# 近年來我國中、小學生數理科表現升？或降？

## －國際數學與科學教育成就趨勢調查結果－

**國科會新聞稿**

我國參加由國際教育成就調查委員會（The International Association for the Evaluation of Educational Achievement,簡稱 IEA）主辦的「國際數學與科學教育成就趨勢調查」（Trends in Mathematics and Science Study 2003 ,簡稱 TIMSS 2003）」與國際同步揭曉結果，在四十九個參與調查的國家中，我國國二和小四學生的科學總平均成績排名都是第二，國二和小四學生的數學總平均成績排名都是第四，表現極為優異。這個成果顯示我國數學和科學教育一直有不錯的水準，這是大家對科學教育關心與努力的結果。

TIMSS 2003 是 IEA 自 1995 年以來第三次主辦連續週期性調查學生的數學和科學成就，主要目的在提供各國長期追蹤學生數學和科學趨勢成就，以提升學生數學和科學的學習成效。TIMSS 2003 以 13 歲群(即國二生)和 9 歲群(即小四生)為調查對象，國科會和教育部體認到未來我國國民在國際上競爭力的重要性，希望持續了解我國學生的學習成就與家庭背景、學習環境、教師等影響因素的關係，以及我國學生的學習特色與優缺點，並與其他國家進行比較，提供改進我國中小學數學及科學教育政策及課程之參考，並積極參與國際間科學教育的交流與合作，因此補助國立台灣師範大學科學教育中心進行 TIMSS 2003 調查研究。

TIMSS 2003 從 2000 年九月開始發展研究調查相關工作，總計有 49 個國家參加，其中 48 個國家參加 13 歲群調查，26 個國家參加 9 歲群調查。我國自 2001 年元月開始加入 TIMSS 2003 國際調查工作，包括提供命題架構意見、數學和科學試題命題、試測（field test）資料收集、參加專家問卷會議、實測（main survey）資料收集、參加國際成果指標會議、國際資料分析會議等各項工作。我國於 2002 年 4 月 18 日舉行試測，國中共有 25 所學校 31 班 1110 名學生參加測驗，國小共有 25 所學校 50 班 1601 名學生參加測驗。2003 年 5 月 19 - 6 月 6 日舉行實測，國中和國小各抽測 150 校，每校一班，共計 5379 位國二學生和 4661 位小四學生受測。

測驗的結果我國國二學生科學學習成就平均成績的國際排名為第二名（見表一），但與第一名的新加坡無顯著差異，也就是說我國國二學生科學成就仍是最優等級國家之一；國二學生數學平均成績的國際排名為第四名（見表二），與新加坡有顯著差異，但與韓國和香港無顯著差異，仍列於國際數學表現優異的國家。我國小四學生科學學習成就平均成績的國際排名為

第二名（見表三），與第一名的新加坡有顯著差異；數學平均成績的國際排名爲第四名（見表四），與新加坡和香港有顯著差異，但與日本無顯著差異，我國小四學生科學和數學成就仍列於國際表現優異的國家。

各學科內容領域平均成績的國際排名分別如下：【國二科學部份】生命科學第二名，化學第一名，物理第三名，地球科學第四名，環境科學第二名。【國二數學部分】數第四名，代數第三名，測量第四名，幾何與香港並列第二名，資料呈現與分析第四名；【小四科學部份】生命科學第三名，物質科學第三名，地球科學第一名；【小四數學部分】數第三名，數型和關係第三名，測量第四名，幾何第四名，資料呈現與分析第三名。

我國 13 歲群學生曾在 1999 年參加 IEA 的 TIMSS-R 調查，因此可以進行 1999 年至 2003 年的成就趨勢比較。結果顯示我國國二學生的整體科學和數學成就趨勢在統計上無顯著差異，女生和男生的科學與數學成就趨勢在統計上也無顯著差異，但女生的科學和數學成就進步，男生退步。在問卷的趨勢問題中，相較於 1999 年填答情形，不同意【我喜歡學理化】的學生百分比增加 20%，不同意【我喜歡學數學】的學生百分比增加 16%。因此如何提昇學生的學習意願及興趣仍是我國教育上的一個重要的課題。

