



# How Well Does Hong Kong's Education Work?

The Programme for International Student Assessment (PISA) is a project led by the Organisation for Economic Co-operation and Development (OECD). PISA takes place every three years starting from 2000, assessing the knowledge and skills of 15-year-olds in scientific, reading and mathematical literacy. The assessments were fully computerized in 2015. Collaborative problem solving was assessed, and affective indicators including students' overall life satisfaction and test anxiety were measured. About 510,000 students from 72 countries/economies participated in PISA 2015.

## Top 10 Performing Countries/Economies in PISA 2015

Science		Reading		Mathematics		Collaborative Problem Solving	
Countries / Economies	Mean score	Countries / Economies	Mean score	Countries / Economies	Mean score	Countries / Economies	Mean score
Singapore	556	Singapore	535	Singapore	564	Singapore	561
Japan	538	Hong Kong-China	527	Hong Kong-China	548	Japan	552
Estonia	534	Canada	527	Macao-China	544	Hong Kong-China	541
Chinese Taipei	532	Finland	526	Chinese Taipei	542	Korea	538
Finland	531	Ireland	521	Japan	532	Canada	535
Macao-China	529	Estonia	519	China (B-S-J-G)	531	Estonia	535
Canada	528	Korea	517	Korea	524	Finland	534
Viet Nam	525	Japan	516	Switzerland	521	Macao-China	534
Hong Kong-China	523	Norway	513	Estonia	520	New Zealand	533
China (B-S-J-G)	518	New Zealand	509	Canada	516	Australia	531

Note: Shaded area indicates scores significantly different from those of Hong Kong. The four participating regions of Mainland China are Beijing, Shanghai, Jiangsu, and Guangdong.

## Overall Life Satisfaction and Test Anxiety Index of Top 10 Performing Countries/Economies in PISA 2015

Overall Life Satisfaction		Test Anxiety Index	
Countries / Economies	Mean index	Countries / Economies	Mean index
Finland	7.89	Finland	-0.41
Estonia	7.50	Estonia	-0.22
China (B-S-J-G)	6.83	Canada	0.17
Japan	6.80	China (B-S-J-G)	0.23
Chinese Taipei	6.59	Japan	0.26
Macao-China	6.59	Hong Kong-China	0.33
Hong Kong-China	6.48	Macao-China	0.37
Canada	m	Chinese Taipei	0.39
Singapore	m	Singapore	0.57
Viet Nam	m	Viet Nam	m

Note: Shaded area indicates indices significantly different from those of Hong Kong. The four participating regions of Mainland China are Beijing, Shanghai, Jiangsu, and Guangdong. m denotes missing data.



## Student Performance in PISA 2015

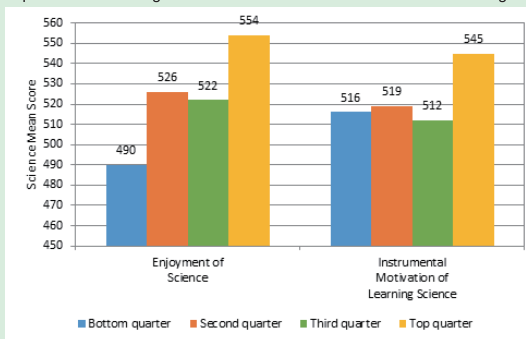
- Scientific Literacy**  
The science performance of Hong Kong students in 2015 is lower than those in 2006, 2009 and 2012, which ranks ninth among all participating countries/economies. In terms of science competency and knowledge subscales, Hong Kong students have similar performances in *explaining phenomena scientifically*, *evaluating and designing scientific enquiry* and *interpreting data and evidence scientifically*, and they are stronger in *content knowledge* than in *procedural and epistemic knowledge*.
- Reading Literacy**  
Hong Kong students perform consistently well in reading and rank second among all participating countries/economies. Their reading performance in 2015 is higher than that in 2003 but lower than that in 2012.
- Mathematical Literacy**  
Hong Kong students perform consistently well in mathematics and rank second among all participating countries/economies. Their mathematics performance in 2015 is similar to those in 2003, 2006 and 2009, but lower than that in 2012.
- Collaborative Problem Solving**  
Hong Kong students perform well and rank third in collaborative problem solving among all participating countries/economies.

- Overall Life Satisfaction**  
The overall life satisfaction of Hong Kong students (6.48) is significantly lower than the OECD average (7.31) and that of the other top performing countries/economies.
- Test Anxiety**  
The test anxiety index of Hong Kong students (0.33) is significantly higher than the OECD average (0.01) and that of many top performing countries/economies.

## Relationship between Non-cognitive Abilities and Science Performance

Hong Kong students have significantly higher intrinsic motivation (enjoyment of science) and extrinsic motivation (instrumental motivation) of learning science than the OECD averages. These two kinds of non-cognitive abilities have significant positive correlations with science performance.

