

TIMSS 2011 Obtaining Student Responses for Developing Field-test Scoring Training Materials

In order to develop field test scoring materials for the TIMSS 2011 constructed-response items, responses were gathered from students in English-speaking countries in January 2010. For each constructed-response item, the TIMSS & PIRLS International Study Center staff together with the other Mathematics and Science task force members reviewed the student responses and used them to revise the scoring guides by clarifying code descriptions, adding examples, or expanding scoring codes to encompass additional response types. The exhibit below provides the number of items tested, the number of student responses collected, and the breadth of country participation.

Collection of Student Responses for Scoring Materials

| | Fourth Grade | Eighth Grade |
|------------------------------|--|---|
| Items | | |
| Mathematics Items | 38 | 49 |
| Science Items | 68 | 96 |
| Total Items | 106 | 145 |
| Responses per Item (approx.) | 290 | 260 |
| Participants | | |
| Countries | Botswana, England, Malta, Singapore, United States | Botswana, England, Ghana, Singapore, South Africa |
| Benchmarking Entities | Canadian provinces of Ontario and Quebec | Canadian provinces of Ontario and Quebec |
| Number of Students (approx.) | 870 | 780 |

Mainly though, the TIMSS Mathematics and Science Task Forces used the student responses to create sets of field test scoring training materials for a select number of constructed-response items that were more challenging or complex to score. Example and practice paper sets illustrating the various scoring guide categories were created for each field test scoring training item. The example paper sets consisted of a range of student responses that commonly occurred and demonstrated important features of the scoring guide. Each student response in the example set was presented along with the scoring code it was assigned. The practice paper set used student responses similar to those in the example paper set, but presented them

without scoring codes so that the National Research Coordinators could practice assigning codes during scoring training. The number of example and practice papers per training item varied depending on the complexity of the scoring guide.

Once the student responses to each training item were selected for each example and practice paper set, the TIMSS & PIRLS International Study Center scanned each student response and entered it into a database. Staff members then used the database to combine identification information about each training item with its student responses to create scoring training materials to be used during international scoring training. For the TIMSS 2011 field test, example and practice paper sets for 29 fourth-grade training items and 31 eighth-grade training items were created.