

EDITORIAL

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Many readers of *MJMS* are familiar with the Third International Mathematics and Science Study, known as TIMSS. In this study, students were tested in both mathematics and science at five different grades across primary, middle, and secondary school. More than 500,000 students in 41 countries participated in the study. One report coming from the TIMSS study is *Gender Differences in Achievement*. This report focuses on differences in mathematics and science achievement by gender for students in the fourth grade, eighth grade, and in their final year of secondary school.

The Executive Summary of the report summarizes the findings in this report. Overall, the TIMSS results showed very few gender differences in average mathematics achievement at the fourth or eighth grade levels. For the final year of secondary school, in 18 of 21 countries, males had significantly greater achievement in mathematics literacy.

For those students scoring in the top quarter of their respective countries, few gender differences were found at fourth or eighth grade, but there was an increasing advantage for males by the final year of secondary school. This same pattern held for students scoring in the bottom quartile.

The researchers also examined those items exhibiting the greatest gender differences. Across all grades, males tended to exhibit higher achievement on items involving spatial representation, proportionality measurement, and problems with no immediate formula. At the fourth and eighth grade levels, females scored significantly higher than males on items involving reading graphs, computation, and algorithmic problem solving. At the final year of secondary school, females did not outperform males on any specific items.

Finally, there appear to be some attitudinal differences that are gender specific. At the final year of secondary school, more males identified that it was important to do well in mathematics and science while more females said it was important to do well in language. More males than females agreed that it was important to do well in mathematics and science to please their parents and to get a desired job.

In summary, then, the gender gap in mathematics achievement becomes greater as students progress through school. This pattern holds for most of the countries in the TIMSS study. The results discussed in this report may well have been related to issues such as the numbers of students (particularly females) taking more advanced mathematics courses, the number of students majoring in mathematics or related fields, the number of students obtaining advanced degrees in mathematics, and the shortage of certified secondary mathematics teachers.

The full report can be found at <http://timss.bc.edu/timss1995i/gender.html>.