NMPED Science Curriculum Review of Evidence

Curriculum Name: Holt Modern Chemistry

Publisher: Houghton Mifflin Harcourt, publishing as Holt McDougal
Number of Studies Submitted: 1
Number of Studies Reviewed: 1
Grade(s) of Studies Reviewed: 10-12

Average Rubric Ratings:

Criteria	Average Rating Across All Studies
Experimental Design	1
Sample	1.5
Methodology	2
Measures	0
Studies	0
Reporting Results	1
Investigators	2
Total Score	7.5
Average Subscale Score	1.07

Narrative:
Holt, Rinehart, and Winston, Inc. School Publishers contracted with Educational Research Institute of America (ERIA) to conduct an effectiveness study of *Holt Modern Chemistry ©2006 and ©2009*, a new program under development at that time. *Holt Modern Chemistry ©2006* is a year-long high school chemistry course geared for honors/pre-AP students. Two chapters, representative of the content and format in the new program, were field tested during the second semester of 2003-2004 school year. During the field test, 21 chemistry teachers using different instructional chemistry programs in 20 schools located in nine states volunteered for the pretest/posttest study. They received no special training to implement the *Holt Modern Chemistry* program.

ERIA analyzed pretest/posttest scores using a paired comparison *t*-test at a $p<.05$ level of significance. Researchers conducted analyses on each chapter separately and on socio-economic status (SES) based on percentage of students enrolled in a free or reduced lunch program. Students showed statistically significant improvement from pretest to posttest for both chapters (<.0001). Schools were categorized into three socio-economic status (SES) areas to conduct a comparison of pretest/posttest scores. Students in each group showed statistically significant improvement for both chapters to show effectiveness across SES groups.

ERIA administered a student questionnaire to evaluate various sections of the chapters. Two thirds of students found the difficulty of the two chapters to be *About Right*. Approximately 70% of the students found the new material to be *Challenging but Understandable*.

Overall Quantity and Quality of Evidence:
The one study submitted for review provides some evidence for the effectiveness of *Holt Modern Chemistry*. There are statistically significant results from the pretest/posttest data. The study does not report effect size as a result of the use of the program. Classification of SES groups was based on school data and not data specific to classrooms in the study. The number of students distributed among the three SES groups is not equally distributed with a significantly lower number in the Low SES category. Based on the study, there is promising evidence of program efficacy of *Holt Modern Chemistry*.

References of Submitted Studies:

Educational Research Institute of America (August 2004). A Study of the Instructional Effectiveness of *Holt Modern Chemistry* ©2009, Report Number 151.