



High School Standards & Expectations for College & the High-skills Workplace

RESEARCH IN BRIEF

January 2009

State standards for high school graduation appear to fall short of what colleges and employers expect students to know and be able to do when they graduate, according to an analysis conducted by REL Central.

REL Central set out to inform states in its seven-state region (Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming) whether their standards reflect the knowledge and skills that two national groups have identified as vital for success in college and the high-skills workplace. This study compared standards from states in the region, as well as six other states deemed to have exemplary standards for language arts and mathematics, against expectations for 21st century employees and college students. These post-secondary expectations were identified by the American Diploma Project (ADP) and Standards 4 Success (S4S) project.

Three key insights emerged from this study:

1. A majority of the region's states were missing at least eight out of 45 (18%) of the English language arts topics shared by ADP and S4S; 25 of 69 (36%) mathematics topics common to ADP and S4S were not found in the majority of the Central Region states.
2. Standards for Central Region states do not fare appreciably worse in this analysis than standards from "exemplary" states.
3. Carnegie units¹ have limited usefulness as a method for articulating expectations for high school graduates. Although many states still use Carnegie units to establish high school graduation

requirements, analysts found it difficult to compare Carnegie units with ADP and S4S standards.

NEED FOR BETTER HIGH SCHOOL PREPARATION

Institutions of higher education and employers alike express concerns about high school graduates' preparedness for college or the workforce. At the college level, a recent study from the National Center for Education Statistics found that 35 percent of colleges and universities report that their students require an average of one year of remediation upon entering college (Parsad & Lewis, 2003, p. iv). Such remediation needs are greatest in "broad access" institutions—those that admit almost every student who applies and educate approximately 80 percent of the nation's first-year college students (Kirst, 2003). The high levels of remediation among these students suggest they are not being adequately prepared for college. At the same time, the demand for highly skilled workers means that "whether bound for jobs or college, all students need high-level academic knowledge and skills associated with college preparatory studies" (Somerville & Yi, 2002, p. 2).

College education has a significant impact on students' future success. According to Carnevale & Desrochers, (2003) "six in 10 jobs are held by workers with at least some postsecondary education or training, compared with two in 10 in 1959"(p. 3).

Those without college degrees face diminishing job

¹Completion of a year-long course equals one Carnegie unit. Sometimes referred to as "seat time," the unit does not take into account either the quality of the instruction or the quality of the learning.

prospects and income potential (Carnevale & Desrochers, 2003), and wages for college-educated workers continue to outpace those of high school-educated workers. Factory jobs, once a haven for high school dropouts, are now increasingly filled by those with some college experience. Between 1973 and 2000, the proportion of factory jobs held by individuals with at least some college education tripled and their wages held nearly steady, while wages for those with a high school diploma or less fell by 19 percent over the same period (Barth, 2003).

Further, predominantly rural areas, such as the laboratory system's Central Region states, are subject to additional economic pressures. New technologies continue to impact the economic development of rural communities by increasing the number of high-skill jobs while diversifying the job base, even in these remote areas (Min, Sukhumaran, & Varghese, 2001; Gibbs, 2005).

And finally, high school graduation requirements fall short of college entry requirements. An examination of the Carnegie units (credits earned for completing courses) required for graduation in states across the U.S. found that "no state's current standard high school graduation requirements are fully aligned with college admissions requirements" (Dounay, April 2006).

STUDY METHODOLOGY

REL Central analysts began by identifying standards in mathematics and English language arts that several states inside and outside the Central Region established for high school graduates. They then compared these standards against two national study reports that describe expectations of universities and employers of high-skilled workers: S4S and ADP.

The states selected for comparison from outside the region were California, Georgia, Indiana, Massachusetts, Louisiana, and New Mexico. These states' standards received high rankings from *Education Week's* Editorial Projects in Education Research Center and the Fordham Foundation and are in accord with the laboratory's definition of high-quality standards (i.e., clear, consistent, specific, and representative of best research).

The analysis proceeded by subject matter, rather than by

grade level or course. Content analysts determined the absence or presence of specific topics within each study document and provided evidence of that judgment.² The study included an examination of the level of performance expected of students relative to the content they were expected to learn.

A performance level was assigned whenever the level of difficulty could be inferred. Content was deemed missing from state standards if the topic was not addressed, or when the topic was addressed but students were not expected to reach the same or a higher performance level than expressed in the national documents.

ENGLISH LANGUAGE ARTS FINDINGS

There are several key findings from the analysis of language arts standards.

- Thirty-seven of 45 topics (82%) considered important by both national reports in the English language arts were also present in a majority of the state standards reviewed.
- Eight topics were missing from standards in a majority of Central Region states.
- Four topics were missing from standards in a majority of comparison states.

MATHEMATICS FINDINGS

Key findings from the analysis of mathematics standards follow .

