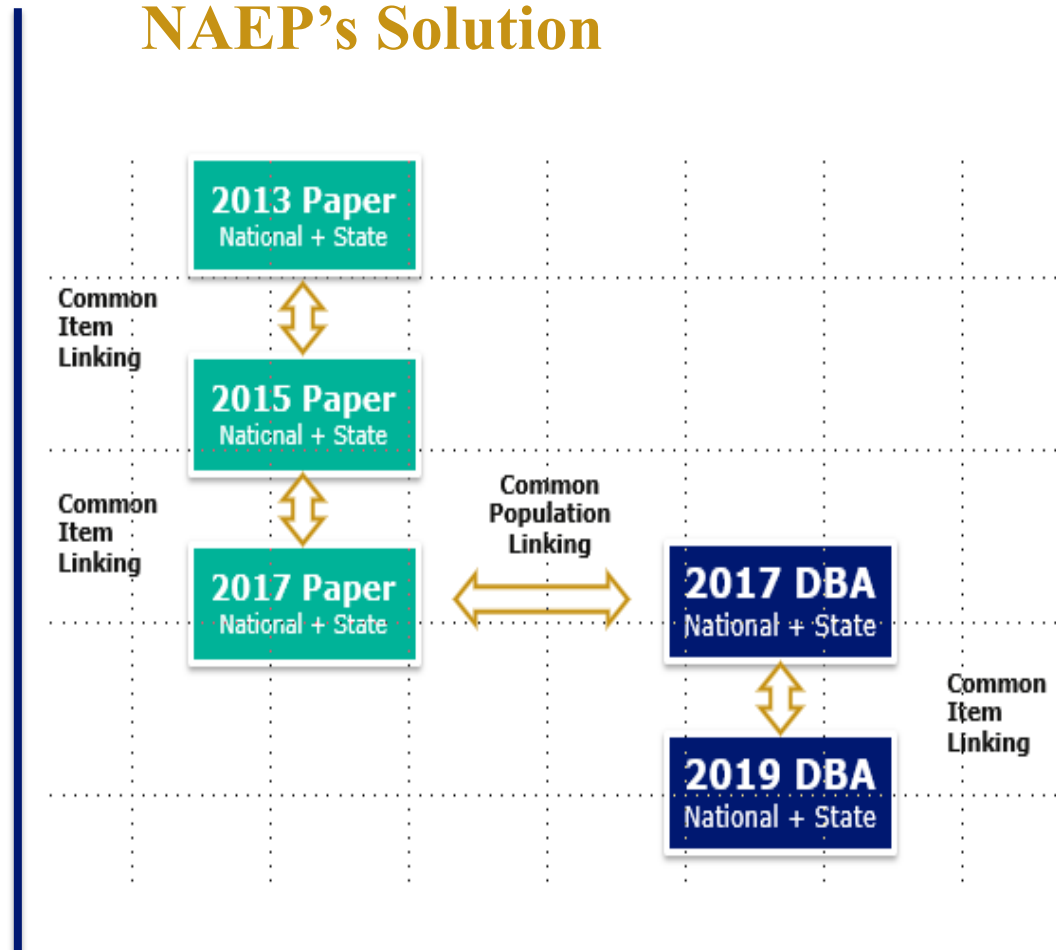
- End-to-end data capture, transfer and testing for all digital item types to confirm validity of student response
- Identification of items to be human scored or machine scored as part of the item development process

5. Trend

Challenge

How to ensure current and future student performance can be compared with past performance?

NAEP's Solution



6. Reporting results

Challenge

How to explain results are comparable between the paper-based and digital-based assessments?

NAEP's Solution

- Multiple internal meetings with panels of technical experts to craft a clear non-technical explanation of the common population linking methodology
- Development of an FAQ document to address predictable questions

7. Quality assurance - QA

Challenge

What paper-based QA processes need revision or replacement?

Things to consider

- end-to-end review,
- identifying new process for DBA,
- keeping high quality, and
- catching issues early

NAEP's Solution

Implementation of quality assurance for

- Assessment systems development
- Data management
- Hardware management
- Operational processes

THANK YOU

For more information on NAEP's conversion to DBA:

- [NCES Home Page for Digital Assessments](#)
- [2019 NAEP Tutorials](#)
- [NAEP DBA FAQs](#)

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