Relationship between Non-cognitive Abilities and Science Performance of Hong Kong Students



Prof. Esther Ho

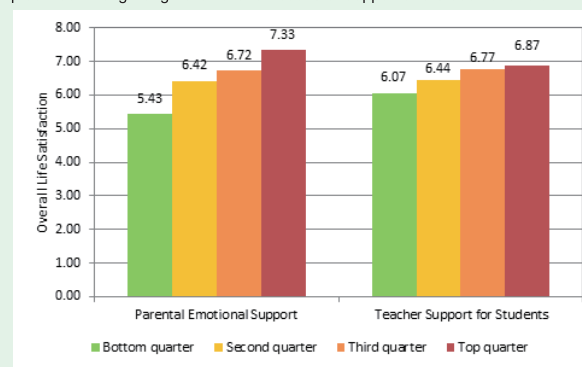
Develop passion for learning and compassion for others and yourself!



## Relationship between Parents' and Teachers' Support and Students' Overall Life Satisfaction

The emotional support from Hong Kong parents for their child is significantly lower than the OECD average, whereas the support from Hong Kong teachers for students is similar to the OECD average. These two kinds of support have significant positive correlations with students' overall life satisfaction.

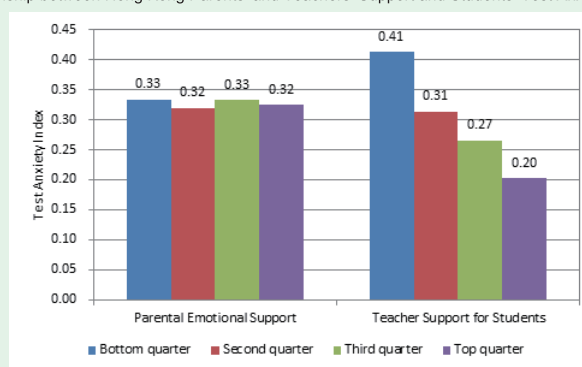
Relationship between Hong Kong Parents' and Teachers' Support and Students' Overall Life Satisfaction



## Relationship between Parents' and Teachers' Support and Students' Test Anxiety

Teacher support for students has a significant negative correlation with students' test anxiety: the more the teacher support, the less the students' test anxiety. Parental emotional support for child, on the other hand, does not have any significant correlation with students' test anxiety.

Relationship between Hong Kong Parents' and Teachers' Support and Students' Test Anxiety Index



Prof. Esther Ho

Dare to dream: The future belongs to those who believe in the beauty of their dreams



## Hints for Educators

- Since the implementation of the New Senior Secondary (NSS) curriculum in 2009, there are more senior secondary students taking at least one science or combined science subject than before, but the proportion of Hong Kong students studying all three science subjects, namely Physics, Chemistry and Biology, has decreased substantially. The content knowledge learnt may have decreased on average, and the depth and extensiveness of science learning may have also reduced. As a result, teachers need more support from the community, teaching resources and time to accommodate the weaknesses in students' basic science knowledge and learning motivation.
- The nurture of affective domains in science learning warrants immediate attention as they are influential factors which can raise students' science performance. Science teachers may help to improve students' interest and enjoyment in science by arranging more experiments in daily lessons and making good use of project learning with real life context.
- In an era of ever-advancing information and communication technologies, schools and teachers may guide students on how to make proper use of the Internet as a tool for collaborating with others and solving problems. Rather than spending a long time on or being addicted to the Internet, students should learn how to obtain practical and educational information from the Internet and weigh the pros and cons of various online activities.
- Despite their high ranking in literacy performances, Hong Kong students have a relatively poor well-being and a relatively high test anxiety which are of particular concern. The education authorities should review the positive effects and side effects of the existing assessments and leave room for teachers to care for and support students, so that students' life satisfaction may be raised and their test anxiety may be reduced.

Prof. Esther Ho

Follow your heart, pursue your dreams



## Hints for Parents

Enhancing social communication between parent and child, arranging science activities for the child at an early age and providing more emotional support for the child, have positive effects on the child's learning. Besides, children who engage moderately in online activities for fun or schoolwork have better performance in collaborative problem solving than those who do so excessively (every day) or who never do so.

Things parents can do to promote their child's learning:

- Watch or listen to programmes about science with their child
- Encourage their child to participate in science-related activities and read science books
- Have dinner and chat with their child
- Allow their child to have moderate use of computer and Internet for learning
- Encourage their child to read online news and search for practical information

Things parents can do to raise their child's life satisfaction:

- Support their child's efforts and achievements
- Avoid over-criticism
- Support their child when he/she is facing difficulties at school
- Discuss school life with their child
- Show interest in their child's school activities

\*\*\*\*\*

Contact information of HKCISA Centre:

Director: Professor Esther Sui Chu HO

Telephone: 2603 7209

Fax: 2603 5336

E-mail: [hkcisa@fed.cuhk.edu.hk](mailto:hkcisa@fed.cuhk.edu.hk)

Website: <https://www.fed.cuhk.edu.hk/~hkcisa>

Address: HKCISA Centre, Sino Building  
The Chinese University of Hong Kong  
Shatin, Hong Kong

For more information about OECD/PISA, please visit the website:

<http://www.oecd.org/pisa>

The Chinese University of Hong Kong

Commissioned by Education Bureau