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

December 3, 2012 | Charleston, West Virginia
• An independent, non-partisan board
• Sets policy for and oversees NAEP

• The only continuing, nationally representative, state-comparable measure of student achievement

• Created to increase awareness about academic preparedness, as measured by NAEP
What is NAEP?
NAEP: Gold Standard in Assessing Achievement

Assesses what students know and can do:

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>GRADES</th>
</tr>
</thead>
<tbody>
<tr>
<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>
</tr>
</tbody>
</table>

RESULTS

Student Achievement Data for
- Nation
- States
- 21 Urban Districts
NAEP Provides West Virginia with Data in Comparison to the Nation and Other States

West Virginia: Grade 4 Mathematics Scores

* Accommodations were not permitted.

Source: National Center for Education Statistics, 2011
NAEP Reports on Student Achievement Gaps

West Virginia: Grade 4 Mathematics Scores by Race/Ethnicity

* Accommodations were not permitted.
Source: National Center for Education Statistics, 2011
NAEP Provides Unique Benefits to States

- Comparisons across states
- Progress over time
- Rich information, no cost to the state
- Minimal burden on schools
- No test preparation
NAEP Provides Unique Benefits to States

★ NAEP will put West Virginia’s state results in international context.

★ **NAEP is the only source of national and state-comparable student achievement data at the 12th grade.**
  - 11 state pilot at 12th grade in 2009 – reading and math
  - Administered again in 2013
NAEP: Only Source of 12th Grade Comparisons

Grade 12 Mathematics Scale Scores and Achievement Levels

<table>
<thead>
<tr>
<th>State</th>
<th>Average Score</th>
<th>Below Basic</th>
<th>Basic</th>
<th>Proficient</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nation (public)</td>
<td>152</td>
<td>37</td>
<td>38</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Arkansas</td>
<td>146</td>
<td>41</td>
<td>43</td>
<td>15</td>
<td>#</td>
</tr>
<tr>
<td>Connecticut</td>
<td>156</td>
<td>34</td>
<td>44</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Florida</td>
<td>148</td>
<td>41</td>
<td>40</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Idaho</td>
<td>153</td>
<td>29</td>
<td>46</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Illinois</td>
<td>154</td>
<td>33</td>
<td>41</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Iowa</td>
<td>156</td>
<td>29</td>
<td>46</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>163</td>
<td>25</td>
<td>39</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>160</td>
<td>26</td>
<td>42</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>New Jersey</td>
<td>156</td>
<td>33</td>
<td>37</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>South Dakota</td>
<td>160</td>
<td>23</td>
<td>48</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>West Virginia</td>
<td>141</td>
<td>48</td>
<td>39</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

# Rounds to zero.

NOTE: Eleven states participated in the assessment and met the reporting criteria. Detail may not sum to totals because of rounding.

Source: National Center for Education Statistics, 2009
NAEP and 12th Grade Academic Preparedness
National Blue-Ribbon Panel:
Recommended NAEP Report on 12th Grade Preparedness

The panel’s rationale:

★ Grade 12: transition to postsecondary education and training.

★ The nation needs an indicator of 12th grade student preparedness.

★ NAEP—trusted for quality and integrity.

★ NAEP—uniquely positioned to serve as preparedness indicator.
Many High School Graduates Are Not Prepared for Entry-Level College Courses

Percentage of Freshmen College Students Taking Any Remedial Course

<table>
<thead>
<tr>
<th>Institution</th>
<th>Public 2-year</th>
<th>Public 4-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia</td>
<td>66%</td>
<td>20%</td>
</tr>
<tr>
<td>Nation</td>
<td>42%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: WVHEPC, 2011; NCES, 2004
The costs of remediation are high and far-reaching.

A high school diploma and academic preparedness are not necessarily the same.
Education Level is Related to Employment and Earnings

Unemployment Rate

- Less Than High School Diploma: 12.6%
- High School Graduate: 8.4%
- Some College/Associate Degree: 7.5%
- Bachelor’s Degree or Higher: 4.1%

Median Weekly Earnings

- Less Than High School Diploma: $464
- High School Graduate: $648
- Some College/Associate Degree: $736
- Bachelor’s Degree or Higher: $1,170

Median: $803

Our Global Competitiveness Hinges on Our Graduates’ Academic Preparedness

“Because other nations have...the competitive advantage of a low wage structure, the United States must compete by optimizing its knowledge-based resources, particularly in science and technology....”