另外，這次調查中還有些特點說明如下：

1.測驗成績在性別的比較上，我國國二學生的科學和數學成就，男女生之間皆無顯著差異；但在分科成就中，女生化學成就顯著高於男生，男生地球科學成就顯著高於女生，女生代數和幾何成就顯著高於男生。我國小四學生的科學成就男生在物質科學和地球科學顯著高於女生；男女生的數學成就無顯著差異，但女生資料呈現與分析成就顯著高於男生。

2.我國小四學生有 21%的學生不同意【我喜歡學自然科學】，34%的學生不同意【我喜歡學數學】，高於國際平均百分比。

3.我國國二學生的學習理化自信指標（Index of Students' Self-Confidence in Learning Science，簡稱 SCS），僅 28%學生達高自信指標；學習數學自信指標（Index of Students' Self-Confidence in Learning Mathematics，簡稱 SCM），僅 26%學生達高自信指標，低於國際平均百分比。

4.我國小四學生的學習自然科學自信指標（Index of Students' Self-Confidence in Learning Science，簡稱 SCS），有 50%學生達高自信指標；學習數學自信指標（Index of Students' Self-Confidence in Learning Mathematics，簡稱 SCM），僅 41%學生達高自信指標，低於國際平均百分比。

5.我國國二學生的評價科學的指標（Index of Students' Valuing Science，簡稱

SVS)，僅 26%學生達高評價指標；評價數學的指標（Index of Students' Valuing Science，簡稱 SVM)，僅 26%學生達高評價指標，低於國際平均百分比。

6.從 1999 到 2003 我國學生科學和數學學習成就高低成就之差異程度明顯縮小。

最後值得一提的事，IEA 依得分將學生表現分爲優、高級、中級、初級等四級：

在數學科方面，我國國二學生列爲優的有 38%，僅次於新加坡的 44%，較總成績第二的韓國高出 3%；但在低分群方面，我國有 3.4%尚未到達初級標準，而新加坡及韓國分別僅 0.8%及 1.7%，顯示我國國二生低分群的比例過高。小四學生列爲優的有 16%，比例低於新加坡、香港及日本，而總分名列第一的新加坡有 38%列爲優等，爲我國兩倍強。低分群方面，我國僅 0.8%未達初級標準，新加坡、香港、日本分別爲 2.4%、0.8%及 1.7%，顯示此部份我國成績分布較收斂。

在科學科方面，我國國二學生列爲優的有 26%，僅次於新加坡的 33%；在低分群方面，我國有 1.6%尚未到達初級標準，而新加坡爲 4.2%，顯示我國國二生成績分布頗收斂。小四學生列爲優的有 14%，低於新加坡、英國，新加坡有 25%列爲優等。低分群方面，我國 1.7%未達初級標準，新加坡則爲 4.1%。

