NMPED Science Curriculum Review of Evidence

Curriculum Name: New Mexico Interactive Science, Grades 6-8

Publisher: Pearson Education, Inc. publishing as Prentice Hall
Number of Studies Submitted: 2
Number of Studies Reviewed: 2
Grade(s) of Studies Reviewed: 6-8

Average Rubric Ratings:

Criteria	Average Rating Across All Studies
Experimental Design	1
Sample	1
Methodology	2
Measures	2
Reporting Results	1
Studies	1
Investigators	2
Total Score	10
Average Subscale Score	1.43

Narrative:
The 2009 pilot study, conducted by PRES Associates Inc., used a pre/posttest assessment to obtain preliminary information without randomization on effects of the *Interactive Science* program. The pilot sample included 435 students in two states spanning sixth to eighth grade in 22 classes taught by seven teachers who selected one or two available program chapters to teach. Assessments aligned to three pilot chapters using Pearson test generator and released items from the Massachusetts state assessment. The pilot study did not include a comparison group. Researchers conducted the study over a three month time period not allowing for strong causal inferences to be made. Yet, students demonstrated significant growth from pretest to posttest on two of the chapters regardless of gender, ethnicity, or academic performance and improved knowledge of science vocabulary. Other measures included teacher surveys, classroom observations, teacher interviews, student focus groups, and student work-text reviews.

PRES Associates Inc. also conducted the 2010 pilot study on Pearson's *Interactive Science 2011* program to expand on the previous pilot study. This non-randomized study consisted of 381 students in grades 6-8 in three middle schools in three states and eight science teachers who selected one of three modules that consisted of four to eight chapters in the program to teach. Custom science assessments used items from released state science assessments, TIMMS, and NAEP as well as custom-developed items to measure content taught. The custom tests showed high levels of internal consistency (Cronbach's alpha) and split half reliability, indicating they are psychometrically sound. Researchers also administered the *TerraNova*, Third Edition Complete Battery Science test, which covers topics beyond those covered in the pilot. A correlation of custom assessments with the *TerraNova3* assessments within each grade level showed the assessments are moderately correlated and suggestive of concurrent validity. Due to the short duration of the study and the lack of randomization, strong conclusions with respect to student science learning cannot be drawn. Yet, students showed significant growth from pre- to post-testing on two of the custom assessments and marginally significant learning gains on the pre to post *TerraNova3* testing. Other measures included teacher surveys, student surveys, classroom observations, teacher interviews, and teacher activity logs.

Overall Quantity and Quality of Evidence:

The two studies submitted for review provide evidence for the effectiveness of the science program. Disaggregate scores in the first study (2009) do not distinguish further the minority classifications; the second study (2010) did not disaggregate results. Content measures, classroom observation protocols, and interview and focus group questions were not provided with the studies. The information obtained from the 2010 pilot study is used to inform the design of the more rigorous experimental study on the effectiveness of the program to be undertaken during the 2010-2011 school year. Based on the studies, there is good evidence of program efficacy for *New Mexico Interactive Science, Grades 6 – 8*.

References of Submitted Studies:

PRES Associates Inc. (2009). A Pilot Study on Pearson's *Interactive Science* Program.
The report can be downloaded from:
http://www.pearsoned.com/RESRPTS_FOR_POSTING/SCIENCE_RESEARCH_STUDIES/pearson-interactive-science-pilot-study-report-final-7-30-09.pdf

PRES Associates Inc. (2010). A Pilot Study on Pearson's *Interactive Science 2011* Program.
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