

International Benchmarking

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International Benchmarking

- In American education, “benchmarking” often means comparing performance outcomes or setting performance targets
- In business and among education leaders in other countries, it means much more:
 - Comparing outcomes to identify top performers or fast improvers, learning how they achieve great results and applying those lessons to improve one’s own performance.

American Productivity and Quality Center

“Benchmarking is the practice of being humble enough to admit that someone else has a better process and wise enough to learn how to match or even surpass them.”

-Benchmarking for Success: Ensuring U.S. Students Receive a World-Class Education.

International Benchmarking

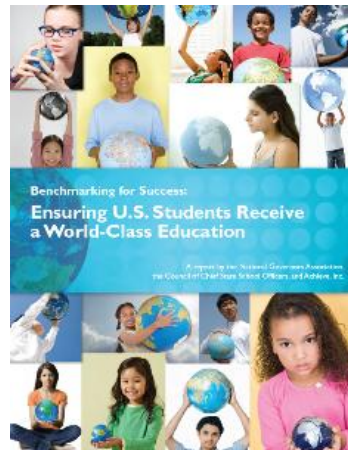
- Trends in International Mathematics and Science Study (TIMSS)
- Program for International Student Assessment (PISA)
- Progress in International Reading Literacy Study (PIRLS)

The United States

- Out of 30 industrialized countries participating in the OECD's Programme for International Student Assessment (PISA) in 2006, the U.S. ranked 25th in math and 21st in science achievement
- The performance gap between the United States and top-performing nations is huge: American students lag about a **full year behind their peers** in the countries that perform best in mathematics
- U.S. students consistently performed below average across international assessments

Benchmarking for Success: Ensuring U.S. Students Receive a World-Class Education

A report by the National Governors Association, the Council of Chief State School Officers, and Achieve, Inc.



Summary

- Provides states a roadmap for benchmarking their K-12 education systems against those of top-performing nations
- Explains urgent need for action and outlines what states and the federal government must do to ensure U.S. students receive a world-class education

Recommendation

Upgrade state standards by adopting a common core of internationally benchmarked standards in math and language arts for grades K-12 to ensure that students are equipped with the necessary knowledge and skills to be globally competitive

Standards Revision in Ohio

The standards revision process began with an international benchmarking research study, focused on the content standards of top performing nations, to identify best practices from around the world

Benchmark Countries

Countries that significantly and persistently outscore the US on PISA and TIMMS, two internationally administered standardized assessments:

- Australia
- England
- Finland
- Hong Kong
- Japan
- New Zealand
- Netherlands
- Ontario
- Singapore

Qualitative Data Areas

- Country
- Content Area
- Composition of Populations
- Status of the Teaching Profession
- Curriculum
- Policies, practices and other pertinent information
- Educational Organizational Structures

Content Area

According to the Singapore Ministry of Education, they recognize areas of giftedness that may be demonstrated including intellectual ability, leadership ability, talent in art and music and psychomotor ability

Composition of Population

- Students identified for the Gifted Education Program (GEP) based on performance on screening tests administered at the end of Primary Three
- Approximately 4000 students shortlisted to take the GEP selection tests
- Five hundred students selected to join the GEP in Primary Four
- Officially cater to the top 1% of the national cohort through the GEP
- After Primary Six GEP students may be promoted to the next level of gifted education
- Additional school-based Gifted Education Programs (SBGE) available

Status of Teaching Profession

- Teachers complete **three compulsory courses**:
Foundation Course in Gifted Education, Affective Education for the Gifted, and Curriculum Differentiation for the Gifted
- Required participation in classroom observations
- Required to demonstrate qualities necessary to teach the gifted such as strong subject content, good academic qualifications and teaching record
- SBGE teachers are trained by the Gifted Education Branch as well but only receive training in the fundamentals of gifted education

Curriculum

The GEP curriculum enrichment model is based on curriculum differentiation in 4 areas:

- **Content Enrichment** (extends beyond basic syllabus in depth and breadth, covers more advanced topics, caters more to individual needs and interests, etc.)
- **Process Enrichment** (develops higher level thinking skills, provides opportunities to discovery and experiential learning, open-ended problem solving, etc.)
- **Product Enrichment** (encourages modes of presentations, creative expression, etc.) and
- **Learning Environment** (learner-centered, risk-taking), etc.)