表一 Distribution of Science Achievement

8th Grade TIMSS 2003 Science

| Countries | Years of Schooling* | Average Age | Science Achievement Distribution | Average Scale Score | Human Development Index** |
|---|---|---|---|---|---|
| Singapore | 8 | 14.3 | | 578 (4.3) h | 0.884 |
| Chinese Taipei | 8 | 14.2 | | 571 (3.5) h | – |
| ¿ Korea, Rep. of | 8 | 14.6 | | 558 (1.6) h | 0.879 |
| † Hong Kong, SAR | 8 | 14.4 | | 556 (3.0) h | 0.889 |
| Estonia | 8 | 15.2 | | 552 (2.5) h | 0.833 |
| Japan | 8 | 14.4 | | 552 (1.7) h | 0.932 |
| Hungary | 8 | 14.5 | | 543 (2.8) h | 0.837 |
| † Netherlands | 8 | 14.3 | | 536 (3.1) h | 0.938 |
| ‡ United States | 8 | 14.2 | | 527 (3.1) h | 0.937 |
| Australia | 8 or 9 | 13.9 | | 527 (3.8) h | 0.939 |
| Sweden | 8 | 14.9 | | 524 (2.7) h | 0.941 |
| Slovenia | 7 or 8 | 13.8 | | 520 (1.8) h | 0.881 |
| New Zealand | 8.5 - 9.5 | 14.1 | | 520 (5.0) h | 0.917 |
| Lithuania | 8 | 14.9 | | 519 (2.1) h | 0.824 |
| Slovak Republic | 8 | 14.3 | | 517 (3.2) h | 0.836 |
| Belgium (Flemish) | 8 | 14.1 | | 516 (2.5) h | 0.937 |
| Russian Federation | 7 or 8 | 14.2 | | 514 (3.7) h | 0.779 |
| Latvia | 8 | 15.0 | | 512 (2.6) h | 0.811 |
| † Scotland | 9 | 13.7 | | 512 (3.4) h | 0.930 |
| Malaysia | 8 | 14.3 | | 510 (3.7) h | 0.790 |
| Norway | 7 | 13.8 | | 494 (2.2) h | 0.944 |
| Italy | 8 | 13.9 | | 491 (3.1) h | 0.916 |
| Israel | 8 | 14.0 | | 488 (3.1) h | 0.905 |
| Bulgaria | 8 | 14.9 | | 479 (5.2) | 0.795 |
| Jordan | 8 | 13.9 | | 475 (3.8) | 0.743 |
| International Avg. | 8 | 14.5 | | 474 (0.6) | – |
| Moldova, Rep. of | 8 | 14.9 | | 472 (3.4) | 0.700 |
| Romania | 8 | 15.0 | | 470 (4.9) | 0.773 |
| Serbia | 8 | 14.9 | | 468 (2.5) i | – |
| Armenia | 8 | 14.9 | | 461 (3.5) i | 0.729 |
| Iran, Islamic Rep. of | 8 | 14.4 | | 453 (2.3) i | 0.719 |
| Macedonia, Rep. of | 8 | 14.6 | | 449 (3.6) i | 0.784 |
| Cyprus | 8 | 13.8 | | 441 (2.0) i | 0.891 |
| Bahrain | 8 | 14.1 | | 438 (1.8) i | 0.839 |
| Palestinian Nat'l Auth. | 8 | 14.1 | | 435 (3.2) i | 0.731 |
| Egypt | 8 | 14.4 | | 421 (3.9) i | 0.648 |
| Indonesia | 8 | 14.5 | | 420 (4.1) i | 0.682 |
| Chile | 8 | 14.2 | | 413 (2.9) i | 0.831 |
| Tunisia | 8 | 14.8 | | 404 (2.1) i | 0.740 |
| Saudi Arabia | 8 | 14.1 | | 398 (4.0) i | 0.769 |
| ‡ Morocco | 8 | 15.2 | | 396 (2.5) i | 0.606 |
| Lebanon | 8 | 14.6 | | 393 (4.3) i | 0.752 |
| Philippines | 8 | 14.8 | | 377 (5.8) i | 0.751 |
| Botswana | 8 | 15.1 | | 365 (2.8) i | 0.614 |
| Ghana | 8 | 15.5 | | 255 (5.9) i | 0.567 |
| South Africa | 8 | 15.1 | | 244 (6.7) i | 0.684 |
| ¶ England | 9 | 14.3 | | 544 (4.1) h | 0.930 |
| Benchmarking Participants | | | | | |
| Basque Country, Spain | 8 | 14.1 | | 489 (2.7) h | – |
| Indiana State, US | 8 | 14.5 | | 531 (4.8) h | – |
| Ontario Province, Can | 8 | 13.8 | | 533 (2.7) h | – |
| Quebec Province, Can | 8 | 14.2 | | 531 (3.0) h | – |

0 100 200 300 400 500 600 700 800

Percentiles of Performance
5th 25th 75th 95th
95% Confidence Interval for Average (±2SE)

h Country average significantly higher than international average

i Country average significantly lower than international average

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

* Represents years of schooling counting from the first year of ISCED Level 1.

** Taken from United Nations Development Program's *Human Development Report 2003*, p. 237-240.

† Met guidelines for sample participation rates only after replacement schools were included (see Exhibit A.9).

‡ Nearly satisfied guidelines for sample participation rates only after replacement schools were included (see Exhibit A.9).

¶ Did not satisfy guidelines for sample participation rates (see Exhibit A.9).

1 National Desired Population does not cover all of International Desired Population (see Exhibit A.6).

2 National Defined Population covers less than 90% of National Desired Population (see Exhibit A.6).

¿ Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates comparable data are not available.

