NMPED Science Curriculum Review of Evidence

Curriculum Name: Holt Modern Biology ©2009

Publisher: Houghton Mifflin Harcourt, publishing as Holt McDougal
Number of Studies Submitted: 1
Number of Studies Reviewed: 1
Grade(s) of Studies Reviewed: 9-12

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 McDougal, a division of Houghton Mifflin Harcourt Publishing Company, contracted with Educational Research Institute of America (ERIA) to conduct a study of instructional effectiveness of *Holt Modern Biology* Program ©2006 and ©2009. A field test during the second semester of the 2003-2004 school year used a chapter representative of the format and content of the 2009 program under development. ERIA used a pretest/posttest design with 18 volunteer biology teachers (grades 9-12) from different high schools in 10 states. Teachers were using different biology programs and did not receive special training before implementation of the *Holt Modern Biology* chapter. Researchers analyzed pretest/posttest scores using a paired comparison *t*-test at a <0.5 level of significance. They analyzed results in three different ways: (1) comparison of all students in the sample; (2) comparison of three SES groups based on student enrollment in a free/reduced lunch program for students; and (3) comparison of three minority enrollment groups in the schools. All three analyses showed statistically significant improvement from pretest to posttest ($p<.0001$) and significant improvement in percentage of correct on posttest.

A student questionnaire evaluated the difficulty of the different elements that comprised the implemented chapter. The largest percentage of students (84%) found the new material to be challenging but understandable.

Overall Quantity and Quality of Evidence:
The only study submitted for review provides some evidence for the effectiveness of the science program. The study gives no information on the reliability of the pretest/posttest items. The classification for the three SES groups and three ethnic groups was based on school information and not the specific classrooms involved in the study. There was no effect size stated in the study. Based on this study, there is promising evidence with statistically significant results from pretest/posttest design.

References of Submitted Studies:
Educational Research Institute of America (August 2004). A Study of the Instructional Effectiveness of *HOLT MODERN BIOLOGY ©2009*, Report Number 152.