Policies, Practice and Other Pertinent Information

Goals of the Gifted Education Program are as follows:

- to develop intellectual depth and higher level thinking
- to nurture productive creativity
- to develop attitudes for self-directed lifelong learning
- to enhance aspirations for individual excellence and fulfillment
- to develop a strong social conscience and
- commitment to serve society and nation, and to develop more values and qualities for responsible leadership

Quantitative Data

- Trends in International Mathematics and Science Study (TIMSS)
- Program for International Student Assessment (PISA)
- Australia, England, Finland, Hong Kong, Japan, New Zealand, Netherlands, Ontario, Singapore

Student Questionnaire

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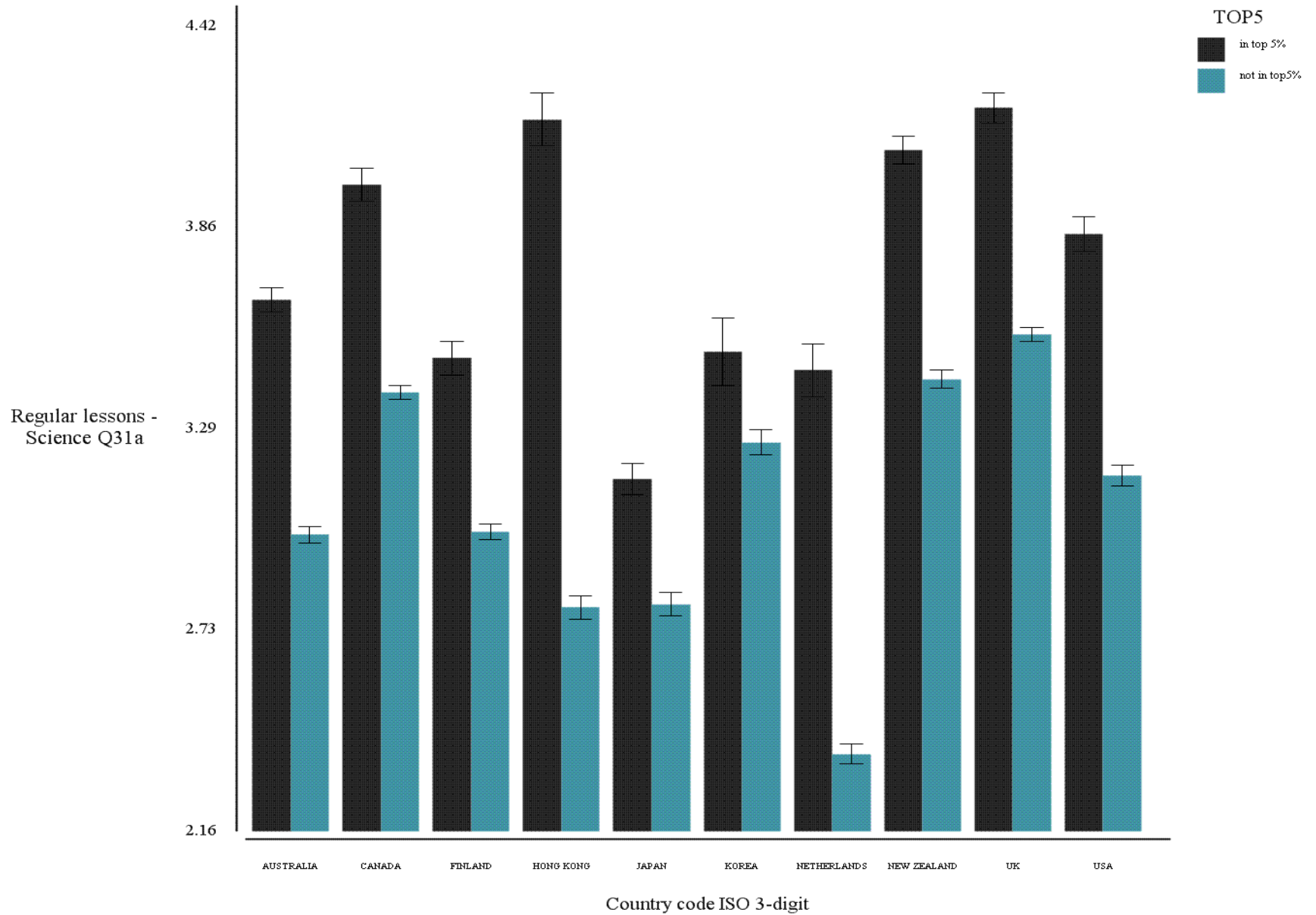
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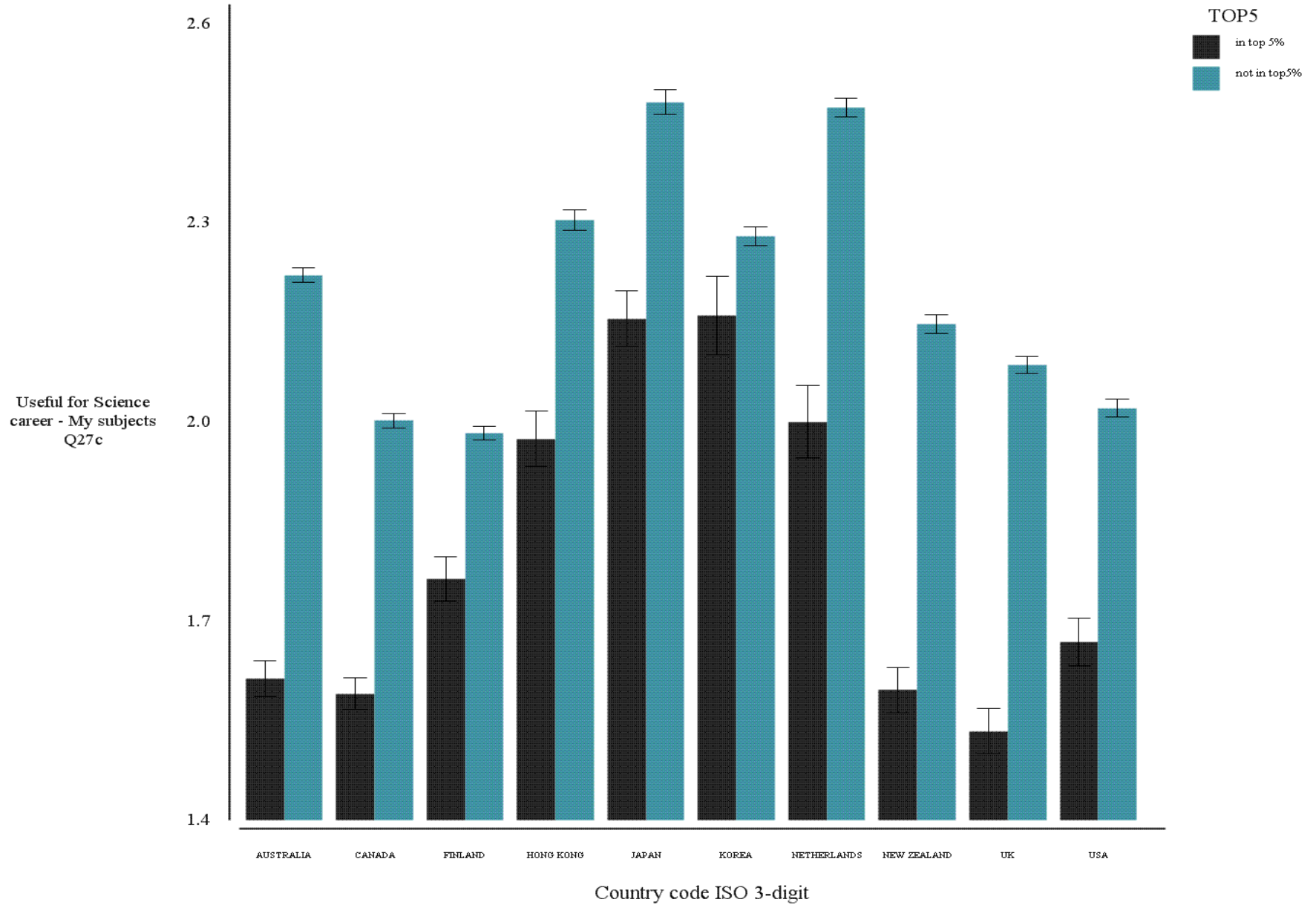
-	11	Study biology	Whether or not the student is studying biology this year