– National Academy of Sciences, “Rising Above the Gathering Storm”
Changes in demography & labor market

= 

Need to close gaps and achieve high levels of academic preparedness
What We Know, What We Don’t Know
What We Know

On a daily basis we know:

★ The changes on the stock market
★ The number of bushels of wheat produced
★ The price of gold
What We Don’t Know:

Are the nation’s 12th graders well-prepared academically for college and job training?

The U.S. has no common definition or measure of 12th grade preparedness

Governing Board program of research:
Transform 12th grade NAEP into indicator of preparedness for postsecondary education and training
The Governing Board’s Preparedness Research
The Governing Board’s Work on Preparedness: Underway for Nearly 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
Research Studies and Development of Preparedness Report

The Governing Board’s approach: rigorous, comprehensive, and methodical in making NAEP a preparedness indicator.
Working Definition of Preparedness

★ The knowledge and skills needed to qualify for placement into entry-level college-credit courses or job training, without the need for remediation in math or reading.

- Assumption: 12th graders need training beyond high school to qualify for a career
- “Preparedness” versus “Readiness” – NAEP measures academic proficiency
- Academic skills for college and for job training not necessarily the same
A Comprehensive Plan:
More than 30 Studies in Five Research Areas

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

Research Results Are Promising
Content Comparisons: ACT, SAT, ACCUPLACER

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/coverage of specific content in mathematics
Content Comparisons: WorkKeys

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.
Statistical Linking

- NAEP and SAT math = .91 correlation
- NAEP and SAT reading = .74 correlation
- Proficient on NAEP = 500 on SAT Reading and Math = College Board Readiness Benchmark

**Florida study:** 12th grade state NAEP and…

- ACT, SAT, and ACCUPLACER
- Employment and salary data
- Course grades in college and job training programs

- Florida results are confirming of NAEP/SAT results
Standard Setting:
12 studies in five job training programs and college placement

★ Job training
  ★ Automotive Master Mechanic
  ★ Computer Support Specialist
  ★ HVAC Technician
  ★ Licensed Practical Nurse
  ★ Pharmacy Technician

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

- **Course Content Analysis: First Year College Courses and Five Job Training Programs**
  - 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 place freshmen
Mathematics Preparedness Findings

80% At or Above SAT ≈ 500 (175)
67% At or Above SAT ≈ 500 (169)
SAT Concordance ≈ 500 (165)
50% At or Above SAT ≈ 500 (164)

FL: Did NOT meet ACT Benchmark (138)
FL: Did NOT meet SAT Benchmark (143)
FL: Met SAT Benchmark (179)
FL: Met ACT Benchmark (180)
Reading Preparedness Findings

80% At or Above SAT ≈ 500 (325)

67% At or Above SAT ≈ 500 (313)

SAT Concordance ≈ 500 (303)

50% At or Above SAT ≈ 500 (301)

FL: Did NOT meet ACT Benchmark (271)
FL: Did NOT meet SAT Benchmark (279)
FL: Met ACT Benchmark (308)
FL: Met SAT/ Benchmark (311)
Next Steps

- Review findings with technical experts.
- Plan research for 2013 NAEP.
  - SAT and ACT linking studies
  - State partners
  - 8th grade EXPLORE
Conclusions

★ Governing Board’s research is
  - Rigorous, comprehensive
  - Methodologically sound, well documented

★ Cautious optimism – NAEP as preparedness indicator.

★ NAEP content may not be well aligned with job training requirements.
Panel Discussion

★ Potential relevance and use of this research in West Virginia?
  - NAEP as preparedness indicator
  - The NAEP research
  - The research results

★ Additional research to consider?

★ Potential partners for additional research?
What is the relevance and utility of the NAEP 12th Grade Academic Preparedness Initiative to West Virginia?

- NAEP as an indicator of academic preparedness
- The NAEP research
- The research results
What additional research should be considered in connection with NAEP 12th grade assessments in reading and mathematics to be conducted in 2013?

Who are potential research partners?
For More Information…

★ National Assessment Governing Board:
  www.nagb.org

★ NAEP 12th Grade Preparedness Commission:
  www.nagb.org/commission

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