# The Nation’s Report Card and 12th Grade Academic Preparedness

Aspen Senior Congressional Education Staff Network  
August 20-22, 2013

NAEP: Gold Standard in Assessing Achievement

<table>
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<tr>
<th>SUBJECTS</th>
<th>GRADES</th>
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<tbody>
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<td>Reading, Mathematics, Writing, Science, U.S. History, Civics, Geography, Economics, the Arts, Technology and Engineering Literacy, Foreign Language</td>
<td>4, 8, and 12</td>
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<table>
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<tr>
<th>RESULTS</th>
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| Student Achievement Data for  
  - Nation  
  - States  
  - 21 Urban Districts |
The Governing Board’s Work on Preparedness: Underway for More Than a Decade

- **2002-04**: 12th Grade Blue-Ribbon Panel Report
- **2006**: Contract With Achieve to Review NAEP in Terms of Preparedness
- **2006-08**: Report of Technical Panel on Validity Research
- **2009**: Board Approval of Validity Research Program
- **2010-12/2013-15**: Research Studies and Development of Preparedness Report

The Governing Board’s approach: rigorous, comprehensive, and methodical in making NAEP a preparedness indicator

A Comprehensive Plan: More Than 30 Studies in Five Research Areas

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<th>Study Types</th>
<th>Questions</th>
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<td>Content Comparison</td>
<td>Is the content of NAEP similar to relevant tests?</td>
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<td>Statistical Relationships</td>
<td>How does performance on NAEP compare to performance on other relevant tests?</td>
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<td>Judgmental Standard Setting</td>
<td>What is the point on the NAEP scale that experts judge as just “academically prepared”?</td>
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<td>Survey of Postsecondary Institutions</td>
<td>What are the tests and cut-scores used for placement?</td>
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<td>Benchmarking</td>
<td>How do selected reference groups perform on NAEP?</td>
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Research Results Are Promising
Working Definition: Academic Preparedness for College

The knowledge and skills to qualify for placement into entry-level, credit-bearing college courses without need for remediation in math or reading

- “Preparedness” versus “readiness”—NAEP measures academic proficiency
- Qualify for placement
- No assumption of success or completion
- Placement vs. admissions
- “Typical” student in “typical” college

Content Comparisons: College

ACT, SAT, ACCUPLACER

- NAEP content is similar to the ACT, SAT, and ACCUPLACER.
- ACT, SAT, and ACCUPLACER content is generally covered by NAEP.
- NAEP is generally broader.
- NAEP differs in some ways:
  - Types of test questions
  - Cognitive rigor of test questions
  - Types of reading texts
  - Weighting and coverage of specific content in mathematics
Statistical Comparisons: College

NAEP/SAT 2009

* NAEP and SAT Mathematics = .91 correlation
* NAEP and SAT Reading = .74 correlation
* Proficient on NAEP ≈ 500 on SAT Reading and Math ≈ College Board Readiness Benchmark

NAEP High School Transcript Study 2005/2009

* NAEP to ACT and SAT results confirm NAEP/SAT linking study

Florida study confirms NAEP/SAT linking and HSTS

* First-year college GPA
* Placement into remedial/developmental
* ACT and SAT college readiness benchmarks

NAEP 12th-Grade Preparedness Research: Mathematics

Average Scores and Inter-quartile Ranges for Selected Variables, SAT and ACT College Readiness Benchmarks From the 2009 NAEP/SAT Linking Study, 2005 High School Transcript Study, 2009 High School Transcript Study, and 2009 Florida Longitudinal Study
NAEP 12th-Grade Preparedness Research: Reading
Average Scores and Inter-quartile Ranges for Selected Variables, SAT and ACT College Readiness Benchmarks
From the 2009 NAEP/SAT Linking Study and 2009 Florida Longitudinal Study

Florida Study
First Year GPA >= 2.67 (298)
Florida Study
No Remedial (299)
Florida Study
SAT (301)
Florida Study
First Year GPA >= 2.67 (298)
Florida Study
Proficient (302)
Florida Study
ACT (296)
Florida Study
Remedial Reading Only (264)