-	12	Liking biology	How much the student likes and feels competent at biology
-	13	Valuing biology	Importance and value the student attributes to biology
-	14	Learning activities in biology	Frequency with which student does various learning activities in biology lessons
-	15	Study earth science	Whether or not the student is studying earth science this year
-	16	Liking earth science	How much the student likes and feels competent at earth science
-	17	Valuing earth science	Importance and value the student attributes to earth science
-	18	Learning activities in earth science	Frequency with which student does various learning activities in earth science lessons
-	19	Study chemistry	Whether or not the student is studying chemistry this year
-	20	Liking chemistry	How much the student likes and feels competent at chemistry
-	21	Valuing chemistry	Importance and value the student attributes to chemistry
-	22	Learning activities in chemistry	Frequency with which student does various learning activities in chemistry lessons
-	23	Study physics	Whether or not the student is studying physics this year
-	24	Liking physics	How much the student likes and feels competent at physics
-	25	Valuing physics	Importance and value the student attributes to physics
-	26	Learning activities in physics	Frequency with which student does various learning activities in physics lessons
14	27	Computers	Whether or not student uses a computer, where student uses it, and frequency with which student uses a computer in mathematics and science
15	28	School climate	Student's affinity for school, perception of other students' motivation in school, and teachers' expectations
16	29	Safety in school	Whether or not the student experienced being the object of problematic behaviors by other students
17	30	Out-of-school activities	Frequency with which student does various nonacademic activities and homework outside of school