Thirty-eight of 69 topics (64%) considered important in the national studies were present in the majority of the states reviewed.

- Twenty-five topics were not found in the Central Region's state standards.
- Twenty-two topics were missing in the majority of states selected for comparison.

IMPLICATIONS

This review examined standards established for all students, not just those who intend to continue academic work. Thus, some of the topics that do not appear in a majority of the state standards may be taught only to a select group of students. Other topics,

²Each assignment of content to a topic was reviewed by a second analyst. Disagreements regarding content assignment were resolved through deliberations with a third analyst.

however, may not be systematically addressed at all, even for students on a college track. Educators, policymakers, and others who work to ensure that the high school diploma has value beyond K–12 education may find it useful to examine these results.

The study also suggests that a separate review may be warranted to determine whether high school students who do not go on to attend college or advanced training are acquiring the skills they need to be successful in the workplace. Are state standards adequate to ensure that all students learn not just basic academic skills, but also the

softer skills that employers require, such as the ability to solve problems, to work well with others, and to self-regulate? Such skills should also serve well students who go on to post-secondary education and advanced training.

ACCESS THE FULL REPORT

Download the full report from the National Laboratory Network Web site at <http://ies.ed.gov/ncee/edlabs/projects/project.asp?id=12>.

REFERENCES

- Barth, P. (2003, Winter). A common core for the new century. *Thinking K–16*, 7(1), 3–31.
- Carnevale, A., & Desrochers, D. M. (2003). *Standards for what? The economic roots of K–16 reform*. Washington, DC: Educational Testing Service.
- Dounay, J. (2006, April). “Alignment of High School Graduation Requirements and State-Set College Admissions Requirements.” *State Notes*. Denver, CO: Education Commission of the States.
- Eisen, P., Jasinowski, J. J., and Kleinert, R. (2005). *2005 skills gap report: A survey of the American manufacturing workforce*. Retrieved June 5, 2006 from http://www.deloitte.com/dtt/cda/doc/content/us_mfg_Talent%20Management_112205.pdf
- Gibbs, R. (2005, November). Education as a rural development strategy. *Amber Waves*, (3)5, 20–25. Retrieved December 1, 2006, from <http://www.ers.usda.gov/AmberWaves/November05/pdf/FeatureEducationNovember2005.pdf>.
- Hart Research Associates/Public Opinion Strategies (2005). *Rising to the Challenge: Are High School Graduates Prepared for College and Work?* Washington, DC: Achieve, Inc.
- Kendall, J. S., Pollack, C., Schwols, A., & Snyder, C. (2007). *High school standards and expectations for college and the workplace* (Issues & Answers Report, REL 2007–No. 001). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central. Retrieved from <http://ies.ed.gov/ncee/edlabs>.
- Kirst, Michael (2003, September). *College Preparation and Grade 12 NAEP*. Paper prepared for the National Assessment Governing Board. Retrieved June 5, 2006, from: <http://www.stanford.edu/group/bridgeproject/College%20Prep%20and%20Grade%2012%20NAEP.pdf>
- Min, J., Sukhumaran, B., & Varghese, S. (2001). *Internet-Based Economic Development for Rural Communities*. Industrial and Manufacturing Systems Engineering Iowa State University. Retrieved December 1, 2006 from http://www.eda.gov/ImageCache/EDAPublic/documents/pdfdocs/1g3lr_5f12_5fiowastate_2epdf/v1/1g3lr_5f12_5fiowastate.pdf
- Parsad, B., & Lewis, L. (2003, November). *Remedial education at degree-granting postsecondary institutions in fall 2000: Statistical analysis report* (NCES 2004-010). Washington, DC: U.S. Department of Education, National Center for Education Statistics. Retrieved September 19, 2004, from <http://nces.ed.gov/pubs2004/2004010.pdf>
- Somerville, J. & Yi, Y. (2002). *Aligning K–12 and Postsecondary Expectations: State Policy in Transition*. Washington, DC: National Association of System Heads

REL Central, administered by McREL, is one of 10 regional educational laboratories funded by the U.S. Department of Education's Institute of Education Sciences. Its mission is to provide educators in the Central Region (Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming) with high-quality, scientifically valid education research; training and technical assistance; and dissemination.



Mid-continent Research for Education and Learning

Phone: 303-337-0990 • Fax: 303-337-3005

www.mcrel.org • relcentral@mcrel.org

This report was prepared for the Institute of Education Sciences under Contract #ED-06-CO-0023 by Regional Educational Laboratory Central, administered by Mid-continent Research for Education and Learning. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. This publication is in the public domain. Authorization to reproduce in whole or in part for educational purposes is granted.



Mid-continent Research for Education and Learning
4601 DTC Blvd., #500
Denver, CO 80237

Nonprofit
US Postage
PAID
Denver, CO
Permit No. 993