



Press Release

Trends in International Mathematics and Science Study (TIMSS) 2015

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(I) A LANDMARK OF 20 YEARS: TWO DECADES OF EDUCATIONAL TRENDS IN MATHEMATICS AND SCIENCE ACHIEVEMENT: HONG KONG CONTINUES TO BE IN THE TOP POSITION OF INTERNATIONAL MATHEMATICS AND SCIENCE ASSESSMENT

The Trends in International Mathematics and Science Study (TIMSS) 2015 press conference, scheduled today (29 November 2016) at Room 408-410, Meng Wah Complex, HKU, aimed to inform the public about the achievement in and attitudes towards mathematics and science of Primary 4 and Secondary 2 students from Hong Kong as compared with students from nearly 60 other countries/regions.

TIMSS 2015, being the sixth cycle of the international assessment, tested more than 582,000 students worldwide. The Hong Kong component of TIMSS 2015 involved 3,600 Primary 4 students and 4,155 Secondary 2 students from 132 primary and 133 secondary schools respectively.

The Chairman of Hong Kong Centre for IEA Studies, Professor Frederick Leung, announced the findings of the Hong Kong component of TIMSS 2015 at the press conference concurrently with the official international press release in Amsterdam, the Netherlands, on November 29, 2016. Professor Leung said, "This is the sixth time Hong Kong participated in TIMSS since 1995. Participation in TIMSS provides us with invaluable and reliable trend data to make evidence-based decisions on how to improve teaching and learning in mathematics and science, and also monitor Hong Kong students' achievement trends in an international context. TIMSS not only informs us about the prevailing standings of different countries' mathematics and science achievement, but also the changes in achievement across time. For example, the findings of this cycle show that Hong Kong students are still at the top levels of international mathematics and science achievement. At the same time, the findings also indicate that, generally, there is an increase in Hong Kong students' performance in mathematics and science during the 20-year period."

In this cycle of TIMSS, Hong Kong students continue to demonstrate remarkable performance in mathematics. Together with Singapore, Korea, Chinese Taipei and Japan, we are the top five countries/regions in the Primary 4 sample. Similar to the pattern found in the previous cycles of TIMSS, students from these five East Asian countries/regions outperformed their counterparts in other participating countries/regions. The Hong Kong result is not significantly different from the results of Singapore and Korea. Hong Kong students also performed very well at Secondary 2. The other top-performing countries/regions are Singapore, Korea, Chinese Taipei and Japan, with Singapore having significantly higher achievement than the rest of the participating countries/regions. The result of Hong Kong is not significantly different from those of Chinese Taipei and Japan.

In science, Primary 4 students in Hong Kong performed very well, albeit students in Singapore, Korea, Japan, Russian Federation performed significantly better. The science performance of Hong Kong students is not significantly different from the performance of their counterparts in Chinese Taipei, Finland and Kazakhstan. At Secondary 2, the science achievement of students in Singapore, Japan, Chinese Taipei and Korea is significantly higher than that of the students in Hong Kong. The result of Hong Kong is not significantly different from the results of Slovenia, Russia Federation and England.

(II) OTHER KEY FINDINGS:

1. Trends in Achievement

In the past 20 years, the mathematics achievement in Hong Kong shows an upward trend for Primary 4 and a fairly consistent pattern for Secondary 2. At Primary 4, the TIMSS 2015 result is significantly better than the results of TIMSS 2011, 2003 and 1995. At Secondary 2, the TIMSS 2015 mathematics achievement is only significantly higher than those of TIMSS 2007 and 1995.

For science at Primary 4, the TIMSS 2015 result is significantly better than the results of TIMSS 2011, 2003 and 1995. At Secondary 2, the TIMSS 2015 science achievement is significantly higher than those of TIMSS 2011, 2007, 1999 and 1995.

2. International “Advanced” Benchmarks

In Hong Kong, over two-fifths (45 percent) of the Primary 4 students have reached the “advanced” benchmark of mathematics, compared with the international average of only 6%. At Secondary 2, over one-third (37 percent) of Hong Kong students have reached the “advanced” benchmark of mathematics (international average 5%). For science, there are 16 percent of Primary 4 students reaching the “advanced” benchmark of science (international average 7%). At Secondary 2, there are 12 percent of students reaching the “advanced” benchmark of science (international average 7%).

In Hong Kong, at least 96 percent of our students have passed the lowest benchmark of mathematics and science. The percentages of Primary 4 students reaching the “advanced” benchmarks of mathematics and science in 2015 have also increased significantly.

3. Gender and Achievement

In the current study, there is a significant difference in mathematics and science achievement between boys and girls at Primary 4, with boys performing better than girls in both subjects. A significant difference in science achievement between boys and girls is also found at Secondary 2. Boys’ performance in science is significantly better than girls’.

4. Attitudinal Results

It is somewhat perplexing to note that although Hong Kong (and many other East Asian) students do very well in their mathematics and science, they are less likely to have positive attitudes towards mathematics and science when compared to students from other parts of the world, especially where confidence in learning mathematics and science is concerned. In Hong Kong (and other countries/regions as well), Primary 4 students generally have more positive attitudes towards mathematics and science than Secondary 2 students. They are more likely to find mathematics and science interesting and have more confidence in learning the two subjects than Secondary 2 students.

[A summary of findings is attached to this press release]

TIMSS 2015 Participants

The Trends in International Mathematics and Science Study (TIMSS) 2015 was conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA). The participating countries/regions include Armenia, Australia, Bahrain, Belgium (Flemish), Botswana, Bulgaria, Canada, Chile, Chinese Taipei, Croatia, Cyprus, Czech Republic, Denmark, Egypt, England, Finland, France, Georgia, Germany, Hong Kong SAR, Hungary, Indonesia, Iran, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Kuwait, Lebanon, Lithuania, Malaysia, Malta, Morocco, Netherlands, New Zealand, Northern Ireland, Norway, Oman, Poland, Portugal, Qatar, Russian Federation, Saudi Arabia, Serbia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Thailand, Turkey, United Arab Emirates, and United States (plus 7 benchmarking participants from Argentina, Canada, Norway, United Arab Emirates and United States, including Buenos Aires, Ontario, Quebec, Norway, Abu Dhabi, Dubai and Florida).

Media Note:

The international reports of TIMSS 2015 can be downloaded at <http://timss.bc.edu>.

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