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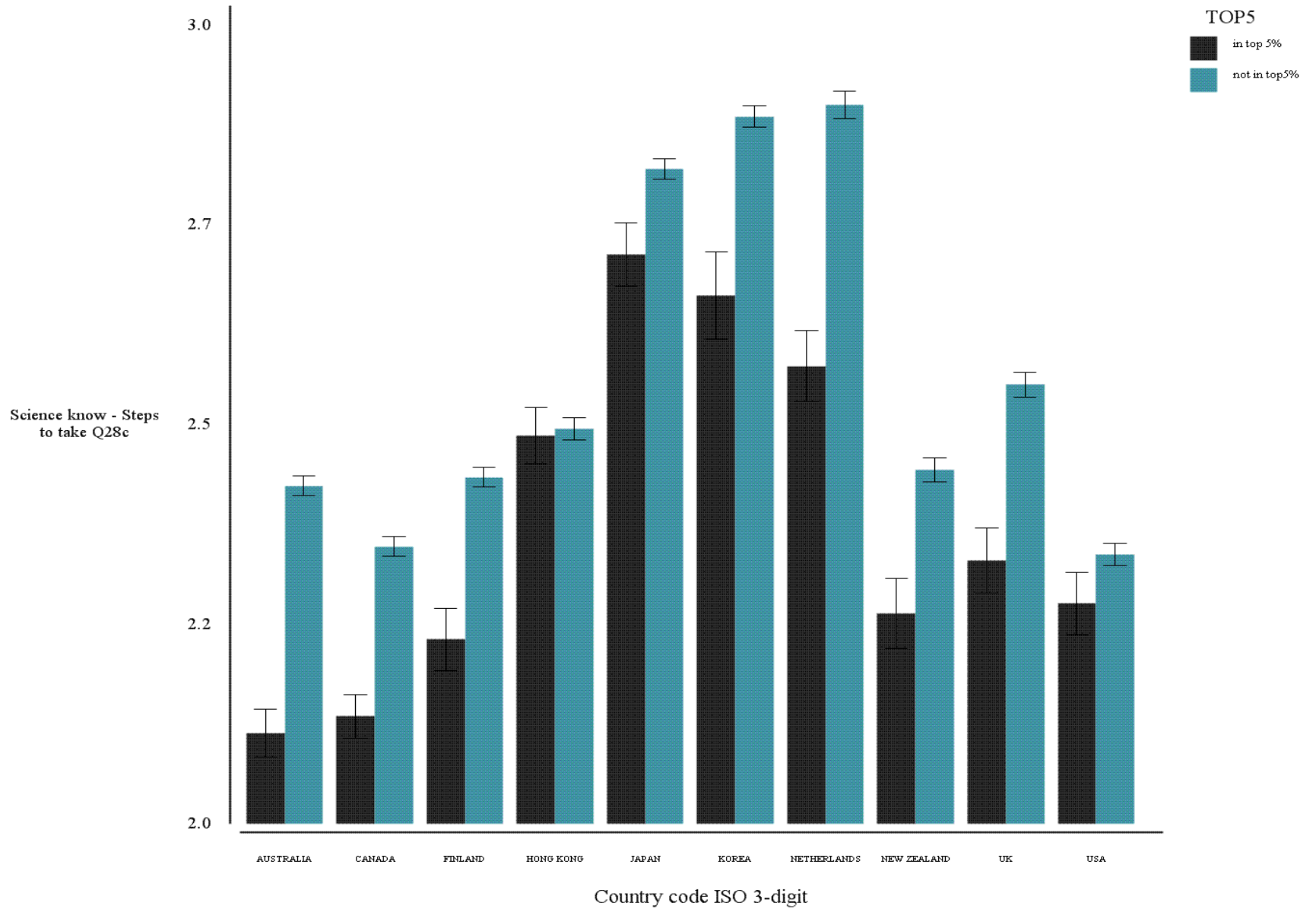
31A: TIME SPENT PER WEEK ON STUDYING REGULAR LESSONS IN SCHOOL SCIENCE AT SCHOOL

