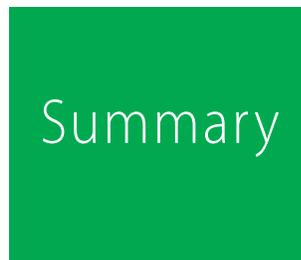




Aligning science assessment standards: New Mexico and the National Assessment of Educational Progress (NAEP)



Institute of Education Sciences
U.S. Department of Education



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Summary

July 2007

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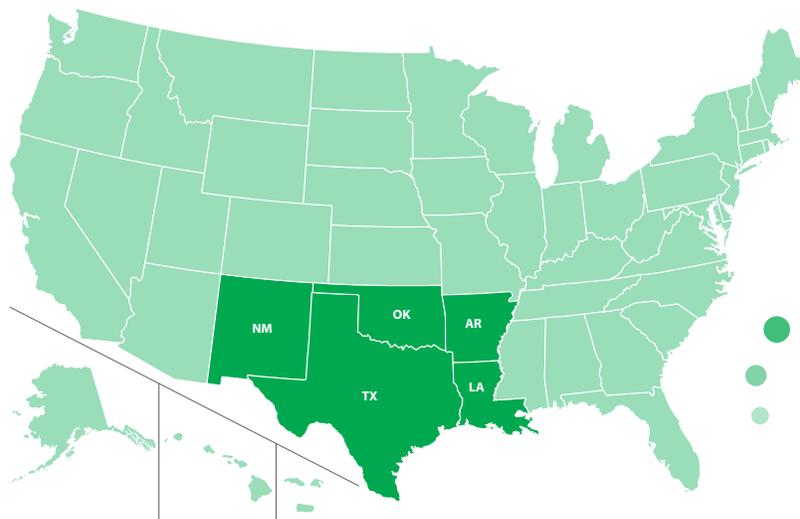
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July 2007

This report was prepared for the Institute of Education Sciences (IES) under Contract ED-06-CO-0017 by Regional Educational Laboratory Southwest administered by Edvance Research. 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.

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Timms, M., Schneider, S., Lee, C., & Rolffhus, E. (2007). *Aligning science assessment standards: New Mexico and the National Assessment of Educational Progress (NAEP)* (Issues & Answers Report, REL 2007–No. 021). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

This report is available on the regional educational laboratory web site at <http://ies.ed.gov/ncee/edlabs>.

Summary

Aligning science assessment standards: New Mexico and the National Assessment of Educational Progress (NAEP)

This policy research document is intended for New Mexico policymakers to use when examining possible changes to the state assessment's alignment with the National Assessment of Educational Progress (NAEP). The 2009 NAEP test is not yet in existence, so the purpose of this report is to give policymakers a headstart in determining where they might, if they so decide, begin to make changes in their assessment standards and specifications to develop an assessment system more closely aligned with that used for the NAEP.

Overall, reviewers found New Mexico's science assessment framework to be fairly well aligned with the NAEP framework. For grade 4, all NAEP content items are to some degree addressed by New Mexico's science assessment framework, with no ratings of 1 and an overall alignment rating of 2.2 (a rating of 1 indicates no alignment and a rating of 3, full alignment). For grade 8 the majority of NAEP content statements are partially aligned with the content in the New Mexico science assessment framework, and the overall alignment rating is 2.1, mostly because the NAEP standards typically contain more detail and more specific content than the corresponding New Mexico standards. In the comparison with NAEP grade 12, New Mexico was given

an overall alignment rating of 2.3, indicating a fairly high degree of alignment; only two NAEP content statements are not addressed by corresponding New Mexico standards.

A rating of partial alignment between New Mexico and the NAEP was due primarily to reviewers finding that the state often implied content that was stated explicitly by the NAEP and that the NAEP often provided more specific content items or more detail. However, reviewers believed that New Mexico was, on the whole, fairly well aligned with the NAEP.

This report reveals current alignment issues between the state's tests and the future NAEP tests and may be especially important to policymakers who are considering revising science standards and assessments in line with No Child Left Behind requirements for state science tests in elementary, middle, and high schools. If state policymakers wish to increase the alignment between the state assessments and the NAEP, areas to consider are increasing Earth and space science coverage in grade 8 and including a wider variety of test item types, such as hands-on and interactive computer tasks. Revising assessments requires considerable time and resources, so policymakers must carefully consider their capacity to make changes and the degree to which such changes will benefit students.

Grade 4 alignment

All NAEP content items are addressed to some degree by New Mexico's science assessment framework, and New Mexico is fairly well aligned with the NAEP. The New Mexico statements are most often partially aligned with NAEP statements, primarily because New Mexico covers the NAEP content at higher grade levels. However, raters believed that New Mexico's content was spiraled well through all grade levels. The New Mexico framework also contains many content items that are not listed in the NAEP's content statements, including those within New Mexico's scientific thinking and practice section, which reviewers praised for its promotion of rigorous scientific methodology. The overall alignment rating for grade 4 is 2.15.

Grade 8 alignment

The majority of NAEP grade 8 content statements were partially aligned with the content in the New Mexico science assessment framework. Partial alignment was due mainly to the fact that NAEP standards typically contain more detail and more specific content than the corresponding New Mexico standards. The overall alignment rating is 2.1, indicating partial alignment.

Grade 12 alignment

New Mexico's grade 11 performance standards are fairly well aligned with the NAEP's grade 12 content; only two NAEP statements were unaddressed by New Mexico, and the overall alignment rating is 2.3. Reviewers found most content to be partially aligned, and the

majority of aligned New Mexico content was found to imply content explicitly stated by the NAEP.

Test specifications

The New Mexico test blueprints ensure that testing student knowledge and skills does not rely solely on multiple-choice items by including short and longer constructed-response items. That enables a wider range of knowledge types to be tested than with multiple-choice alone. New Mexico breaks down the content differently from the NAEP (by number of items and number of points), so it is hard to directly compare the relative amounts of testing time devoted to each topic. However, when focusing just on the three topics tested in the NAEP, the New Mexico blueprints are fairly similar to the NAEP at grades 4 and 8, although in grade 8 the NAEP devotes more time to Earth and space science than New Mexico does. Comparisons for high school could not be completed, because the grade 11 New Mexico Standards Based Assessment (NMSBA) will not be given until the 2007/08 school year. Overall, there is a reasonable match between the New Mexico test blueprints and the NAEP assessment and item specifications.

Standards and test specifications represent the starting point for the development of tests and test items. In the ideal alignment study state science assessments would be compared with NAEP assessments directly at the item level. At some future date the NAEP 2009 assessment items may be available for such a study.