

**ZMATH 2012b.00490**

**Haja, Shajahan; Clarke, David**

**Middle school students' responses to two-tier tasks.**

Math. Educ. Res. J. 23, No. 1, 67-76 (2011).

Summary: The structure of two-tier testing is such that the first tier consists of a multiple-choice question and the second tier requires justifications for choices of answers made in the first tier. This study aims to evaluate two-tier tasks in "proportion" in terms of students' capacity to write and select justifications and to examine the effect of different two-tier formats on student performance. Twenty students each from Y7 to Y8 participated in the study in Melbourne in March 2008. The students took eight similar tests with each test having eight two-tier tasks. Eight students were interviewed individually after the testing. Analysis of students' responses revealed that 1) Y7 and Y8 students were able to select and write justifications to two-tier tasks, 2) Y7 and Y8 students' success in writing or selecting justifications varied on "marked answer" and "select answer" formats, and 3) Y7 and Y8 students' justifications gave some information about their misconceptions in proportional reasoning. Implications for teachers looking for alternative assessment tasks tracing students' reasoning behind their correct and incorrect answers are discussed.

*Classification:* D63 D73

*Keywords:* student attitudes; alternative assessment; testing; misconceptions; concept formation; comparative testing; multiple choice tests; evaluation methods; interviews; evaluation research; evaluative thinking; middle school students; mathematics achievement; mathematics skills; mathematics tests; task analysis  
doi:10.1007/s13394-011-0004-5