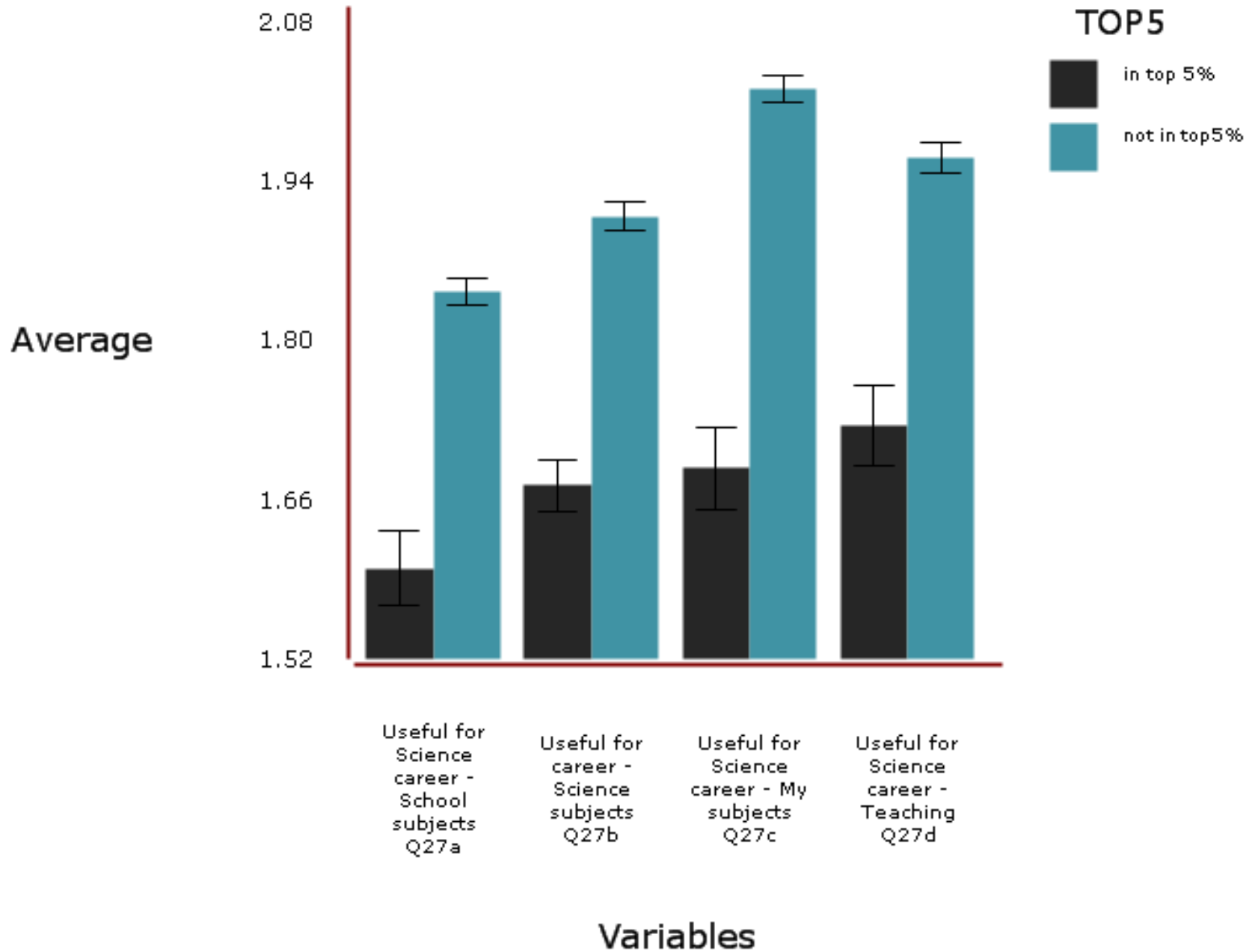


27C: THE SUBJECTS I STUDY PROVIDE ME WITH THE BASIC SKILLS AND KNOWLEDGE FOR A SCIENCE-RELATED CAREER

