Many High School Graduates Are Not Prepared for Entry-Level College Courses

Percentage of Freshman College Students Taking Any Remedial Course (reading, writing, mathematics)

Source: 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: 10.7%
- High School Graduate: 7.6%
- Some College/Associate Degree: 6.4%
- Bachelor's Degree or Higher: 3.9%

Overall Unemployment Rate: 7.6%

Median Weekly Earnings

- Less Than High School Diploma: $457
- High School Graduate: $651
- Some College/Associate Degree: $741
- Bachelor's Degree or Higher: $1,189

Median: $827

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 and 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 Know, What We Don’t Know

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 Work on Preparedness: Underway for More Than a Decade

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

Stipulations

★ Postsecondary education and training in the U.S. is a complex enterprise of independent institutions and organizations, public, private, and proprietary.

★ Across and within institutions, different admission requirements and different policies used for placing individual students into courses and majors.

★ There is no single, generally accepted definition of “academic preparedness for college” or for “job training” in the U.S.

★ Therefore, a working definition was needed to design/conduct the NAEP research.

★ *Did not assume:* Academic skills for college and for job training necessarily the same.

★ *Did assume:* Education systems intend all H.S. students to graduate able to pursue the path they choose, whether college or job training.
A Comprehensive Plan: More Than 30 Studies in Five Research Areas

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Research Results Are Promising
Academic Preparedness Definition 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 = .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
Academic Preparedness for College: Key Takeaways

★ Content comparisons confirm appropriateness of revised 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 need to be considered
Academic Preparedness Definition 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 mathematics objectives NOT evident as prerequisite in any course examined within the five occupations
  - Between 16% and 68% of the 37 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”
Study Interrelationships

- Content Alignment Studies
- Benchmarking Studies
- Higher Education Survey
- Statistical Linking Studies
- Judgemental Studies (Expert Panels)

Numbers:
- 500
- 391
- 367
- 346
- 336
- 327
- 313
- 302
- 297
- 286
- 277
- 265
- 256
- 243
- 0
Next Steps

★ Review findings with technical experts
★ Receive comments: symposium/other stakeholders
★ Governing Board consideration (August 2013 meeting) on reporting 12th-grade results in terms of preparedness
★ 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