Academic Preparedness for College:
Key Takeaways

★ Content comparison studies confirm appropriateness of NAEP 12th grade reading and mathematics frameworks
★ Statistical comparisons confirmatory and consistent across studies and years
★ Students scoring at or above Proficient likely to be academically prepared, but…
★ Results are different for reading and math in relation to Proficient and interpretations/implications for reporting are framed accordingly
Working Definition: Academic Preparedness for Job Training

The knowledge and skills to qualify for placement into job training without need for remediation in math or reading

- “Preparedness” versus “readiness” – NAEP measures academic proficiency
- Goal: identify prerequisite KSAs and reference point on NAEP scales
- “Job training” versus “career”
- Assumption: significant training beyond high school but not B.A.
- No assumption of success or completion
- No assumption academic skills for college and job training necessarily the same

Content Comparisons: Job Training

WorkKeys

- Some NAEP content is similar to WorkKeys.
- WorkKeys measures some content that NAEP does not.
- NAEP is broader.
- WorkKeys Applied Mathematics and Reading for Information focus on the application of foundational skills in workplace situations and NAEP does not.
- NAEP does not have workplace situations as its primary focus.
Standard Setting: Job Training

Ten studies in five job training programs

Programs included
- Automotive Master Mechanic
- Computer Support Specialist
- HVAC Technician
- Licensed Practical Nurse
- Pharmacy Technician

Criteria for selection
- Significant numbers, stable or growing positions
- Range of occupations, civilian and military comparability
- Training beyond high school, not bachelor’s degree
- Range of reading and math skills
- Compensation with growth potential
- Familiar to public

Standard Setting: Job Training

Study results
- Results not confirmed by the replicate panels/other research results
- Panelists deemed many NAEP 12th-grade items not required for determining academic preparedness for their job training programs
- Findings do not support conclusion that academic preparedness for these job training programs is same as for college
- Results suggest a need for closer look at course content requirements
Course Content Analysis: Job Training

Study results

* Large study analyzing course materials from 122 institutions – 85 courses for mathematics content and 80 courses for reading content
* Prerequisite KSAs are largely included in the grade 12 NAEP frameworks, but NAEP frameworks are much larger and broader
* Most course prerequisites are measured by NAEP, but represent a mostly small, varying portion of the framework objectives
  - Between 64% and 77% of the 130 NAEP mathematics objectives NOT evident as prerequisite in any course examined within the five occupations
  - Between 16% and 68% of the 37 NAEP reading objectives NOT evident as prerequisite in any course examined within the five occupations

Academic Preparedness for Job Training: Key Takeaways

* Content comparison, standard setting, and course content studies suggest:
  - Prerequisite KSAs are largely included in NAEP frameworks, but NAEP frameworks are much larger and broader
  - Most prerequisite KSAs are measured by NAEP, but represent a varying portion of the objectives
* No evidence that academic preparedness for job training = college
* However, students prepared for college likely to be academically prepared for these job training programs
* Designing studies for academic preparedness for job training is especially challenging
Other Research

Course Content Analysis: First Year College Courses
- Review of course syllabi and textbooks for reading and math demands

Benchmarking
- Texas postsecondary pilot study
- Seeking partners for collaboration—job training, military, higher ed., etc.

Higher Education Survey
- Tests and cut scores used to determine need for remedial in college
- Only extant nationally representative survey
- Results confirm statistical relationship studies
- Results show variability in cut scores for “needs remedial”

Phase I Culmination and Next Steps
- Reviewed findings with technical experts
- Received comments: symposium/other stakeholders
- Governing Board approved reporting 12th-grade results in terms of preparedness (August 2013 meeting)
- Planning research for 2013–2015:
  - SAT and ACT linking studies
  - State partners (Fla., Ill., Mass., Mich., Tenn.)
  - 8th grade EXPLORE (Ky., Tenn.)
View the Report
www.nagb.org/what-we-do/preparedness-research.html

For More Information…

★ National Assessment Governing Board:
   www.nagb.org

★ Preparedness Research and Resources:
   www.nagb.org/commission/researchandresources.html