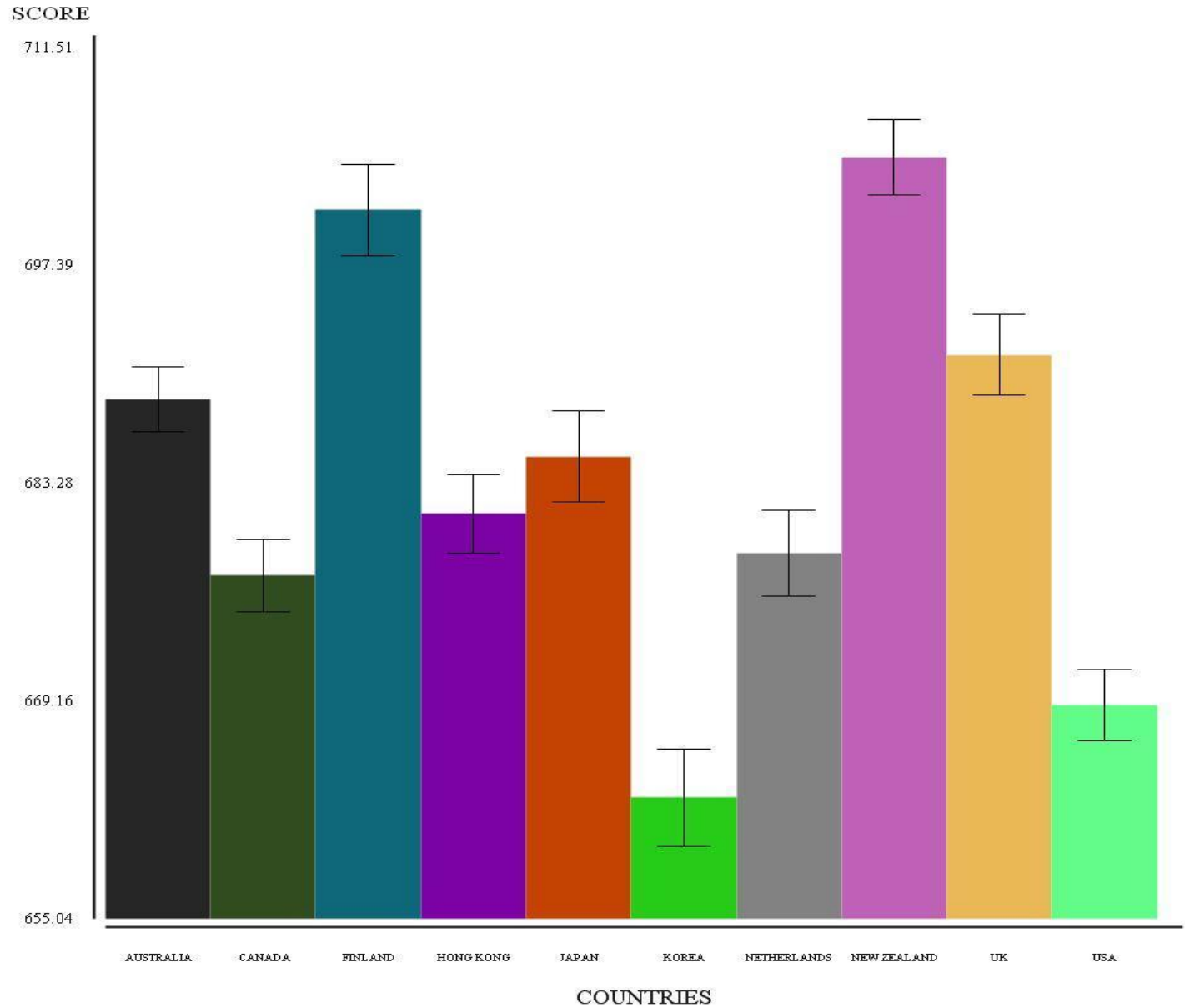


28C: HOW INFORMED ARE YOU ABOUT THE STEPS STUDENTS NEED TO TAKE IF THEY WANT A SCIENCE-RELATED CAREER?