表二　Distribution of Mathematics Achievement

8th Grade TIMSS 2003 Mathematics

| Countries | Years of Schooling* | Average Age | Mathematics Achievement Distribution | Average Scale Score | | Human Development Index** |
|---|---|---|---|---|---|---|
| Singapore | 8 | 14.3 | | 605 (3.6) | h | 0.884 |
| ¿ Korea, Rep. of | 8 | 14.6 | | 589 (2.2) | h | 0.879 |
| † Hong Kong, SAR | 8 | 14.4 | | 586 (3.3) | h | 0.889 |
| Chinese Taipei | 8 | 14.2 | | 585 (4.6) | h | – |
| Japan | 8 | 14.4 | | 570 (2.1) | h | 0.932 |
| Belgium (Flemish) | 8 | 14.1 | | 537 (2.8) | h | 0.937 |
| † Netherlands | 8 | 14.3 | | 536 (3.8) | h | 0.938 |
| Estonia | 8 | 15.2 | | 531 (3.0) | h | 0.833 |
| Hungary | 8 | 14.5 | | 529 (3.2) | h | 0.837 |
| Malaysia | 8 | 14.3 | | 508 (4.1) | h | 0.790 |
| Latvia | 8 | 15.0 | | 508 (3.2) | h | 0.811 |
| Russian Federation | 7 or 8 | 14.2 | | 508 (3.7) | h | 0.779 |
| Slovak Republic | 8 | 14.3 | | 508 (3.3) | h | 0.836 |
| Australia | 8 or 9 | 13.9 | | 505 (4.6) | h | 0.939 |
| ‡ United States | 8 | 14.2 | | 504 (3.3) | h | 0.937 |
| Lithuania | 8 | 14.9 | | 502 (2.5) | h | 0.824 |
| Sweden | 8 | 14.9 | | 499 (2.6) | h | 0.941 |
| † Scotland | 9 | 13.7 | | 498 (3.7) | h | 0.930 |
| Israel | 8 | 14.0 | | 496 (3.4) | h | 0.905 |
| New Zealand | 8.5 - 9.5 | 14.1 | | 494 (5.3) | h | 0.917 |
| Slovenia | 7 or 8 | 13.8 | | 493 (2.2) | h | 0.881 |
| Italy | 8 | 13.9 | | 484 (3.2) | h | 0.916 |
| Armenia | 8 | 14.9 | | 478 (3.0) | h | 0.729 |
| Serbia | 8 | 14.9 | | 477 (2.6) | h | – |
| Bulgaria | 8 | 14.9 | | 476 (4.3) | h | 0.795 |
| Romania | 8 | 15.0 | | 475 (4.8) | | 0.773 |
| International Avg. | 8 | 14.5 | | 467 (0.5) | | – |
| Norway | 7 | 13.8 | | 461 (2.5) | i | 0.944 |
| Moldova, Rep. of | 8 | 14.9 | | 460 (4.0) | | 0.700 |
| Cyprus | 8 | 13.8 | | 459 (1.7) | i | 0.891 |
| Macedonia, Rep. of | 8 | 14.6 | | 435 (3.5) | i | 0.784 |
| Lebanon | 8 | 14.6 | | 433 (3.1) | i | 0.752 |
| Jordan | 8 | 13.9 | | 424 (4.1) | i | 0.743 |
| Iran, Islamic Rep. of | 8 | 14.4 | | 411 (2.4) | i | 0.719 |
| Indonesia | 8 | 14.5 | | 411 (4.8) | i | 0.682 |
| Tunisia | 8 | 14.8 | | 410 (2.2) | i | 0.740 |
| Egypt | 8 | 14.4 | | 406 (3.5) | i | 0.648 |
| Bahrain | 8 | 14.1 | | 401 (1.7) | i | 0.839 |
| Palestinian Nat'l Auth. | 8 | 14.1 | | 390 (3.1) | i | 0.731 |
| Chile | 8 | 14.2 | | 387 (3.3) | i | 0.831 |
| ‡ Morocco | 8 | 15.2 | | 387 (2.5) | i | 0.606 |
| Philippines | 8 | 14.8 | | 378 (5.2) | i | 0.751 |
| Botswana | 8 | 15.1 | | 366 (2.6) | i | 0.614 |
| Saudi Arabia | 8 | 14.1 | | 332 (4.6) | i | 0.769 |
| Ghana | 8 | 15.5 | | 276 (4.7) | i | 0.567 |
| South Africa | 8 | 15.1 | | 264 (5.5) | i | 0.684 |
| ¶ England | 9 | 14.3 | | 498 (4.7) | h | 0.930 |
| Benchmarking Participants | | | | | | |
| Basque Country, Spai | 8 | 14.1 | | 487 (2.7) | h | – |
| Indiana State, US | 8 | 14.5 | | 508 (5.2) | h | – |
| Ontario Province, Can | 8 | 13.8 | | 521 (3.1) | h | – |
| Quebec Province, Car | 8 | 14.2 | | 543 (3.0) | h | – |

0 100 200 300 400 500 600 700 800

Percentiles of Performance
5th 25th 75th 95th
95% Confidence Interval for Average (±2SE)

h Country average significantly higher than international average

i Country average significantly lower than international average

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

* Represents years of schooling counting from the first year of ISCED Level 1.

** Taken from United Nations Development Programme's *Human Development Report 2003*, p. 237-240.

† Met guidelines for sample participation rates only after replacement schools were included (see Exhibit A.9).

‡ Nearly satisfied guidelines for sample participation rates only after replacement schools were included (see Exhibit A.9).

¶ Did not satisfy guidelines for sample participation rates (see Exhibit A.9).

1 National Desired Population does not cover all of International Desired Population (see Exhibit A.6).

2 National Defined Population covers less than 90% of National Desired Population (see Exhibit A.6).

¿ Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

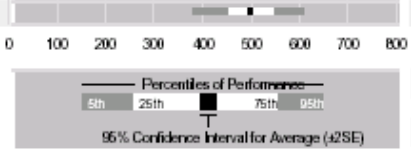
( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates comparable data are not available.

表三 Distribution of Science Achievement

4th grade TIMSS 2003 Science

| Countries | Years of Schooling* | Average Age | Science Achievement Distribution | Average Scale Score | | Human Development Index** |
|---|---|---|---|---|---|---|
| Singapore | 4 | 10.3 | | 565 (5.5) | h | 0.884 |
| Chinese Taipei | 4 | 10.2 | | 551 (1.7) | h | – |
| Japan | 4 | 10.4 | | 543 (1.5) | h | 0.932 |
| † Hong Kong, SAR | 4 | 10.2 | | 542 (3.1) | h | 0.889 |
| † England | 5 | 10.3 | | 540 (3.6) | h | 0.930 |
| † United States | 4 | 10.2 | | 536 (2.5) | h | 0.937 |
| Latvia | 4 | 11.1 | | 532 (2.5) | h | 0.811 |
| Hungary | 4 | 10.5 | | 530 (3.0) | h | 0.837 |
| Russian Federation | 3 or 4 | 10.6 | | 526 (5.2) | h | 0.779 |
| † Netherlands | 4 | 10.2 | | 525 (2.0) | h | 0.938 |
| † Australia | 4 or 5 | 9.9 | | 521 (4.2) | h | 0.939 |
| New Zealand | 4.5 - 5.5 | 10.0 | | 520 (2.5) | h | 0.917 |
| Belgium (Flemish) | 4 | 10.0 | | 518 (1.8) | h | 0.937 |
| Italy | 4 | 9.8 | | 516 (3.8) | h | 0.916 |
| Lithuania | 4 | 10.9 | | 512 (2.6) | h | 0.824 |
| † Scotland | 5 | 9.7 | | 502 (2.9) | h | 0.930 |
| Moldova, Rep. of | 4 | 11.0 | | 496 (4.6) | | 0.700 |
| Slovenia | 3 or 4 | 9.8 | | 490 (2.5) | | 0.881 |
| International Avg. | 4 | 10.3 | | 489 (0.9) | | – |
| Cyprus | 4 | 9.9 | | 480 (2.4) | i | 0.891 |
| ø Norway | 4 | 9.8 | | 466 (2.6) | i | 0.944 |
| Armenia | 4 | 10.9 | | 437 (4.3) | i | 0.729 |
| Iran, Islamic Rep. of | 4 | 10.4 | | 414 (4.1) | i | 0.719 |
| Philippines | 4 | 10.8 | | 332 (9.4) | i | 0.751 |
| Tunisia | 4 | 10.4 | | 314 (5.7) | i | 0.740 |
| Morocco | 4 | 11.0 | | 304 (6.7) | i | 0.606 |
| Benchmarking Participants | | | | | | |
| Indiana State, US | 4 | 9.5 | | 553 (3.7) | h | – |
| Ontario Province, Can. | 4 | 9.8 | | 540 (3.7) | h | – |
| Quebec Province, Can | 4 | 10.1 | | 500 (2.5) | h | – |




h Country average significantly higher than international average

i Country average significantly lower than international average

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

* Represents years of schooling counting from the first year of ISCED Level 1.