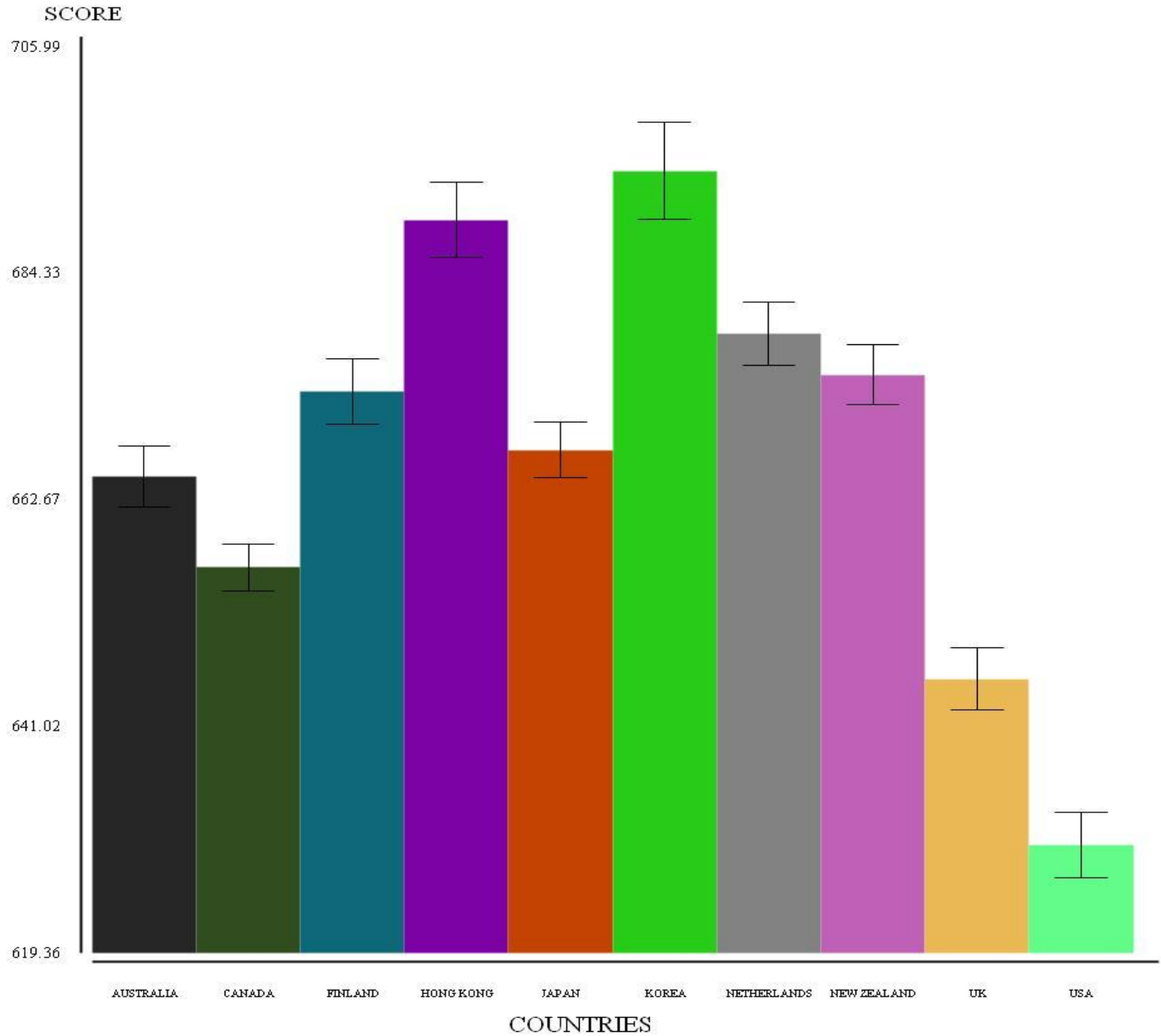




SCIENCE ACHIEVEMENT BY COUNTRY



MATHS COUNTRY MEANS



Findings Summary by Area

- Country
- Content Area
- Composition of Populations
- Status of the Teaching Profession
- Curriculum
- Policies, practices and other pertinent information
- Educational Organizational Structures

Content Area

- Gifted education is **not specifically mandated** by law in most countries
- Majority of study countries have a **term and definition** for “giftedness” and corresponding identification and service procedures
- **Singapore**, which consistently outperforms the majority of the study countries on international standardized assessments, has the **most specific legislation and federal funding support for gifted education**

Composition of Population

The majority of the study countries identify between 5-10% of their students as “gifted.”

Status of the Teaching Profession

- Most study countries do not require a specific course in gifted education for pre-service teachers
- It is a topic of discussion throughout other courses in their program
- **Singapore** is an exception in that all pre-service teachers are required to complete three courses in gifted education: Foundations in Gifted Education, Affective Education for the Gifted and Curriculum Differentiation for the Gifted.
- Majority of study countries offer professional development in gifted education

Curriculum

- All study countries serve the high ability learners in their country through a combination of settings
- Most prominent service settings include ability grouping and acceleration

Policies, Practices, and Other Pertinent Information

- Majority of study countries have legislative policies and practices that address high ability learners
- Many study countries serve their high ability learners through rigorous after-school programs

Education Organization Structure

- Services for high ability learners in the majority of the study countries are controlled at the local school level with the exception of Singapore
- Some countries, such as Korea, provide federal support for special schools and programs for gifted students, particularly at the secondary level