** Taken from United Nations Development Program's *Human Development Report 2003*, p. 237-240.

† Met guidelines for sample participation rates only after replacement schools were included (see Exhibit A.9).

1 National Desired Population does not cover all of International Desired Population (see Exhibit A.6).

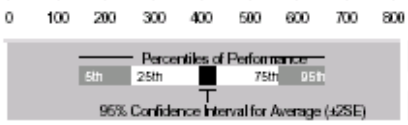
ø Norway: 4 years of formal schooling, but First Grade is called "First grade/Preschool."

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.
A dash (–) indicates comparable data are not available.

表四　Distribution of Mathematics Achievement

4th grade TIMSS 2003 Mathematics

| Countries | Years of Schooling* | Average Age | Mathematics Achievement Distribution | Average Scale Score | | Human Development Index** |
|---|---|---|---|---|---|---|
| Singapore | 4 | 10.3 | | 594 (5.6) | h | 0.884 |
| † Hong Kong, SAR | 4 | 10.2 | | 575 (3.2) | h | 0.889 |
| Japan | 4 | 10.4 | | 565 (1.6) | h | 0.932 |
| Chinese Taipei | 4 | 10.2 | | 564 (1.8) | h | – |
| Belgium (Flemish) | 4 | 10.0 | | 551 (1.8) | h | 0.937 |
| † Netherlands | 4 | 10.2 | | 540 (2.1) | h | 0.938 |
| Latvia | 4 | 11.1 | | 536 (2.8) | h | 0.811 |
| Lithuania | 4 | 10.9 | | 534 (2.8) | h | 0.824 |
| Russian Federation | 3 or 4 | 10.6 | | 532 (4.7) | h | 0.779 |
| † England | 5 | 10.3 | | 531 (3.7) | h | 0.930 |
| Hungary | 4 | 10.5 | | 529 (3.1) | h | 0.837 |
| † United States | 4 | 10.2 | | 518 (2.4) | h | 0.937 |
| Cyprus | 4 | 9.9 | | 510 (2.4) | h | 0.891 |
| Moldova, Rep. of | 4 | 11.0 | | 504 (4.9) | | 0.700 |
| Italy | 4 | 9.8 | | 503 (3.7) | h | 0.916 |
| † Australia | 4 or 5 | 9.9 | | 499 (3.9) | | 0.939 |
| International Avg. | 4 | 10.3 | | 495 (0.8) | | – |
| New Zealand | 4.5 - 5.5 | 10.0 | | 493 (2.2) | | 0.917 |
| † Scotland | 5 | 9.7 | | 490 (3.3) | | 0.930 |
| Slovenia | 3 or 4 | 9.8 | | 479 (2.6) | i | 0.881 |
| Armenia | 4 | 10.9 | | 456 (3.5) | i | 0.729 |
| ø Norway | 4 | 9.8 | | 451 (2.3) | i | 0.944 |
| Iran, Islamic Rep. of | 4 | 10.4 | | 389 (4.2) | i | 0.719 |
| Philippines | 4 | 10.8 | | 358 (7.9) | i | 0.751 |
| Morocco | 4 | 11.0 | | 347 (5.1) | i | 0.606 |
| Tunisia | 4 | 10.4 | | 339 (4.7) | i | 0.740 |
| Benchmarking Participants | | | | | | |
| Indiana State, US | 4 | 9.5 | | 533 (2.8) | h | – |
| Ontario Province, Can | 4 | 9.8 | | 511 (3.8) | h | – |
| Quebec Province, Car | 4 | 10.1 | | 506 (2.4) | h | – |




h　Country average significantly higher than international average

i　Country average significantly lower than international average

* Represents years of schooling counting from the first year of ISCED Level 1.

** Taken from United Nations Development Programme's *Human Development Report 2003*, p. 237-240.

† Met guidelines for sample participation rates only after replacement schools were included (see Exhibit A.9).

1 National Desired Population does not cover all of International Desired Population (see Exhibit A.6).

ø Norway: 4 years of formal schooling, but First Grade is called "First grade/Preschool."

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates comparable data are not available.